



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES

11805 SW 26 Street Miami, FL 33175-2474
(786) 315-2000

BUILDING PERMIT AND INSPECTION RECORD

Municipal #: **2026056665**
Process Number: M2026007430
Issue Date:

Job Location

Folio: 3220140220020
Job Site Address: 15700 NW 67 AVE 100
Legal: MIAMI LAKES MEADOW WALK PB 116-33

Project Information

Application Type: ALTER INTERIOR
Proposed Use: OFFICE - PROFESSIONAL BUILDINGS
Sq. Ft.: 0 / Units: 0 / Floors: 0
Permit Type: MUNICIPAL ELEC / Permit Category: 0004 MUNICIPAL FIRE ALARM

Owner & Contractor Information

Property Owner: JULISSA ASSETS LLC
Contractor:
Qualifier:



Required Inspections

FIRE - 0004 FIRE ALARM

Inspection Type	Initials	Date
209 FIRE FINAL		

Notes

Rough, electrical, plumbing, and mechanical inspections must be made and approved

before requesting a framing inspection.

Inspections can be requested online at www.miamidade.gov/building under the Inspection tab or by calling (786) 315-2100. Before scheduling the inspection, please have your ten-digit permit number and three-digit inspection type ready. The inspection type can be found on the permit card next to the required inspection. Inspectors can be reached at the office from 7 AM to 8 AM or via our website.

To schedule Fire inspections, call Fire Dept. at 786-331-4798

Warning to Owners

Your failure to record a Notice of Commencement may result in your paying twice for improvements to your property. If you intend to obtain financing, consult with your lender or an attorney before recording your Notice of Commencement.

You have purchased a building permit only. Separate permits are required for roofing, plumbing, electrical, mechanical, window, and storm shutter work.

Compliance with the Florida Accessibility Code will be verified at the time of rough and final inspections where applicable.

Building permits shall expire 180 days from the date of issuance or the date of last approved inspection.

In addition to the requirements of this permit, there may be additional restrictions applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management district, state agencies, or federal agencies.

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MIAMI-DADE COUNTY

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES

<http://www.miamidade.gov/building/home.asp>

4/6/2026 3:13:17 PM

Contact Name: Kristen Froehlich
Contact Email: KRISTEN@NATIONALPERMITSCOMPANY.COM
Tracking Number: 3226007430
Reviews to rework: FIRE
Comments:

MIAMI-DADE COUNTY

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES

<http://www.miamidade.gov/building/home.asp>

5/27/2026 9:08:27 AM

Contact Name: Kristen Froehlich
Contact Email: KRISTEN@NATIONALPERMITSCOMPANY.COM
Tracking Number: 3226007430
Reviews to rework: FIRE
Comments:

MIAMI-DADE COUNTY

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES

<http://www.miamidade.gov/building/home.asp>

6/23/2026 1:33:25 PM

Contact Name: Kristen Froehlich
Contact Email: KRISTEN@NATIONALPERMITSCOMPANY.COM
Tracking Number: 3226007430
Reviews to rework: FIRE
Comments:

Miami-Dade Department of Regulatory and Economic Resources

CONTACT INFORMATION FOR PERMIT APPLICATION

FIRST NAME (print clearly) Kristen	LAST NAME (print clearly) Froehlich
MOBILE PHONE 954-254-1405	OFFICE/HOME PHONE
EMAIL (required so you can be notified on the status of your plans) kristen@nationalpermitscompany.com	
COMMENTS (If you are submitting a municipal plan, please provide the municipal process number(s) and ensure the municipal application is in the office set of plans.)	

PLANS (check all that apply)

Please indicate if plans qualify for the following expedited plan reviews:

- | | | |
|--|--|--|
| ☐ GOV'T PROJECT/DEPT _____ | ☐ GREEN BLDG* (new construction only) | ☐ PACE PROJECT* |
| ☐ AFFORDABLE/WORKFORCE HOUSING* | ☐ ECONOMIC SIGNIFICANCE* | ☐ CONCIERGE |

(*Pursuant to Ordinance 99-140; Ordinance 05-115; and Ordinance 08-51. Project may have additional requirements.)

Further, under the penalty of perjury, I, being first duly sworn, depose and say that I have read the foregoing application and that the facts stated herein are accurate and true, including any boxes checked. I further acknowledge that this application and affidavit is subject to penalties of perjury, and acknowledge that Miami-Dade County reserves the right to revoke, cancel, void, or suspend, any permit issued pursuant to any application that contains any materially false or fraudulent statements, and acknowledge that continued operation of the uses after the permit is revoked, canceled, voided, or suspended, may subject me to enforcement penalties allowed by law. I further acknowledge that any application that contains any materially false or fraudulent statements may subject me to additional permitting fees including fees for expedited plan review services.

REQUESTED PLAN REVIEWS (check all that apply for rework only)

- | | | | | | |
|--------------------------------------|--|---|---|--|---|
| ☐ ALL | ☐ BLDG/HCAP | ☐ ELEC | ☐ ENRG | ☐ FIRE | ☐ ROOF |
| ☐ LANDSCAPING | ☐ MECH | ☐ PLUM | ☐ PWKS | ☐ PWCC | ☐ SIGN |
| ☐ STRU | ☐ ZNPR | ☐ WASD | ☐ PWIF | ☐ LPGX | ☐ SHOP DRAWING |
| ☐ DERM CORE | ☐ DERM AIR | ☐ DERM AIRPORT | ☐ DERM ASBESTOS | ☐ DERM COASTAL | ☐ DERM FLOOD |
| ☐ DERM GREASE | ☐ DERM INDUSTRIAL | ☐ DERM PAVING & DRAINAGE | ☐ DERM POLLUTION | ☐ DERM PRE-TREATMENT | ☐ DERM SOLID WASTE |
| ☐ DERM TANKS | ☐ DERM TREES | ☐ DERM WATER TREATMENT | ☐ DERM WETLANDS | ☐ PERMIT BY AFFIDAVIT CHECK | ☐ SHORT TERM EVENT AFFIDAVIT CHECK |
| ☐ DOH/HRS | ☐ DERM OSTD | | | | |

OPTIONAL PLAN REVIEWS (check all that apply)

- | | | | | |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| ☐ BLDG | ☐ ELEC | ☐ MECH | ☐ PLUM | ☐ STRU |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|

OPR DERM **INITIAL** REVIEWS (check all that apply)

- | | |
|------------------------------------|--|
| ☐ DERM CORE | ☐ DERM SPECIALTY (You will be notified after core review is complete for additional fees) |
|------------------------------------|--|

OPR DERM **REWORK** (OPR for specialty only available at PIC)

- | | | | | | |
|--------------------------------|-------------------------------------|-----------------------------------|--|-------------------------------|--|
| ☐ TREE | ☐ GREASE | ☐ ASBESTOS | ☐ COASTAL | ☐ AIR | ☐ PAVING & DRAINAGE |
| ☐ TANKS | ☐ INDUSTRIAL | ☐ WETLAND | ☐ PRE-TREATMENT | ☐ CORE | ☐ FLOOD |

FOR OFFICE USE ONLY (to be completed by Permitting Staff)

APPLICATION DATE	CLERK NAME	ARRIVAL TIME
PROCESS NUMBER	PROCESS NUMBER	PROCESS NUMBER
☐ RE-ISSUE	☐ PLAN REVISION	☐ REWORK
☐ SHOP DRAWING		

Device Type	Calculation Column 1 Primary (AC) Power Source Fire Alarm Current (amps)			Calculation Column 2 Secondary (Battery) Power Source Fire Alarm Current (amps)			Calculation Column 3 Secondary (Battery) Power Source Standby Current (amps)		
	Qty	X[current draw]=	Total	Qty	X [current draw]=	Total	Qty	X [current draw]=	Total
Main Circuit Board ¹				1	X[0.257]=		1	X[0.141]=	
IPOTS-COM Communicator	[]	X[0.041]=		[]	X[0.041]=		[]	X[0.040]=	
CELL-MOD/CAB-FL	[]	X[0.100]=		[]	X[0.100]=		[]	X[0.055]=	
PWRMOD24		N/A		[]	X[0.008]=		[]	X[0.007]=	
ANN-80	[]	X[0.040]=		[]	X[0.040]=		[]	X[0.015]=	
ANN-100	[]	X[0.025]=		[]	X[0.025]=		[]	X[0.020]=	
ANN-(R)LED	[]	X[0.068]=		[]	X[0.068]=		[]	X[0.028]=	
ANN-RLY	[]	X[0.075]=		[]	X[0.075]=		[]	X[0.015]=	
ANN-I/O	[]	X[0.200]=		[]	X[0.200]=		[]	X[0.035]=	
ANN-S/PG	[]	X[0.045]=		[]	X[0.045]=		[]	X[0.045]=	
ECC-FFT		N/A		[]	X[0.230]=		[]	X[0.120]=	
4XTMF	[]	X[0.011] ² =		[]	X[0.011]=		[]	X[0.005]=	
4-wire Detector Heads	[]	X[]=		[]	X[] ³ =		[]	X[]=	
Power Supervision Relays ⁴	[]	X[0.025]=		[]	X[0.025]=		[]	X[0.025]=	
CP350, CP355	maximum alarm draw for all devices =	0.400		maximum alarm draw for all devices =	0.400		[]	X[0.00030]=	
SD350, SD355, SD365							[]	X[0.00030]=	
SD355CO							[]	X[0.00030]=	
SD350T, SD355T, SD365T							[]	X[0.00030]=	
AD350, AD355							[]	X[0.00030]=	
H350, H355, H365							[]	X[0.00030]=	
H350R, H355R, H365R							[]	X[0.00030]=	
H355HT, H365HT							[]	X[0.00030]=	
D350P, D350PL							[]	X[0.00030]=	
D350RP, D350RPL							[]	X[0.00030]=	
B501BH, B501BHT ⁵							[]	X[0.001]=	
B224RB Relay Base							[]	X[0.00050]=	
B224BI Isolator Base							[]	X[0.00045]=	
MMF-300							[]	X[0.00040]=	
MMF-300-10							[]	X[0.00350]=	
MDF-300							[]	X[0.00075]=	
MMF-301							[]	X[0.000375]=	
MMF-302							[]	X[0.00027]=	
MMF-302-6							[]	X[0.00200]=	
BG-12LX							[]	X[0.00030]=	
CMF-300							[]	X[0.00039]=	
CMF-300-6							[]	X[0.00225]=	
CRF-300							[]	X[0.00027]=	
CRF-300-6							[]	X[0.00145]=	
I300							[]	X[0.00040]=	
ISO-6							[]	X[0.00045]=	
W-GATE							[]	X[0.040] or [0.024] ⁶	
NAC #1 ⁷	[]	X[]=		[]	X[]=				
NAC #2 ⁷	[]	X[]=		[]	X[]=				
NAC #3 ⁷	[]	X[]=		[]	X[]=				
NAC #4 ⁷	[]	X[]=		[]	X[]=				
FCPS (remote sync)	[]	X[0.02]=		[]	X[0.0217]=				
Current Draw from TB3	[]	[]=		[]	[]=		[]	[]=	
Sum each column for totals	AC Powered, Fire Alarm Load ⁸ =			Battery Powered, Fire Alarm Load ⁹ =			Battery Powered, Standby Load ¹⁰ =		

Table 9.3 System Current Load Calculations

- 1 Main board with display only.
- 2 If using the Reverse Polarity Alarm output, add 0.005 amps; if using the Reverse Polarity Trouble output, add another 0.005 amps.
- 3 Refer to the Device Compatibility Document for standby current.
- 4 Must use compatible listed Power Supervision Relay.
- 5 Maximum alarm current for each sounder base is 0.015 amps which must be supplied by aux. 24VDC source.
- 6 When powered by an external source, use 0.040A. When powered by the SLC, use 0.024A.
- 7 If using Gentex brand NACs, the max number of devices for each NAC output is 35. The "UL Max" current rating, published in their data sheets, must be used in order to maintain performance under low battery conditions with the maximum wire resistances shown in Table D.2 on page 147.
- 8 Total Alarm current load cannot exceed 3.0 amps or 6.0 amps only when the PWRMOD24 option module is installed.
- 9 When AC power is initially applied to the panel and the battery is not fully charged, an initial charge current of up to 5.3 amps may be observed at the battery. This high current is only applied for a very short duration (milliseconds) and does not affect system load or battery size calculations.
- 10 Total Standby current load cannot exceed 2.25 amps.



Addressable Fire Alarm Control Panel
ES-200X
ES-200XC
ES-200XI
Manual



Fire Alarm & Emergency Communication System Limitations

While a life safety system may lower insurance rates, it is not a substitute for life and property insurance!

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control panel (FACP) with remote notification capability—can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various interoperable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. This document can be found at <http://www.systemsensor.com/appguides/>. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, chimneys, even wet or humid areas may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets, such as air conditioning vents.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectric sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may

year by a qualified fire protection specialist. Heat detectors are designed to protect property, not life.

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, compromising its ability to report a fire.

Audible warning devices such as bells, horns, strobes, speakers and displays may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

- An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.
- Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).
- Language and instructional requirements must be clearly disseminated on any local displays.
- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. It is the property owner's responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A life safety system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Alarm Signaling Communications:

- **IP connections** rely on available bandwidth, which could be limited if the network is shared by multiple users or if ISP policies impose restrictions on the amount of data transmitted. Service packages must be carefully chosen to ensure that alarm signals will always have available bandwidth. Outages by the ISP for maintenance and upgrades may also inhibit alarm signals. For added protection, a backup cellular connection is recommended.
- **Cellular connections** rely on a strong signal. Signal strength can be adversely affected by the network coverage of the cellular carrier, objects and structural barriers at the installation location. Utilize a cellular carrier that has reliable network coverage where the alarm system is installed. For added protection, utilize an external antenna to boost the signal.
- **Telephone lines** needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup alarm signaling connections are recommended.

The most common cause of life safety system malfunction is inadequate maintenance. To keep the entire life safety system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 72 shall be followed. Environments with large amounts of dust, dirt, or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled as required by National and/or local fire codes and should be performed by authorized professional

Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or inter-connecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood.

CAUTION - System Re-acceptance Test after Software

Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49° C/ 32-120° F and at a relative humidity 93% ± 2% RH (non-condensing) 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.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, or printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Units with a touchscreen display should be cleaned with a dry, clean, lint free/microfiber cloth. If additional cleaning is required, apply a small amount of Isopropyl alcohol to the cloth and wipe clean. Do not use detergents, solvents, or water for cleaning. Do not spray liquid directly onto the display.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

Precau-D2-11-2017

FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing devices pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when devices are operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his or her own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radio-electriques depassant les limites applicables aux appareils numeriques de la classe A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

LiteSpeed™ and Lite-Connect™ are trademarks; and Fire-Lite® Alarms, Honeywell®, and SWIFT® are registered trademarks of Honeywell International Inc. Farenhyt™ is a trademark; and Flexput®, Honeywell®, JumpStart®, Silent Knight® and SWIFT® are registered trademarks of Honeywell International Inc. Flexput®, Honeywell®, JumpStart®, and SWIFT® are registered trademarks of Honeywell International Inc. Triga™ is a trademark of TRIGA Life Safety Systems, LLC. Flexput®, Honeywell®, JumpStart®, and SWIFT® are registered trademarks of Honeywell International Inc. Microsoft® and Windows® are registered trademarks of the Microsoft Corporation. Chrome™ and Google™ are trademarks of Google Inc. Firefox® is a registered trademark of The Mozilla Foundation.

Software Downloads

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product prior to commissioning any system. Contact Technical Support with any questions about software and the appropriate version for a specific application.

Documentation Feedback

Your feedback helps us keep our documentation up-to-date and accurate. If you have any comments or suggestions about our online Help or printed manuals, you can email us.

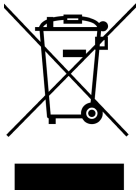
Please include the following information:

- Product name and version number (if applicable)
- Printed manual or online Help
- Topic Title (for online Help)
- Page number (for printed manual)
- Brief description of content you think should be improved or corrected
- Your suggestion for how to correct/improve documentation

Send email messages to:

FireSystems.TechPubs@honeywell.com

Please note this email address is for documentation feedback only. If you have any technical issues, please contact Technical Services.



This symbol (shown left) on the product(s) and / or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, contact your local authorities or dealer and ask for the correct method of disposal.

Electrical and electronic equipment contains materials, parts and substances, which can be dangerous to the environment and harmful to human health if the waste of electrical and electronic equipment (WEEE) is not disposed of correctly.

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It is imperative that the installer understand the requirements of the Authority Having Jurisdiction (AHJ) and be familiar with the standards set forth by the following regulatory agencies:

- Underwriters Laboratories/Underwriters Laboratories Canada
- National Fire Protection Association

Before proceeding, the installer should be familiar with the following documents.



NFPA Standards

NFPA 72 National Fire Alarm Code
NFPA 70 National Electrical Code
NFPA 720 Carbon Monoxide Detection and Warning Equipment



Underwriters Laboratories Documents:

UL 38 Manually Actuated Signaling Boxes
UL 217 Smoke Detectors, Single and Multiple Station
UL 228 Door Closers—Holders for Fire Protective Signaling Systems
UL 268 Smoke Detectors for Fire Protective Signaling Systems
UL 268A Smoke Detectors for Duct Applications
UL 346 Waterflow Indicators for Fire Protective Signaling Systems
UL 464 Audible Signaling Appliances
UL 521 Heat Detectors for Fire Protective Signaling Systems
UL 864 Standard for Control Units for Fire Protective Signaling Systems
UL 1481 Power Supplies for Fire Protective Signaling Systems
UL 1638 Visual Signaling Appliances
UL 1971 Signaling Devices for Hearing Impaired
UL 2017 General-Purpose Signaling Devices and Systems
UL 2075 Standard for Gas and Vapor Detector and Sensors
UL 2572 Communication and Control Units for Mass Notification Systems



CAN/ULC - S524-01 Standard for Installation of Fire Alarm Systems
CAN/ULC - S559-04 Equipment for Fire Signal Receiving Centers and Systems
CAN/ULC - S561-03 Installation and Services for Fire Signal Receiving Centers and Systems
CAN/ULC - S527-99 Standard for Control Units for Fire Alarm Systems
This Class (A) digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe (A) est conforme à la norme NMB-003 du Canada.

Other:

Canadian Electrical Code, Part I
EIA-232E Serial Interface Standard
EIA-485 Serial Interface Standard
NEC Article 250 Grounding
NEC Article 300 Wiring Methods
NEC Article 760 Fire Protective Signaling Systems
Applicable Local and State Building Codes
Requirements of the Local Authority Having Jurisdiction (LAHJ)

Fire-Lite Documents:

Fire-Lite Device Compatibility	Document #15384
SLC Wiring Manual	Document #51309
ECC-50/100 Manual	Document #LS10001-000FL-E
ECC-FFT Manual	Document #LS10031-000FL-E
Wireless Gateway Manual	Document #LS10036-000FL-E
CHG-120F Battery Charger	Document #50888
CHG-75 Battery Charger	Document #51315
IPOTS-COM POTS/IP Communicator	Document #LS10184-000GE-E
PWRMOD24 NAC Power Module	Document #LS10185-000GE-E
CELL-CAB-FL GSM Communicator	Document #LS10186-000FL-E
ANN-80 Product Installation Document	Document #52749
ANN-100 Product Installation Document	Document #LS10205-000FL-E
ANN-(R)LED Product Installation Doc.	Document #50055
ANN-I/O Product Installation Document	Document #151416
ANN-RLY Product Installation Document	Document #50055
ANN-S/PG Product Installation Document	Document #151417

This product has been certified to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, 10th Edition. Operation of this product with products not tested for UL 864, 10th Edition has not been evaluated. Such operation requires the approval of the local Authority Having Jurisdiction (AHJ).

For product compliance, refer to the UL/ULC listing cards located on the UL online certification directory at <https://iq.ulprospector.com/en/>.

Basic System Connections

2 Programmable Relays & Fixed Trouble Relay
 Non-supervised relay contacts
 Contact rating:
 2.0 amps @ 30 VDC (resistive)
 0.5 amps @ 30 VDC (resistive)
 Contacts shown below in normal condition (AC power with no alarm, trouble, or supervisory activity)
 AC Fail Safe Trouble relay switches to the NO position during trouble conditions and under loss of all power.
 (*Factory default relay programming)

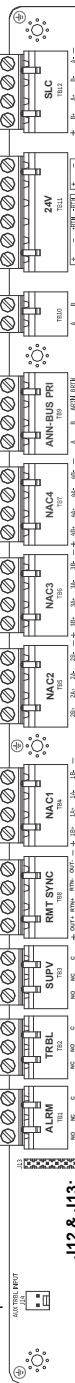
Notification Appliance Circuits
 NAC #1, #2, #3, & #4 Class B or Class A (Supervised, Power-Limited) (Special application) 2.5 amps max. per circuit

Special Application DC Power Outputs (24 VDC)
 Non-supervised, Power-Limited circuits
 Nonresettable Power suitable for powering annunciators; Resettable Power suitable for powering smoke detectors.
 Aux Power 1: Resettable or Nonresettable Power, 24 VDC filtered, power-limited (1.0 amp maximum), Class A or Class B wiring possible. Supervision required for Class B wiring. Supervise with a power supervision relay EOLR-1
 Aux Power 2: Nonresettable or Resettable Power, 24 VDC filtered, power-limited (1.0 amp maximum). Supervision required.

Remote Synchronization Output
 Supervised, Power-Limited circuits
 24 VDC filtered (0.35 amp maximum). Requires a 4.7 Kohm End-of-Line Resistor

Supervisory*
 Alarm* Trouble

Auxiliary Trouble Input



ES50-PCA REV
 ES200-PCA REV

SW2: 4XTMF
 Supervisory Relay:
 Slide switch to the down position to enable the relay when the 4XTMF is installed

Primary ANN-BUS
 to Annunciators (power-limited, supervised)
Secondary ANN-BUS
 to Annunciators (power-limited, supervised)

To disable ground fault detection, slide SW1 to the left.

Important! Disabling Ground Fault Detection voids UL/NFPA Class identifications for circuits. Disable Ground Fault only with the approval of the AHJ (Authority Having Jurisdiction).

NPM Connector
 Connection to the PWRMOD24 NAC power expander module. Remove the termination card prior to installation. See Section 2.8.2 for more information.

AC Power
 (Supervised, Nonpower-Limited)
 120 or 240 VAC, 50/60 Hz, 3.25 amps

CAUTION! HIGH VOLTAGE

USB Port J20 for firmware updates, local programming using a personal computer and FS-Tools utility or a thumb drive

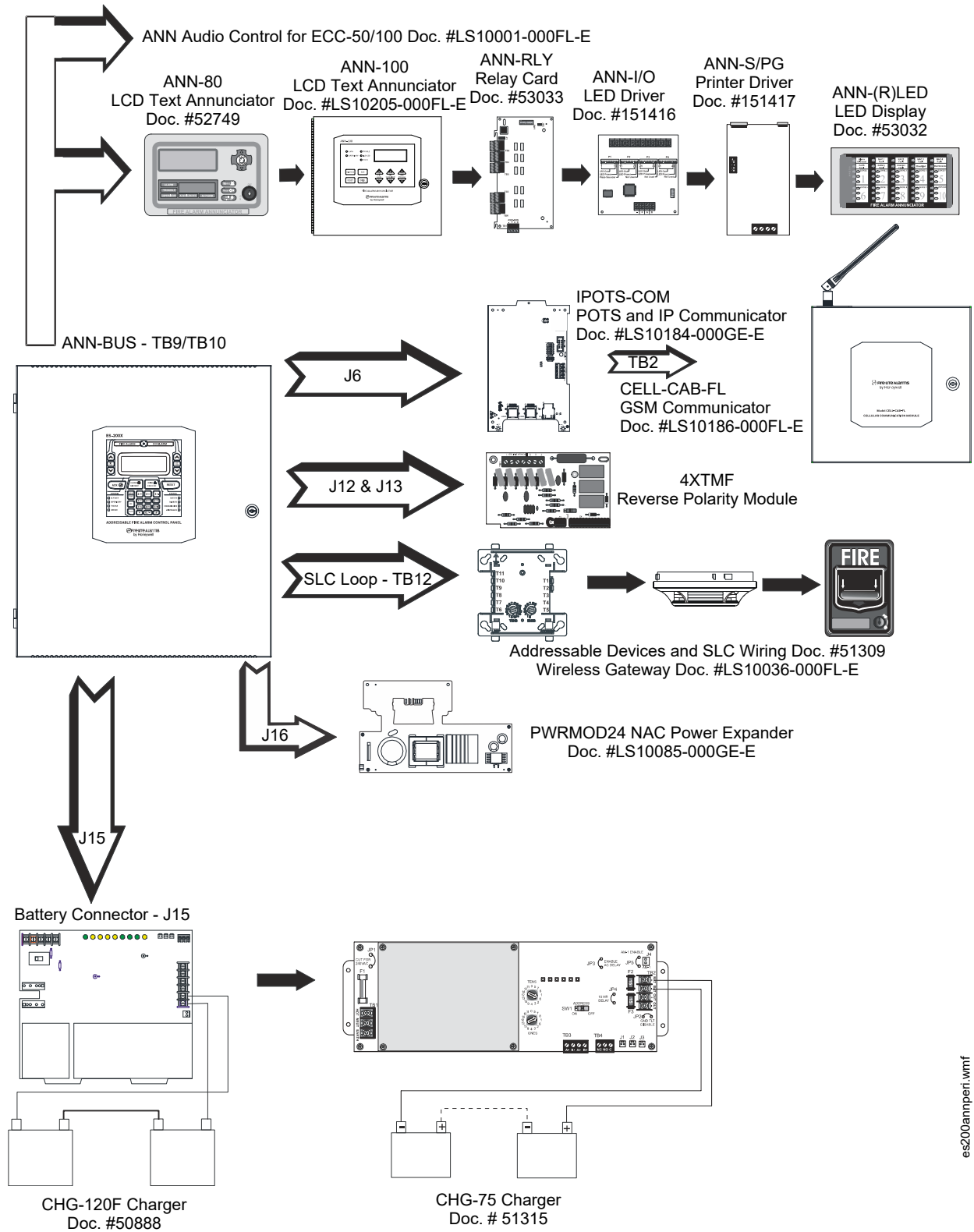
Keypad Connector DISPLAY

Battery
 24 VDC, supervised, nonpower-limited, 18 AH maximum

Connection to the IPOTS-COM communicator card for POTS and IP reporting

COMPARATOR

Peripheral Devices and Their Documents:



es200amperi.wmf

Section 1: Product Description

The Fire-Lite ES-200X is an addressable FACP (Fire Alarm Control Panel) with a pre-installed communicator card that is compact, cost effective, intelligent, and has an extensive list of powerful features. The combination of Fire-Lite's newer series devices and legacy 300 Series devices, along with the ES-200X FACP, offer the latest in fire protection technology. The power supply and all electronics are housed in a metal cabinet, providing a complete fire control system for most applications. Optional modules, which plug into the main circuit board, are available for special functions. Available accessories include multi-technology central station communicators, LED, graphic, and LCD annunciators, reverse polarity/city box transmitter, local and remote upload/download software, and remote power expansion.

The ES-200XC is a ULC-listed Canadian version of the FACP which offers the same features as the ES-200X, but is supplied standard with a dress panel. Refer to "Canadian Option" on page 82 for a full description.

The ES-200XI is a version of the FACP which offers the same features as the ES-200X, but does not come with the pre-installed communicator.



NOTE: Unless otherwise specified, the term ES-200X is used to refer to all versions of the panel.

Inventory

When ES-200X shipment is received, check that all parts have been included in shipment. The ES-200X shipment consists of one of each of the following:

- ✓ main circuit board with display
- ✓ backbox with door
- ✓ plastic bag containing screws, cables, ELRs, terminal blocks, etc.

1.1 Features and Options

- Pre-installed IPOTS-COM Ethernet IP and POTS (Plain Old Telephone Service) Central Station Communicator (The ES-200XI does not include the pre-installed communicator.)
- Optional CELL-MOD(C) or CELL-CAB-FL GSM Central Station Communicator over AlarmNet
- Automated activation of the ECC-50/100 Emergency Command Center
- ECC-FFT Firefighter Telephone option
- Compatible with SWIFT® wireless devices
- LiteSpeed™ polling protocol for faster SLC response time
- SLC operates up to 10,000 ft. (3,000 m) in LiteSpeed mode with twisted, unshielded wire (refer to "Wire Requirements" on page 146)
- Single addressable SLC loop which meets NFPA Class A, Class B, and/or Class X requirements
- 198 addressable device capacity (99 detectors and 99 control/relay/monitor modules)
- 99 software zones
- Four (4) Class B or four (4) Class A NAC (Notification Appliance Circuits) circuits - special application power
- 3.0 amps total 24 VDC output circuit current in alarm condition
- NAC power expandable by 3.0 amps with optional PWRMOD24 module
- Four programmable function keys for ease of maintenance
- Two programmable relay outputs and one fixed trouble relay
- Synchronization output for remote power supply applications (special application)
- Built-in Programmer
- 80-character LCD display (backlit)
- Real-time clock/calendar with daylight savings time control
- History file with 1,000 event capacity
- Addressable sounder base compatibility
- Multi-criteria detector (smoke, heat, CO) with programmable response
- Advanced fire technology features:
 - ✓ Automatic drift compensation
 - ✓ Maintenance alert
 - ✓ Detector sensitivity test capability (NFPA 72 compliant)
 - ✓ Automatic device type-code verification
 - ✓ Point trouble identification
- Waterflow selection per module point
- Alarm verification selection per detector point
- Walktest, silent or audible
- PAS (Positive Alarm Sequence) and Pre-signal per point (NFPA 72 compliant)
- Silence inhibit timer option per NAC
- Autosilence timer option per NAC
- Continuous, March Time, Temporal or California code for main circuit board NACs with two-stage capability
- Selectable strobe synchronization per NAC
- Remote Acknowledge, Alarm Silence, Reset and Drill via addressable modules or ANN-80/ANN-100 Remote annunciator
- Auto-program (learn mode) reduces installation time. Reports two devices set to the same address
- Password and key-protected nonvolatile memory
- User programmable password

- Fully programmable from local keypad
- Optional FS-Tools programming utility for local or remote Upload/Download of programming and data (available for download from www.firelite.com)
- Compatible with Fire-Lite's devices in LiteSpeed and CLIP mode (refer to SLC Wiring Manual for a list of compatible addressable devices)
- Compatible with legacy Fire-Lite 300 Series devices in CLIP mode only (refer to the SLC Wiring Manual for a list of compatible addressable devices)
- Optional 4XTMF module (conventional reverse polarity/city box transmitter)
- ANN-BUS for connection to following optional modules:
 - ✓ ANN-80 Remote Annunciator (UL applications only)
 - ✓ ANN-100 (FM and Canadian applications only)
 - ✓ ANN-I/O LED Driver
 - ✓ ANN-S/PG Printer Module
 - ✓ ANN-RLY Form-C Relay Module
 - ✓ ANN-LED Annunciator Module announces alarm, trouble and supervisory (required for Canada and emergency signaling)
 - ✓ ANN-RLED Annunciator Module announces alarms only
- Automated activation of the legacy ACC-25/50(ZS/T) Audio-Command-Center

1.2 Specifications

Refer to Illustration on page 10 for terminal locations and connections.

AC Power - TB13

Operates in either 120 or 240 VAC, 50/60 Hz, 3.25 amps, auto-sensing. No switch or jumper required.

Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation

Battery (Sealed Lead Acid Only) - J15

Maximum Charging Circuit: Normal Flat Charge – 27.6 VDC @ 1.5 amps

Maximum Battery Charger Capacity: 18 Amp Hour (FACP cabinet holds maximum of two 18 Amp Hour batteries. The BB-26 Battery Box holds two 26 Amp Hour batteries and the CHG-75. For greater than 26 Amp Hour up to 120 Amp Hour batteries, use the CHG-75 or CHG-120F Battery Charger and BB-55F Battery Box).

Minimum Battery Size: 7 Amp Hour

Note: Refer to the programming section to disable the FACP battery charger when using an external battery charger.

Communication Loop - TB12

24 VDC nominal, 27.6 VDC maximum

Maximum length - refer to "Wire Requirements" on page 146)

Maximum loop current is 400 mA (short circuit) or 100 mA (normal)

Maximum loop resistance is 40 ohms

Supervised and power-limited circuit

Refer to *SLC Wiring manual* for wiring information

Notification Appliance Circuits - TB4, TB5, TB6, & TB7

Four (4) Class B NAC circuits or four (4) Class A circuits

Special Application, filtered power

Power-limited circuitry

NAC wiring requirements refer to "NAC Wiring" on page 147

Nominal operating voltage: 24 VDC

Current-limit: fuseless, electronic, power-limited circuitry

Maximum signaling current per circuit: 2.5 amps special application, 250 mA regulated (see Figure 1.1 on page 15)

End-of-Line Resistor: 4.7 kΩ, ½ watt (P/N 71252 UL listed) required for each circuit; system capable of 1.9 kΩ - 22 kΩ ELR range.

Refer to the *Device Compatibility Document* for listed compatible devices

Two Programmable Relays and One Fixed Trouble Relay - TB1, TB2, & TB3

Contact rating: 2.0 amps @ 30 VDC (resistive), 0.5 amps @ 30 VAC (resistive)

Form-C relays

Refer to Figure 2.6 on page 26 for information on power-limited relay circuit wiring

Nonresettable or Resettable Special Application Power (24 VDC Nominal) - TB11, Terminals 1 (+), 2 (-), 3(+), & 4(-) (programmable)

Factory-set as nonresettable, suitable for powering annunciators

Programmable Class A or Class B wiring

Maximum ripple voltage: 20mV_{RMS}

Total DC current available is up to 1.0 amp (see Figure 1.1 on page 15)

Power-limited circuit

Note: Refer to the programming section to configure power as resettable/non-resettable and for Class A or Class B wiring.

Resettable or Nonresettable Special Application Power (24 VDC Nominal) - TB11, Terminals 5 (+) & 6 (-)

Factory-set as resettable, suitable for powering four-wire smoke detectors

Class B wiring only

Maximum ripple voltage: 20 mV_{RMS}

Total DC current available is up to 1.0 amp (see Figure 1.1)

Power-limited circuit

Refer to the *Device Compatibility Document* for listed compatible devices

Note: Refer to the programming section to configure power as resettable/non-resettable.

Remote Sync Output - TB8

Remote power supply synchronization output

24 VDC nominal special application power

Maximum current is 350 mA

End-of-Line Resistor: 4.7K Ω

Output linked to NAC 1 control

Supervised and power-limited circuit

Programmable Class A or Class B wiring

Secondary ANN-BUS - TB10

ANN-BUS annunciator connector, Terminal 1 (+/A) and Terminal 2 (-/B)

Annunciators require non-resettable power

Primary ANN-BUS - TB9

Class A or Class B wiring

ANN-BUS annunciator connector, Terminal 1 (+/A) and Terminal 2 (-/B)

Class A wiring uses Terminal 3 (+/A Return) and Terminal 4 (-/B Return)

Annunciators require non-resettable power

The following figure illustrates the maximum current that is possible for each major panel output circuit and the total current available from the FACP.

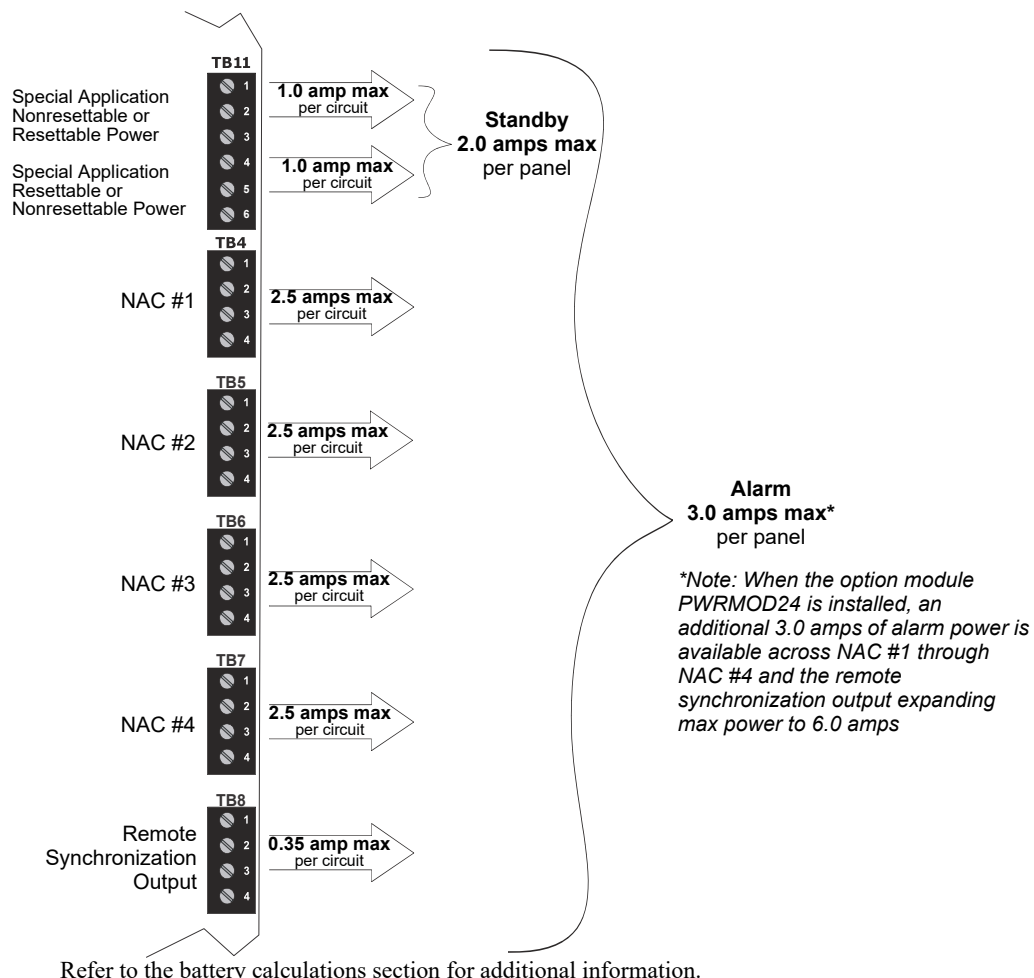


Figure 1.1 Current Availability without PWRMOD24 Option

1.3 Controls and Indicators

LCD Display

The FACP uses an 80-character (4 lines X 20 characters) high viewing angle LCD display. The display includes a long life LED backlight that remains illuminated. If AC power is lost and the system is not in alarm, the LED backlight will turn off to conserve batteries.



Key Panel

Mounted on the main circuit board, the key panel includes a window for the LCD display and LED indicators as listed below. The key panel, which is visible with the cabinet door closed, has 30 keys, including a 16 key alpha-numeric pad similar to a telephone keypad.

LED Indicators

LED indicators are provided to annunciate the following conditions:

- Fire Alarm (red)
- CO Alarm (yellow)
- AC Power (green)
- Supervisory (yellow)
- Trouble (yellow)
- Ground fault (yellow)
- Battery fault (yellow)
- Disabled (yellow)
- Maintenance (yellow)
- Communication (yellow)
- Alarm Silenced (yellow)
- F1-F4 Function Keys (yellow)

Function keys:

- Acknowledge
- Alarm Silence
- Drill
- Reset (lamp test)
- four (4) programmable function keys

Service/program keys:

- Keys labeled 1 to 9
- * key
- # key
- 0 key
- First Event and scroll keys
- Last Event and scroll keys
- Clear key
- Escape key
- Two cursor keys (left and right)
- Menu/Enter key

Local Piezo Sounder

A piezo sounder provides separate and distinct pulse rates for alarm, trouble and supervisory conditions.

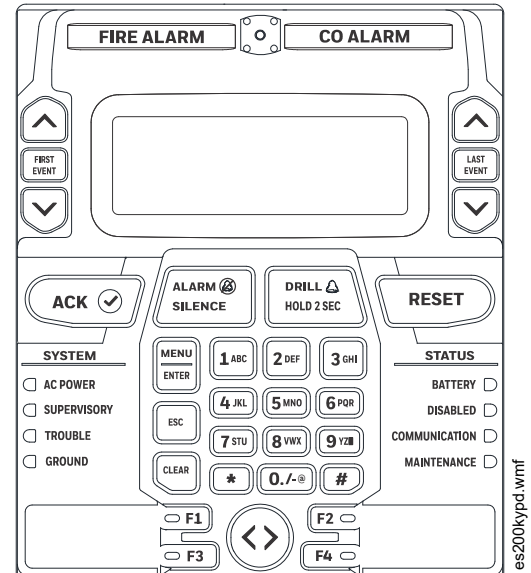


Figure 1.2 Membrane/Display Panel

1.4 Components

Main Circuit Board

The main circuit board contains the system's CPU, power supply, other primary components and wiring interface connectors. The 4XTMF option module plugs in and is mounted to the main circuit board.

IPOTS-COM Communicator Card

The pre-installed IP/POTS communicator card (not included on the ES-200XI model) transmits system status (alarms, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. It also allows remote programming or interrogation of the control panel using the FS-Tools Upload/Download utility and a hard-wired Ethernet IP connection. Any personal computer with Windows® 7 or greater, 32 or 64 bit, and FS-Tools software may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walktest data, current status and system voltages. Refer to Section 6 on page 126 for more information.

The IPOTS-COM digital communicator provides the following POTS functions:

- Line Seizure: takes control of the phone lines disconnecting any premises phones
- Off/On Hook: performs on and off-hook status to the phone lines
- Listen for dial tone: 440 Hz tone typical in most networks

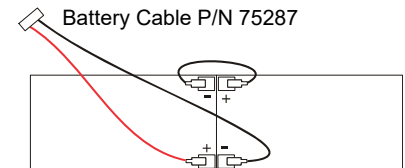
- Dialing the Central Station(s) number: default is Touch-Tone®, programmable to rotary
- For tone burst or touchtone type formats: discern proper *Ack* and *Kiss-off* tone(s). The frequency and time duration of the tone(s) varies with the transmission format. The control panel will adjust accordingly.
- Communicate in the following formats:
 - ✓ Ademco Contact ID
 - ✓ SIA DCS 8
 - ✓ SIA DCS 20

Cabinet

The ES-200X backbox provides space for two batteries (up to 18 Amp Hour). Ample knockouts are provided for system wiring. Also available is an optional dress panel (DP-ES-R), which mounts to the inside of the cabinet (required by ULC for Canadian installations).

Batteries

The ES-200X cabinet provides space for two batteries (up to 18 Amp Hour). Batteries larger than 18 Amp Hour require an external charger such as the CHG-75 or CHG-120F and a UL listed battery box such as the BB-26 or BB-55F. Batteries must be ordered separately.



1.4.1 Intelligent Addressable Detectors

Intelligent, addressable detectors provide information to the control panel on an SLC Signaling Line Circuit (refer to the SLC Wiring Manual for detailed information on device installation, wiring and operation). This allows the control panel to continually process the information to determine the status (alarm, trouble, maintenance or normal) of each detector. Each detector responds to an SLC address that is set in the detector head using built-in rotary decimal switches. The maximum address cannot exceed address 99. Note that a blinking LED on an intelligent detector indicates communication between the detector and the control panel.

These devices (350 Series or newer) can operate in CLIP mode (Classic Loop Interface Protocol) or LiteSpeed mode to provide a quicker response. They are also compatible with older 300 Series devices. If a mix of old and new series devices are installed on the same loop, the FACP must be programmed to operate in CLIP mode. Refer to the SLC Wiring Manual for a list of compatible addressable detectors.

1.4.2 Intelligent Addressable Modules

Control Modules and Monitor Modules provide an interface between the control panel and conventional notification and initiating devices. Each module can be set to respond to an address with built-in rotary switches. The maximum address cannot exceed address 99. Note that a blinking LED on an addressable module indicates communication between the module and the control panel.

These devices (i.e., MMF-300, MDF-300, MMF-301, MMF-302, CMF-300, CRF-300) can operate in CLIP mode (Classic Loop Interface Protocol) or LiteSpeed mode to provide a quicker response. They are also compatible with older 300 series devices. If a mix of old and new series devices are installed on the same loop, the FACP must be programmed to operate in CLIP mode. Refer to the *SLC Wiring Manual* for a list of compatible addressable modules. Refer to the *Device Compatibility Document* for a list of approved conventional notification and initiating devices.

1.4.3 Addressable Device Accessories

End-of-Line Resistor Assembly

The End-of-Line resistors are included with each module. Refer to the specific module documentation for specific information.

Power Supervision Relay

The UL listed End-of-Line power supervision relay is used to supervise the power to 4-wire smoke detectors and notification appliances.

EOL-C(R/W) Mounting Plate

The EOL-CR (red) and EOL-CW (white) are single End-of-Line resistor plates which are required for use in Canada. An ELR, which is supplied with each module and fire alarm control panel, is mounted to the EOL-C(R/W) plate. Resistors mounted to the plate can be used for the supervision of a monitor and control module circuit.

1.5 Optional Modules

The ES-200X main circuit board includes option module connectors for the following modules:

CELL-MOD(C)/CELL-CAB-FL(C)

Optional GSM communicator card for central station reporting. It mounts in its own plastic or metal enclosure. Use of the CELL-MOD(C)/CELL-CAB-FL(C) requires the IPOTS-COM communicator. Connections are made from the CELL-MOD/CELL-CAB to the IPOTS-COM.

PWRMOD24 Power Expander Module

Optional power module. Increases NAC power output by 3 amps.

4XTMF Transmitter Module

The 4XTMF provides a supervised output for local energy municipal box transmitter, alarm and trouble reverse polarity. It includes a disable switch and disable trouble LED. A jumper on the module is used to select an option which allows the reverse polarity circuit to open with a system trouble condition if no alarm condition exists. The module plugs into connectors J5 and J6 which are located near the right edge the main circuit board. When the 4XTMF module is installed, enable supervision of the module through FACP programming.

1.6 Accessories

1.6.1 FS-Tools Programming Utility

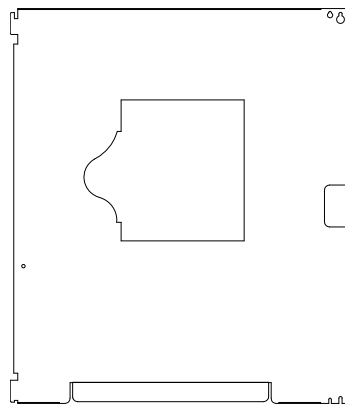
The FS-Tools Programming Utility can be used to locally or remotely program the FACP from most Windows® compatible computers (PC), running Windows 7 or newer, 32 or 64 bit. The FACP program files can also be created and stored on the PC for future download to the control panel. FS-Tools can be downloaded from www.firelite.com. A standard USB cable with male-A to male-A connectors, which must be purchased separately, is required for local connection of the PC to the USB port J20 on the FACP main circuit board. Remote programming requires that the PC have a GSM or Ethernet connection.

FS-Tools also provides the ability to create panel program files on a USB flash drive. The drive can then be plugged into USB port J20 on the FACP main circuit board.

Important: Remote modification of FACP programming requires that the panel be enabled for remote download (refer to “FS-Tools Upload/Download” on page 126). Remote interrogation of panel programming, history logs, detector status, etc., is possible without enabling the remote download option.

1.6.2 Dress Panel

An optional dress panel DP-ES-Ris available for the ES-200X (required by ULC for Canadian installations). The dress panel restricts access to the system wiring while allowing access to the key panel. A ground strap must be connected between the stud on the inside of the dress panel and the ground stud in the backbox. The dress panel mounts to the backbox with two (2) #6-32 screws. The ES-200XC is supplied standard with a dress panel.



1.6.3 Trim Ring

An optional Trim Ring (P/N TR-CE) is available for the FACP backbox. The Trim Ring adds 1.5” of wall coverage around the backbox, concealing hardware and providing a finished appearance for a semi-flush mounted panel.

1.6.4 Battery Box

BB-26

The BB-26 battery box may be used to house up to two 26 AH batteries and the CHG-75 Battery Charger.

BB-55F

The BB-55F battery box may be used to house two 26 AH batteries, two 60 AH batteries or one 100 AH battery. When the CHG-120F is mounted in the BB-55F, two 26 AH or one 60 AH battery may also be housed in the battery box.

1.6.5 Battery Charger

CHG-75 Battery Charger

The CHG-75 is capable of charging up to 75 AH lead-acid batteries with the ES-200X FACP. The FACP battery charger must be disabled, through user programming, when using the CHG-75. The charger and up to 26 AH batteries can be housed in the BB-26 battery box. Larger batteries and the charger can be housed in the BB-55F battery box which can be mounted up to 20 feet away from the control panel. Refer to the *CHG-75 Manual* for additional information.

CHG-120F Battery Charger

The CHG-120F is capable of charging up to 120 AH lead-acid batteries with the ES-200X FACP. The FACP battery charger must be disabled, through user programming, when using the CHG-120F. The batteries and charger can be housed in the BB-55F battery box which can be mounted up to 20 feet away from the control panel. Note that when using the BB-55F for housing the charger and batteries greater than 26AH, multiple BB-55Fs are required. Refer to the *CHG-120F Manual* for additional information.

1.6.6 ECC-50/100

The ECC-50/100 is a single channel, 50 watt, 25 V_{RMS}, emergency voice evacuation panel that may be used for fire applications, mass notification applications, or both. Automatic activation of the ECC-50/100 is possible via eight Command Input Circuits (CMD) or via the ANN BUS serial communications link from the ES-200X FACP.

1.6.7 ECC-FFT

An ECC-FFT Fire Fighter Telephone provides supervision, annunciation, and control for local and remote telephone handsets. The ECC-FFT's keypad provides indications of phone activation and corresponding trouble conditions. Not for use in Canadian applications.

1.6.8 W-GATE(A) Wireless Gateway

The W-GATE(A) Wireless Gateway acts as a bridge between a group of wireless fire devices and a LiteSpeed SLC loop on the ES-200X. It is powered by the SLC loop or by a regulated, external 24VDC UL-listed power supply evaluated for life safety. Available wireless devices include a photo detector, a photo/heat detector, a fixed-temperature heat detector, a rate-of-rise heat detector, a monitor module, and a relay module. A maximum of 196 wireless devices can be used in the system. For details about wireless devices, system setup, and operation, see the *SWIFT® Smart Wireless Integrated Fire Technology Instruction Manual* #LS10036-000FL-E.

1.6.9 ANN-BUS Annunciators/Modules



WARNING: RISK OF ELECTRICAL SHOCK AND EQUIPMENT DAMAGE

DISCONNECT ALL SOURCES OF POWER (AC AND DC) BEFORE INSTALLING OR REMOVING ANY MODULES OR WIRING.

Guidelines

- A variety of optional annunciation devices can be connected to an ANN-BUS communication circuit. ANN Series devices can be connected to the primary communication circuit (EIA-485) terminals on TB9. A secondary communication circuit for these devices is available at TB8. Each ANN-BUS communication circuit supports up to eight (8) annunciators. Compatible devices include the following:
 - ANN-80 LCD Annunciator (UL applications only)
 - ANN-100 LCD Annunciator (FM and Canadian applications only)
 - ANN-S/PG Serial/Parallel Printer Interface Module
 - ANN-I/O LED Driver Module
 - ANN-LED Annunciator Module (alarm, trouble, supervisory LEDs)
 - ANN-RLED Annunciator Module (red alarm LEDs only)
 - ANN-RLY Relay Module (can be mounted in the supplied FACP chassis)
- When operating two ANN-BUS circuits, only one ANN-S/PG Printer module can be used in the system.
- The panel is capable of operating a primary ANN-BUS (TB9) and a secondary ANN-BUS (TB10) simultaneously.
- Only one audio system (ECC-50/100 or ACC-25/50) may be connected to the ANN-BUS.

ANN-80/ANN-100 Remote Fire Annunciators

The ANN-80 and ANN-100 Annunciators are 80 character, backlit LCD remote fire annunciators. They mimic the display on the control panel and will annunciate device type, point alarm, trouble or supervisory conditions, zone assignments plus any custom alpha labels programmed into the FACP. The annunciators also provide system status LEDs to display AC Power, Alarm, Trouble, Supervisory and Alarm Silenced conditions. Additionally, the annunciators are capable of remotely performing critical system functions such as Acknowledge, Silence, Reset and Drill. Communication between the annunciators and the FACP is accomplished over a two wire RS-485 serial interface employing the ANN-BUS communication format. The devices are powered, via two additional wires, from either the host FACP or remote UL-listed, filtered, regulated, power supply.

The function buttons and piezo sounder may be individually enabled and disabled through the FACP software. Refer to “ANN-80/100 Options” on page 101 for a description of this feature and programming information.

ANN-S/PG Serial/Parallel Interface Module

The ANN-S/PG Serial/Parallel Interface module allows the connection of a remote serial or parallel printer to the FACP for a real-time log of system events, detector status reports and event history. The module is provided with a plastic enclosure for surface mounting.

ANN-I/O LED Driver Module

The ANN-I/O is an LED driver module that can be used in a wide variety of applications, including as an interface with most customized graphic annunciators. The ANN-I/O can drive up to 40 LEDs. The module is provided with a plastic wall mount.

ANN-LED Annunciator Module

The ANN-LED and ANN-RLED annunciator modules provide LED annunciation of general system faults and input zones/points when used with a compatible FACP. The ANN-LED module provides alarm (red), trouble (yellow) and supervisory (yellow) indication for up to ten input zones or addressable points. The ANN-RLED provides alarm (red) indication for up to 30 input zones or addressable points. Multiple ANN-(R)LED modules may be used for full system coverage.

ANN-RLY Annunciator Module

The ANN-RLY relay module provides 10 programmable Form-C relays when used with a compatible FACP.

1.7 Getting Started

The following is a brief summary of the minimal steps involved in bringing an ES-200 on-line:

- Install backbox and main circuit board (refer to “Mounting the Backbox” on page 22)
- Address and install intelligent devices (refer to the SLC Wiring Manual)
- Enter autoprogramming (refer to “Autoprogram” on page 55)
- Resolve programming conflicts
- Go to point program to enter specific data (refer to “Point Program” on page 56). Use the right and left arrow keys to navigate between devices.

1.8 Telephone Requirements and Warnings

1.8.1 Telephone Circuitry

Ringer Equivalence Number (REN) = 0.3A

AC Impedance: 10.0 Mega Ohm

Complies with FCC Part 68

Mates with RJ31X Male Connector

Supervision Threshold: loss of phone line voltage for 2 minutes

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

Before connecting the control panel to the public switched telephone network, the installation of two RJ31X jacks is necessary. If trouble is experienced with this equipment, for repair or warranty information, please contact:

Manufacturer: Honeywell International, Inc.
One Fire-Lite Place
Northford, CT 06472
(203) 484-7161

Product Model Number: **ES-200X**

FCC Registration Number: **US:1W6AL03AEVOLX**

Ringer Equivalence: **0.3A**



NOTE: This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the inside of the FACP door is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

Alarm dialing equipment must be able to seize the telephone line and place a call in an emergency situation. It must be able to do this even if other equipment (telephone, answering system, computer modem, etc.) already has the telephone line in use. To do so, alarm dialing equipment must be connected to a properly installed RJ31X jack that is electrically in series with and ahead of all other equipment attached to the same telephone line. If there are any questions concerning these instructions, consult the telephone company or a qualified installer about installing the RJ31X jack and alarm dialing equipment. Refer to “IPOTS-COM Communicator” on page 30 for an illustration of the proper installation of this equipment.

Important! *The DACT must not be used to dial a phone number that is call-forwarded.*

1.8.2 Telephone Company Rights and Warnings

The telephone company, under certain circumstances, may temporarily discontinue services and/or make changes in its facilities, services, equipment or procedures which may affect the operation of this control panel. However, the telephone company is required to give advance notice of such changes or interruptions.

If the control panel causes harm to the telephone network, the telephone company reserves the right to temporarily discontinue service. Advance notification will be provided except in cases when advance notice is not practical. In such cases, notification will be provided as soon as possible. The opportunity will be given to correct any problems and to file a complaint with the FCC if you believe it is necessary. DO NOT CONNECT THIS PRODUCT TO COIN TELEPHONE, GROUND START, OR PARTY LINE SERVICES.

When the control panel activates, premise phones will be disconnected.

Two separate phone lines are required. Do not connect both telephone interfaces to the same telephone line.

The control panel must be connected to the public switched telephone network upstream (as first device) of any private telephone system at the protected premises.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by ACTA. This equipment is designed to be connected to the telephone network or premises wiring using a compliant RJ31X male modular plug and compatible modular jack that is also compliant.

1.8.3 For Canadian Applications

The following is excerpted from CP-01 Issue 5:

NOTICE: The Industry Canada (IC) label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the users' satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure, for their own protection, that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspections authority, or electrician.

“The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. the termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the REN of all devices does not exceed 5.”

DOC Compliance - “This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.”

Representative: NOTIFIER/FIRE•LITE, CANADA
10 Whitmore Road
Woodbridge, Ontario L4L 7Z4
Phone: (905) 856-8733
FAX: (905) 856-9687

IC Certificate Number: 2132A-EVOLX
Ringer Equivalence Number (REN): 0.3A
Load Number: 2

Section 2: Installation

The cabinet may be either semi-flush or surface mounted. The cabinet mounts using two key slots and two 0.250" (6.35 mm) diameter holes located in the backbox. The key slots are located at the top of the backbox and the two securing holes at the bottom.

Carefully unpack the system and check for shipping damage. Mount the cabinet in a clean, dry, vibration-free area where extreme temperatures are not encountered. The area should be readily accessible with sufficient room to easily install and maintain the panel. Locate the top of the cabinet approximately 5 feet (1.5 m) above the floor with the hinge mounting on the left. Determine the number of conductors required for the devices to be installed. Sufficient knockouts are provided for wiring convenience. Select the appropriate knockout(s) and pull the conductors into the box. All wiring should be in accordance with the National and/or Local codes for fire alarm systems.

2.1 Mounting the Backbox



CAUTION: STATIC SENSITIVE COMPONENTS

THE CIRCUIT BOARD CONTAINS STATIC-SENSITIVE COMPONENTS. ALWAYS GROUND YOURSELF WITH A PROPER WRIST STRAP BEFORE HANDLING ANY BOARDS SO THAT STATIC CHARGES ARE REMOVED FROM THE BODY. USE STATIC SUPPRESSIVE PACKAGING TO PROTECT ELECTRONIC ASSEMBLIES.

To prevent damage to the circuit board and to facilitate backbox mounting, the chassis with main circuit board can be easily removed. Loosen the two 3/8" nuts securing the top flanges of the chassis, then slide the chassis up to free it from the lower tabs. Place the chassis assembly in a safe location until it can be reinstalled in the backbox.

1. Mark and pre-drill hole in the wall for the center top keyhole mounting bolt using the dimensions illustrated in Figure 2.2 on page 23.
2. Install center top fastener in the wall with the screw head protruding.
3. Place backbox over the top screw, level and secure.
4. Mark and drill the left and right upper and lower mounting holes.
Note: Outer holes (closest to sidewall) are used for 16" O.C. stud mounting.
5. Install remaining fasteners and tighten.
6. When the location is dry and free of construction dust, install the chassis/circuit board assembly.
7. Mount the chassis to the backbox by aligning the two mounting tabs with the slots in the backbox, then position the two mounting hole tabs over the studs with nuts located in the upper portion of the backbox.
8. Slide the tabs located on the bottom of the chassis into the mounting slots in the backbox by pressing the chassis down.
9. Secure the chassis to the backbox by tightening the two mounting nuts (#10-32) at the top, and to ensure proper grounding, use a 3/8" nut driver or socket.
10. If the main circuit board is not already attached to the chassis, install it by positioning the ten mounting holes over the studs on the chassis and secure with the supplied screws.

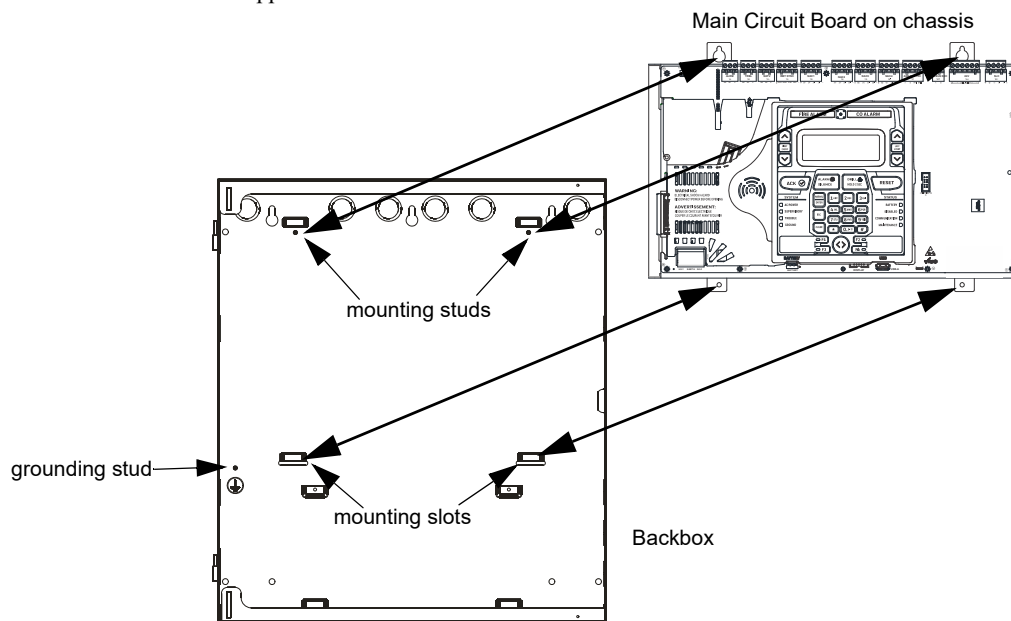


Figure 2.1 ES-200X Chassis Removal and Installation

es200chassisinbox.wmf

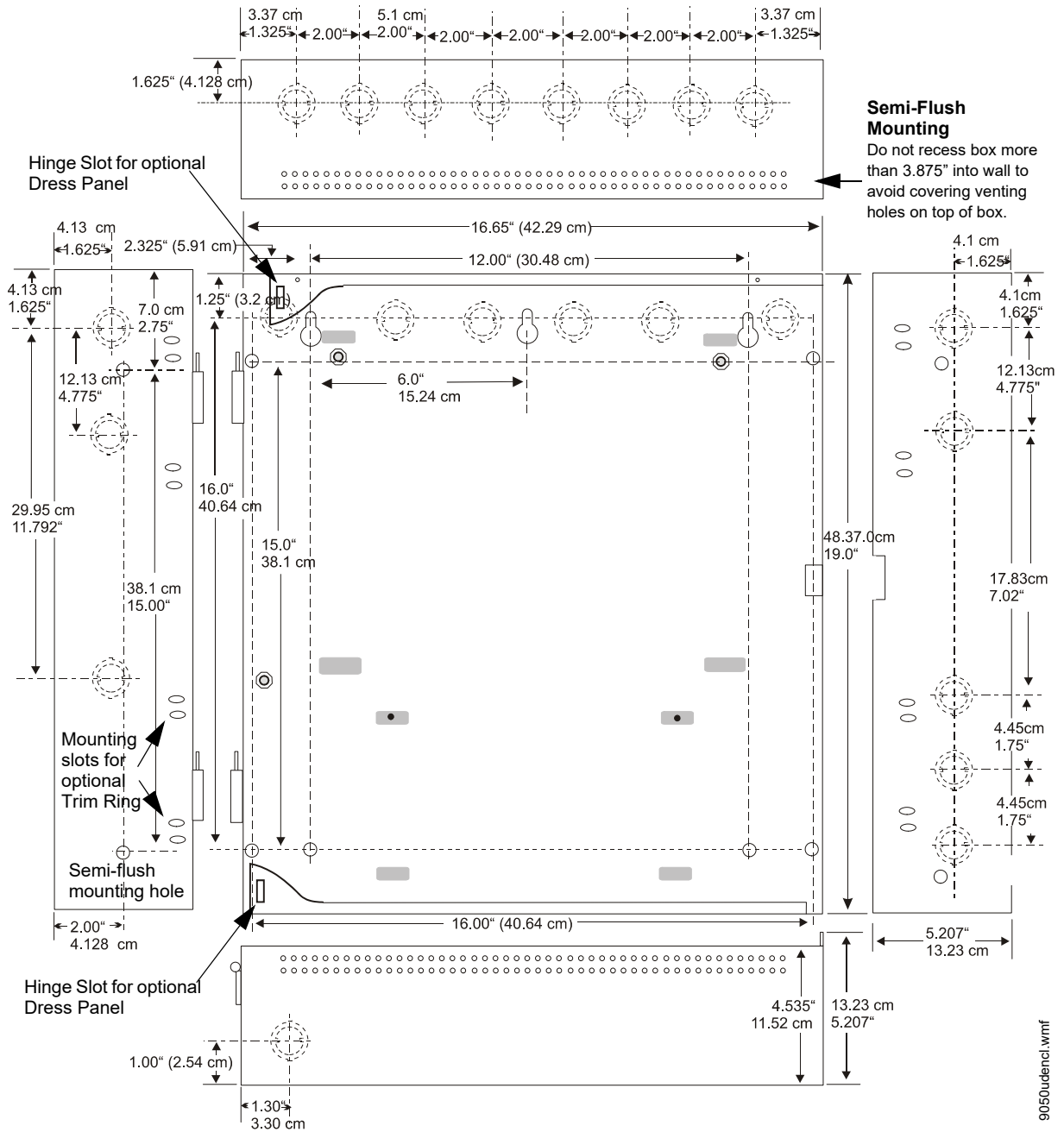


Figure 2.2 ES-200X Cabinet Mounting

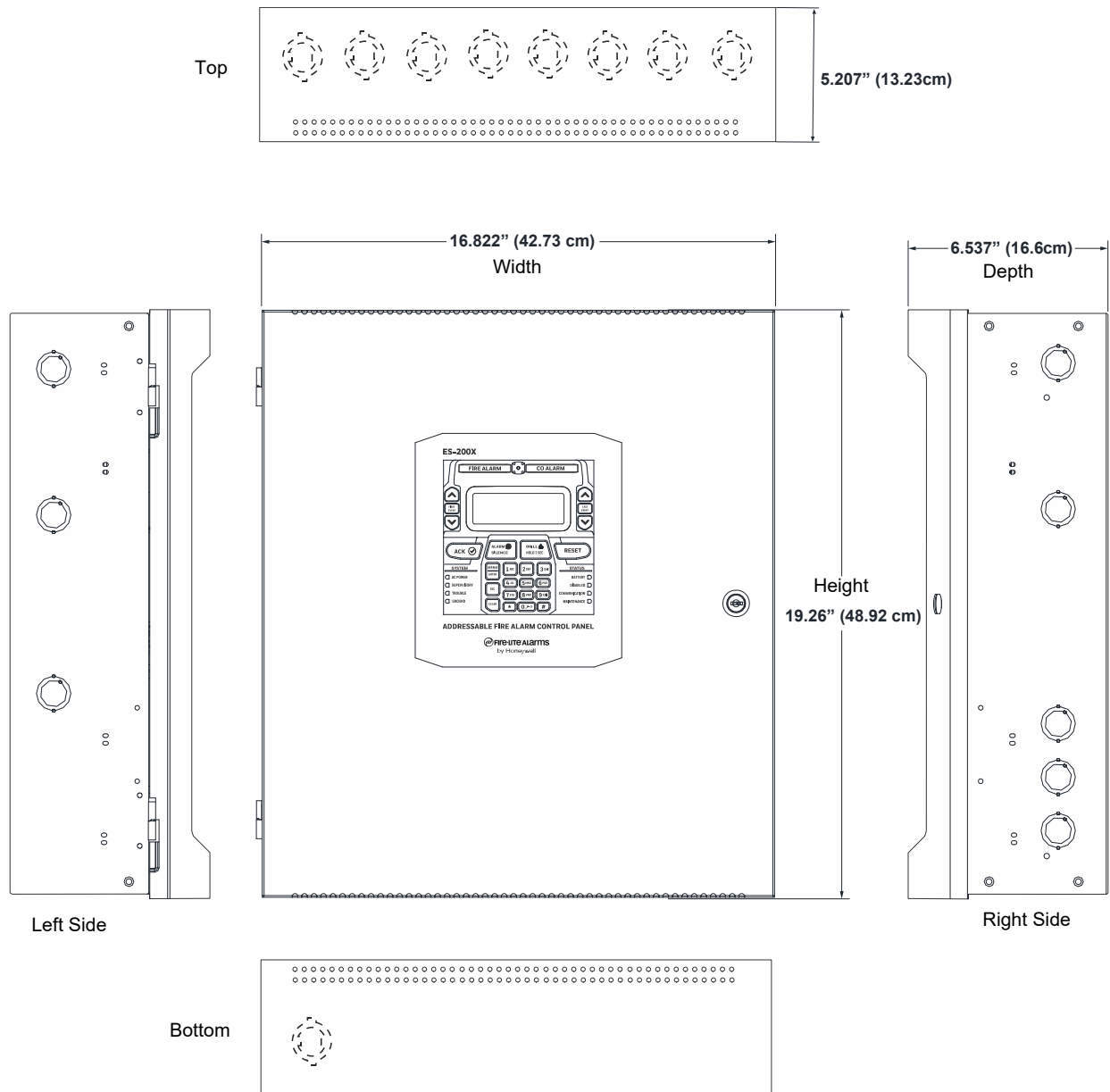


Figure 2.3 Cabinet Dimensions

An optional Trim Ring (P/N TR-CE-) is also available for semi-flush mount installations.

2.2 Power

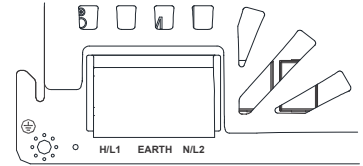


WARNING: RISK OF EQUIPMENT DAMAGE AND PERSONAL INJURY

SEVERAL DIFFERENT SOURCES OF POWER CAN BE CONNECTED TO THIS PANEL. DISCONNECT ALL SOURCES OF POWER BEFORE SERVICING. THE PANEL AND ASSOCIATED EQUIPMENT MAY BE DAMAGED BY REMOVING AND/OR INSERTING CARDS, MODULES OR INTERCONNECTING CABLES WHILE THIS UNIT IS ENERGIZED.

2.2.1 AC Power and Earth Ground Connection

Primary power required for the FACP is 120 or 240 VAC, 50/60 Hz, 3.25 amps. The FACP will auto-detect the voltage used. No special switch or jumper is required to select AC power. Overcurrent protection for this circuit must comply with Article 760 of the National Electrical Code (NEC) and/or local codes. Use 14 AWG (2.00 mm²) or larger wire with 600 volt insulation rating. Make certain that the AC mains circuit breaker is **off** before wiring any connections between the mains and the control panel. Connect wiring from the AC mains to TB13 on the FACP, being careful to observe proper connections.



Remove the two keps nuts from the grounding stud in the backbox. Connect the incoming earth ground wire to supplied cable #71073 with a wire nut. Position the ring terminal end over the grounding stud. Secure with one of the keps nuts. Place the ring terminal from the other supplied ground cable #71073 over the ground stud and secure with the second keps nut. Wire the ground cable to the bottom position of TB11. Refer to Figure 2.1 on page 22 for location of the stud. Ensure that the ground for AC mains is the first cable installed, closest to the backbox. This connection is vital in reducing the panel's susceptibility to transients generated by lightning and electrostatic discharge. Apply AC power to the panel only after the system is completely installed and visually checked. *Note that AC power must be applied to the panel before installing the battery interconnect cable (refer to the following section).*

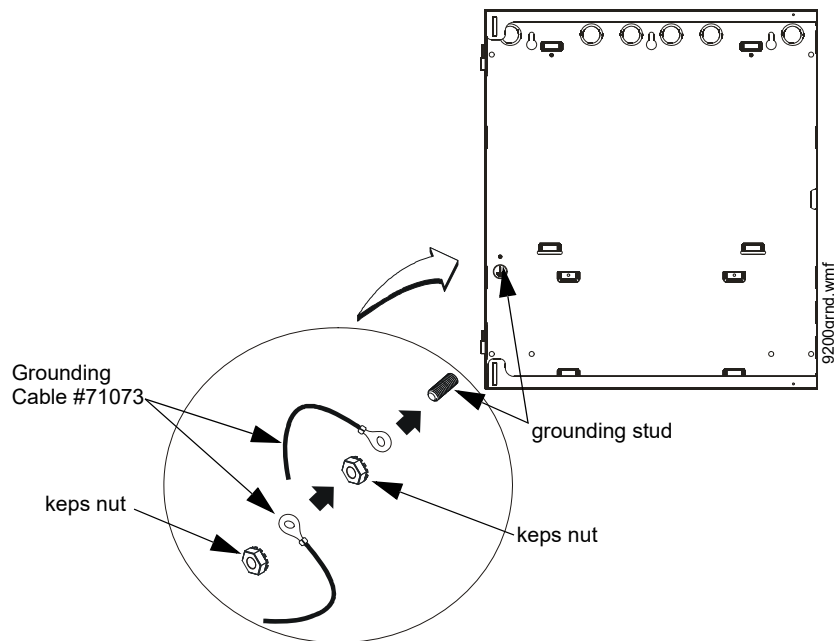
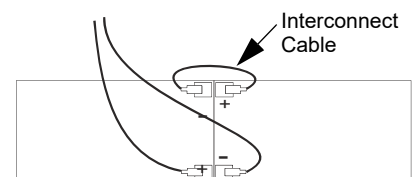


Figure 2.4 Earth Ground Connection

2.2.2 Battery Power

The batteries must be sealed lead acid type. Before connecting the batteries to the FACP, make certain that the interconnect cable between the batteries is **not** connected. Do not connect the interconnect cable until the system is completely installed. Observe polarity when connecting the batteries. Connect the battery cable to J9 on the main circuit board. Refer to "Power Supply Calculations" on page 131, for calculation of the correct battery rating.



WARNING: RISK OF PERSONAL INJURY

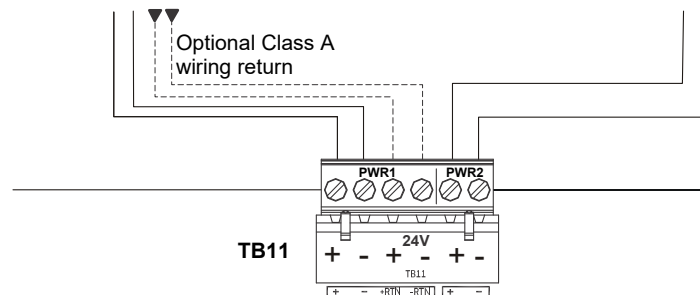
BATTERY CONTAINS SULFURIC ACID WHICH CAN CAUSE SEVERE BURNS TO THE SKIN AND EYES AND CAN DESTROY FABRICS. IF CONTACT IS MADE WITH SULFURIC ACID, IMMEDIATELY FLUSH THE SKIN OR EYES WITH WATER FOR 15 MINUTES AND SEEK IMMEDIATE MEDICAL ATTENTION.

2.2.3 Special Application DC Power Output Connection

All Special Application DC power outputs are power-limited (refer to “UL Power-limited Wiring Requirements” on page 29).

Power-limited Non-resettable or Resettable Power
1.0 amperes max., 24 VDC nominal filtered, non-resettable or resettable power is programmable. PWR1 can be programmed as Class B or Class A.

Power-limited Resettable or Non-resettable Power
1.0 amperes max., 24 VDC nominal filtered, programmable resettable or non-resettable power can be drawn from TB11 Terminals 5(+) and 6(-)



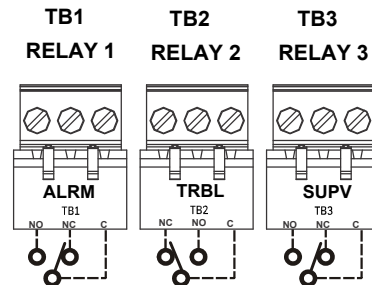
es200tb11.wmf

Figure 2.5 Special Application Power Outputs - 24 VDC

2.3 Relays

The FACP provides two programmable Form-C relays and one fixed fail-safe Form-C trouble relay. Note that relay connections may be power-limited or nonpower-limited, provided that 0.25" spacing is maintained between conductors of power-limited and nonpower-limited circuits. Refer “UL Power-limited Wiring Requirements” on page 29.

Note that the programmable relay labeled as Relay 1 is factory default programmed as Alarm and programmable Relay 3 is factory default programmed as Supervisory. The relay labeled Relay 2 is fixed as a Trouble relay and cannot be changed. It is a fail-safe relay which will transfer on any trouble or total power failure.



Relay contacts shown with power applied to panel and no active troubles, alarms or supervisories

es200rly.wmf

Figure 2.6 Relay Terminals

2.4 Notification Appliance Circuits

The control panel provides four Class B or four Class A NACs (Notification Appliance Circuits). Each circuit is capable of 2.5 amps of current. Total current in alarm for all external devices cannot exceed 6.0 amps (refer to “Calculating the System Current Load” on page 131). Use UL listed 24 VDC notification appliances only. Circuits are supervised and power-limited. Refer to the *Device Compatibility Document* for a listing of compatible notification appliances. The NACs, which are located on the main circuit board, may be expanded via the FCPS Series field charger/power supplies.

The following sections describe the configuration and wiring of Class B and Class A Notification Appliance Circuits on the ES-200X main circuit board.

2.4.1 Class B NAC Wiring

4 Class B Notification Appliance Circuits, supervised and power-limited - 4.7 k Ω , ½ watt P/N:71252 UL listed

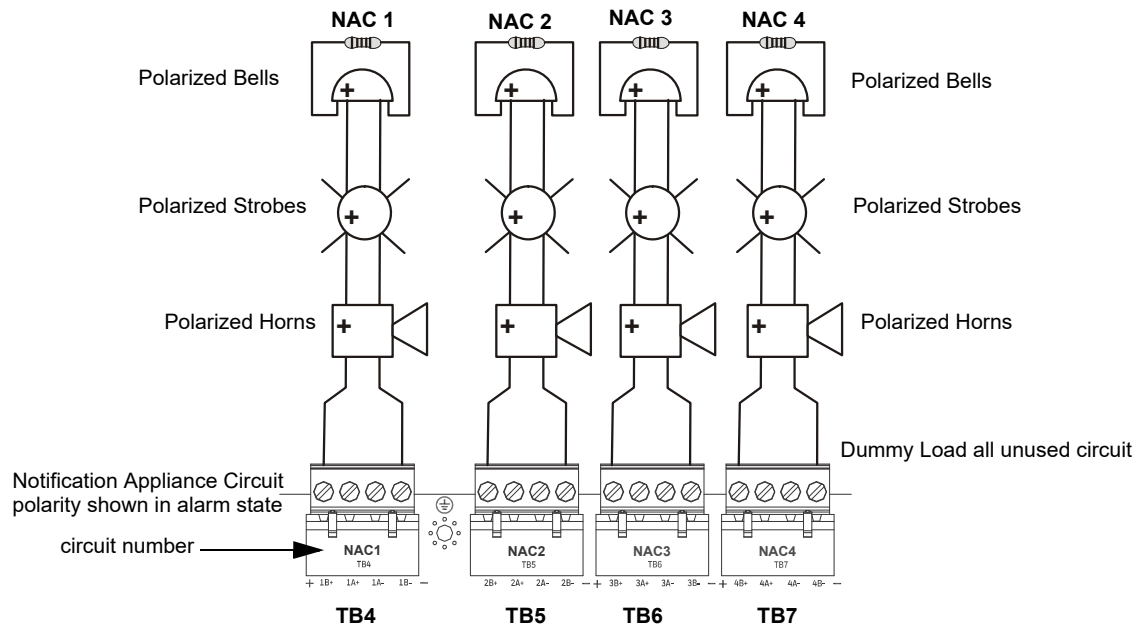


Figure 2.7 NAC Class B Wiring

es200nacy.wmf

2.4.2 Class A NAC Wiring

4 Class A Notification Appliance Circuits, supervised and power-limited

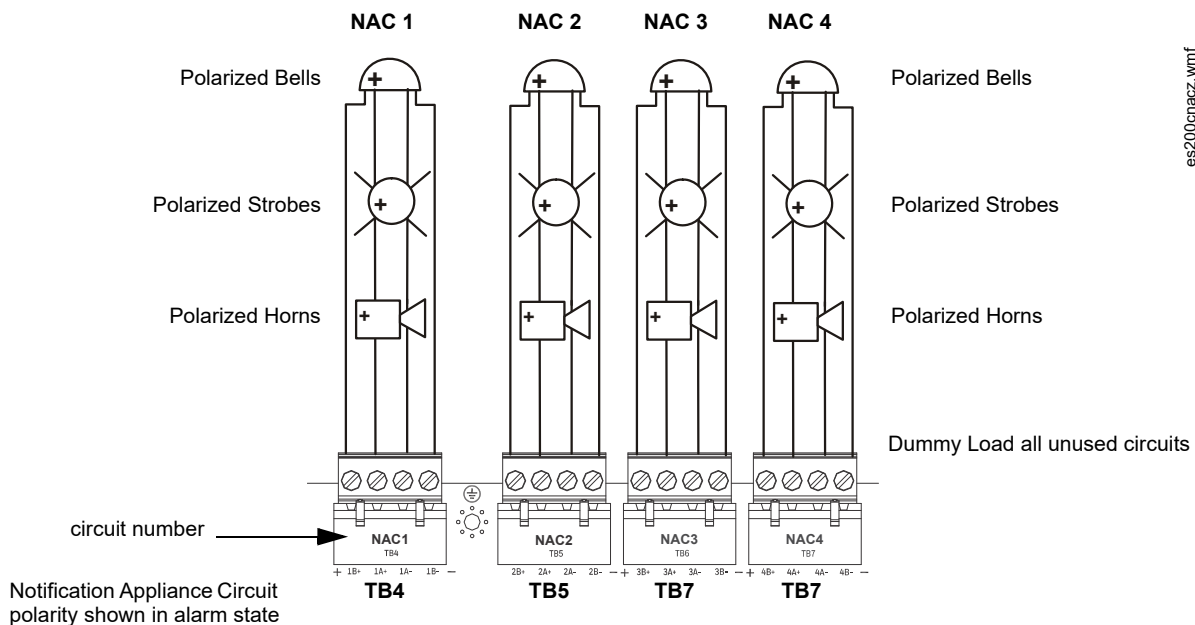


Figure 2.8 NAC Class A Wiring

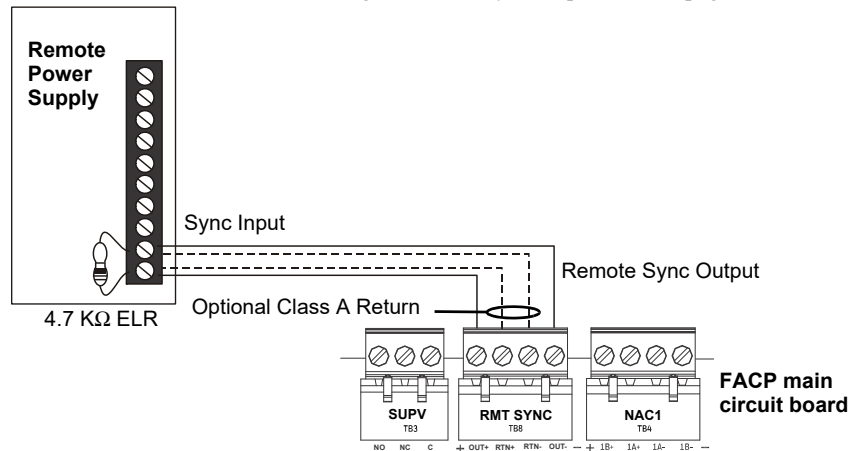
es200cnac2.wmf

2.5 Remote Synchronization Output

Synchronization is a feature that controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time. This is particularly critical when activating strobes which must be synchronized to avoid random activation and a potential hazard to individuals. Devices connected directly to the control panel's NACs can be synchronized as described in "Type" on page 79.

Notification appliances connected to FCPS NAC power supplies require synchronization with the FACP's devices. This can be accomplished by connecting the Remote Synchronization Output from TB8 of the ES-200X to the sync input of the FCPS-24FS6/8 Power Supply. The 24 VDC signal from TB8 follows, that is mimics, the signal on NAC1. This allows the devices connected to the power supply to be synchronized with the devices connected to NAC1 on the FACP.

The Remote Synchronization Output is power-limited and supervised (refer to "UL Power-limited Wiring Requirements" on page 29) and can be wired in Class B or Class A. A 4.7 K Ω ELR resistor must be connected to the end of the wiring at the remote power supply for Class B wiring. Supervision of the remote synchronization is automatically enabled when the remote sync output is enabled. Supervision will be disabled if the output is disabled. For more information on enabling the remote sync output, refer to page 106.



es200sync.wmf

Figure 2.9 Remote Sync Output

2.6 UL Power-limited Wiring Requirements

Power-limited and nonpower-limited circuit wiring must remain separated in the cabinet. All power-limited circuit wiring must remain at least 0.25" (6.35 mm) away from any nonpower-limited circuit wiring and nonpower-limited circuit wiring must enter and exit the cabinet through different knockouts and/or conduits. When connecting the ground cables, be sure that the AC mains ground is the first one installed, closest to the backbox. A typical wiring diagram for the ES-200X is shown below.

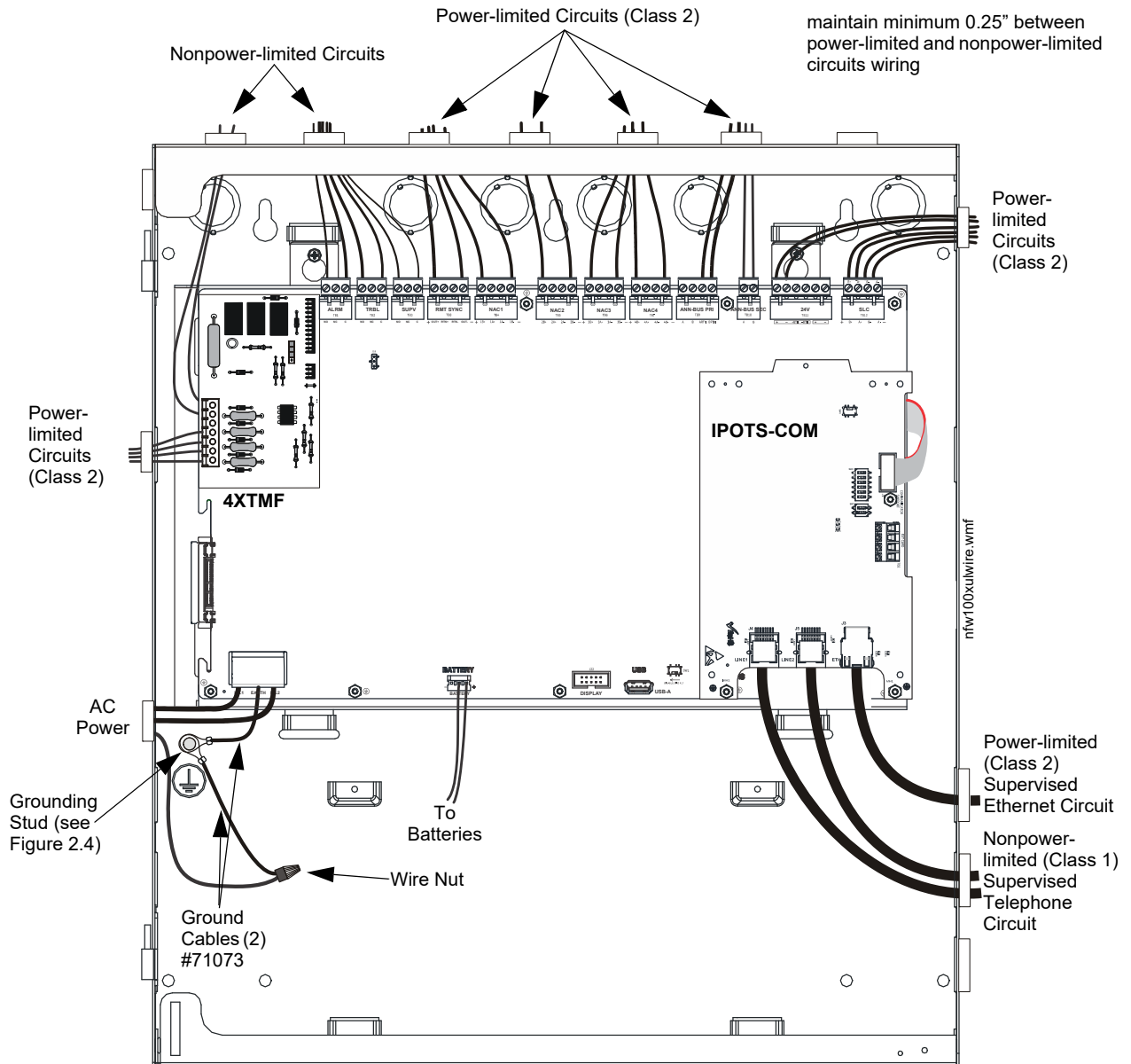


Figure 2.10 Typical UL Power-limited Wiring Requirements

2.7 IPOTS-COM Communicator

Two independent telephone lines can be connected to the control panel via the IPOTS-COM Phone/IP Communication Module. Telephone line control/command is made possible via double line seizure as well as usage of an RJ31X style interconnection. *Note that it is critical that the IPOTS-COM Digital Communicator be located as the first device on the incoming telephone circuit to properly function.*

Important! The IPOTS-COM must *not* be used to dial a phone number that is call-forwarded.

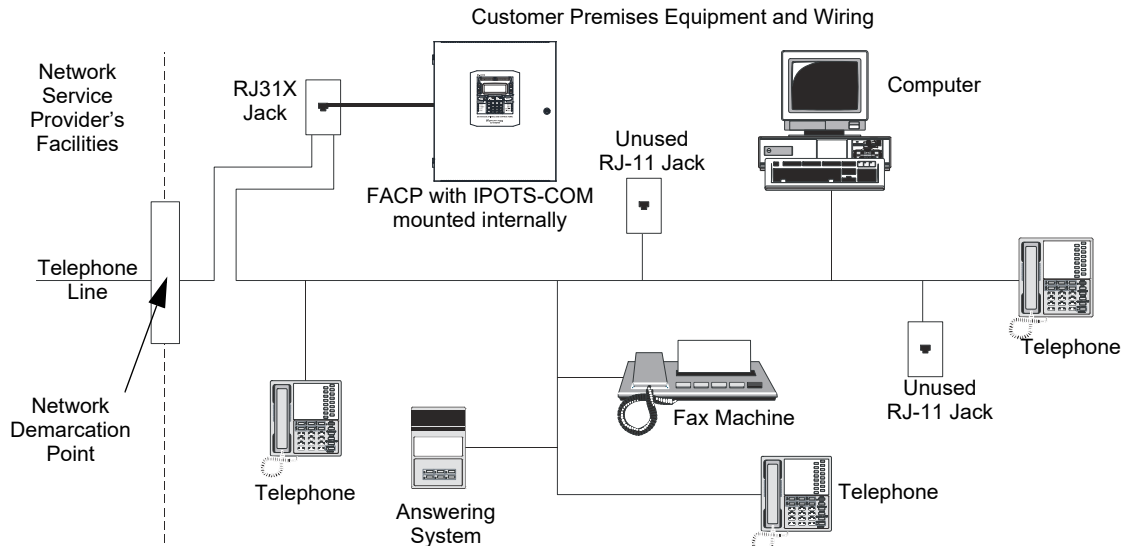


Figure 2.11 Communicator Installation

Wiring

Connection and wiring of two phone lines is required as shown below.

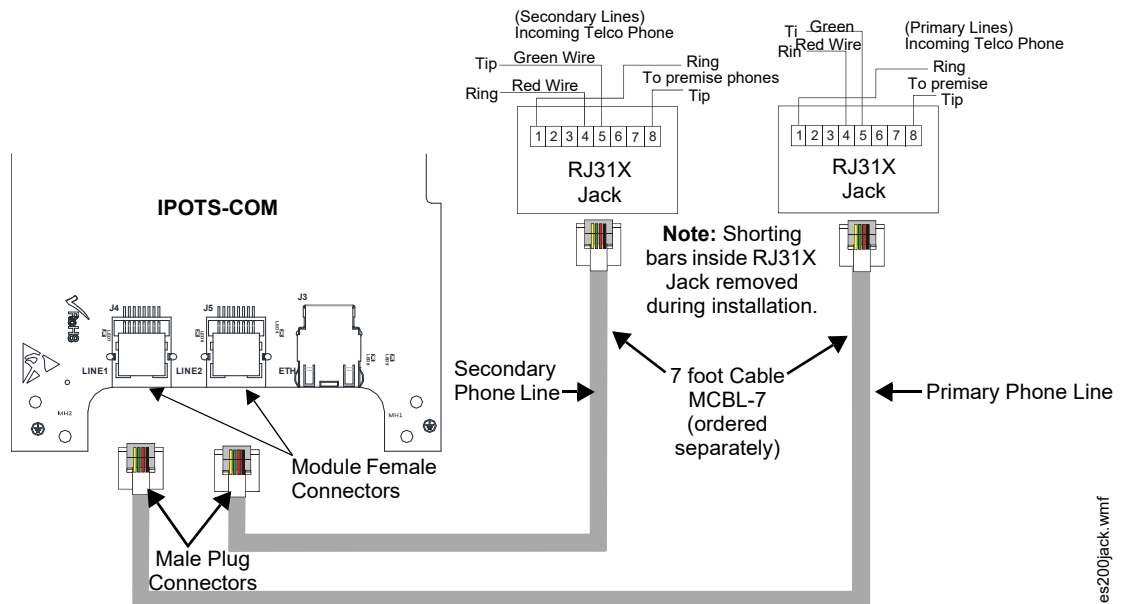


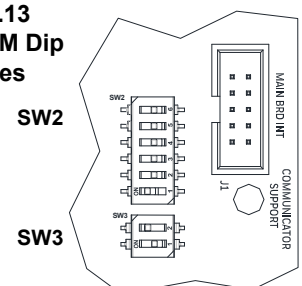
Figure 2.12 Wiring Phone Jacks

Dip Switches

There are two configurable dip switches on the IPOTS-COM communicator.

- SW2: 6-position dip switch- FUTURE USE- No configuration necessary.
- SW3: 2-position dip switch- Factory Settings- Do not change unless instructed to do so by Honeywell.

Figure 2.13
IPOTS-COM Dip
Switches



2.8 Optional Module Installation



WARNING: RISK OF ELECTRIC SHOCK AND EQUIPMENT DAMAGE

DISCONNECT ALL SOURCES OF POWER (AC AND DC) BEFORE INSTALLING OR REMOVING ANY MODULES OR WIRING.

2.8.1 CELL-CAB-FL/CELL-MOD

The CELL-CAB-FL/CELL-MOD offers an optional GSM communicator card for central station reporting. It mounts in its own plastic or metal enclosure. Use of the CELL-MOD/CELL-CAB-FL requires the IPOTS-COM communicator.

Installation

Install the CELL-CAB-FL(C) as described in the Product Installation Document #LS10186-000FL-E and the CELL-MOD(C) as described in #LS10182-000GE-E.

Wiring

Connections are made from TB2 on the IPOTS-COM board to the terminal on the GSM card as shown below.

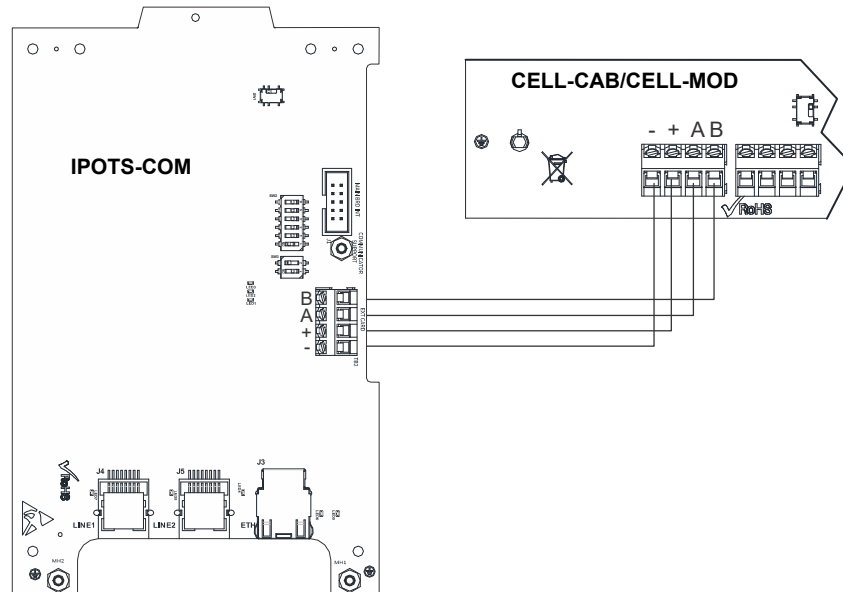


Figure 2.14 Wiring the CELL-CAB/CELL-MOD

2.8.2 PWRMOD24 NAC Expander

The PWRMOD24 is an optional module that provides an additional 3 amps of NAC power. The pre-installed termination card must be removed to install the PWRMOD24. Store this card in a safe location for replacement if the PWRMOD24 is removed at any time. If the PWRMOD24 is ever removed, the termination card must be replaced for proper functionality.

Installation and Wiring

Install the PWRMOD24 as described in the *Product Installation Document* #LS10185-000GE-E.

2.8.3 4XTMF Transmitter Module Installation

The 4XTMF provides a supervised output for a local energy municipal box transmitter in addition to alarm and trouble reverse polarity. A jumper option allows the reverse polarity circuit to open with a system trouble condition if no alarm condition exists. A disable switch allows disabling of the transmitter output during testing to prevent accidental calling of the monitoring service.

Local Energy Municipal Box Service (NFPA 72 Auxiliary Fire Alarm Systems):

Supervisory Current: 5.0 mA

Trip Current: 350 mA (subtracted from notification appliance power)

Coil Voltage: 3.65 VDC

Maximum Coil Resistance: 14.6 ohms

Maximum allowable wire resistance between panel and trip coil: 3 ohms

Municipal Box wiring can leave the building

estocellcab.wmf

Remote Station Service (NFPA 72 Remote Station Fire Alarm Systems) - Intended for connection to a polarity reversal circuit or a Remote Station receiving unit having compatible ratings:

Maximum load for each circuit: 10 mA

Reverse polarity output voltage: 24 VDC

Remote Alarm and Remote Trouble wiring can leave the building

Before installing the module, place the disconnect switch to the right (disconnect) position to prevent accidental activation of the municipal box. Note that a Disconnect LED will illuminate after the module is installed in the ES-200X. In addition, the System Trouble LED will turn on to indicate the Disconnect condition.

Note: The 4XTMF Module is not directly suitable for transmitting a reverse polarity supervisory signal. For applications using reverse polarity of a supervisory signal, refer to Keltron Wiring document #52776.

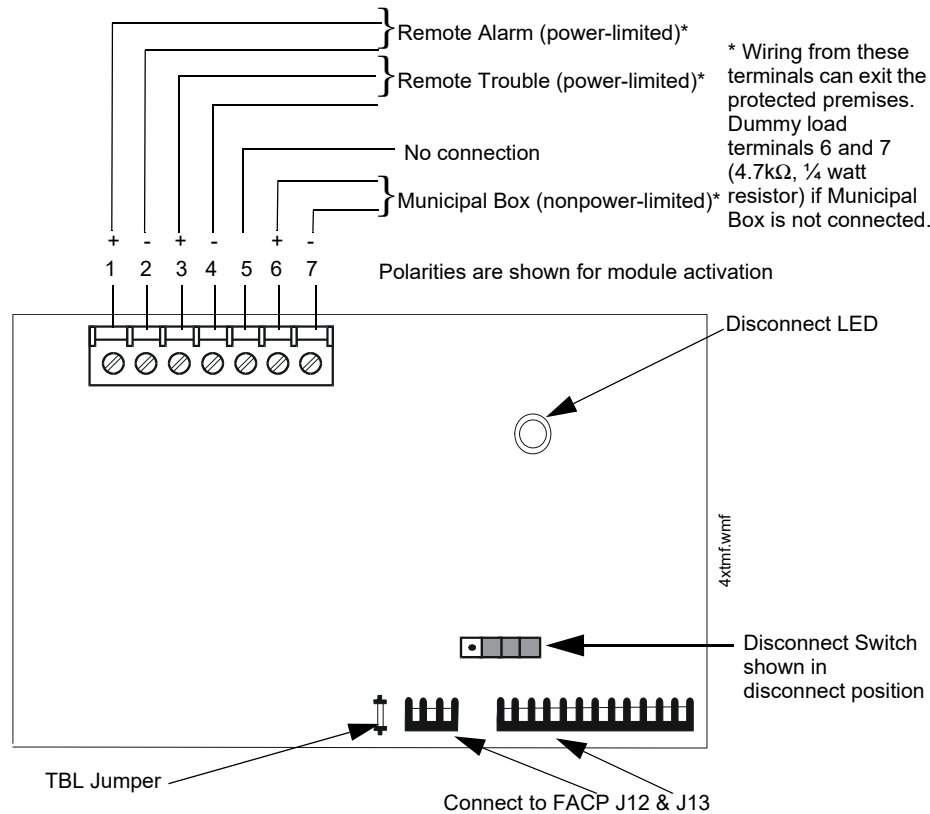


Figure 2.15 4XTMF Transmitter Module

The following steps must be followed when installing the 4XTMF module:

1. Remove all power (Primary and Secondary) from the FACP before installing 4XTMF.
2. Carefully plug the connectors on the 4XTMF module into connectors J12 and J13 on the ES-200X main circuit board, being careful not to bend any pins.
3. Secure 4XTMF module to standoffs with supplied screws.
4. Slide SW2 on the ES-200X main circuit board to the down position.
5. Enable 4XTMF supervision in user programming. Refer to "4XTMF Supervision" on page 84.
6. Reapply power to the FACP.
7. For proper 4XTMF operation, the output relays must be programmed for the factory default settings: Alarm Relay 1, Trouble Relay 2 and Supervisory Relay 3.
8. When the installation has been complete, enable the 4XTMF module by sliding the disconnect switch to the left.
9. Test system for proper operation.

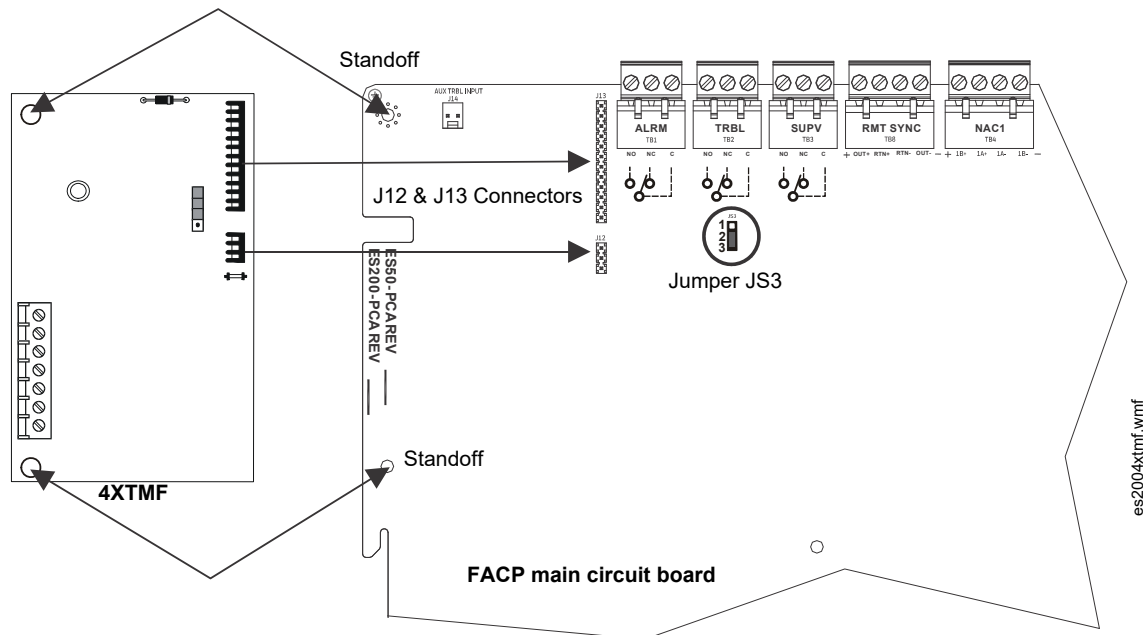


Figure 2.16 4XTMF Connectors to ES-200X Connectors



NOTE: When a 4XTMF is installed, enable supervision in panel programming. Jumper JS3 on the FACP main circuit board can be used to configure the FACP supervisory relay for operation with the 4XTMF module. Relay 3 at TB3 must be programmed as a supervisory relay. Jumpering pins 2&3 on JS3 will allow the 4XTMF to generate a trouble if the supervisory contact opens. Jumpering pins 1&2 on JS3 will prevent generation of a trouble if the supervisory contact opens.

2.8.4 ANN-BUS Annunciators/Modules

ANN-BUS Wiring

This section contains information on calculating ANN-BUS wire distances and the types of wiring configurations (Class B).

■ Calculating Wiring Distance for ANN-BUS Modules

The following instructions will guide the installer in determining the type of wire and the maximum wiring distance that can be used with FACP ANN-BUS accessory modules.

To calculate the wire gauge that must be used to connect ANN-BUS modules to the FACP, 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. The individual worst case values are shown in the following table:

Model Number	Worst Case Current Draw ¹
ANN-80 LCD Annunciator	0.040 amps
ANN-100 LCD Annunciator	0.025 amps
ANN-S/PG Serial/Parallel Printer Interface Module	0.040 amps
ANN-I/O LED Driver Module	0.200 amps
ANN-(R)LED Annunciator Module	0.068 amps
ANN-RLY Relay Module	0.075 amps

- ¹ When powering the ANN-BUS from one of the (nonresettable) DC power outputs at TB11, the total worst case current draw cannot exceed 1.0 amp. If sharing this DC output with other devices, the worst case current drawn by these devices must be combined with the ANN-BUS current draw, and the total cannot exceed 1.0 amp. If the total current demand exceeds 1.0 amp, refer to "Powering ANN-BUS Devices from an Auxiliary Power Supply" on page 35.

In general, the wire length is limited by resistance, but for heavier wire gauges, capacitance is the limiting factor. Maximum length can never be more than 6,000 feet (1,800 m), regardless of gauge used. The following formulas were used to generate the wire distances:

$$\text{Maximum Resistance (Ohms)} = \frac{2.0 \text{ Volts}}{\text{Total Worst Case Current Draw (amps)}}$$

$$\text{Maximum Wire Length (feet)} = \frac{\text{Maximum Resistance (Ohms)}}{\text{Rpu}} \times 500$$

(6,000 feet maximum)

where: Rpu = Ohms per 1,000 feet for various Wire Gauges (see table below)

Wire Gauge	Ohms per 1,000 feet (Rpu)
22	16.2
18	6.4
16	4.02
14	2.54

Exception: When using the ANN-RLY module, the installer must ensure that the maximum 24VDC power line drop does not exceed 0.3 volts. This results in the following wiring limitations:

Wire Gauge	Maximum Wire Length
18	312 feet
16	497 feet
14	787 feet
12	1,250 feet

Wiring Distance Calculation Example:

Suppose a system is configured with the following ANN-BUS modules:

- 3 ANN-80 Remote Fire Annunciators
- 1 ANN-S/PG Serial/Parallel Printer Interface Module

The total worst case current is calculated as follows:

ANN-80 Current Draw	= 3 X 0.040 amps	= 0.120 amps
ANN-S/PG Current Draw	= 1 X 0.040 amps	= 0.040 amps
Total Worst Case Current Draw		= 0.160 amps

■ Wiring Configuration

Figure 2.17 illustrates the wiring between the FACP's Primary ANN-BUS and ANN-BUS devices.

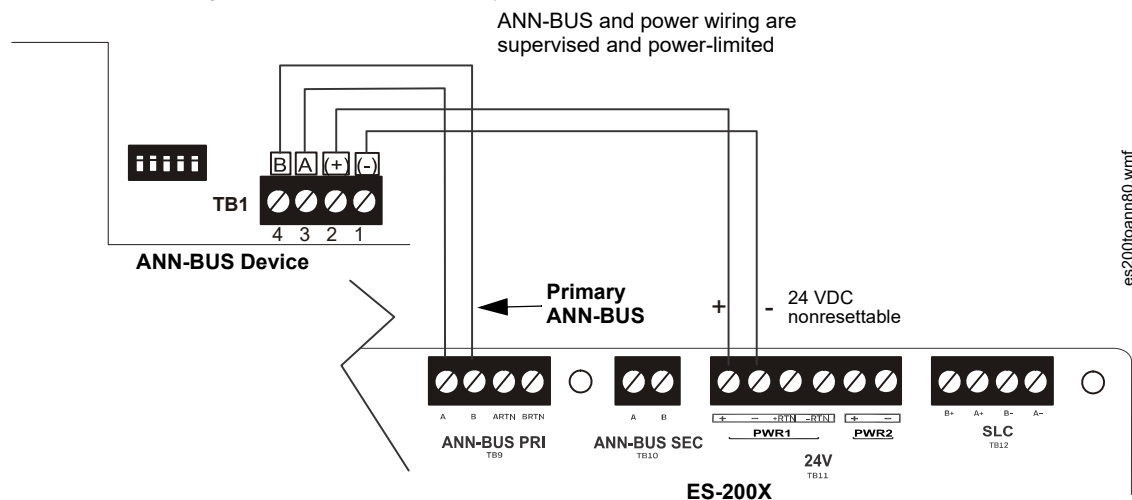


Figure 2.17 Primary ANN-BUS wiring to ANN-BUS Device

Figure 2.18 illustrates the wiring between the FACP's Secondary ANN-BUS and ANN-BUS devices. ANN-BUS and power wiring are supervised and power-limited

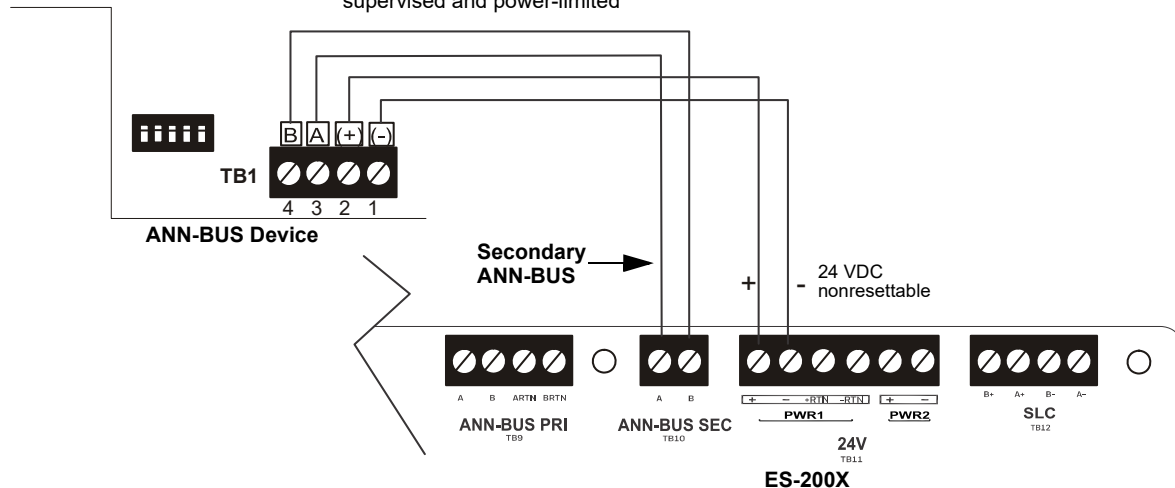


Figure 2.18 Secondary ANN-BUS wiring to ANN-BUS Device

■ Powering Both ANN-BUS Circuits Simultaneously

When simultaneously using the Primary and Secondary ANN-BUS circuits on the FACP, power can be shared from the Nonresettable Power output on TB11. Alternately, one ANN-BUS can be powered by the Resettable Power output (TB11 Terminals 3 and 4) once it is reconfigured as Nonresettable Power in panel programming. This provides the benefit of independently acting power-limiting for the two ANN-BUS circuits (required for Canadian applications).

■ Powering ANN-BUS Devices from an Auxiliary Power Supply

Figure 2.19 illustrates the powering of ANN-BUS devices from an auxiliary power supply such as the FCPS-24FS6/8, when the total ANN-BUS power requirements exceed the panel's DC Power Output capability.

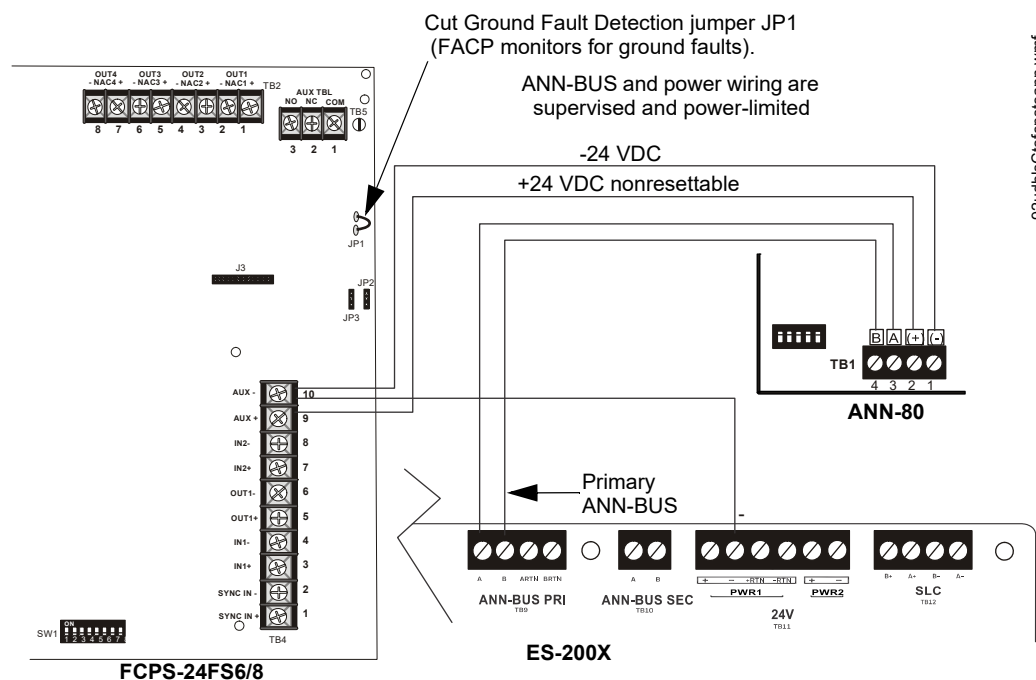


Figure 2.19 Powering ANN-BUS Devices from FCPS-24FS6/8

ANN-BUS Device Addressing

Each ANN-BUS device requires a unique address (ID Number) in order to communicate with the FACP. A 5-position DIP switch on each device is used to set this address. The address set for these devices must also be programmed at the FACP for the specific device (refer to the programming section titled “ANN-BUS Setup” on page 93).

A maximum of 8 devices can be connected to each FACP ANN-BUS communication circuit. Device addresses do not need to be sequential and can be set to any number between 01 and 08. This applies to both ANN-BUS communication circuits. Note that 00 is not a valid address. The following table shows the DIP switch setting for each address.



NOTE: Address (ID Number) DIP switches on some devices may have more than 5 switch positions. Unless otherwise specified in the documentation supplied with each device, switch positions 6 and above must be set to **OFF**.

Address	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
not valid	OFF	OFF	OFF	OFF	OFF
01	OFF	OFF	OFF	OFF	ON
02	OFF	OFF	OFF	ON	OFF
03	OFF	OFF	OFF	ON	ON
04	OFF	OFF	ON	OFF	OFF
05	OFF	OFF	ON	OFF	ON
06	OFF	OFF	ON	ON	OFF
07	OFF	OFF	ON	ON	ON
08	OFF	ON	OFF	OFF	OFF

Switch 5 must be set to OFF for ANN-BUS devices to be recognized.

ANN-80 Remote Fire Annunciator

■ Specifications

- Operating Voltage Range: 18 VDC to 28 VDC
- Current Consumption @ 24 VDC nominal (filtered and nonresettable):
 - Normal/Standby (no activity): 37 mA
 - Trouble: 39 mA
 - Alarm: 40 mA
 - AC Fail (not backlit): 15 mA
- For use indoors in a dry location

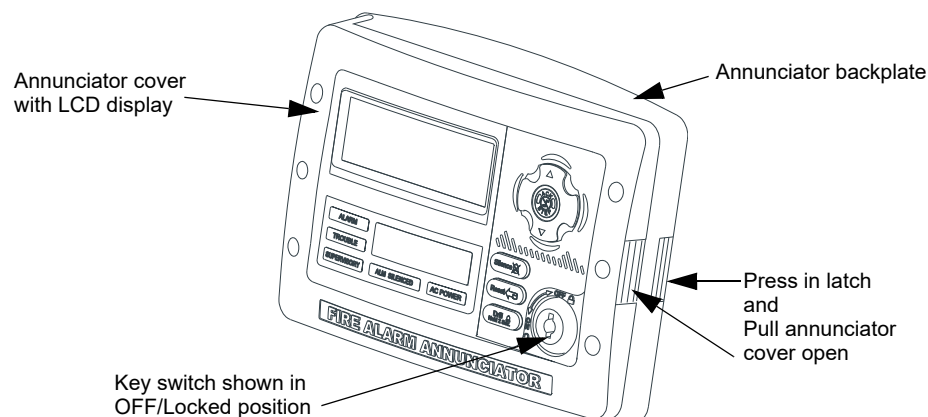
■ Installation

Ensure that all power (AC and DC) has been removed from the FACP before installing the annunciator.

■ Opening/Closing Annunciator

The following procedure details the steps used to open the annunciator in order to access the terminal block and DIP switches (refer to figure below):

1. Turn the key switch to the ON (Unlocked) position by turning the key counter-clockwise.
2. Push in the snap latch located on the right side of the unit while pulling the cover open.
3. To close the cover, make certain the key switch is in the ON (Unlocked) position. Swing the cover closed, snapping it shut.
4. Turn the key switch to the OFF (Locked) position by turning clockwise and remove the key.



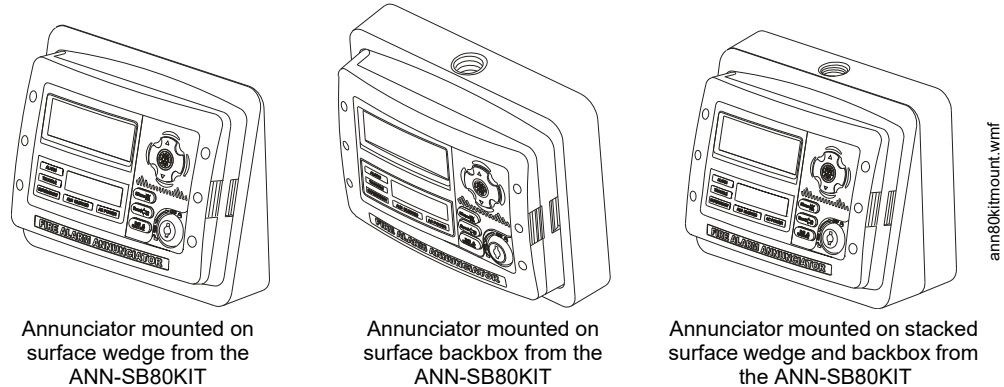
ann-80_iso2.wmf

■ Mounting

The ANN-80 can be surface or semi-flush mounted to a single, double or 4" square electrical box. Select and remove the appropriate knock-out(s), pull the necessary wires through the knockouts and mount the annunciator in or on the wall depending on the type of installation desired.

The ANN-SB80KIT(-R/-B/-W) is an available mounting kit for the ANN-80 annunciator. The kit comes with a surface backbox and surface wedge for angled viewing. The two pieces can be used separately or can be stacked together.

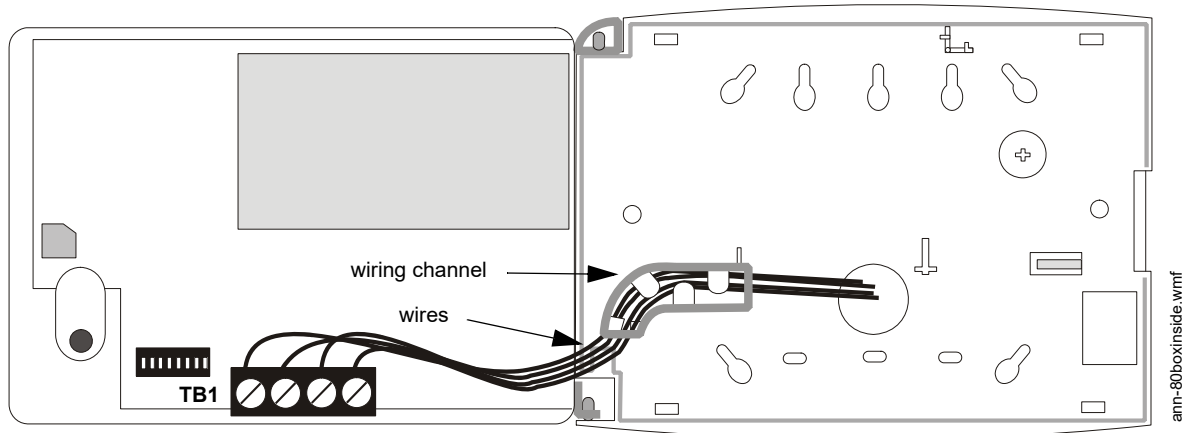
The ANN-80 cover must be attached to the annunciator backplate before mounting the annunciator to the electrical box/wall. The cover cannot be reattached or removed after the annunciator has been mounted.



■ Wiring ANN-80 to FACP

The following steps can be used as a guide to wire the annunciator. Make certain all power has been removed from the FACP prior to annunciator installation.

1. Route wires from hole in backplate, through wiring channel and then to ANN-80 terminal block TB1



2. Remove appropriate amount of wire insulation
3. Connect the wiring from the FACP ANN-BUS to annunciator TB1 terminals 3 (A) & 4 (B). Make certain to connect A to A and B to B
4. If appropriate, connect the wiring going to the next device on the ANN-BUS to TB1 terminals 3 & 4. Make certain to connect A to A and B to B
5. Connect the wiring from the 24 VDC power source to annunciator TB1 terminals 1 (-) & 2 (+). Make certain to observe proper polarity
6. If appropriate, connect the power wiring going to the next device to terminals 1 (-) & 2 (+). Make certain to observe proper polarity

7. After all connections are made, remove extra wire from inside of annunciator by dressing it neatly through wire channel, with any excess wire pushed back through hole into electrical box

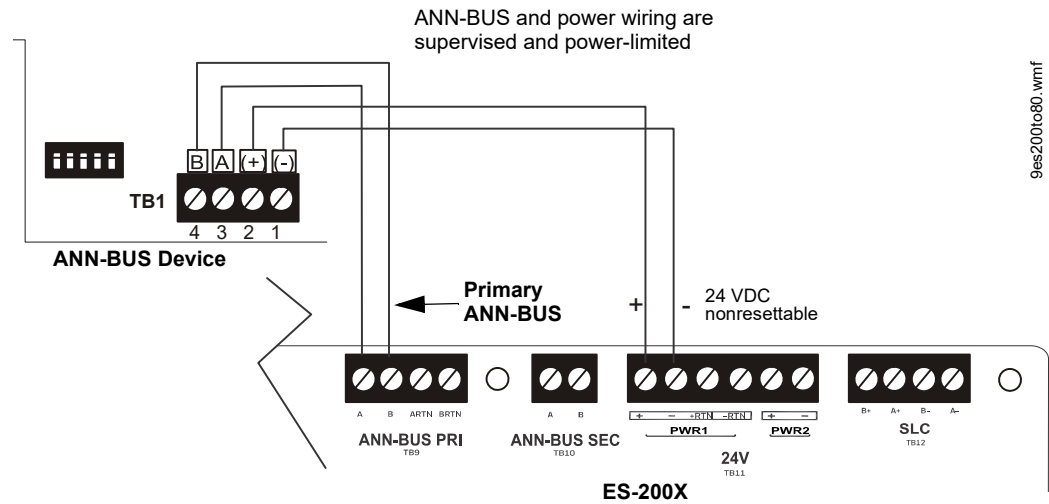


Figure 2.20 ANN-80 Wiring to FACP

The following table shows the ANN-80 connections to the ES-200X.

ES-200X	ANN-80 (TB1)
Terminal GND (-) on TB11	Terminal 1 (-)
Terminal PWR (+) on TB11	Terminal 2 (+)
Terminal Data (A) on TB9	Terminal 3 (A)
Terminal Data (B) on TB9	Terminal 4 (B)

■ Programming

Following installation and wiring of the ANN-80 LCD annunciator to the FACP, the annunciator must be added to the system via FACP programming. Refer to the programming section titled “ANN-BUS Setup” on page 93 in this manual for detailed programming information.

■ Trouble Response

If the ANN-80 is installed but the ANN-BUS is not enabled at the FACP, the ANN-80 will indicate a trouble condition by NOT turning on its AC Power indicator. The LCD will also display *Key Bus Trouble* and the piezo will sound approximately once every 10 seconds. Note that the FACP will provide no indication of an ANN-80 trouble.

To clear the ANN-80 trouble condition, enable the ANN-BUS and program the address corresponding to the address set on the ANN-80 at the FACP.

ANN-100 Remote Fire Annunciator

■ Specifications

- Operating Voltage: 24 VDC
- Current
 - Standby: 20 mA
 - Alarm: 25 mA
- Ambient Temperature: 32°F to 120°F (0°C to 49°C)
- Max. Wiring Distance from FACP: 6,000 ft. (1,800 m)
- Mounting: Surface or Flush-mount
- Dimensions: 12-1/4”W x 11-1/2”H x 7/8”D (31.1 cm W x 29.2 cm H x 2.2 cm D)
- For indoor use in a dry location only

The following table shows the ANN-100 connections to the ES-200X.

ES-200X	ANN-100 (TB1)
Terminal GND (-) on TB11	Terminal 1 (-)
Terminal PWR (+) on TB11	Terminal 2 (+)
Terminal Data (A) on TB9	Terminal 3 (A)
Terminal Data (B) on TB9	Terminal 4 (B)

■ Programming

Following installation and wiring of the ANN-100 LCD annunciator to the FACP, the annunciator must be added to the system via FACP programming. Refer to the programming section titled “ANN-BUS Setup” on page 93 in this manual for detailed programming information.

■ Trouble Response

If the ANN-100 is installed but the ANN-BUS is not enabled at the FACP, the ANN-100 will indicate a trouble condition by NOT turning on its AC Power indicator. The LCD will also display *Key Bus Trouble* and the piezo will sound approximately once every 10 seconds. Note that the FACP will provide no indication of an ANN-100 trouble.

To clear the ANN-100 trouble condition, enable the ANN-BUS and program the address corresponding to the address set on the ANN-100 at the FACP.

ANN-S/PG Serial/Parallel Interface Module

■ Installation

1. Ensure that all power (AC and DC) has been removed from the FACP.
2. Connect the ANN-S/PG to the FACP as illustrated in Figure 2.21

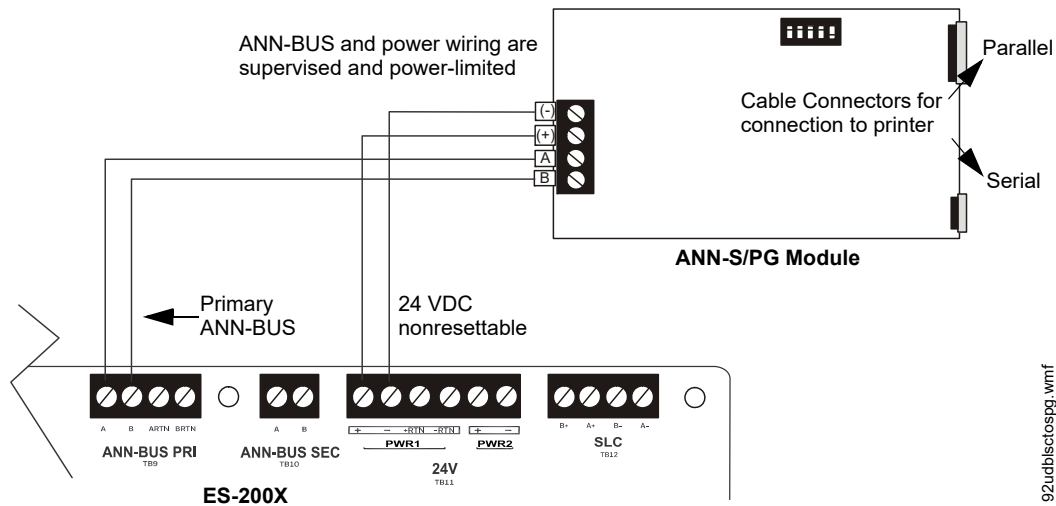


Figure 2.21 ANN-S/PG Connection to FACP

3. Using the DIP switches on the back of the ANN-S/PG module, assign an ID number (address) to the module.
4. Select the address and configuration options for the ANN-S/PG module as described in the Programming section of this manual (refer to “ANN-BUS Setup” on page 93).
Note that the Auto-configure feature allows the programmer to quickly bring all installed ANN-BUS modules online (refer to “Auto-Configure” on page 100).
5. Connect a printer to the ANN-S/PG Parallel or Serial connectors (refer to Figure 2.21). Only one printer can be connected.

■ Specifications

- Operating Voltage: 24 VDC
- Current (Alarm and Standby): 45 mA
- Ambient Temperature: 32°F to 120°F (0°C to 49°C)
- Max. Wiring Distance from FACP: 6,000 ft. (1,800 m)
- Mounting: Surface
- Dimensions: 6"W x 7-3/4"H x 1-7/16"D (15.2 cm W x 19.7 cm H x 3.7 cm D)
- For indoor use in a dry location only

■ Connecting a PRN-7 Printer

Remote printers require a primary AC power source. If required for the fire alarm system configuration (for example, a Proprietary Fire Alarm System), a remote printer requires a secondary power source (battery backup). Since a secondary power source is not provided as a standard feature, a separate UL-listed Uninterruptible Power Supply (UPS) should be used. The building emergency power supply may be used, as long as it meets the power continuity requirements of NFPA 72. Refer to NFPA 72 for further details.

Connect the remote printer to the FACP via the ANN-S/PG module using a standard DB-9 cable. One end of the cable will plug into the DB-9 connector on the PRN-7 printer and the other end plugs into the serial connector on the ANN-S/PG module.

■ Setting Printer Options

Refer to the documentation supplied with the PRN-7 printer for instructions on using the printer menu controls. Set the printer options (under the menu area) as shown in the following table:

Option	Setting	Option	Setting
Font	HS Draft	CPI	10CPI
LPI	6 LPI	Skip	0.5
ESC Character	ESC	Emulate	LQ-2550
Bidirectional Copy	ON	I/O	
CG-TAB	Graphic	Buffer	64K
Country	E-US ASCII	Serial	
Auto CR	OFF	Baud	9600 or 2400
Color Option	Not Installed	Format	7 Bit, Even, 1 Stop
Formien		Protocol	XON/XOFF
Lines	6LPI=60	Character Set	Standard
Standard	Exec 10.5	Sl.Zero	On
Barcode	Off	Auto LF	On
Barcode	Unsecured		

Table 2.1 PRN-7 Setup Options

■ PRN-6F Printer Installation

When connected to the FACP via the ANN-S/PG module, the PRN-6F prints the status changes within the control panel and time-stamps the printout with the time of day and date that the event occurred. It provides 80 columns of data on standard 9" x 11" tractor-feed paper. This section contains information on connecting a printer to the control panel and setting the printer options.

Connecting PRN-6F Printer

Remote printers require a primary AC power source. If required for the fire alarm system configuration (for example, a Proprietary Fire Alarm System), a remote printer requires a secondary power source (battery backup). Since a secondary power source is not provided as a standard feature, a separate UL-listed Uninterruptible Power Supply (UPS) should be used. The building emergency power supply may be used, as long as it meets the power continuity requirements of NFPA 72. Refer to NFPA 72 for further details.

Connect the remote printer to the FACP via the ANN-S/PG module using a standard DB-25 cable. One end of the cable will plug into the DB-25 connector on the PRN printer and the other end plugs into the parallel connector on the ANN-S/PG module. Note that the 9-pin DB-9 port on the ANN-S/PG is used to connect a serial printer. The 25-pin port is used for a Centronics parallel printer cable. Connect either a serial or parallel printer, but not both at the same time.

Setting Printer Options

Refer to the documentation supplied with the PRN-6F printer for instructions on using the printer menu controls. Set the printer options (under the menu area) as shown in the following table:

Option	Setting	Option	Setting
Font	HS Draft	CPI	10CPI
LPI	6 LPI	Skip	0.5
ESC Character	ESC	Emulate	Epson FX-850
Bidirectional Copy	ON	I/O	
CG-TAB	Graphic	Buffer	40K
Country	E-US ASCII	Serial	
Auto CR	OFF	Baud	9600 or 2400
Color Option	Not Installed	Format	7 Bit, Even, 1 Stop
Formien		Protocol	XON/XOFF
Lines	6LPI=60	Character Set	Standard
Standard	Exec 10.5	Sl.Zero	On
		Auto LF	On
		PAPER	
		BIN 1	12/72"
		BIN 2	12/72"
		SINGLE	12/72"
		PUSH TRA	12/72"
		PULL TRA	12/72"
		PAP ROLL	12/72"

Table 2.2 PRN -6 Setup Options

ANN-I/O LED Driver Module

■ ANN-I/O Board Layout

Figure 2.22 illustrates the ANN-I/O board showing locations of screw terminals for connection to the FACP, pin connectors for connecting LEDs and the DIP switch for selecting the ANN-BUS ID number.

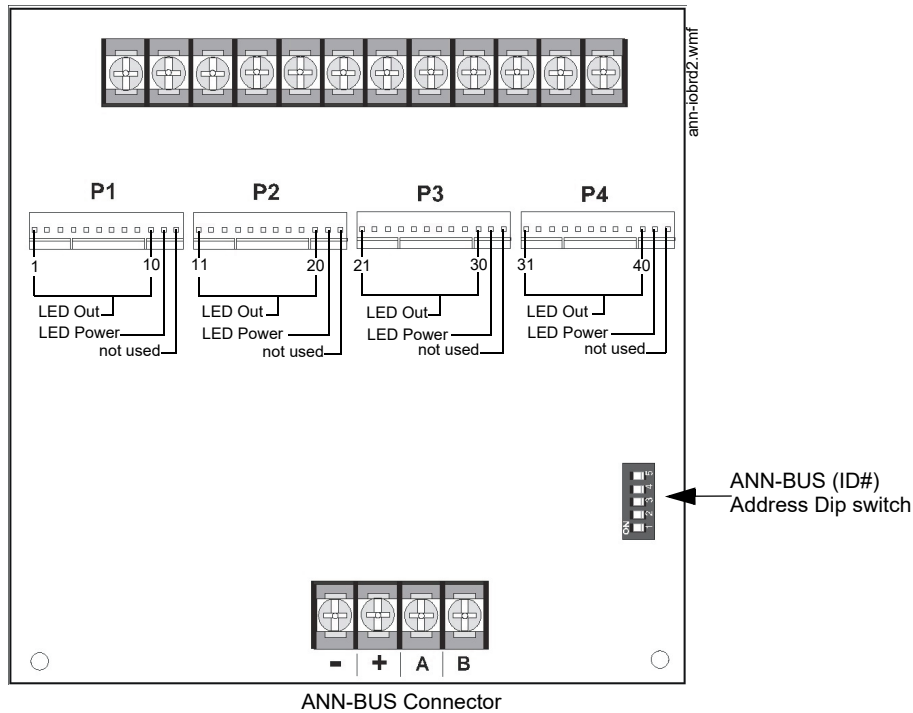


Figure 2.22 ANN-I/O Board Layout

■ Specifications

- Max. ANN-BUS Voltage: 24 VDC
- Max. Current:
 - ✓ Alarm: 200 mA
 - ✓ Standby: 35 mA
 - ✓ Each LED: 10 mA
- Operating Temperature: 32°F to 120°F (0°C to 49°C)
- For indoor use in a dry location only

■ ANN-I/O Connection to FACP

The ANN-I/O connects to the FACP via the ANN-BUS as illustrated in Figure 2.23. After the ANN-I/O is connected to the panel, it must be added to the system via FACP programming. Refer to the section titled “ANN-I/O Options” on page 94.

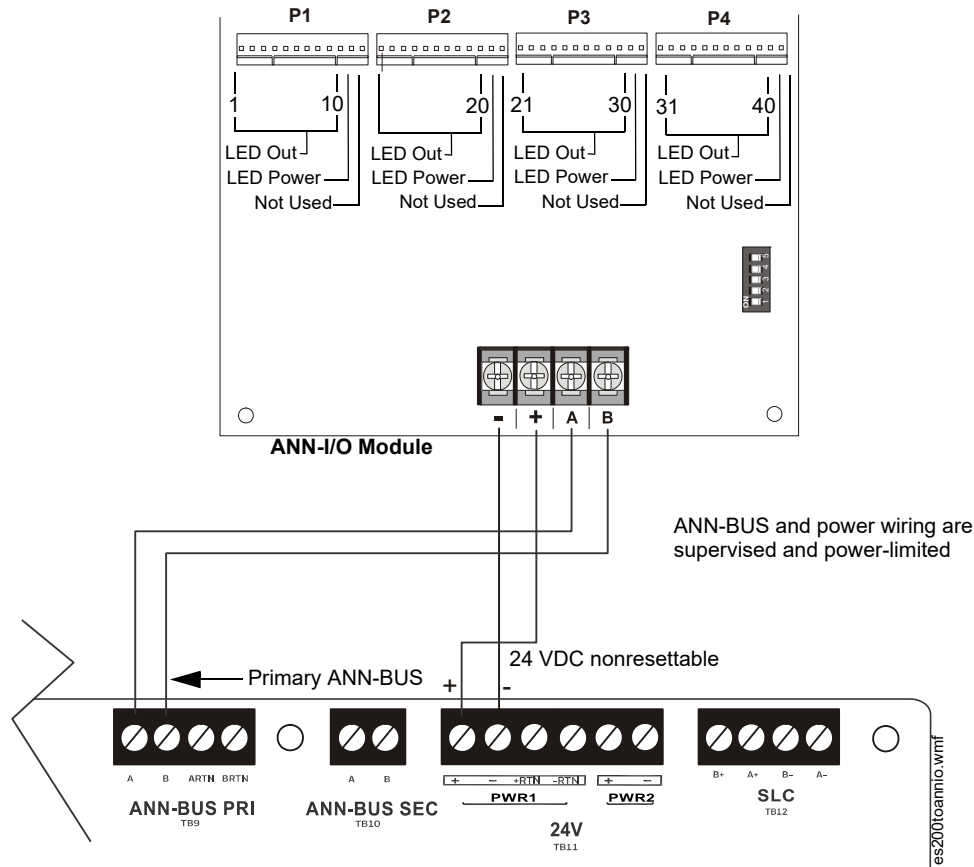


Figure 2.23 ANN-I/O Connection to FACP

■ ANN-I/O Module LED Wiring

There are four 12-pin connectors on the ANN-I/O module for connecting LEDs. Each set of 10 LEDs get their power from Pin 11 of the corresponding connector. Internal resistors are sized so that there is approximately 10 mA of current for each LED. No series resistors are required. LED outputs can be mapped to output circuits. Refer to the programming section titled “ANN-I/O Options” on page 94 of this manual.

The LEDs are wired as illustrated in Figure 2.24. Note that the illustration depicts only connectors P1 and P2. Wiring is identical for P3 (LEDs 21-30) and P4 (LEDs 31-40).

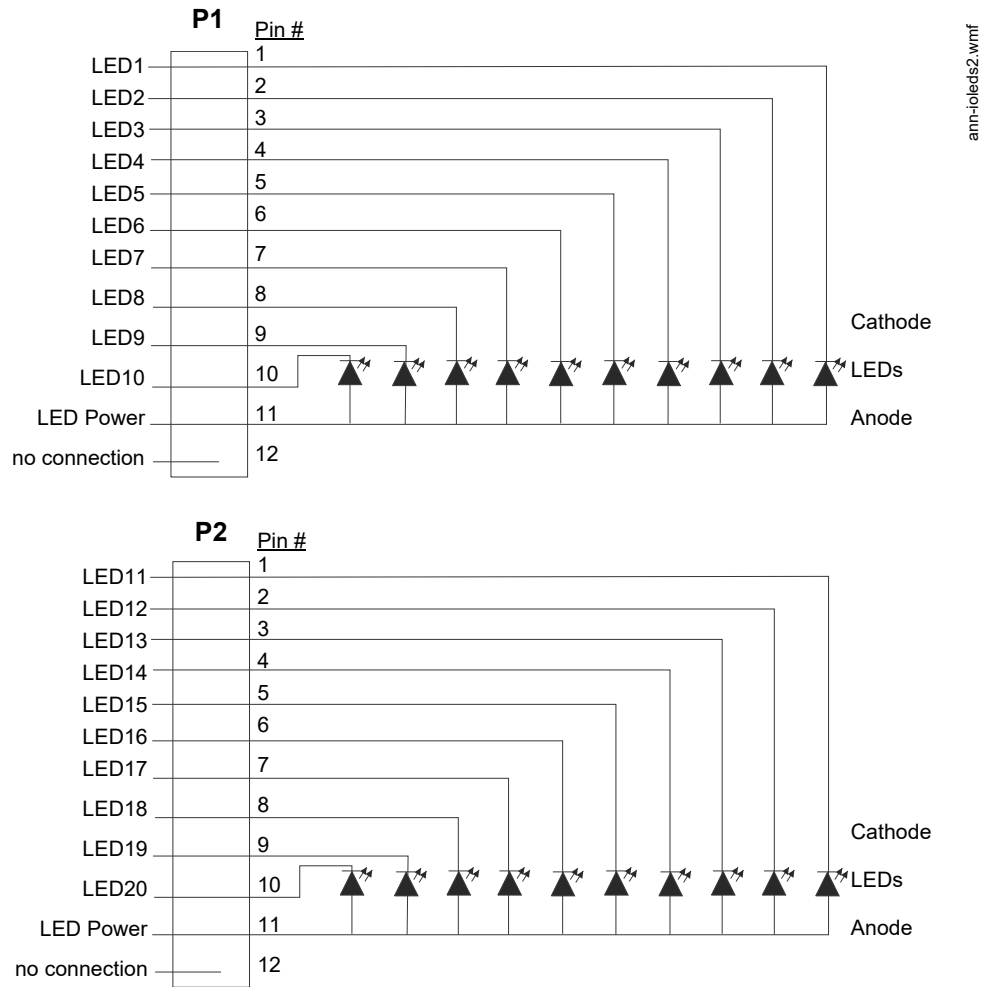


Figure 2.24 ANN-I/O LED Wiring

ANN-LED Annunciator Module

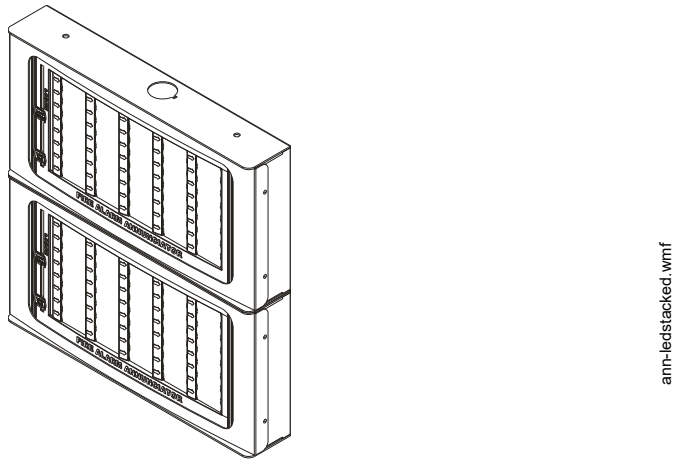


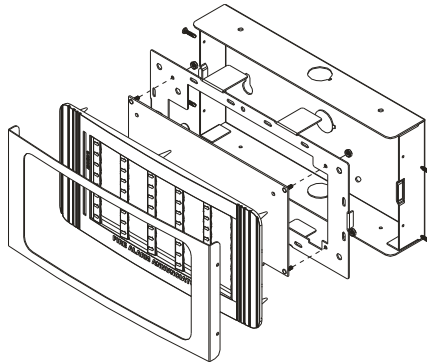
Figure 2.25 ANN-LEDs (shown in possible stacked configuration)

■ Specifications

- Max. ANN-BUS Voltage: 24 VDC
- Max. Current:
 - ✓ Alarm: 68 mA
 - ✓ Standby: 28 mA
- Operating Temperature: 32°F to 120°F (0°C to 49°C)
- For indoor use in a dry location only

■ Mounting/Installation

The ANN-LED Module is supplied with a metal backbox, mounting bracket, and cover. Refer to the *ANN-LED Installation Document #53032* for more information.



ann-led.wmf

Figure 2.26 Exploded View of ANN-LED

■ ANN-LED Board Layout and Connection to FACP

Figure 2.27 illustrates the ANN-LED board showing locations of screw terminals for connection to the FACP and the DIP switches for selecting the ANN-BUS ID number.

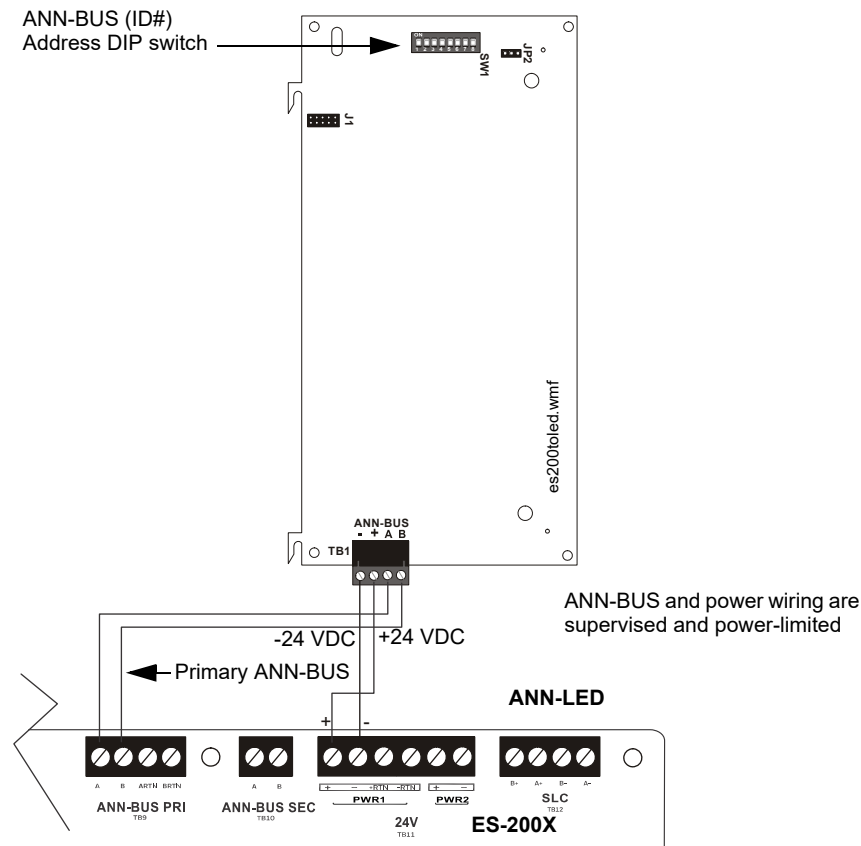


Figure 2.27 ANN-LED Board Layout and Connection to FACP

ANN-RLY Annunciator Module

■ Specifications

- Operating Voltage: 24 VDC
- Max. Current:
 - ✓ Alarm: 75 mA
 - ✓ Standby: 15 mA
- Operating Temperature: 32°F to 120°F (0°C to 49°C)
- For indoor use in a dry location only

■ Mounting/Installation

The ANN-RLY relay module can be mounted inside the FACP main circuit board chassis or inside the ROME Series enclosure. Refer to the *ANN-RLY Installation Document #53033* for instructions on chassis mounting or to the *ROME Series Installation Document #53530* for mounting in the separate backbox.

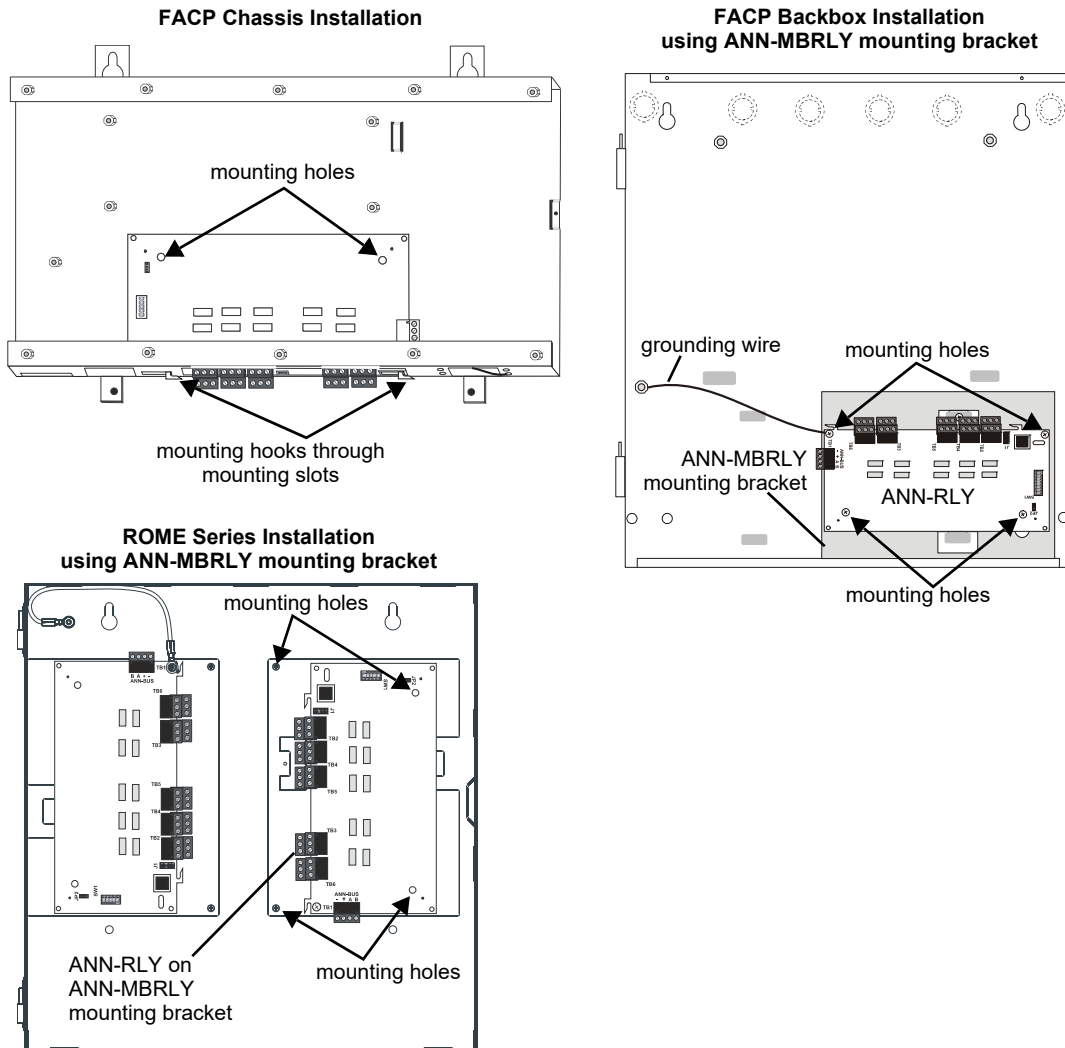


Figure 2.28 ANN-RLY Mounting Options

■ ANN-RLY Board Layout and Connection to FACP

Figure 2.29 illustrates the ANN-RLY board showing locations of screw terminals for connection to the FACP and the DIP switches for selecting the ANN-BUS ID number.

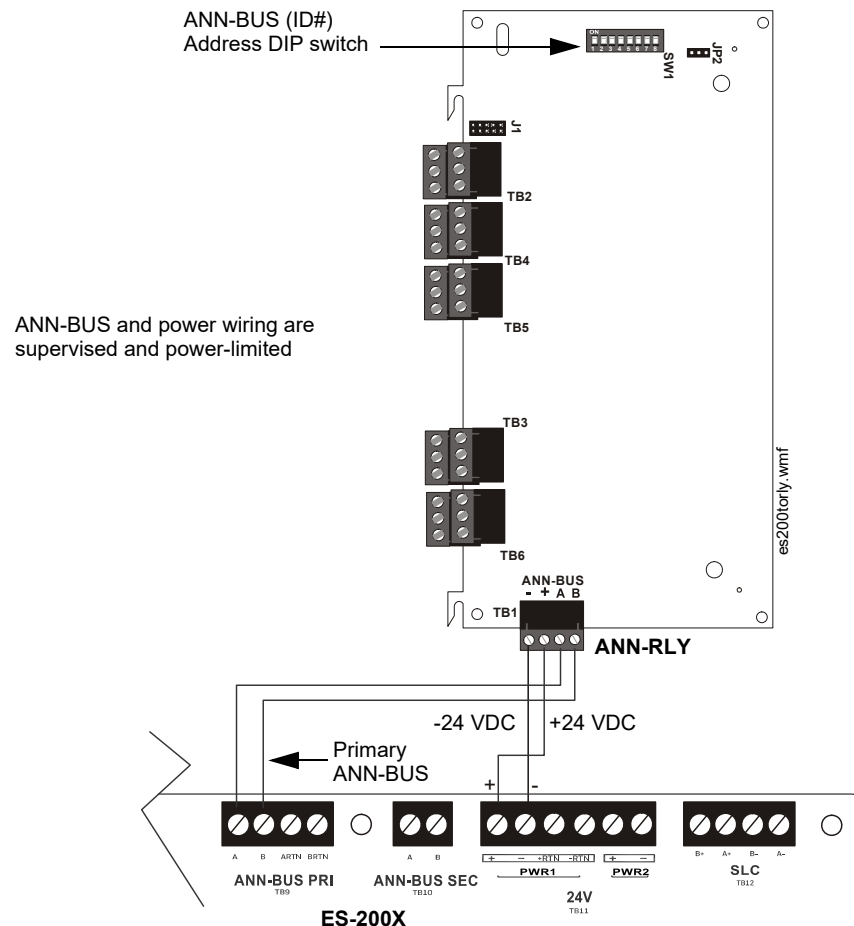


Figure 2.29 ANN-RLY Board Layout and Connection to FACP

2.8.5 Printer

A parallel printer may be connected to the FACP using the optional ANN-S/PG Serial/Parallel Interface Module. The printer can be used to provide a hard-copy printout of real-time events, history file and walktest data. Installation of the device requires panel programming to allow the FACP to communicate with the device. Refer to “ANN-S/PG Serial/Parallel Interface Module” on page 19 for installation details. Refer to “ANN-BUS Setup” on page 93 for programming information.



CAUTION: POSSIBLE EQUIPMENT DAMAGE

DO NOT CONNECT A PRINTER OR PC TO THE ES-200X FACP IF A GROUND FAULT (ZERO IMPEDANCE TO GROUND) EXISTS ON THE CONTROL PANEL. CIRCUIT DAMAGE MAY RESULT. REMOVE ALL POWER (PRIMARY AND SECONDARY) BEFORE INSTALLING OR REMOVING ANY WIRING.

Printer Configuration

Refer to the documentation supplied with the printer for pertinent information about printer setup. Set the printer's options as listed in the following table:

COMMUNICATION SETUP	
BUFFER:	LARGE
DATA BITS:	7
PARITY:	EVEN
STOP BIT:	1 STOP
BAUD RATE:	2400/4800/9600
AUTOMATIC LINE FEED	NO
AUTOMATIC CARRIAGE RETURN	NO

Table 2.3 Printer Options

2.8.6 ECC-FFT Firefighter Telephone

The ECC-FFT connects from TB11 (non-resettable aux power) on the FACP to the DC Power input on the ECC-FFT board.

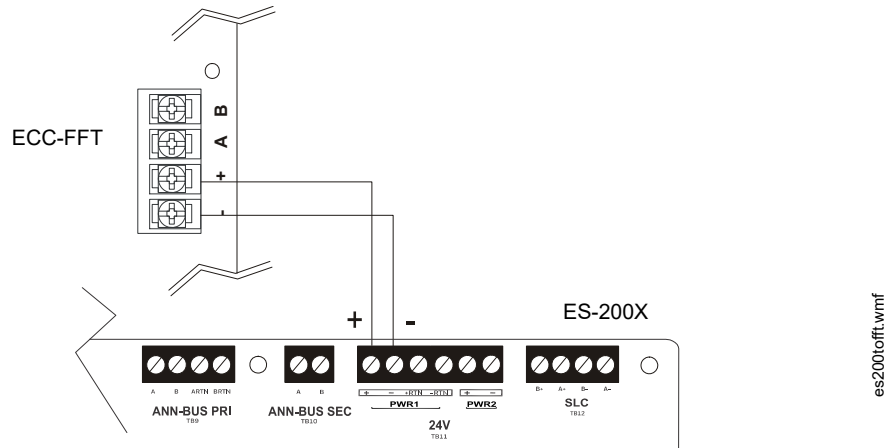


Figure 2.30 ECC-FFT Connections

2.8.7 W-GATE(A) Wireless Gateway

The W-GATE(A) connects to the FACP's SLC connection at TB10. The W-GATE(A) can be powered by either the SLC or an external 24 VDC power source. A maximum of 100 wireless devices can be used in the system. Refer to the *SWIFT® Smart Wireless Integrated Fire Technology Manual* for more information.

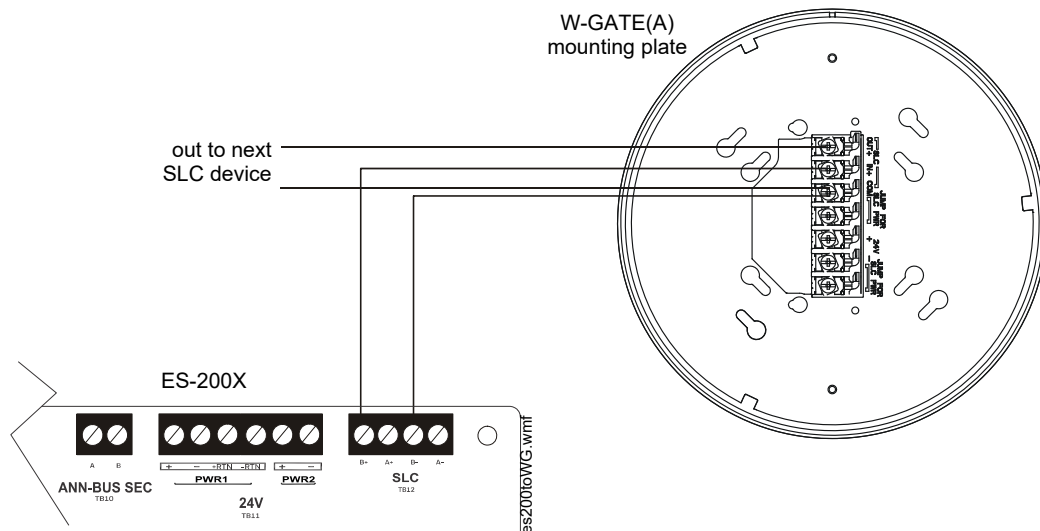


Figure 2.31 W-GATE(A) SLC Connection

2.9 Automatic Audio Panel Control

The FACP annunciator bus serves as the “FACP Data Bus” to the ECC-50/100 or ACC-25/50 audio system. User programming is required to set up the operation of the audio system. To set up the annunciator bus, refer to Section 2.8.4 on page 33. The annunciator protocol, ANN-Bus, must be selected and enabled.

The FACP will automatically detect the audio system connection during annunciator “auto-configuration”. No ANN-Bus address selection is necessary at the FACP.

Once the FACP can communicate with the audio system, FACP zones Z33 through Z56 become automatically dedicated as output zones for speaker circuits 1 through 24 respectively. FACP zone Z32 is dedicated to turn on all speaker circuits. FACP programming allows association between any addressable SLC input device (module, detectors) with any of the speaker circuits. In addition 1 of 14 messages (1 of 5 using the legacy ACC panel) can be generated over the selected speaker circuit. Any fault in the ECC-50/100 audio system is sent to the FACP via the FACP Data Bus and is indicated as an annunciator fault on the FACP display. A fault at the ACC-25/50ZS Series panel will cause the FACP to indicate a System Trouble and the display will indicate a Voice Evac Fault.

For speaker circuit mapping and audio message assignment, refer to “Zone Message” on page 73. Also, refer to “Programmed Activation by FACP” in chapter 3 of the *ECC-50/100 Instruction Manual* (Doc. LS10001-000FL-E) or Appendix D, “Programmed Activation by FACP” in the *ACC-25/50ZS Series Instruction Manual* (Doc. 51889).

Connect the ECC-50/100 panel's FACP Data Bus at TB13 to TB9 on the ES-200X FACP.

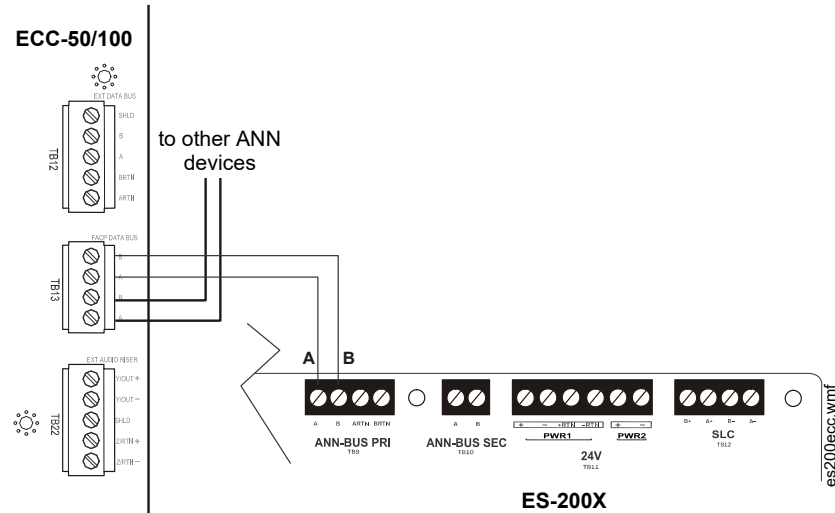


Figure 2.32 FACP Connection to ECC-50/100 Series Audio Panel

The only connection between the FACP and ACC-25/50ZS Series audio panel is a pair of communication wires connected between the A(+)/B(-) terminals on TB9 of the FACP and TB1 terminals 2 & 3 of the ACC-ZPMK module on the audio panel.

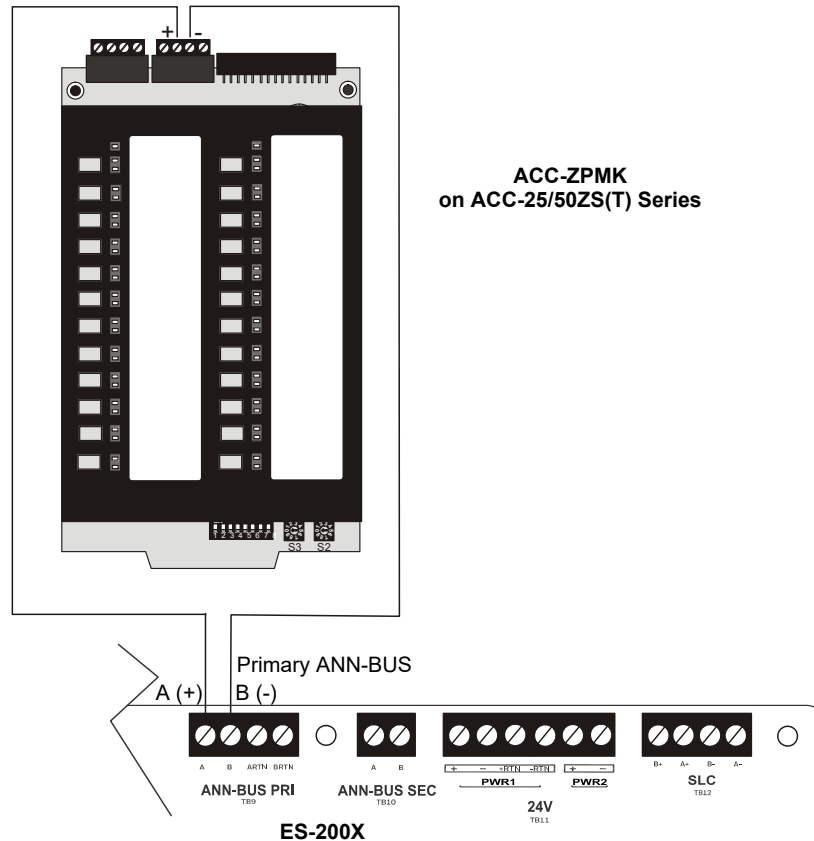


Figure 2.33 FACP Connection to ACC-25/50ZS(T) Series Audio Panel (Legacy)

Section 3: Programming

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION AND OTHER INVOLVED PARTIES			
This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, Equipment for Fire Signal Receiving Centers and Systems: ULC-S559, and Standard for Control Units for Fire Alarm Systems: ULC-S527, certain programming features or options must be limited to specific values or not used at all as indicated below:			
Program feature or option	Permitted in UL864/ ULC-S527 /ULC-S559? (Y/N)	Possible settings	Settings permitted in UL864 / ULC-S527/ULC-S559
Trouble Call Limit	N	Refer to "Trouble Report Limit (Dialer Runaway Prevention)" on page 90. - Trouble Call Limit = 0 (factory default): unlimited calling to Central Station for any trouble condition - Trouble Call Limit = 1 - 99: limits call for each unique trouble to from 1 to 99 within a 24 hour period	Trouble Call Limit = 0 for unlimited Central Station trouble calls
AC Fail Delay Timer	Y	Refer to "AC Loss Delay" on page 77. 0-23 hours	1-3 hours
Remote Download	Y	Refer to "FS-Tools Upload/Download" on page 126. - Remote Download - Proprietary No - Remote Download - Proprietary Yes	Remote Download <i>Proprietary</i> Yes for Proprietary system intended to protect only contiguous properties
Control Module Delay	N	Refer to "Control Module Delay" on page 78. - Control Module Delay = 0 (factory default): no delay in Control Module activation - Control Module Delay = 1-180: delays control module activation from 1-180 seconds	Control Module Delay = 0 for no delay in control module activation
Cell/Ethernet Supervision Options	Y	Refer to "Supervision Settings" on page 89 and page 90 - NFPA 2010 Dual Path: Supervision Interval: 24 Hours - NFPA 2010 Sole Path: Supervision Interval: 5 min - NFPA 2013 Dual Path: Supervision Interval: 6 Hours - NFPA 2013 Sole Path: Supervision Interval: 1 Hour	Any NFPA setting is permitted per UL864. For ULC applications, the supervision interval for panels communicating in Sole Path (Cellular-only or Ethernet-only method) is fixed at 3 minutes and cannot be changed, regardless of setting option, when the Canadian Option is enabled.
Trouble Reminder (when used with SWIFT wireless devices)	Y	Refer to "Trouble Reminder" on page 83 4 hours 24 hours	4 hours
4XTMF Supervision	Y	Refer to "4XTMF Supervision" on page 84. - Enabled Yes - Enabled No	Enabled Yes when the 4XTMF module is installed.
Supervised Phone Line	Y	Refer to "Supervised Phone Line" on page 86. - Supervised Yes - Supervised No	Supervised Yes if transmission method is POTS.
Test Time Interval	Y	Refer to "Test Time Interval" on page 88. 24 hours 12 hours 8 hours 6 hours 4 hours 3 hours 2 hours 1 hour	6 hours 4 hours 3 hours 2 hours 1 hour
Annunciator Lock Enable	Y	Refer to "Lock Enable Option" on page 101. - Enabled Yes - Enabled No	Enabled Yes
Canadian Option	N (UL864) Y (ULC-S527) Y (ULC-S559)	Refer to "Canadian Option" on page 82. - On - Off	Off (UL864) On (ULC-S527) On (ULC-S559)



NOTE: Two-stage operation cannot be used at the same time as in-suite silence feature.

3.1 User Programming

The ES-200X is completely field programmable and requires no special software skills. *While programming the ES-200X, the fire protection capabilities of the control panel are enabled.*

Site-specific programming may be accomplished in any of the following ways:

- **Autoprogramming Feature** - This is a convenient method for quickly bringing the FACP addressable SLC devices on-line without the necessity of programming each device individually. Refer to “Autoprogram” on page 55 for a detailed description of Autoprogramming.
- Manual programming or editing, using the FACP keypad
- Remote Programming and Editing Feature - allows creation and editing of site-specific custom programs using a Windows-based computer and Ethernet connection. For programs requiring a large amount of data entry, this method may be preferred. The FS-Tools programming utility can be downloaded from www.firelite.com for this purpose.
- Local Programming and Editing Feature - allows creation and editing of site-specific custom programs using a Windows-based computer and the FACP USB connection. For programs requiring a large amount of data entry, this method may be preferred. The FS-Tools programming utility can be downloaded from www.firelite.com for this purpose.

3.2 Programming Screens Description

The options available when the *Enter* key is pressed are: Read Status Mode and Login. The Read Status and Login options have multiple functions or features which may be chosen. To view all of the choices, it is necessary that the programmer scroll through a number of additional *subscreens*. These selections are displayed on multiple screens to make them more readable for the programmer. Refer to “Master Programming Level” on page 54, for additional information on the various screens.

The title of the main option screen will always be displayed at the top of the subscreens for the programmer’s convenience. If additional subscreens exist, an Up or Down arrow will be displayed in the upper right corner of the screen being viewed. The programmer can then press the keypad Up or Down arrow key to view the new subscreen. To select one of the choices in a screen, the programmer presses the keypad numerical key corresponding to the desired choice.

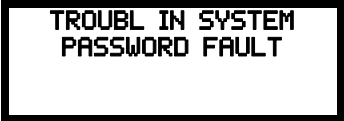
Note that subscreens may also have multiple options which require viewing more than one screen. The same process, as detailed in the previous paragraphs, is followed to view all option choices.

The programmer can exit any mode by repeatedly pressing the keypad *ESC* (Escape) key until the display reads System Normal. *Note that the data which is entered during Programming mode is not saved until the programmer exits this mode by repeatedly pressing the ‘ESC’ key. If the Reset key is pressed or power is lost before exiting Programming mode, all data just entered will be lost.*

3.3 Initial Power-up

The following sections describe the initial programming procedures for a new system. The same procedures are used to modify programming in an existing system.

After completing the wiring of addressable devices to the SLC, apply power to the control panel. Since the addressable devices have not yet been programmed into the FACP, their LEDs will not flash, and the following trouble message will be displayed.



TROUBL IN SYSTEM
PASSWORD FAULT

3.4 Users and Passwords

After initial power-up, the ES-200X requires a password change and user account setup before programming. After pressing *Enter*, and 2 for panel login, a screen will prompt for the type of access account, Administrator or User. An administrator has the ability to modify user accounts and view the cybersecurity log. The User account has access to panel programming. Under the user account there are two programming levels:

- User Master Program Level is used for programming panel specific data relating to device types, zoning, messages, control panel functions, etc.
- User Maintenance Program Level is used by a qualified operator to access features such as Disable/Enable, View and Clear History, Walktest and System Time Change.

Using the Administrator login, the default password must be changed to a new, unique password. Refer to the section below. There is a maximum of two administrator logins available. After the administrator account is set up, User account(s) must be created. Only a User account has the ability to program the control panel. There is a maximum of ten (10) User accounts available.

3.4.1 Administrator Role

Password Change-Administrator

The factory set password must be changed to clear the Password Fault from the panel. Pressing the *Enter* key on home screen will cause the following screen to be displayed:

```
1=READ STATUS MODE
2=LOGIN
```

Press 2 to login to the panel. The following screen will appear.

```
SELECT ACCOUNT
1=ADMINISTRATORS
2=USERS
3=NOT USED
```

Select 1 for Administrators.

```
SELECT ADMIN
1=ADMIN 1
2=ADMIN 2
```

Select 1 for Administrator 1.

```
LOGIN FOR ADMIN 1
ENTER PASSWORD
*****
```

Enter the default eight-digit password, 00000000. Note that the passwords will not be displayed on LCD annunciators.

The following screen will appear when the password is entered:

```
ADMIN 1 ACCOUNT
1=MODIFY ACCOUNTS
2=VIEW CYBER SEC LOG
3=NOT USED
```

Enter Password Screen

Select 1 to modify an account.

```
MODIFY ACCOUNTS
1=ADMINISTRATORS
2=USERS
3=NOT USED
```

Select 1 to modify an Administrator account.

```
MODIFY ADMIN
1=ADMIN 1    ENABLED
2=ADMIN 2    DISABLED
```

Select 1 to modify the Administrator 1 account.

```
MODIFY ADMIN 1
1=NOT USED
2=NOT USED
3=PASSWORD
```

Press 3 to change the default password. The default password, 00000000, must be changed to clear the Password Fault from the panel.

```
MODIFY ADMIN 1
ENTER PASSWORDS
ADMIN 1: *****
NEW: *****
```


A flashing cursor will appear in the center of the display. Enter the default password, 00000000. Then, enter a new, valid eight digit password in the second line. Once the last digit is entered, the following screen will be displayed:

```

MODIFY ADMIN 1
VERIFY PASSWORD

NEW: *****
  
```

Re-enter the new password to verify the change. A message will appear showing the password has been successfully changed. The administrator may then set up a second admin account following the last four steps for Admin 2.

Password Change- User

Once the default password has been change, the administrator must create a user in the account for system programming. Pressing the *Enter* key on home screen will cause the following screen to be displayed:

```

1=READ STATUS MODE
2=LOGIN
  
```

Press 2 to login to the panel. The following screen will appear.

```

SELECT ACCOUNT
1=ADMINISTRATORS
2=USERS
3=NOT USED
  
```

Select 1 for Administrators.

```

SELECT ADMIN
1=ADMIN 1
2=ADMIN 2
  
```

Select 1 for Administrator 1.

```

LOGIN FOR ADMIN 1
ENTER PASSWORD
*****
  
```

Enter the eight-digit password. *Note that the passwords will not be displayed on LCD annunciators.* The following screen will appear when the password is entered:

```

ADMIN 1 ACCOUNT
1=MODIFY ACCOUNTS
2=VIEW CYBER SEC LOG
3=NOT USED
  
```

Select 1 to modify an account.

```

MODIFY ACCOUNTS
1=ADMINISTRATORS
2=USERS
3=NOT USED
  
```

Select 2 to modify a User account.

```

MODIFY USER
1=USER 1
2=USER 2
3=USER 3
  
```

Select the desired User account. There are ten User accounts available, where "X" represents the user account chosen.

```

MODIFY USER X
1=ENABLED      NO
2=ROLE         MASTER
3=PASSWORD
  
```

Select *1* to enable the User account. Each press of the *1* key will toggle the screen between Enabled *Yes* and Enabled *No*. Press *3* to assign a password. *Note that if a user is disabled at any time, the password will need to be reassigned.*

```

MODIFY USER X
ENTER PASSWORDS
ADMIN X: *****
NEW: *****

```

A flashing cursor will appear in the center of the display. The administrator must re-enter their password. Then, enter the new 8-digit password for the User account. When the last digit is entered, the following screen will be displayed:

```

MODIFY USER X
VERIFY PASSWORD

NEW: *****

```

Re-enter the new User password to verify the change. A message will appear showing the password has been successfully changed.

■ Invalid Password

If a password is entered incorrectly or is not a valid password, the panel will display either of the following messages.

```

MODIFY ----- X
----- X PASSWORD
IS INCORRECT
PRESS ENTER OR ESC

```

```

MODIFY ----- X
NEW PASSWORD CANNOT
BE ALL THE SAME CHAR
PRESS ENTER OR ESC

```

The programmer may hit the *Escape* or *Enter* key and re-enter the password correctly.

■ Incorrect Password/Timeout

An administrator has two attempts to enter the correct password. If the password is incorrect after the two attempts, the administrator must wait 60 seconds for another attempt. However, if the password has been forgotten, record the 20-character code and contact Fire•Lite Technical Services. After proper authentication, the password will be supplied to the administrator.

```

INVALID PASSWORD

*****
PRESS ENTER OR ESC

```

Assign Role

The Administrator has permissions to assign the programming roles of the User accounts. The Master Program Level is used for programming panel specific data relating to device types, zoning, messages, control panel functions, etc. The Maintenance Program Level is used by a qualified operator to access features such as Disable/Enable, View and Clear History, Walktest and System Time Change.

To assign roles to specific users, press the *Enter* key on the home screen. The following screen will display:

```

1=READ STATUS MODE
2=LOGIN

```

Press *2* to login to the panel. The following screen will appear.

```

SELECT ACCOUNT
1=ADMINISTRATORS
2=USERS
3=NOT USED

```

Select *1* for Administrators.

```

SELECT ADMIN
1=ADMIN 1
2=ADMIN 2

```

Select the appropriate administrator.

```

LOGIN FOR ADMIN X
ENTER PASSWORD
*****

```

Enter the eight-digit password. *Note that the passwords will not be displayed on LCD annunciators.*

The following screen will appear when the password is entered:

```
ADMIN X ACCOUNT
1=MODIFY ACCOUNTS
2=VIEW CYBER SEC LOG
3=NOT USED
```

Select 1 to modify an account.

```
MODIFY ACCOUNTS
1=ADMINISTRATORS
2=USERS
3=NOT USED
```

Select 2 to modify a User account.

```
MODIFY USER
1=USER 1
2=USER 2
3=USER 3
```

Select the desired User account. There are ten User accounts available.

```
MODIFY USER X
1=ENABLED NO
2=ROLE MASTER
3=PASSWORD
```

Select 2 to modify the User's role.

```
MODIFY USER X
ENTER NEW ROLE
1=MASTER
2=MAINTENANCE
```

Press 1 to select Master level for programming panel specific data relating to device types, zoning, messages, control panel functions, etc. Press 2 to select Maintenance level for access to features such as Disable/Enable, View and Clear History, Walktest, and System Time Change.

3.4.2 User Role

There are two programming levels which will access the Programming screens as indicated in the following sections. From either of the screens, access to specific system and device features or programming may be obtained. All user programming entries are stored in nonvolatile memory. The Master Program Level is used for programming panel specific data relating to device types, zoning, messages, control panel functions, etc. The Maintenance Program Level is used by a qualified operator to access features such as Disable/Enable, View and Clear History, Walktest and System Time Change. A user has the ability to change their administrator-assigned password. Refer to Section 3.5.9 on page 102 for instructions.

3.5 Master Programming Level

When the Master Program Level password is entered, the control panel can enter user Programming mode. In this mode, the piezo sounder remains off, the trouble relay is activated and the system Trouble LED flashes until Programming mode is exited. An Administrative user must have enabled the User in password setup and granted the User access to programming at the Master level. To access user programming mode at the master level, press the *Enter* key. The LCD will display the following.

```
1=READ STATUS MODE
2=LOGIN
```

Select 2 to login to the panel.

```
SELECT ACCOUNT
1=ADMINISTRATORS
2=USERS
3=NOT USED
```

Select 2 to login as a User.

```
SELECT USER
1=USER 1
2=USER 2
3=USER 3
```

Select the appropriate User login ID:



Enter the User's **Master** level password. Only a user with master level programming rights can access panel programming. The following screen will appear:



Select **1** to access panel programming mode.



Programming Screen #1

Pressing the down arrow will display more programming options:



Programming Screen #2



Programming Screen #3



Programming Screen #4

3.5.1 Autoprogram



Programming Screen #1

Pressing **1** while viewing Programming Screen #1, will select the Autoprogram option, which prompts the control panel to poll all devices installed on the SLC loop. The primary purpose of autoprogramming is to allow the installer a fast and easy way to bring the system on-line as quickly as possible. The first time the system is powered-up, it should be autoprogrammed.

If the system is already programmed and Autoprogram is initiated, the system will only add default values for newly installed devices.

When Autoprogram is selected, the control panel will begin autoprogramming the system by communicating with each addressable device installed on the SLC loop. While autoprogramming, the panel will display the following:



Autoprogram Progress Screen

When Autoprogramming is completed, the control panel will display the type and quantity of each device installed on the SLC loop similar to the following display:



Autoprogram Result Screen #1

In the preceding example, the display indicates that the SLC Loop has 55 addressable detectors, 35 monitor modules and 30 control modules installed.

Pressing the **ESC** key will return the display to Programming Screen #1.

3.5.2 Point Program

PROGRAMMING
1=AUTO PROGRAM
2=POINT PROGRAM
3=ZONE SETUP
Programming Screen #1

The Point Program option allows the programmer to add a new addressable device to the SLC loop, delete an existing device from the loop or change the programming for an existing device. Pressing 2, while viewing Programming Screen #1, will select the Point Program option and display the following screens:

POINT PROGRAM
SELECT TYPE
1=DETECTOR
2=MODULE

Point Program Screen

Detector Programming

Pressing 1, while viewing the Point Program Screen, will allow the programmer to add, delete or change the programming of an addressable detector. The following screen will be displayed by the control panel:

DETECTOR
1=ADD
2=DELETE
3=EDIT

Detector Screen

■ Add Detector

Pressing 1 while viewing the Detector Screen will display the following screen which allows the programmer to add a new detector address to programming:

ADD DETECTOR
ENTER DETECTOR#

Add Detector Screen

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit detector address, such as 005. The screen will then ask whether the detector being added is wireless.

ADD DETECTOR
1=DETECTOR
2=DETECTOR:WIRELESS

Add Detector Screen

Select 1 for wired detector or 2 for wireless detector. When the choice is selected, the following screen will be displayed:

DETECTOR TYPE
1=SMOKE(PHOTO)
2=USER-DEFINED-1
3=SMOKE(ION)

through

DETECTOR TYPE
1=PHOTO CO
2=USED-DEFINED-13

Press the down arrow key to view additional choices. Press the number corresponding to the desired selection to program that type to the newly added detector. If the selected detector is a multi-criteria Photo (Fire)/CO detector, select 1 for *Fire CO*. When the type has been selected, the following screen will be displayed:

ADD DETECTOR
DETECTOR# 005
IS ADDED



NOTE: The system *must* be monitored by a Supervising Station when using carbon monoxide detection per The Requirements for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment, NFPA 720.

The programmer can continue adding detectors by pressing the *ESC* key which will return the display to the Add Detector Screen.

■ Delete Detector

```

DETECTOR
1=ADD
2=DELETE
3=EDIT

```

Detector Screen

Pressing 2 in the Detector Screen will display the Delete Detector Screen which allows the programmer to delete a specific detector:

```

DELETE DETECTOR
ENTER DETECTOR#
***

```

Delete Detector Screen

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit detector address, such as 005. When the last digit is keyed-in, the following screen will be displayed:

```

DELETE DETECTOR
DETECTOR#      005
IS DELETED

```

The programmer can continue deleting detectors by pressing the *ESC* key which will return the display to the Delete Detector Screen.

■ Edit Detector

The programmer can change a detectors existing or factory default programming by pressing 3 in the Detector Screen. The following screen will be displayed:

```

EDIT DETECTOR
ENTER POINT ADDRESS
***

```

Edit Detector Screen

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit detector address, such as 017.

When the last digit is keyed-in, if the selected address has not been added to programming, a screen showing information about a device that is installed with a lower address, closest to the selected address, will be displayed.

If no detectors have been installed on the loop, the following will be displayed:

```

NO DETECTOR
INSTALLED

```

Edit Detector Screen #1

If the selected address has been added to programming, device summary screens will be displayed. These screens allow the programmer to view all device settings at a single glance. Pressing the left or right arrow keys will allow the programmer to rapidly view the devices at the previous or next address (if installed).

If a detector (such as a photoelectric detector) with the selected address is not physically installed on the SLC or has a communication fault but the address is programmed in the system, the following screen will be displayed:

```

TROUBL SMOKE<PHOTO>
<ADJ><NOUN>
          ZNNN
          *  1D017

```

Edit Detector Screen #1

If the selected address has been added to programming and a detector (such as a photoelectric detector) with the selected address is physically installed on the SLC and is communicating with the control panel, the following will be displayed:

```

NORMAL SMOKE <PHOTO>
<ADJ><NOUN>
          ZNNN
          *V * 1D017

```

Edit Detector Screen #1

To change the programming for the displayed detector, press the keypad 'down' arrow key to view the Edit Detector screens.

In the preceding example:

- ✓ Normal - indicates that the detector with the selected address is physically installed on the SLC and communicating with the control panel (enabled)
- ✓ <ADJ><NOUN> - represents the adjective and noun, which have been programmed, describing the location of the displayed device

- ✓ ZNNN - represents the first of five possible software zones that the detector is assigned to (NNN = the three digit zone number from 000 - 099)
- ✓ V or * - indicates whether or not alarm verification is enabled (V = alarm verification enabled and * = alarm verification disabled)
- ✓ W or * - indicates whether or not walktest is enabled (W = walktest enabled and * = walktest disabled)
- ✓ X or * - indicates whether or not the detector is wireless (X = wireless detector and * = wired detector)
- ✓ 1D017 - represents the Loop, Device type and Device address (1=SLC Loop, D=Detector and 017=Detector Address 017)

The following examples show the editing of a photoelectric smoke detector with address 017, located on the SLC loop:

EDIT DETECTOR 1D017 1=ENABLED YES 2=TYPE SMOKE<PHOTO> 3=VERIFICATION OFF	EDIT DETECTOR 1D017 1=WALKTEST YES 2=PAS NO 3=PRE-SIGNAL NO	EDIT DETECTOR 1D017 1=ZONE ASSIGNMENT 000 *** **
Edit Detector Screen #2	Edit Detector Screen #3	Edit Detector Screen #4
EDIT DETECTOR 1D017 WIRELESS NO 2=SOUNDER BASE	EDIT DETECTOR 1D017 1=NOUN/ADJECTIVE 2=DESCRIPTION *****	
Edit Detector Screen #5	Edit Detector Screen #6	

Enable/Disable Detector

EDIT DETECTOR
 1=ENABLED
 2=TYPE
 3=VERIFICATION

Edit Detector Screen #2

To Enable or Disable the detector, press the 1 key while viewing the Edit Detector Screen #2. Each press of the key will toggle the screen between *Enabled Yes* and *Enabled No*. If *Enabled No* is selected, the detector will not be polled by the control panel, preventing the detector from reporting alarms and troubles to the panel. The control panel will display the device type and address which has been disabled and will turn on the Trouble LED and Disable LED.

Type

EDIT DETECTOR
 1=ENABLED
 2=TYPE
 3=VERIFICATION

Edit Detector Screen #2

To select the type of detector being programmed, press the 2 key while viewing the Edit Detector Screen #2. This will cause the control panel to display the following Detector Type Screens:

DETECTOR TYPE
 1=SMOKE<PHOTO>
 2=USER-DEFINED-1
 3=SMOKE<ION>

through

DETECTOR TYPE
 1=PHOTO CO
 2=USER-DEFINED-13

Pressing the down arrow key will display additional detector types as indicated in the following table.

Detector Type	Action When Activated
Smoke Photo	Fire Alarm
User-Defined-1	same as previous (Smoke Photo)
Smoke (Ion)	Fire Alarm
User-Defined-2	same as previous (Smoke Ion)
Heat Detect	Fire Alarm
User-Defined-3	same as previous (Heat Detect)
Smoke Duct-P	Fire Alarm
User-Defined-4	same as previous (Smoke DuctP)
Photo w/Heat	Fire Alarm
User-Defined-5	same as previous (Photo w/Heat)
CO	CO Alarm
User-Defined-6	same as previous (CO Alarm)
Duct Superv	Supervisory, latching
User-Defined-7	same as previous (Superv DuctP)
Photo Super AR	Supervisory, nonlatching (works only in LiteSpeed)
User-Defined-8	same as previous (Photo-SupervAR)
CO Supervisory	Supervisory, latching
User-Defined-9	same as previous (CO Supervisory)
ADAPT	Fire Alarm
User-Defined-10	same as previous (ADAPT)
Beam	Fire Alarm
User-Defined-11	same as previous (Beam)

Fire/CO	response is programmable (Alarm, Supv, or None)
User-Defined-12	same as previous (Fire/CO)
Photo/CO	response is programmable (Alarm, Supv, or None)
User-Defined-13	same as previous (Photo/CO)

While viewing either Detector Type screen, select the type of detector being programmed by pressing the corresponding keypad number key. The display will return to Edit Detector Screen #2 and indicate the selection next to the Type option.



NOTE: If a detector is selected to be a DUCT SUPERV type, it will function like a supervisory point not a fire alarm point. The supervisory LED and supervisory relay will activate, not the fire alarm LED or alarm relay, if the detector senses smoke.

If the selected detector is a multi-criteria Fire/CO or Photo/CO detector, select 1 for *Fire CO* or *Photo CO* on the last screen and the following will display:

DETECTOR RESPONSE	
1=CO	ALARM
2=HEAT	ALARM
3=PHOTO	ALARM

In this screen, select the action performed by the detector when it is activated. Press 1 to change the response for the *Photo* element of the detector, 2 for the *Heat* element, and 3 for the *CO* element. The detector response will toggle between *Alarm* (sends an Alarm signal to the FACP), *Supervisory* (sends a Supervisory signal to the FACP, and *None* (no signal sent to the FACP).

Verification

EDIT DETECTOR
1=ENABLED
2=TYPE
3=VERIFICATION

Edit Detector Screen #2

Alarm verification is used to confirm that a smoke detector activation is a true alarm condition and not a false alarm. This feature is selected by pressing 3 while viewing the Edit Detector Screen #2 so that the display reads *Verification On*. Each time the 3 key is pressed, the display will toggle between *Verification On* and *Verification Off*. For a detailed description, refer to “Alarm Verification (None or One Minute)” on page 116.

Walktest

EDIT DETECTOR
1=WALKTEST
2=PAS
3=PRE-SIGNAL

Edit Detector Screen #3

The Walktest feature allows one person to test the system devices without the necessity of manually resetting the control panel after each device activation. To enable a device for the Walktest feature, press 1 while viewing the Edit Detector Screen #3 until the display reads *Walktest Yes*. Each press of the 1 key will cause the display to toggle between *Walktest Yes* and *Walktest No*. Refer to “Walktest” on page 117.

PAS

The PAS (Positive Alarm Sequence) option will program an automatic, addressable detector to delay panel activation (including alarm relay and communicator) for a period of 15 seconds plus a programmable time of up to 3 minutes. Zone 97, however, will activate immediately and may be used to connect a signaling device to indicate PAS activation (*do not use a Notification Appliance Circuit for this purpose*). To enable the PAS feature, press 2 while viewing the Edit Detector Screen #3 until the display reads *PAS Yes*. Each press of the 2 key will cause the display to toggle between *PAS Yes* and *PAS No*. Refer to “Positive Alarm Sequence” on page 115.

For example, if a detector with address 005 is to be configured for PAS operation:

- ✓ Select *PAS Yes* when editing the detector set to address 005
- ✓ Program the desired zone or zones to be activated by this detector, in this example Z001
- ✓ Program an output, such as a control module that is to be activated by detector 005 by assigning the same zone to it; in this example Z001
- ✓ Program an output, such as a control module, for PAS activation by assigning zone Z97 to it. This control module may be connected to a signaling device used to indicate a PAS condition (*do not use a Notification Appliance Circuit for this purpose*)
- ✓ Enable zones Z001 and Special Purpose Zone PAS 97 and set the PAS delay timer to some value

With the preceding program settings, when the detector with address 005 is activated, zone Z97 will cause its associated control module to activate immediately, sounding the connected PAS signaling device. Following the PAS delay time, zone Z001 will cause its associated control module to activate and the control panel will initiate an alarm condition.

Note that a detector can be enabled for either PAS or Pre-signal but not both.

Pre-signal

EDIT DETECTOR
1=WALKTEST
2=PAS
3=PRE-SIGNAL

Edit Detector Screen #3

The Pre-signal option programs the detector to delay panel activation for a preprogrammed time delay of up to three minutes while allowing for visual verification by a person. Note that the alarm relay and communicator will respond to the initial alarm immediately. In addition, Zone 98 will activate. This zone can be programmed to a control module which may be used to activate a sounder or indicator which the installer designates as a Presignal indication (*do not use a Notification Appliance Circuit for this purpose*). To enable the Pre-signal feature, press 3 while viewing Edit Detector Screen #3 until the display reads *Pre-signal Yes*. Each press of the 3 key will cause the display to toggle between *Pre-signal Yes* and *Pre-signal No*. Refer to “Presignal” on page 115.

For example, if a detector with address 005 is to be configured for Pre-Signal operation:

- ✓ Select *Pre-signal Yes* when editing the detector set to address 005
- ✓ Program the desired zone or zones to be activated by this detector, in this example Z001
- ✓ Program an output, such as a control module that is to be activated by detector 005 by assigning the same zone to it; in this example Z001

- ✓ Program an output, such as a control module, for Pre-signal activation by assigning zone Z98 to it. This control module may be connected to a signaling device used to indicate a Pre-signal condition (*do not use a Notification Appliance Circuit for this purpose*)
- ✓ Enable zones Z001 and Special Purpose Zone Pre-signal 98 and set the Pre-signal delay timer to some value

With the preceding program settings, when the detector with address 005 is activated, zone Z98 will cause its associated control module to activate immediately, sounding the connected signaling device to indicate the Pre-signal condition. Following the Pre-signal delay time, zone Z001 will cause its associated control module to activate and the control panel will initiate an alarm condition.

Note that a detector can be enabled for either PAS or Pre-signal but not both

Zone Assignment

```
EDIT DETECTOR
1=ZONE ASSIGNMENT
000 *****
```

Edit Detector Screen #4

A maximum of five zones can be programmed to each addressable detector. Pressing 1 while viewing Edit Detector Screen #4 displays the following screen:

```
ZONE ASSIGNMENT
Z000 *** ** *
```

Zone Assignment Screen

Note that Z*** represents the Zone Number(s) corresponding to this device. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first 0 to the right. Enter the three digit number corresponding to the zone that is to be assigned to this device. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zone Z000. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the Edit Detector Screen #4. Note that the left and right arrow keys can be used to navigate through the zones and the *CLEAR* key can be used to quickly clear a zone.

If the selected detector is a multi-criteria detector, the following screen will display respective before the Zone Assignment Screen allowing the user to program the zones independently.

```
EDIT DETECTOR
1=PHOTO ZONES
2=HEAT ZONES
3=CO ZONES
```

Multi-Criteria Detector Zones Screen

Wireless

```
EDIT DETECTOR
WIRELESS NO
2=SOUNDER BASE
```

Edit Detector Screen #5

The Wireless selection will update automatically if the system recognizes a wireless device. A wireless device operates as part of the SWIFT wireless network. If the detector is wireless, the display reads *Wireless Yes*. If the device is wired, the display will read *Wireless No*. For more information on the SWIFT wireless network, refer to the *SWIFT manual*, #LS10036-000FL-E.

Sounder Base

The Sounder Base selection allows the programmer to enter different values if the selected detector is mounted in an addressable sounder base. Pressing 2 while viewing Edit Detector Screen #5 will display the following:

```
SOUNDER BASE
1=INSTALLED NO
2=SILENCEABLE NO
3=CODING STEADY
```

Sounder Base Screen #1

```
SOUNDER BASE
1=ZONE ASSIGNMENT
*** ** *
2=VOLUME LOW
```

Sounder Base Screen #2

If the selected detector has been installed in a sounder base, press 1 while viewing Sounder Base Screen #1 until the display reads *Installed Yes*. Each press of the 1 key will cause the display to toggle between *Installed Yes* and *Installed No*.

The Silenceable selection allows the programmer to select whether the selected sounder base can be silenced, either by pressing the Alarm Silence key or by enabling Autosilence. Pressing the 2 key while viewing Sounder Base Screen #1 will enable the Silenceable feature causing the display to read *Silenceable Yes*. Repeated presses of the 2 key will cause the display to toggle between *Silenceable Yes* and *Silenceable No*. When set to Canadian mode of operation, a third silenceable option appears, *Silenceable Auto*. When set to *Silenceable Auto*, the intelligent sounder base will automatically silence after the Control Module Auto Silence timer expires.

The Coding feature allows the programmer to select the type of output that the sounder base will generate when activated. Pressing 3 while viewing Sounder Base Screen #1 will cause the following displays to appear:

```
CODING
1=STEADY
2=TEMP-3
3=TEMP-4
```

Coding Screen #1

The programmer can select the sounder base output by pressing the number corresponding to the desired output. The coding selections are:

- Steady - a continuous output with no coding
- Temporal 3 - ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, 1½ Seconds Off

- Temporal 4 - ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, 1½ Seconds Off

```

SOUNDER BASE
1=ZONE ASSIGNMENT
000 000 000 000 000
2=VOLUME          LOW

```

Sounder Base Screen #2

The sounder base volume has two settings: Low or High. Press *1* while viewing Sounder Base Screen #2 until the display reads Low or High as desired. Each press of the *1* key will cause the display to toggle between *Volume Low* and *Volume High*.

A maximum of five zones can be programmed to each sounder base. Pressing *2* while viewing Sounder Base Screen #2 displays the following screen:

```

ZONE ASSIGNMENT
Z*** *** **

```

Zone Assignment Screen

Note that Z*** represents the Zone Number(s) corresponding to this device. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first *0* to the left. Enter the three digit number corresponding to the zone that is to be assigned to this sounder base. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zone Z000. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the Sounder Base Screen #2. Note that the left and right arrow keys can be used to navigate through the zones and the *CLEAR* key can be used to quickly clear a zone.



CAUTION: VERIFY SOUNDER BASE MODEL NUMBER

USE OF THE SOUNDER BASE PROGRAMMING OPTIONS REQUIRES THE USE OF THE **B200S** SOUNDER BASE. WHILE THE **B200SR** SOUNDER BASE IS COMPATIBLE, IT DOES NOT ALLOW FOR SPECIAL PROGRAMMING OPTIONS. IF USING THE B200SR, SET THE SOUNDER BASE OPTION TO "NO". IF SET TO "YES", AN ERROR WILL OCCUR AND THE SYSTEM WILL DISPLAY AN INVALID REPLY. CODING OPTIONS FOR THE B200SR ARE ACHIEVED MANUALLY WITH JUMPER SETTINGS ON THE DEVICE.

Noun/Adjective

```

EDIT DETECTOR
1=NOUN/ADJECTIVE
2=DESCRIPTION
*****

```

Edit Detector Screen #6

The Noun/Adjective selection allows the programmer to enter specific descriptors about the detector currently being programmed. Pressing *1* while viewing Edit Detector Screen #6 will cause the following screen to be displayed:

```

1=STANDARD ADJECTIVE
2=STANDARD NOUN
3=CUSTOM ADJECTIVE
4=CUSTOM NOUN

```

Noun/Adjective Screen

```

1=STANDARD ADJECTIVE
2=STANDARD NOUN
3=CUSTOM ADJECTIVE
4=CUSTOM NOUN

```

Noun/Adjective Screen

Pressing *1* while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keypad *down* arrow key must be pressed to see all the Adjective screens. Press the number corresponding to the adjective that is to be used as a descriptor for the location of the detector currently being programmed. When an adjective has been selected, it will appear at the top of the display as indicated by the asterisks.

```

*****
1=NORTH
2=SOUTH
3=EAST

```

Adjective Screen #1

```

*****
1=WEST
2=FRONT
3=CENTER

```

Adjective Screen #2

```

*****
1=REAR
2=UPPER
3=LOWER

```

Adjective Screen #3

```

*****
1=MAIN
2=FIRST
3=2ND

```

Adjective Screen #4

```

*****
1=3RD
2=4TH
3=5TH

```

Adjective Screen #5

```

*****
1=FLOOR1
2=FLOOR2
3=FLOOR3

```

Adjective Screen #6

```

*****
1=FLOOR5
2=FLOOR6
3=ROOM

```

Adjective Screen #7

```

1=STANDARD ADJECTIVE
2=STANDARD NOUN
3=CUSTOM ADJECTIVE
4=CUSTOM NOUN

```

Noun/Adjective Screen

Pressing 2 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keypad *down* arrow key must be pressed to see all the Noun screens. Press the number corresponding to the noun that is to be used as a descriptor for the location of the detector currently being programmed. When a noun has been selected, it will appear at the top of the display as indicated by the asterisks.

```

*****
1=BASEMENT
2=BOILER RM
3=CLASSROOM

```

Noun Screen #1

```

*****
1=CLOSET
2=CORRIDOR
3=ELECTRIC RM

```

Noun Screen #2

```

*****
1=ELEVATOR
2=ENTRANCE
3=FLOOR

```

Noun Screen #3

```

*****
1=GARAGE
2=HALLWAY
3=HVAC RM

```

Noun Screen #4

```

*****
1=KITCHEN
2=LOBBY
3=OFFICE

```

Noun Screen #5

```

*****
1=PATIENT
2=RESTROOM
3=ROOM

```

Noun Screen #6

```

*****
1=STAIRWAY
2=STOREROOM
3=WING

```

Noun Screen #7

```

*****
1=ZONE

```

Noun Screen #8

```

1=STANDARD ADJECTIVE
2=STANDARD NOUN
3=CUSTOM ADJECTIVE
4=CUSTOM NOUN

```

Noun/Adjective Screen

Pressing 3 or 4 while viewing the Noun/Adjective Screen will display screens similar to the previous Adjective and Noun Screens. The new screens will list custom Adjectives and Nouns which have been programmed into the control panel using the FS-Tools utility. These descriptors are selected as described in the previous sections.

Description

The Description selection allows the programmer to enter additional information about the detector currently being programmed. This information will be displayed as part of the device label on the display. Pressing 2 while viewing Edit Detector Screen #5 will cause the following screen to be displayed:

```

EDIT DETECTOR
1=NOUN/ADJECTIVE
2=DESCRIPTION

```

Edit Detector Screen #5

```

DESCRIPTION 1D002
NOUN-ADJECTIVE
*****

```

Adjective/Noun Screen

A flashing cursor will appear at the first asterisk to the left. The programmer can enter additional descriptive information about the device being programmed. This information will appear on the display along with the standard device label information.

A maximum of 20 characters (including spaces) can be entered. To enter alphanumeric characters from the keypad, repeatedly press the appropriate key until the desired character is displayed in the first position. For example, to enter the letter *B*, press the 2 (ABC) key three times to toggle through the characters *2*, *A* and *B*. Press the right arrow key to move the cursor one position to the right and repeat the process to enter the next character. To enter a space, press the * (QZ) key four times until a blank appears in the desired position. When all characters have been entered, press the Enter key to store the information. The display will return to the Edit Detector Screen #5, displaying the new information at the bottom of the screen.

Module Programming

```

POINT PROGRAM
SELECT TYPE
1=DETECTOR
2=MODULE

```

Point Program Screen #2

Pressing 2, while viewing Point Program Screen #2, will allow the programmer to add, delete or change the programming of an addressable module. The following screen will be displayed by the control panel:

```

MODULES
1=ADD
2=DELETE
3=EDIT

```

Modules Screen

■ Add Module

Pressing 1 while viewing the Modules Screen will display the following screen which allows the programmer to add a new module address to programming:

```

ADD MODULE
ENTER MODULE#
***

```

Add Module Screen #1

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit module address, such as 005.

When the last digit is keyed-in, the following screen will be displayed:

```

      ADD MODULE
1=CON      3=MON
2=CON:WL   4=MON:WL
  
```

Add Module Screen #2

Pressing 1 for Control Module, 2 for Wireless Control Module, 3 for Monitor Module, or 4 for Wireless Monitor Module will cause the following screen to be displayed:

```

      ADD MODULE
MODULE#      005
IS ADDED (WIRELESS)
  
```

Add Module Screen #3

The programmer can continue adding modules by pressing the *ESC* or left arrow key which will return the display to the Add Module Screen #1.

■ Delete Module

```

      MODULES
1=ADD
2=DELETE
3=EDIT
  
```

Modules Screen

Pressing 2 in the Modules Screen will display the Delete Module Screen which allows the programmer to delete a specific module:

```

      DELETE MODULE
ENTER MODULE#
***
  
```

Delete Module Screen

A flashing cursor will appear in the position of the first asterisk to the left. Using the panel keypad, key in the module address such as 005. When the last digit is keyed in, the following confirmation that the module has been deleted will be displayed:

```

      DELETE MODULE
MODULE#      005
IS DELETED
  
```

■ Edit Module Screen for Monitor Module

The programmer can change a modules existing or factory default programming by pressing 3 in the Modules Screen. The following screen will be displayed:

```

      EDIT MODULE
ENTER MODULE ADDRESS
***
  
```

Edit Module Screen

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit module address, such as 012. When the last digit is keyed-in, if the selected address has *not* been added to programming, a screen showing information about a device that is installed with a lower address, closest to the selected address, will be displayed. If no modules are installed on the loop, the following screen will be displayed:

```

      NO MODULE
      INSTALLED
  
```

Edit Module Screen

If the selected address has been added to programming but a module (such as a monitor module) with the selected address is not physically installed on the SLC or has a communication fault, the following screen will be displayed:

```

      TROUBL MONITOR
      <ADJ><NOUN>
      ZNNN
      * * 1M012
  
```

If the selected address has been added to programming and a module (such as a monitor module) with the selected address is physically installed on the SLC and is communicating with the control panel, the following screen will be displayed:

```

NORMAL MONITOR
<ADJ><NOUN>
  ZNNN
W  1M012
  
```

To change the programming for the displayed module, press the keypad down arrow key to view the following Edit Monitor screens. In the preceding example:

- ✓ Normal - indicates that the module with the selected address is physically installed on the SLC and communicating with the control panel (enabled)
- ✓ <ADJ><NOUN> - represents the adjective and noun, which have been programmed, describing the location of the displayed device
- ✓ ZNNN - represents the first of five possible software zones that the module is assigned to (NNN = the three digit zone number from 000 - 099)
- ✓ 1M012 - represents the Loop, Device type and Device address (1 = SLC Loop, M = Module and 012 = Module Address 012)
- ✓ W or * - indicates whether or not the device is programmed for Walktest (W = programmed for walktest, * = not programmed for walktest).
- ✓ X or * - indicates whether or not the device is wireless (X = wireless, * = wired).

If the selected address corresponds to a control module, a screen displaying information about the control module with the selected address will be displayed as shown in “Edit Module Screen for Control Modules” on page 67.

If the selected address corresponds to a monitor module, a screen displaying information about the module with the selected address will be displayed as illustrated in the following:

```

NORMAL MONITOR
<ADJ><NOUN>
  ZNNN
1M012
  
```

```

EDIT MONITOR 1M012
1=ENABLED   YES
2=TYPE MONITOR
  
```

Edit Monitor Screen #2

```

EDIT MONITOR 1M012
1=PRE-SIGNAL NO
WIRELESS      NO
  
```

Edit Monitor Screen #3

```

EDIT MONITOR 1M012
1=WALKTEST   YES
2=ZONE ASSIGNMENT
000 *** **
  
```

Edit Monitor Screen #4

```

EDIT MONITOR 1M012
1=ADJECTIVE/NOUN
2=DESCRIPTION
*****
  
```

Edit Monitor Screen #5

Enable/Disable Module

To Enable or Disable the monitor module, press the *1* key while viewing the Edit Module Screen #2. Each press of the key will toggle the screen between *Enabled Yes* and *Enabled No*. If *Enabled No* is selected, the module will not be polled by the control panel, preventing the module from reporting alarms and troubles to the panel. The control panel will indicate a system trouble condition and the Disable LED with turn on if any devices are disabled.

Type Monitor

```

EDIT MONITOR
1=ENABLED
2=TYPE MONITOR
  
```

Edit Monitor Screen #2

Using the FS-Tools Upload/Download utility, unique user-defined monitor types can be created and loaded into the FACP for later use. The FACP response to the activation of a user-defined type is the same as most previous standard types in the list, thus allowing a variety of user-defined types and responses. To select the type of monitor module being programmed, press the *2* key while viewing the Edit Monitor Screen #2. This will cause the control panel to display the following Monitor Type Screens:

```

MONITOR TYPE
1=PULL-STATION
2=USER-DEFINED-1
3=WATERFLOW
  
```

Monitor Type Screen #1

Pressing the down arrow key will display additional Monitor Type screens. While viewing one of the Monitor Type screens, select the type of monitor module being programmed by pressing the corresponding keypad number key. The display will return to the Edit Monitor Screen #2 which will show the new type selection.

Table 3.1 lists the Monitor Types and their respective functions.

Monitor module type selection will affect the function of the point as follows:

Monitor Type	Action When Activated
Pull-Station	Fire Alarm
User-Defined-1	same as previous (Pull-Station)
Waterflow	Fire Alarm Delayed

Table 3.1 Monitor Types

User-Defined-2	same as previous (Waterflow)
Monitor	Fire Alarm
User-Defined-3	same as previous (Monitor)
Future	not used
Future	not used
Smoke-Conventional	Fire Alarm
User-Defined-5	same as previous (Smoke-Conventional)
Heat Conventional	Fire Alarm
User-Defined-6	same as previous (Heat-Detector)
Medic Alert ¹	General Purpose Signaling, latching
User-Defined-7	same as previous (Medic-Alert)
Hazard Alert ¹	General Purpose Signaling, latching
User-Defined-8	same as previous (Hazard-Alert)
Tornado Alert ¹	General Purpose Signaling, latching
User-Defined-9	same as previous (Tornado-Alert)
Phone	Active Phone (LCD display only)
User-Defined-10	same as previous (Phone)
Tamper	Supervisory, nonlatching (tracking)
User-Defined-11	same as previous (Tamper)
Supervisory	Supervisory, latching
User-Defined-12	same as previous (Supervisory)
Supervisory AR ²	Supervisory, nonlatching (tracking)
User-Defined-13	same as previous (Supervisory-AR)
HVAC OVRIDE ³	Switch Supervisory, nonlatching (tracking)
Power Monitor	Power Fault
User-Defined-14	same as previous (Power Monitor)
Trouble Monitor	Trouble
User-Defined-15	same as previous (Trouble Monitor)
Process Monitor	General Purpose Signaling, latching
User-Defined 16 ¹	same as previous (Process-Monitor)
Process-Monitor-AR ^{1,2}	General Purpose Signaling, nonlatching (tracking)
User-Defined-17	same as previous (Process-Monitor-AR)
MNS Event	Allows the Mass Notification System to override FACP programming and turn off designated active outputs
User-Defined-18	same as previous (MNS Event)
Ack Switch	Acts like panel Acknowledge Key
Sil Switch	Acts like panel Silence Key
Reset Switch	Acts like panel Reset Key
Drill Switch	Acts like panel Drill Key
PAS Bypass	PAS Disable
HVAC RESTART ³	Switch (see note 2)
Drill Switch AR ²	Acts like panel Drill Key, nonlatching (tracking)
Wireless Gateway	SWIFT gateway needs this type to display wireless troubles at the FACP

Table 3.1 Monitor Types

- Combination systems employing these non-fire monitor types require the SLC loop to be programmed by the installer for Class B operation and isolator modules must be employed on each non-fire branch of the SLC as shown in the SLC Wiring Manual (document number 51309). Fire and non-fire devices must not be used on the same SLC branch. For UL2017 compliance, The ANN-LED annunciator must be used to indicate the active, dedicated zone or device
- For entries ending in AR, AR refers to AutoResettable.
- For HVAC RESTART and HVAC OVRIDE descriptions, refer to "Monitor Module Operation" on page 149.

Pre-signal



Edit Monitor Screen #3

To enable the Pre-signal feature, press *I* while viewing Edit Monitor Screen #3 until the display reads *Pre-signal Yes*. Each press of the *I* key will cause the display to toggle between *Pre-signal Yes* and *Pre-signal No*. Refer to "Presignal" on page 115 for additional information.

Wireless

The Wireless selection will update automatically if the system recognizes a wireless device. If the module is wireless, the display reads *Wireless Yes*. If the module is wired, the display will read *Wireless No*. For more information on the SWIFT wireless network, refer to the *SWIFT manual*, #LS10036-000FL-E.

Walktest

```

EDIT MONITOR
1=WALKTEST      YES
2=ZONE ASSIGNMENT
000 *** ** *
  
```

Edit Monitor Screen #4

The Walktest feature allows one person to test the system devices without the necessity of manually resetting the control panel after each device activation. To enable devices, which are connected to a monitor module, for the Walktest feature, press *1* while viewing the Edit Monitor Screen #4 until the display reads *Walktest Yes*. Each press of the *1* key will cause the display to toggle between *Walktest Yes* and *Walktest No*. Refer to “Walktest” on page 117 for additional information.

Zone Assignment

A maximum of five zones can be programmed to each addressable monitor module. Pressing *2* while viewing Edit Monitor Screen #4 displays the following screen:

```

ZONE ASSIGNMENT
Z000 *** ** *
  
```

Zone Assignment Screen

Note that Z*** represents the Zone Number(s) corresponding to this device. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first *0* to the left. Enter the three digit number corresponding to the zone that is to be assigned to this device. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zones Z000. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the Edit Monitor Screen #4.

Noun/Adjective

```

EDIT MONITOR
1=NOUN/ADJECTIVE
2=DESCRIPTION
*****
  
```

Edit Monitor Screen #5

The Noun/Adjective selection allows the programmer to enter specific descriptors about the monitor module currently being programmed. Pressing *1* while viewing Edit Monitor Screen #5 will cause the following screen to be displayed:

```

1=STANDARD ADJECTIVE
2=STANDARD NOUN
3=CUSTOM ADJECTIVE
4=CUSTOM NOUN
  
```

Noun/Adjective Screen

```

1=STANDARD ADJECTIVE
2=STANDARD NOUN
3=CUSTOM ADJECTIVE
4=CUSTOM NOUN
  
```

Noun/Adjective Screen

Pressing *1* while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keypad *down* arrow key must be pressed to see all the Adjective screens. Press the number corresponding to the adjective that is to be used as a descriptor for the location of the monitor module currently being programmed.

```

*****
1=NORTH
2=SOUTH
3=EAST
  
```

Adjective Screen #1

```

*****
1=WEST
2=FRONT
3=CENTER
  
```

Adjective Screen #2

```

*****
1=REAR
2=UPPER
3=LOWER
  
```

Adjective Screen #3

```

*****
1=MAIN
2=FIRST
3=2ND
  
```

Adjective Screen #4

```

*****
1=3RD
2=4TH
3=5TH
  
```

Adjective Screen #5

```

*****
1=FLOOR 1
2=FLOOR 2
3=FLOOR 3
  
```

Adjective Screen #6

```

*****
1=FLOOR 4
2=FLOOR 5
3=ROOM
  
```

Adjective Screen #7

```

1=STANDARD ADJECTIVE
2=STANDARD NOUN
3=CUSTOM ADJECTIVE
4=CUSTOM NOUN

```

Noun/Adjective Screen

Pressing 2 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keypad *down* arrow key must be pressed to see all the Noun screens. Press the number corresponding to the noun that is to be used as a descriptor for the location of the monitor module currently being programmed.

```

*****
1=BASEMENT
2=BOILER RM
3=CLASSROOM

```

Noun Screen #1

```

*****
1=CLOSET
2=CORRIDOR
3=ELECTRIC RM

```

Noun Screen #2

```

*****
1=ELEVATOR
2=ENTRANCE
3=FLOOR

```

Noun Screen #3

```

*****
1=GARAGE
2=HALLWAY
3=HVAC RM

```

Noun Screen #4

```

*****
1=KITCHEN
2=LOBBY
3=OFFICE

```

Noun Screen #5

```

*****
1=PATIENT
2=RESTROOM
3=ROOM

```

Noun Screen #6

```

*****
1=STAIRWAY
2=STOREROOM
3=WING

```

Noun Screen #7

```

*****
1=ZONE

```

Noun Screen #8

Pressing 3 or 4 while viewing the Noun/Adjective Screen will display screens similar to the previous Adjective and Noun Screens. The new screens will list Custom Adjectives and Nouns which have been programmed into the control panel using the FS-Tools utility.

Description

```

EDIT MONITOR
1=NOUN/ADJECTIVE
2=DESCRIPTION
*****

```

Edit Monitor Screen #5

The Description selection allows the programmer to enter additional information about the monitor module currently being programmed. This information will be displayed as part of the device label on the LCD display. Pressing 2 while viewing Edit Monitor Screen #5 will cause the following screen to be displayed:

```

DESCRIPTION    1M012
NOUN/ADJECTIVE
*****

```

Noun/Adjective Screen

A flashing cursor will appear at the first asterisk to the left. The programmer can enter additional descriptive information about the device being programmed. This information will appear on the LCD display along with the standard device label information.

A maximum of 20 characters (including spaces) can be entered. To enter alphanumeric characters from the keypad, repeatedly press the appropriate key until the desired character is displayed in the first position. For example, to enter the letter *B*, press the 2 (*ABC*) key three times to toggle through the characters *2*, *A* and *B*. Press the right arrow key to move the cursor one position to the right and repeat the process to enter the next character. To enter a space, press the * (*QZ*) key four times until a blank appears in the desired position. When all characters have been entered, press the Enter key to store the information. The display will return to the Edit Monitor Screen #4, displaying the new information at the bottom of the screen.

■ Edit Module Screen for Control Modules

```

MODULES
1=ADD
2=DELETE
3=EDIT

```

Modules Screen

The programmer can change a module's existing or factory default programming by pressing 3 in the Modules Screen. The following screen will be displayed:

```

EDIT MODULE
ENTER MODULE ADDRESS
***

```

Edit Module Screen

A flashing cursor will appear in the position of the first asterisk to the left.

The programmer keys in the three digit module address, such as 002. When the last digit is keyed-in, if the selected address corresponds to a *control* module, a screen displaying information about the control module with the selected address will be displayed as illustrated in the following:

```

NORMAL    CONTROL
<ADJ><NOUN>
      ZNNN
* **    1M002

```

Edit Control Screen #1

In the preceding example:

- ✓ Normal - indicates that the module with the selected address is physically installed on the SLC and communicating with the control panel (enabled)
- ✓ <ADJ><NOUN> - represents the adjective and noun, which have been programmed, describing the location of the displayed device
- ✓ Control - indicates that the selected module is a control module
- ✓ S or * - represents Silenceable (S) or Nonsilenceable (*)
- ✓ W or * - represents Waterflow Timer Delay (W = Waterflow Timer Delay enabled, * = Waterflow Timer Delay disabled)

- ✓ ZNNN - represents the first of five possible software zones that the module is assigned to (NNN = the three digit zone number from 000 - 099)
- ✓ 1M002 - represents the Loop, Device type and Device address (1 = SLC Loop, M=Module and 002 = Module Address 02)

To change the programming for the displayed module, press the keypad *down* arrow key to view the following Edit Control screens:

```

EDIT CONTROL
1=ENABLED      YES
2=TYPE CONTROL
3=SILENCEABLE  YES
  
```

Edit Control Screen #2

```

EDIT CONTROL
1=WALKTEST     YES
2=ZONE ASSIGNMENT
000 *** **
  
```

Edit Control Screen #3

```

EDIT CONTROL
1=NOUN/ADJECTIVE
2=DESCRIPTION
*****
  
```

Edit Control Screen #4

```

EDIT CONTROL
1=MNS OVERRIDE  NO
2=CTRL MOD DLY  NO
WIRELESS        NO
  
```

Edit Control Screen #5

Enable/Disable Module

```

EDIT CONTROL
1=ENABLED      YES
2=TYPE CONTROL
3=SILENCEABLE  YES
  
```

Edit Control Screen #2

To Enable or Disable the control module, press the *1* key while viewing the Edit Control Screen #2. Each press of the key will toggle the screen between *Enabled Yes* and *Enabled No*. If *Enabled No* is selected, the module will not be polled by the control panel, preventing the module from activating its output devices. The control panel will indicate a system trouble condition and the Disable LED will turn on if any devices are disabled.

Control Type

```

EDIT CONTROL
1=ENABLED      YES
2=TYPE CONTROL
3=SILENCEABLE  YES
  
```

Edit Control Screen #2

To select the type of control module being programmed, press the *2* key while viewing the Edit Control Screen #2. This will cause the control panel to display the following Control Type Screens. Press the down arrow key to view additional screens and selections.

```

CONTROL TYPE
FUTURE USE
2=BELL-CIRCUIT
3=HORN-CIRCUIT
  
```

Control Type Screen #1

While viewing one of the Control Type screens, select the type of control module being programmed by pressing the corresponding keypad number key. The display will return to the Edit Control Screen #2 and indicate the new type selection.



NOTE: A control relay module set to the Resettable Power type will follow the main circuit board 24 VDC resettable power unless the control relay module is disabled.

The following table contains control module type codes and their functions which are displayed in the Control Type screens:

Control Type	Special Function
Bell Circuit	NAC Type - supervised
Horn Circuit	NAC Type - supervised
Sounders	NAC Type - supervised
Relay	Ignore Open Circuit
Strobe Circuit	NAC Type - supervised
Control	NAC Type - supervised
Resettable Power ¹	Relay Type - Ignore Open Circuit
HVAC Shutdown RLY ²	Relay Type - Ignore Open Circuit
HVAC Shutdown NAC ²	NAC Type - supervised

¹ When using a control relay module to supply resettable power to conventional 2-wire smoke detectors, the addressable monitor module must be programmed for Smoke-Conventional operation

² For HVAC SHUTDOWN description, refer to "Control Module Operation" on page 148.

Silenceable

```

EDIT CONTROL
1=ENABLED
2=TYPE
3=SILENCEABLE
  
```

Edit Control Screen #2

The Silenceable selection allows the programmer to select whether output devices connected to the control module can be silenced, either by pressing the Alarm Silence key or by enabling Autosilence. Pressing the *3* key while viewing Edit Control Screen #2 will enable the Silenceable feature causing the display to read *Silenceable Yes*. Repeated presses of the *3* key will cause the display to toggle between *Silenceable Yes* and *Silenceable No*. When set to Canadian mode of operation, a third silenceable type appears, Silenceable Auto. When set to *Auto*, the control module will automatically silence after the Control Module Auto Silence timer expires.

Walktest

```

EDIT CONTROL
1=WALKTEST
2=ZONE ASSIGNMENT
000 *** **
  
```

Edit Control Screen #3

The Walktest feature allows one person to test the system devices without the necessity of manually resetting the control panel after each device activation. To enable devices, which are connected to a control module, for the Walktest feature, press *1* while viewing the Edit Control Screen #3 until the display reads *Walktest Yes*. Each press of the *1* key will cause the display to toggle between *Walktest Yes* and *Walktest No*. Refer to "Walktest" on page 117 for additional information.

Zone Assignment

A maximum of five zones can be programmed to each addressable control module. Pressing 2 while viewing Edit Control Screen #3 displays the following screen:



Zone Assignment Screen

Note that Z*** represents the Zone Number(s) corresponding to this device. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first 0 to the left. Enter the three digit number corresponding to the zone that is to be assigned to this device. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zones Z000. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the Edit Control Screen #3.

Noun/Adjective



Edit Control Screen #4

The Noun/Adjective selection allows the programmer to enter specific descriptors about the control module currently being programmed. Pressing 1 while viewing Edit Control Screen #4 will cause the following screen to be displayed:



Noun/Adjective Screen



Noun/Adjective Screen

Pressing 1 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keypad *down* arrow key must be pressed to see all the Adjective screens. Press the number corresponding to the adjective that is to be used as a descriptor for the location of the control module currently being programmed.



Adjective Screen #1



Adjective Screen #2



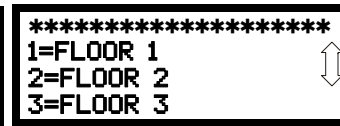
Adjective Screen #3



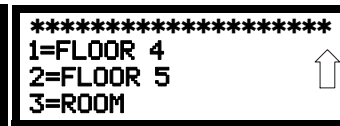
Adjective Screen #4



Adjective Screen #5



Adjective Screen #6



Adjective Screen #7



Noun/Adjective Screen

Pressing 2 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keypad *down* arrow key must be pressed to see all the Noun screens. Press the number corresponding to the noun that is to be used as a descriptor for the location of the control module currently being programmed.



Noun Screen #1



Noun Screen #2



Noun Screen #3



Noun Screen #4



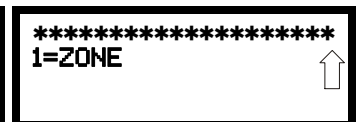
Noun Screen #5



Noun Screen #6



Noun Screen #7



Noun Screen #8

Pressing 3 or 4 while viewing the Noun/Adjective Screen will display screens similar to the previous Adjective and Noun Screens. The new screens will list Custom Adjectives and Nouns which have been programmed into the control panel using the FS-Tools programming utility.

Description

EDIT CONTROL
1=ADJECTIVE/NOUN
2=DESCRIPTION

Edit Control Screen #4

The Description selection allows the programmer to enter additional information about the control module currently being programmed. This information will be displayed as part of the device label on the display. Pressing 2 while viewing Edit Control Screen #4 will cause the following screen to be displayed:

DESCRIPTION	1M002
NOUN/ADJECTIVE	

Adjective/Noun Screen

A flashing cursor will appear at the first asterisk to the left. The programmer can enter additional descriptive information about the device being programmed. This information will appear on the display along with the standard device label information.

A maximum of 20 characters (including spaces) can be entered. To enter alphanumeric characters from the keypad, repeatedly press the appropriate key until the desired character is displayed in the first position. For example, to enter the letter *B*, press the 2 (*ABC*) key three times to toggle through the characters *I*, *A*, and *B*. Press the right arrow key to move the cursor one position to the right and repeat the process to enter the next character. To enter a space, press the * (*QZ*) key four times until a blank appears in the desired position. When all characters have been entered, press the Enter key to store the information. The display will return to the Edit Control Screen #4, displaying the new information at the bottom of the screen.

MNS Override

EDIT CONTROL	
1=MNS OVERRIDE	NO
2=CTRL MOD DLY	NO
WIRELESS	NO

Edit Control Screen #5

The MNS Override feature, when enabled, allows the ECC-50/100 to override the FACP and turn off an active control module or prevent the control module from activating during a mass notification event. Pressing 1 while viewing Edit Control Screen #5 will cause the display to change from the factory default of *MNS Override No* to *MNS Override Yes*. Each press of the 1 key will cause the display to toggle between the two options.

Control Module Delay

EDIT CONTROL	
1=MNS OVERRIDE	NO
2=CTRL MOD DLY	NO
WIRELESS	NO

Edit Control Screen #5

The control module delay feature, if enabled, will delay activation after being triggered by an alarm condition. Pressing 2 while viewing Edit Control Screen #5 will cause the display to change from the factory default of *Ctrl Mod Dly No* to *Ctrl Mod Dly Yes*. Each press of the 2 key will cause the display to toggle between the two options. Delay time varies from 0-180 seconds. See “Control Module Delay” on page 78 to set the delay time. The control module must first be set to *Silenceable No* to enable the Delay Timer.

Wireless

EDIT CONTROL	
1=MNS OVERRIDE	NO
2=CTRL MOD DLY	NO
WIRELESS	NO

Edit Control Screen #5

The Wireless selection will update automatically if the system recognizes a wireless device. If the module is wireless, the display reads *Wireless Yes*. If the module is wired, the display will read *Wireless No*.

3.5.3 Zone Setup

PROGRAMMING
1=AUTO PROGRAM
2=POINT PROGRAM
3=ZONE SETUP

Programming Screen #2

Pressing 3 while viewing Programming Screen #2 will access the Zone Setup screens as illustrated below:

ZONE SETUP
1=ENABLE
2=DISABLE
3=SPECIAL PURPOSE

Zone Setup Screen #1

ZONE SETUP
1=ZONES INSTALLED
2=ZONES ENABLED
3=ZONES DISABLED

Zone Setup Screen #2

ZONE SETUP
1=ZONE TYPES
2=ZONES AVAILABLE
3=ZONE MESSAGE

Zone Setup Screen #3

Enable

ZONE SETUP
1=ENABLE
2=DISABLE
3=SPECIAL PURPOSE

Zone Setup Screen #1

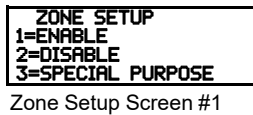
Pressing 1 for Enable, while viewing Zone Setup Screen #1, will display the following screen:

ZONE TO ENABLE
Z***

Enable Screen

This screens allows the programmer to enable zones, one at a time. A flashing cursor appears next to the Z, prompting the programmer to enter a three digit zone number (001 - 099). When the third digit is entered, the zone will be enabled and the cursor returns to the original position next to the Z. Another zone can then be enabled.

Disable



Zone Setup Screen #1

Pressing 2 for Disable, while viewing Zone Setup Screen #1, displays the following:

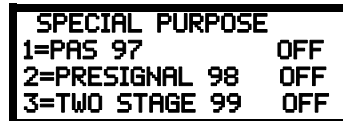


Disable Screen

This screen allows the programmer to disable zones, one at a time. A flashing cursor appears next to the Z, prompting the programmer to enter a three digit zone number (001 - 099). When the third digit is entered, the zone will be disabled and the cursor will return to the original position next to the Z. Another zone can then be disabled.

Special Purpose Zone

Pressing 3 for Special Purpose, while viewing Zone Setup Screen #1, will display the following screens:



Special Purpose Zone Screen #1



Special Purpose Zone Screen #2

Zones 097, 098, 099, and 096 (and Zones 094 and 095 in Canadian mode) can be programmed for normal zone operation or for special purpose applications. In the above illustration, the four zones are shown Off, which means they can be programmed to function in the same manner as all other zones, by assigning them to input and output devices in the Programming Zone Assignment Screen.

Pressing 1 will cause the display to change to *PAS 97 On*. Each press of the 1 key will cause the display to toggle between *PAS 97 On* and *PAS 97 Off*. When Zone 097 is programmed On, a PAS (Positive Alarm Sequence) activation of any smoke detector will cause Zone 097 to activate. By assigning Zone 097 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a PAS condition in the control panel. *Do not assign Zone 97 to a Notification Appliance Circuit when using this zone to indicate a PAS condition. Attempting to do so will generate an error message and will be prevented by software checks.*

Pressing 2 will cause the display to change to *Pre-signal 98 On*. Each press of the 2 key will cause the display to toggle between *Pre-signal 98 On* and *Pre-signal 98 Off*. When Zone 098 is programmed On, a Pre-signal activation of any device will cause Zone 098 to activate. By assigning Zone 098 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a Pre-signal condition in the control panel. *Do not assign Zone 098 to a Notification Appliance Circuit when using this zone to indicate a Pre-signal condition. Attempting to do so will generate an error message and will be prevented by software checks.*

Pressing 3 will cause the display to change to *Two Stage 99 On*. Each press of the 3 key will cause the display to toggle between *Two Stage 99 On* and *Two Stage 99 Off*. Refer to "Two Stage Operation" on page 80 for a description of this feature. Two-stage operation and the in-suite silence feature cannot be used at the same time.

Pressing 1 while viewing the Special Purpose Zone Screen #2 will cause the display to change to *Local Alm 96 On*. Each press of the 1 key will cause the display to toggle between *Local Alm 96 On* and *Local Alm 96 Off*. When Zone 096 is programmed On, a Local Alarm activation of any smoke detector will cause Zone 096 to activate. By assigning Zone 096 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a local alarm condition in the control panel. *Local Alarm Zone alarms are not reported to the Central Station.*

When the panel is set to Canadian mode, pressing 2 while viewing the Special Purpose Zone Screen #2 will cause the display to change to *CO Active 95 On*. Each press of the 2 key will cause the display to toggle between *CO Active 95 On* and *CO Active 95 Off*. When enabled, this zone will activate when a CO Alarm is active on the panel without requiring direct zone mapping to an input device.

When the panel is set to Canadian mode, pressing 3 while viewing the Special Purpose Zone Screen #2 will cause the display to change to *In Suite Sil 94 On*. Each press of the 3 key will cause the display to toggle between *In Suite Sil 94 On* and *In Suite Sil 94 Off*. When enabled, this zone works in conjunction with the In Suite Silence Timer. When enabled, this zone will activate only when a fire alarm is active on the panel and will not activate via zone mapping to an input device. When the In Suite Silence Timer expires, all silenceable output devices and NACs that are activated by only the In Suite Silence Zone will silence. If an output or NAC is activated by a general zone and the In Suite Silence Zone, the output or NAC will not silence when the In Suite Silence Timer expires. This timer restarts with each new fire alarm that occurs on the system. If the timer expires, all silenced outputs and NACs that were silenced by the In Suite Silence Timer will resound with a new fire alarm and the In Suite Silence Timer will restart. In-suite silence cannot be used at the same time as two-stage operation.

Zones Installed



Zone Setup Screen #2

Pressing 1 for Zones Installed, while viewing Zone Setup Screen #2, will display a screen similar to the following:



Zones Installed Screen

This display will show all of the zones that have been programmed into the control panel. Note that an up and/or down arrow may appear in the upper right corner of the display, indicating that additional screens of zone information exists. Press the up or down arrow keys to view the additional zones.

Zones Enabled

Pressing 2 for Zones Enabled, while viewing Zone Setup Screen #2, will display a screen similar to the following:



Zones Enabled Screen

This display will show all of the zones that are enabled in the control panel. Note that an up and/or down arrow may appear in the upper right corner of the display, indicating that additional screens of zone information exists. Press the up or down arrow keys to view the additional zones.

Zones Disabled

Pressing 3 for Zones Disabled, while viewing Zone Setup Screen #2, will display a screen similar to the following:



Zones Disabled Screen

This display will show all of the zones that are disabled in the control panel. Note that an up and/or down arrow may appear in the upper right corner of the display, indicating that additional screens of zone information exists. Press the up or down arrow keys to view the additional zones.

Zone Type



Zone Setup Screen #3

Zone Types must be programmed only if a Communicator, programmed for zone reporting, is installed on the control panel. Pressing 1 for Zone Types, while viewing Zone Setup Screen #3, will display a screen similar to the following:



Zones Installed Screen

This display will show the system zones (default and user programmed) and their associated types. Note that an up and/or down arrow will appear in the upper right corner of the display, indicating that additional screens of zone information exists. Press the up or down arrow keys to view zones Z000 through Z099.

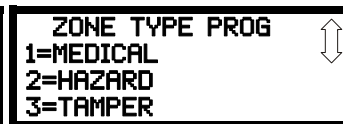
Zone types can be changed by pressing the keypad number key corresponding to the zone in each Zones Installed Screen. Available zone types will be displayed in the resultant screens. For example, to change the zone type for zone Z002 in the screen illustrated above, press 3. The following screens will be displayed:



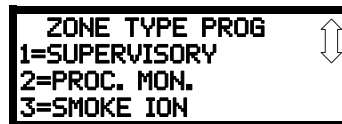
Zone Type Program Screen #1



Zone Type Program Screen #2



Zone Type Program Screen #3



Zone Type Program Screen #4



Zone Type Program Screen #5

To change the zone type for Z002 to Pull Station, scroll the display until Zone Type Program Screen #2 is displayed. Press 2 to program zone Z002 as a Pull Station zone. The display will return to the Zones Installed Screen showing zone Z002 and the Pull Station program type. Repeat the procedure for each zone to be changed.

IMPORTANT! In Zone Type Program Screen #1, selecting WATERFLOW will assign a Waterflow silenceable zone type to the selected zone. Any signaling devices programmed to the same zone can be silenced by pressing the Alarm Silence key or by using the auto-silence feature.

To program a waterfall circuit as nonsilenceable, refer to “System Setup” on page 74.



NOTE: Zone Types are only relevant for Central Station reporting. Changing a zone type will *only* change how it is reported to the Central Station.

Zones Available

ZONE SETUP
1=ZONE TYPES
2=ZONES AVAILABLE
3=ZONE MESSAGE

Zone Setup Screen #3

Pressing 2 while viewing Zone Setup Screen #3 will display the following screen:

ZONES AVAILABLE
001 002 003 004 005
006 007 008 009 010
011 012 013 014 015

The display will show all of the zones that are still available for programming. Note that an up and/or down arrow may appear in the upper right corner of the display, indicating that additional screens of zone information exists. Press the up or down arrow key to view additional screens.

Zone Message

ZONE SETUP
1=ZONE TYPES
2=ZONES AVAILABLE
3=ZONE MESSAGE

Zone Setup Screen #3

Pressing 3 while viewing Zone Setup Screen #3 will display the following screen:

ZONE MESSAGE
1=Z000 NO MESSAGE
2=Z001 MESSAGE 1
3=Z002 NO MESSAGE

Pressing the down arrow key will display additional screens for Zones up to Z99. Press the number key corresponding to the Zone to be programmed. Screens will be displayed allowing the programmer to select Audio Messages 1 through 14. When an audio message is selected, the display will return to the Zone Message screen, showing the message selected for that particular zone. In the example above, Zone 001 has been programmed for Audio Message 1.

3.5.4 Loop Setup

PROGRAMMING
1=LOOP SETUP
2=SYSTEM SETUP
3=FUTURE USE

Programming Screen #2

Loop Setup allows the programmer to configure the SLC Loop for NFPA Class A or Class B wiring and to select the loop protocol. Pressing 1 while viewing Programming Screen #2 will cause the following screen to be displayed:

LOOP SETUP
1=CLASS B
2=PROTOCOL LITESPEED

Loop Setup Screen

Class

To program the SLC Class for the selected loop, press 1 for Class, while viewing Loop Setup Screen. In the preceding example, the control panel is programmed for Class B SLC wiring as indicated by the *B* to the right of *Class* in the display. To change the wiring style, press 1 to toggle the display to read *Class A*. Each press of the 1 key will cause the display to toggle between *Class B* and *Class A*.



NOTE: If the FACP reports an open fault on an SLC Loop programmed for Class A, the trouble condition will latch at the FACP. When the SLC Loop has been repaired, the Reset button must be pressed at the FACP (at least 2 minutes after the trouble has been repaired) to clear the SLC trouble.

Loop Protocol

Loop Protocol refers to the SLC loop mode of operation. Refer to “Wire Requirements” on page 146 for wire specifications based upon SLC protocol. There are two Loop Protocols available:

- CLIP (Classic Loop Interface Protocol) - which is used for the older legacy addressable devices such as the M300 Series modules and detectors
- LiteSpeed (factory default setting) - used for the 350 Series or newer addressable devices for quicker response times. Note that the legacy devices can operate only in CLIP mode while the newer devices are compatible with CLIP and LiteSpeed modes of operation

Pressing 2 while viewing the Loop Setup Screen will toggle between CLIP and LiteSpeed Protocols.

Device Addressing

It is important to note that the ES-200X addressable device capacity is 99 detectors and 99 control/monitor modules. Newer devices can be set to addresses higher than 99 but these addresses will not function with the ES-200X.

Note that it is permissible to mix old and new devices on the same loop but the FACP must be set for CLIP mode when older devices are installed.

3.5.5 System Setup

System Setup allows the programmer to configure the following control panel features:

- **Function Keys:** This feature allows the user to rapidly enable/disable various fire panel inputs and outputs during scheduled maintenance.
- **Banner:** This option allows the user to change the top two lines of the LCD display from the blank factory default readout to a user defined readout when the control panel is in Normal condition.
- **Time-Date:** This feature allows the programmer to set the time, display format (24 hr or 12 hr), date and daylight savings time feature into the FACP memory.
- **Timers:** This option allows the programmer to set the PAS (Positive Alarm Sequence) time delay, Pre-Signal time delay and Waterflow time delay.
- **NACs:** This feature allows the programmer to configure the control panel Notification Appliance Circuits for a variety of options, such as circuit type, silenceable/nonsilenceable, autosilence, coding, silence inhibit, zone assignment and enable/disable.
- **Relays:** This option allows programming of two onboard relays for activation by various control panel events, such as alarm, trouble, supervisory, etc.
- **Canadian Option:** This option allows the programming of certain options to Canadian specifications.
- **Waterflow Silenceable:** This option provides the ability to silence any output circuit activated by a monitor module programmed as a waterflow type.
- **MNS Override:** This option allows the Mass Notification System to override the FACP's specified NACs and control modules.
- **Auxiliary Power:** This option configures the use of the 24VDC auxiliary power output at TB11 on the FACP.
- **Trouble Reminder:** This feature provides an audible reminder that an alarm or trouble still exists on the FACP after the control panel has been silenced. The control panel piezo sounder will pulse once every 15 seconds during an alarm and every two minutes during a trouble condition, after the Alarm Silence or Acknowledge key is pressed. The piezo will continue to sound at these rates until the alarm or trouble condition is cleared. If the trouble condition is not cleared within a selected time of either 4 or 24 hours, the panel will reactivate the trouble sounder and retransmit the trouble condition to the central station if connected. When used with SWIFT wireless devices, the Trouble Reminder must be set to 4 hours.
- **Language:** This option allows the user to switch between English and French language text on the panel display.
- **Charger Enable:** This option allows the user to install an external battery charger.
- **4XTM Supervision:** This feature enables supervision of an installed 4XTMF Transmitter Module.
- **Remote Sync Enable:** This feature controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time.

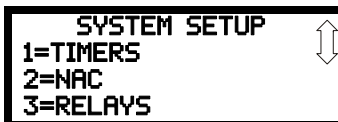


Programming Screen #2

Pressing 2 for System Setup, while viewing Programming Screen #2, will cause the following screens to be displayed:



System Setup Screen #1



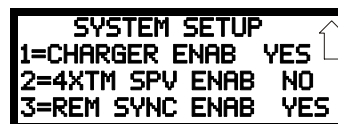
System Setup Screen #2



System Setup Screen #3



System Setup Screen #4



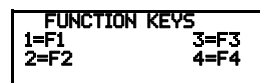
System Setup Screen #5

Function Keys

The ES-200X keypad has 4 programmable function keys. These keys can be programmed to allow rapid disable/enable of various fire panel inputs and outputs during scheduled maintenance. Pressing any function key results in a trouble signal at the panel. Pressing 1 on System Setup Screen #1 displays the following:

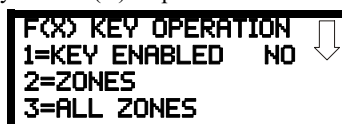


Function Keys Screen

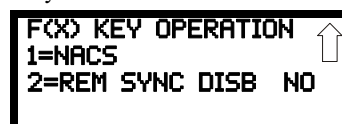


Function Keys Screen

Select 1, 2, 3, or 4 to program the corresponding Function Key. The following screens display for each Function Key where "(X)" represents the number of the key chosen.



Function Keys Screen #1



Function Keys Screen #2

To Enable or Disable the Function Key, press the 1 key while viewing the Function Keys Screen #1. Each press of the key will toggle the screen between *Key Enabled Yes* and *Key Enabled No*.

Pressing 2 key while viewing the Function Keys Screen #1 allows the user to select individual zones that the Function Key will control. Pressing 3 assigns all zones to the selected Function Key.

Each function key can be assigned to control any of the 4 onboard NAC circuits on the ES-200X. By pressing the 2 key while viewing the Function Keys Screen #2 the following screen displays, allowing the user to select the desired NAC circuit(s).

```

FOX> NACS
1=NAC 1 Y 3=NAC 3 N
2=NAC 2 Y 4=NAC 4 N
  
```

Function Keys Screen

Pressing 1, 2, 3, or 4 toggles the screen between *Yes* (controlled by function key) and *No* (not controlled by function key) for each onboard NAC circuit.

```

FOX KEY OPERATION
1=NACS
2=REM SYNC DISB YES
  
```

Function Keys Screen #2

The Remote Synchronization (TB8 on the FACP's main circuit board) can also be disabled through programming of a function key. To disable remote synchronization, press the 3 key while viewing the Function Keys Screen #2. Each press of the key will toggle the screen between *Rem Sync Disb Yes* and *Rem Sync Disb No*.

Banner

```

SYSTEM SETUP
1=FUNCTION KEYS
2=BANNER
3=TIME-DATE
  
```

System Setup Screen #1

The top line of the display, which appears when the control panel is in normal mode, can be changed by using the Banner option. Pressing 2 while viewing System Setup Screen #1 will cause the following to be displayed:

```

BANNER
1=FACTORY
2=USER DEFINED
  
```

Banner Screen

Pressing 1 while viewing the Banner Screen will select the blank factory default banner setting and display the following screen:

```

BANNER
1=FACTORY
2=USER DEFINED
  
```

Banner Screen

```

FACTORY BANNER
  
```

Factory Banner

Pressing the Enter key will store this selection in nonvolatile memory and return the display to the Banner Screen.

Pressing 2 while viewing the Banner Screen will cause the following screens to be displayed:

```

USER DEFINED BANNER
PRESS ENTER IF OK
  
```

User Defined Banner Screen #1

```

USER BANNER - LINE 2
PRESS ENTER IF OK
*****
  
```

User Defined Banner Screen #2

These screens allow the programmer to enter a two line custom banner. A flashing cursor will appear in the bottom left corner of each display. A maximum of 20 characters (including spaces) can be entered into each screen for a total of two lines with 40 characters. After entering up to 20 characters in the first screen, press *Enter* to view the second screen. Enter up to 20 characters in the second screen in the same manner or just press *Enter* if a second banner line is not being entered. To quickly clear the current banner, press the *CLR* key.

To enter alphanumeric characters from the keypad, repeatedly press the appropriate key until the desired character is displayed in the first position. For example, to enter the letter *B*, press the 2 (*ABC*) key three times to toggle through the characters *I*, *A*, and *B*. Press the right arrow key to move the cursor one position to the right and repeat the process to enter the next character. To enter a space, press the 9 (*YZ*) key four times to place a blank in the desired position. When all characters have been entered, press the *Enter* key to store the information. The display will return to the Banner Screen.

Time-Date

```

SYSTEM SETUP
1=TROUBLE REM
2=BANNER
3=TIME-DATE
  
```

System Setup Screen #1

The control panel time and date can be changed by pressing 3 while viewing the System Setup Screen #1. The following screen will be displayed:

```

TIME AND DATE
1=TIME 10:00 AM
2=DATE 15-04-2017
3=CLOCK FORMAT 12HR
  
```

Time-Date Screen #1

```

TIME AND DATE
1=DAYLIGHT SAVINGS
  
```

Time-Date Screen #2

■ Time

To change the time, press *1* while viewing the Time-Date Screen. The following screen will be displayed:

```

ENTER TIME
10:00 AM
1=AM      2=PM
  
```

Time Screen

A flashing cursor is located toward the top left of the display. Below the cursor is the current time. To change the time, enter the two-digit hours followed by the two-digit minutes. The cursor will move one position to the right each time a digit is entered. After the last minutes digit is entered, the cursor will again move one position to the right. At this point enter *1* for AM or *2* for PM. The display will then return to the Time-Date Screen which will show the new time entry. If an error is made while entering a digit, press the *CLR* key to delete the entire entry and beginning again.

■ Date

To change the date, press *2* while viewing the Time-Date Screen. The following screen will be displayed:

```

ENTER DATE
MONTH DAY YEAR
05-04-17
  
```

Date Screen

A flashing cursor is located toward the top left of the display. Below the cursor is the current date. To change the date, enter the two-digit month followed by the two-digit day and then the two-digit year (17 for 2017, 18 for 2018, etc.). The cursor will move one position to the right each time a digit is entered. After the last year digit is entered, the display will return to the Time-Date Screen which will show the new date entry. If an error is made while entering a digit, press the *CLR* key to delete the entire entry and beginning again.

■ Clock Format

The clock can be configured to display 12 hour (AM & PM) or 24 hour (military) time. Pressing *3* while viewing the Time-Date screen will cause the display to toggle between 12HR and 24HR. Select 12HR for 12 hour display or 24HR for 24 hour display. *Note:*



NOTE: If the clock is changed to 24 hour (military) format, the date will change to the European standard of **Day-Month-Year** (for display purposes only).

■ Daylight Savings Time

```

TIME AND DATE
1=DAYLIGHT SAVINGS
  
```

Time & Date Screen #2

Pressing *1* while viewing Time-Date Screen #2 will cause the following screens to be displayed:

```

DAYLIGHT SAVINGS
1=ENABLED YES
2=START MONTH MAR
3=START WEEK WEEK-2
  
```

Daylight Savings Screen #1

```

DAYLIGHT SAVINGS
1=END MONTH NOV
2=END WEEK WEEK-1
  
```

Daylight Savings Screen #2

Pressing *1* while viewing Daylight Savings Screen #1 will cause the display to toggle between *Enabled Yes* and *Enabled No*. The control panel will automatically update the time for daylight savings time when *Enabled Yes* is selected.

Pressing *2* while viewing Daylight Savings Screen #1 will display another screen which allows the programmer to select the month that daylight savings time will begin. In this sub-screen, pressing *1* will select March, *2* will select April, and *3* will select May.

Pressing *3* while viewing Daylight Savings Screen #1 will display two sub-screens which allow the programmer to select the week of the month that daylight savings time will begin. In the first sub-screen, pressing *1* will select the first week, *2* will select the second week and *3* will select the third week, while in the second sub-screen, pressing *1* will select the fourth week and *2* will select the last week of the selected month.

Pressing *1* while viewing Daylight Savings Screen #2 will display another screen which allows the programmer to select the month that daylight savings time will end. In this sub-screen, pressing *1* will select September, *2* will select October, and *3* will select November.

Pressing *2* while viewing Daylight Savings Screen #2 will display two sub-screens which allow the programmer to select the week of the month that daylight savings time will end. In the first sub-screen, pressing *1* will select the first week, *2* will select the second week and *3* will select the third week, while in the second sub-screen, pressing *4* will select the fourth week and *5* will select the last week of the selected month.

Timers

SYSTEM SETUP
1=TIMERS
2=NAC
3=RELAYS

System Setup Screen #2

Timer delays for PAS, Pre-signal and waterflow activation can be programmed by pressing *1* while viewing System Setup Screen #2. The following screen will be displayed:

TIMERS
1=PAS DELAY 000
2=PRE SIGNAL 000
3=WATERFLOW 000

Timer Screen #1

TIMERS
1=AC LOSS DELAY 2
2=CTRL MOD DLY 000
3=CTRL AUTO SIL. 000

Timer Screen #2

TIMERS
1=IN SUITE SIL. 30
2=SUITE RESOUND 01

Timer Screen #3

■ PAS (Positive Alarm Sequence) Delay

TIMERS
1=PAS DELAY 000
2=PRE SIGNAL 000
3=WATERFLOW 000

Timer Screen #1

The factory default setting for PAS is 000 for no delay. To select a PAS delay of 001 to 180 seconds for all devices programmed for PAS, press *1* while viewing Timer Screen #1. The following display will appear:

PAS DELAY
RANGE 0-180 SECONDS

PAS Delay Screen

A flashing cursor is positioned in the lower left corner of the display. Enter a delay time consisting of three digits, such as 005 for five seconds. Upon entering the third digit, the time delay will be stored in the control panel memory and the display will return to the Delay Screen which will indicate the new delay time.

■ Pre-signal Delay

The factory default setting for Pre-signal delay is 000 for no delay. To select a Pre-signal delay of 001 to 180 seconds for all devices programmed for Pre-signal, press *2* while viewing Timer Screen #1. The following screen will be displayed:

PRESIGNAL DELAY
RANGE 0-180 SECONDS

Pre-signal Delay Screen

A flashing cursor is positioned in the lower left corner of the display. Enter a delay time consisting of three digits, such as 009 for nine seconds. Upon entering the third digit, the time delay will be stored in the control panel memory and the display will return to the Delay Screen which will indicate the new delay time.

Note that the FACP allows programming for PAS and Pre-signal timers, but a detector can only be programmed for either PAS or Pre-signal operation. Refer to "Edit Detector" on page 57 for programming details.

■ Waterflow Delay

TIMER
1=PAS DELAY 000
2=PRE SIGNAL 000
3=WATERFLOW 000

Timer Screen #1

A delay can be added prior to declaring a waterflow type of alarm. Be careful to include any built-in delays of the waterflow device. The factory default setting for Waterflow delay is 000 for no delay. To select a Waterflow delay of 01 to 90 seconds for all devices programmed for Waterflow delay, press *3* while viewing Timer Screen #1. The following screen will be displayed:

WATERFLOW DELAY
RANGE 0-90 SECONDS
**

Waterflow Delay Screen

A flashing cursor is positioned in the lower left corner of the display. Enter a delay time consisting of two digits, such as 25 for twenty-five seconds. Upon entering the second digit, the time delay will be stored in the control panel memory and the display will return to the Delay Screen which will indicate the new delay time.

■ AC Loss Delay

TIMER
1=AC LOSS DELAY
2=CTRL MOD DLY
3=CTRL AUTO SIL. 000

Timer Screen #2

The reporting of a loss of AC power to a central station can be delayed by programming the length of the desired delay. The factory default setting is 2 hours. Press *1* while viewing Timer Screen #2 to display the following:

AC LOSS DELAY
1=NO DELAY
2=ENTER DELAY

AC Loss Delay Screen #1

Pressing *1* while viewing AC Loss Delay Screen #1 will program the FACP to transmit an AC Loss report immediately to the central station.

Pressing 2 while viewing AC Loss Delay Screen #1 will display the following:

```

AC LOSS DELAY
RANGE 00-23
**
  
```

AC Loss Delay Screen #2

A flashing cursor will appear in the lower left corner of the display. Type the two digit AC loss reporting delay in hours (00 to 23 hour delay). When the second digit is entered, the display will return to AC Loss Delay Screen #1. Refer to the table on page 49 for permissible settings.



NOTE: Upon the loss of AC power at the control panel, relays programmed for 'AC Loss' will transfer immediately, regardless of the AC Loss Delay setting. If no trouble exists at the panel other than AC Loss, the System Trouble relay will delay its activation for the duration of the AC Loss Delay setting.

■ Control Module Delay

```

TIMER
1=AC LOSS DELAY
2=CTRL MOD DLY
3=CTRL AUTO SIL. 000
  
```

Timer Screen #2

The control module delay feature, if enabled, will delay activation of a control module after being triggered by an alarm condition. Pressing 2 while viewing Timer Screen #2 will display the following:

```

CTRL MOD DELAY
RANGE 0-180 SECONDS
***
  
```

Control Module Delay Screen

A flashing cursor will appear in the lower left corner of the display. Type the three digit control module delay in seconds (000 to 180 second delay). When the third digit is entered, the display will return to the Delay Screen which will indicate the new delay time. Refer to the table on page 49 for permissible settings.

■ Control Module Auto Silence (Canadian Mode Only)

```

TIMER
1=AC LOSS DELAY
2=CTRL MOD DLY
3=CTRL AUTO SIL. 000
  
```

Timer Screen #2

The Control Module Auto Silence feature is only available when the FACP is in Canadian mode of operation. When enabled, this feature automatically silences all silenceable control modules after a programmed length of time. To enable this feature and program the time delay before Control Module Auto Silence activation, press 2 while viewing Timer Screen #2. The following screens will be displayed:

```

CTRL AUTO SILENCE ↓
1=NO
2=5 MINUTES
3=10 MINUTES
  
```

Control Auto Silence Screen #1

```

CTRL AUTO SILENCE ↑↓
1=15 MINUTES
2=20 MINUTES
3=25 MINUTES
  
```

Control Auto Silence Screen #2

```

CTRL AUTO SILENCE ↑
1=30 MINUTES
  
```

Control Auto Silence Screen #3

To disable the Auto Silence feature, press 1 for No while viewing Control Module Auto Silence Screen #1. To enable the Auto Silence feature, press the number corresponding to the time delay which will elapse before Control Module Auto Silence activates. This information will be stored in memory and the display will return to Timer Screen #2.

■ In Suite Silence (Canadian Mode Only)

```

TIMER
1=IN SUITE SIL. 30
2=SUITE RESOUND 01
  
```

Timer Screen #3

The In Suite Silence feature is only available when the FACP is in Canadian mode of operation. When enabled, this feature automatically silences all active outputs mapped to the In Suite Silence Zone (as described in "Special Purpose Zone" on page 71) after a programmed length of time. Pressing 1 while viewing Timer Screen #3 will display the following:

```

IN SUITE SILENCE
RANGE 1-30 MINUTES
**
  
```

In Suite Silence Delay Screen

A flashing cursor will appear in the lower left corner of the display. Type the two digit in suite silence delay in minutes (01 to 30 minute delay). The default time is 30 minutes. When the second digit is entered, the display will return to the Delay Screen which will indicate the new delay time.



NOTE: If the In Suite Silence Timer is set shorter than the Silence Inhibit feature, the system will not silence.

■ Suite Resound (Canadian Mode Only)

TIMER
1=IN SUITE SIL. 30
2=SUITE RESOUND 01

Timer Screen #3

The Suite Resound feature is only available when the FACP is in Canadian mode of operation. When enabled, this feature will resound all outputs and NACs that were silenced by the In Suite Silence timer (if there is an unacknowledged fire alarm on the panel) after a programmed length of time. Once the Suite Resound Timer occurs, additional fire alarms on the system will not restart the In Suite Silence timer. Pressing 2 while viewing Timer screen #3 will display the following.

SUITE RESOUND
RANGE 1-10 MINUTES

In Suite Resound Screen

A flashing cursor will appear in the lower left corner of the display. Type the two digit in suite silence delay in minutes (01 to 10 minute delay). The default time is 1 minute. When the second digit is entered, the display will return to the Delay Screen which will indicate the new delay time. The Suite Resound Timer starts when the In Suite Silence timer expires.

NAC (Notification Appliance Circuit)

SYSTEM SETUP
1=TIMERS
2=NAC
3=RELAYS

System Setup Screen #2

The options for the NACs on the control panel main circuit board can be configured by pressing 2 while viewing System Setup Screen #2. The following screens will be displayed:

NACS
1=NAC 1 3=NAC 3
2=NAC 2 4=NAC 4

NAC Selection Screen

The Notification Appliance Circuits can be configured independently by pressing 1 for NAC 1, 2 for NAC 2, 3 for NAC 3, or 4 for NAC 4. The following screens will be displayed for each selection:

NAC #
1=ENABLED YES ↓
2=TYPE SYNCED STROBE
3=SILENCEABLE YES

NAC Screen #1

NAC #
1=AUTO SILENCE 00 ↑↓
2=CODING TEMPORAL

NAC Screen #2

NAC #
1=ZONE ASSIGNMENT ↑↓
000 000 000 000 000
2=SILENCE INHIBIT NO

NAC Screen #3

NAC #
1=SYNC TYPE S ↑
2=MNS OVERRIDE NO
3=MNS ACTIVE NO

NAC Screen #4

■ Enabled

Pressing 1 while viewing NAC Screen #1 will cause the display to change to *Enabled No*. This will prevent the selected main circuit board NAC from activating its devices. Each press of the 1 key will cause the display to toggle between *Enabled Yes* and *Enabled No*.



NOTE: The programming for NAC 1 will determine the operation of the remote power supply sync.

■ Type

NAC #
1=ENABLED
2=TYPE
3=SILENCEABLE

NAC Screen #1

The main circuit board NAC type can be programmed by pressing 2 while viewing NAC Screen #1. The following screen will be displayed. Press the down arrow key to view additional screens:

NAC TYPE ↓
1=BELL
2=HORN
3=STROBE

Type Screen #1

Select the NAC device type by pressing the number corresponding to the type in the appropriate screen. When the selection is made, the display will return to NAC Screen #1.

The following table contains NAC type codes and their functions:

NAC Type Code	Special Function
Bell	None
Horn	None
Strobe	None
Synced Strobe	Synchronized to manufacturer
Strobe Sil Sync	Same as Synced Strobe but Silence turns off audible & visual devices
Future Use	None
Future Use	None
Future Use	None

Blank	None
-------	------

■ Silenceable

Pressing 3 while viewing NAC Screen #1 will cause the display to change to *Silenceable No*. This will prevent the selected main circuit board NAC from being silenced by pressing the Alarm Silence key or by the Auto Silence feature. Each press of the 3 key will cause the display to toggle between *Silenceable Yes* and *Silenceable No*.

Important: When a Notification Appliance Circuit with a mix of audible and visual devices is programmed for silenceable and the **Synced Strobe** feature is selected, only the audible devices will be turned off if the Silence key is pressed or if the Autosilence feature is enabled. The visual devices (strobes, etc.) will continue to operate. If the **Strobe Sil Sync** feature is selected, Silence or Autosilence will turn off both audible and visual devices.

■ Auto Silence

NAC #
1=AUTO SILENCE
2=CODING TEMPORAL

NAC Screen #2

The Auto Silence feature, when enabled, automatically silences all main circuit board silenceable notification appliances after a programmed length of time. To enable this feature and program the time delay before Auto Silence activation, press 1 while viewing NAC Screen #2. The following screens will be displayed:

AUTO SILENCE 1=NO 2=5 MINUTES 3=10 MINUTES ↓	AUTO SILENCE 1=15 MINUTES 2=20 MINUTES 3=25 MINUTES ↕	AUTO SILENCE 1=30 MINUTES ↑
Auto Silence Screen #1	Auto Silence Screen #2	Auto Silence Screen #3

To disable the Auto Silence feature, press 1 for *No* while viewing Auto Silence Screen #1. To enable the Auto Silence feature, press the number corresponding to the time delay which will elapse before Auto Silence activates. This information will be stored in memory and the display will return to NAC Screen #2.



NOTE: All silenceable control modules as well as the remote power supply sync will be controlled by the Autosilence timer for NAC 1.

■ Coding (only for NACs not programmed as Sync Strobe Type)

The Coding feature allows the programmer to select the type of output that the main circuit board notification appliances will generate when activated. Pressing 2 while viewing NAC Screen #2 will cause the following displays to appear:

CODING 1=STEADY 2=MARCH TIME 3=CALIFORNIA ↓	CODING 1=TEMPORAL 3 2=TEMPORAL 4 3=TWO STAGE 3 MIN ↕	CODING 1=TWO STAGE 5 MIN ↑
Coding Screen #1	Coding Screen #2	Coding Screen #3

The programmer can select the notification appliance output by pressing the number corresponding to the desired output. The coding selections are:

- Steady - a continuous output with no coding
- March Time - 120 ppm (pulse-per-minute) output
- California - 10 seconds on and 5 seconds off
- Temporal 3 - ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, 1½ Seconds Off
- Temporal 4 - 100 milliseconds On, 100ms Off, 100 ms On, 100ms Off, 100 ms On, 100ms Off, 100ms On, 5 Seconds Off
- Two Stage - refer to, "Two Stage Operation" below for a description. If using two-stage operation in a Canadian application, refer to Appendix J on page 159 for more information.

Selection of one of the above options will cause the control panel to store the information in memory and return the display to NAC Screen #2, which will display the new coding choice.

Two Stage Operation

Two Stage operation consists of the following:

- 1st stage output - 20 ppm (pulse-per-minute) coding
- 2nd stage output - Temporal coding as described above
- F2 button functions as the automatic alarm signal cancel button
- F3 button functions as the two stage advance to second stage button



NOTE: Two-stage operation cannot be used at the same time as in-suite silence feature.

If Two Stage operation is programmed as the Coding option, the following sequence of events will occur during an alarm.

1. The onboard NACs which are programmed to General Alarm Zone 0 will activate with a 1st stage output upon activation of any alarm point.
2. If the activated alarm point is directly mapped to a zone which is programmed to an on-board NAC, that NAC will go directly to 2nd stage coding output. All other NACs not directly mapped to the activated alarm point's zone but assigned to Zone 0 will activate with a 1st stage output.

3. If, after the programmed time of 3 or 5 minutes, the Acknowledge switch has not been pressed, all NACs presently in 1st stage activation will go to 2nd stage activation.
4. If an F2 switch has been pressed, the Alarm LED will turn from flashing to steady. Any NACs currently in 1st stage activation will remain in 1st stage. Pressing the Acknowledge switch does not affect NACs already in 2nd stage activation.
5. If an F3 button is pressed, the NACs will progress to the second stage.
6. If another alarm point is activated and the countdown timer is counting, the alarm point will have no effect on the NACs unless the alarm point's zones are directly mapped to one of the NACs, in which case it will follow the procedure outlined in step 2.
7. If another alarm point is activated and the countdown timer has stopped counting due to the Acknowledge switch being pressed, the countdown timer will restart and the NACs will respond as outlined in step 2. NACs already in 2nd stage activation will not be affected.
8. Any control modules assigned to special Zone 099 will be activated either by direct mapping of an input device programmed to Zone 099 or if the timer counts down to zero or when any NAC goes into 2nd stage coding.
9. Control modules that are programmed to the same zone as the activated input device will not be delayed for activation.

■ Zone

```

NAC #
1=ZONE ASSIGNMENT
000 *****
2=SILENC INHIBIT NO
NAC Screen #3

```

A maximum of five zones can be programmed to each main circuit board NAC. Pressing 1 while viewing NAC Screen #3 displays the following screen:

```

ZONE ASSIGNMENT
Z000 *** *** *** ***

```

Zone Screen

Note that Z*** represents the Zone Number(s) corresponding to the selected NAC. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first 0 to the left. Enter the three digit number corresponding to the zone that is to be assigned to this NAC. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zone Z000. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the NAC Screen #3 which will show the zone assignments just entered.

■ Silence Inhibit

```

NAC #
1=ZONE ASSIGNMENT
000 *****
2=SILENC INHIBIT NO
NAC Screen #3

```

The Silence Inhibit feature, when enabled, prevents the silencing of the selected main circuit board NAC for a period of five minutes. Resetting the FACP will also be prevented for the full duration of the silence inhibit time. Pressing 2 while viewing NAC Screen #3 will cause the display to change from the factory default of *Silence Inhibit No* to *Silence Inhibit Yes*. Each press of the 2 key will cause the display to toggle between the two options. If the panel is set to *Canadian* mode of operation, the duration for Silence Inhibit is programmable from 0-300 seconds. Pressing 2 while viewing NAC Screen #3 in Canadian mode only, will display the following:

```

NAC SILENCE INHIBIT
RANGE 0-300 SECONDS
***

```

NAC Silence Inhibit Screen

A flashing cursor will appear in the lower left corner of the display. Type the three digit in suite silence delay in seconds (000 to 300 second delay). The default time is 300 seconds. When the third digit is entered, the display will return to the NAC Screen #3 which will indicate the new Silence Inhibit time.

■ Sync Type

```

NAC #
1=SYNC TYPE
2=MNS OVERRIDE
3=MNS ACTIVE
NAC Screen #4

```

If synchronized strobes were selected as the Type of device installed, the type of synchronization must be selected in this option. Pressing 1 while viewing NAC Screen #4 will cause the following screen to be displayed:

```

NAC SYNC TYPE
1=SYSTEM SENSOR
2=WHEELLOCK
3=GENTEX

```

Pressing 1 while viewing this screen will select System Sensor synchronization, 2 will select Wheelock, and 3 will select Gentex.

Maximum Number of Strobes for Synchronization

The total current draw for each Notification Appliance Circuit cannot exceed 2.5 amps. Refer to the manufacturer's documentation supplied with the Strobes to determine the maximum current draw for each strobe and ensure that the circuit maximum is not exceeded. To ensure proper strobe and circuit operation, there is also a limit to the number of strobes that can be attached to each circuit.

■ MNS Override

```

NAC #
1=SYNC TYPE
2=MNS OVERRIDE
3=MNS ACTIVE
NAC Screen #4

```

The MNS Override feature, when enabled, allows the ECC-50/100 to override the FACP and turn off an active NAC or prevent the NAC from activating during a mass notification event. This feature is the opposite of MNS Active. Both cannot be enabled in the system at the same time. Pressing 2 while viewing NAC Screen #4 will cause the display to change from the factory default of *MNS Override No* to *MNS Override Yes*. Each press of the 2 key will cause the display to toggle between the two options.

■ MNS Active

NAC #
1=SYNC TYPE
2=MNS OVERRIDE
3=MNS ACTIVE
NAC Screen #4

The MNS Active feature, when enabled, allows the selected NAC to activate when an MNS Event occurs and the FACP receives a message from the ECC-50/100. The selected NAC will activate regardless of zone mapping. This feature is the opposite of MNS Override. Both cannot be enabled in the system at the same time. Pressing 3 while viewing NAC Screen #4 will cause the display to change from the factory default of *MNS Active No* to *MNS Active Yes*. Each press of the 3 key will cause the display to toggle between the two options.

Relays

SYSTEM SETUP
1=TIMERS
2=NAC
3=RELAYS
System Setup Screen #2

Pressing 3 while viewing System Setup Screen #2 will allow the programmer to configure two main circuit board Form-C relays from the following screen:

RELAYS
1=RELAY 1
2=RELAY 2
3=RELAY 3

Relays Selection Screen

To program Relay 1 or Relay 3, press the number corresponding to the selected relay. Note that Relay 2 is fixed as a Trouble relay. Selecting Relay 2 will have no effect on its programming. The following screen will appear for each relay to be programmed:

RELAY #
1=TYPE
ALARM

Relay Type Screen

Pressing 1 for Type while viewing the Relay Screen will cause the following screens to be displayed:

RELAY
1=ALARM
2=SUPERVISORY
3=SUPERVISORY AR

Relay Screen #1

RELAY
1=TROUBLE
2=COMM FAIL
3=PROCESS_MON

Relay Screen #2

RELAY
1=PROCESS MON AR
2=AC LOSS
3=HAZARD

Relay Screen #3

RELAY
1=MEDICAL
2=SILENCEABLE ALARM
3=CARBON MONOXIDE

Relay Screen #4

While viewing the selected screen, press the number corresponding to the desired relay type to program the main circuit board relay. The choice will be stored in memory and the display will return to the Relay Type Screen which will show the programmed type choice. Press the Escape key to return to the Relays Selection Screen and repeat the preceding procedure for the remaining relays.



NOTE:

1. *AR (AutoResettable)* in *SUPERVISORY AR* and *PROC MON AR* means that a relay with the Supervisory and/or Process Monitor type code, when activated, will automatically reset when the corresponding condition is cleared.
2. A relay programmed with the Silenceable Alarm type will activate upon any alarm and deactivate when the FACP Alarm Silenced LED is illuminated.

Canadian Option

SYSTEM SETUP
1=CANADIAN OPT. OFF
2=WATERFLOW SIL. NO
3=MNS OVERRIDE NO
System Setup Screen #3

Pressing 1 while viewing System Setup Screen #3 will configure the FACP to comply with Canadian requirements. The display will change to *Canadian Opt. On*. Each press of the 1 key will cause the display to toggle between *Canadian Opt. On* and *Canadian Opt. Off*:

SYSTEM SETUP
1=CANADIAN OPT. OFF
2=WATERFLOW SIL. NO
3=MNS OVERRIDE NO

Important! For Canadian Applications, this option must be set to *ON* prior to any other panel programming.

The Canadian Options configures the FACP with the following as required by Canada:

- The following monitor module type codes are **not** available:
 - ✓ monitor
 - ✓ non-latching supervisory
 - ✓ non-latching drill
 - ✓ non-latching process monitor
 - ✓ process monitor
 - ✓ hazard
 - ✓ tornado
 - ✓ medical alert
- The following features become available:
 - ✓ Sounder Base Auto Silence
 - ✓ Control Module Auto Silence

- ✓ Special Zone 95 CO Active
- ✓ Special Zone 94 In Suite Silence
- ✓ Control Module Auto Silence Timer
- ✓ In Suite Silence Timer
- ✓ In Suite Resound Timer
- ✓ Programmable NAC Silence Inhibit
- ✓ ANN-Bus annunciator keys enable
- Control modules are no longer associated with the auto silence setting for NAC 1.
- Addressable ionization smoke detector sensitivity is automatically monitored using Canadian specifications.
- The Positive Alarm Sequence and Pre-Signal option are not available for Canadian applications.
- The F1 function key is automatically configured to perform a manual alarm signal activation when pressed.
- The F2 function key is automatically configured to perform an automatic alarm signal cancel in two-stage NAC operation when pressed. This prevents the NAC from advancing to the second-stage alarm.
- The F3 function key is automatically configured to force active two-stage NACs into the second (alarm) stage.
- If NACs are set up for two-stage operation, the Silence Inhibit timer is automatically enabled and is fixed at 5 minutes.
- AlarmNet supervision settings for Cellular and Ethernet communications are fixed at 3 minutes and cannot be changed regardless of programming selection.

Waterflow Silenceable

SYSTEM SETUP
 1=CANADIAN OPT. OFF
 2=WATERFLOW SIL. NO
 3=MNS OVERRIDE NO
 System Setup Screen #3

Pressing 2 while viewing System Setup Screen #3 will allow the programmer to configure the system for silenceable on nonsilenceable waterflow circuits. Each press of the 2 key will toggle the display between *Waterflow Sil. No* and *Waterflow Sil. Yes*. When *Waterflow Sil. No* is selected, all output devices associated with a waterflow type input device, will be nonsilenceable. When *Waterflow Sil. Yes* is selected, all output devices associated with a waterflow type input device, will be silenceable.

MNS Override

SYSTEM SETUP
 1=CANADIAN OPT. OFF
 2=WATERFLOW SIL. NO
 3=MNS OVERRIDE NO
 System Setup Screen #3

Pressing 3 while viewing System Setup Screen #3 will allow the programmer to configure the system for use with the Mass Notification System (ECC-50/100 panel). Each press of the 3 key will toggle the display between *MNS Override No* and *MNS Override Yes*. When *MNS Override No* is selected, the ECC-50/100 panel does not have permission to override the FACP. When *MNS Override Yes* is selected, the ECC-50/100 panel will override the FACP, taking control of its NACs and control modules during a mass notification event. Refer to the *ECC-50/100 Manual* for more information. When the *Canadian Option* is set to *On*, the *MNS Override* feature

will become unavailable.

Auxiliary Power

SYSTEM SETUP
 1=AUX POWER
 2=TROUBLE REM 24HR
 System Setup Screen #4

Two Special Application 24 VDC power outputs are available at TB11 on the main circuit board. Pressing 3 while viewing System Setup Screen #4 displays the following:

AUX POWER
 1=AUX 1
 2=AUX 2

Select the desired output. The following screen will be displayed.

AUX 1
 1=CLASS A YES
 2=RESETTABLE YES

Each output can be programmed as resettable or non-resettable power. Non-resettable power is suitable for powering annunciators while resettable power is suitable for powering smoke detectors. Each press of the 2 key will cause the display to toggle between *Resettable Yes* and *Resettable No*.

In addition, Aux 1 can be programmed for Class A wiring. If Aux 1 is to be wired for Class A, press 1. Each press of the 1 key will cause the display to toggle between *Class A Yes* and *Class A No*.

Trouble Reminder

SYSTEM SETUP
 1=AUX POWER
 2=TROUBLE REM 24HR
 System Setup Screen #4

The Trouble Reminder features causes the control panel piezo to sound a reminder ‘beep’ for alarms and troubles, after the panel has been silenced. Refer to “Trouble Reminder” on page 74, for a detailed description of this feature. Pressing 2 while viewing System Setup Screen #4 will cause the display to toggle to *Trouble Rem 4* or *Trouble Rem 24*, which enables this feature for resound at either 4 or 24 hours, respectively. Each press of the 1 key will cause the display to toggle between *Trouble Rem 4* or *Trouble Rem 24*. Refer to the table on page 49 for permissible settings.

Language

```

SYSTEM SETUP
1=AUX POWER
2=TROUBLE REM 24HR
3=LANGUAGE ENGLISH

```

System Setup Screen #4

The language option is used to change the text on the panel display to either English or French. Pressing the 3 key will cause the display to offer a choice of 1=English and 2=French.

Charger Enable

```

SYSTEM SETUP
1=CHARGER ENAB YES
2=4XTM SPV ENAB NO
3=REM SYNC ENAB YES

```

System Setup Screen #5

If using an external battery charger, the FACP battery charger must first be disabled. Pressing 1 while viewing System Setup Screen #5 will cause the display to toggle to *Charger Enab No*, which will allow the use of an external battery charger. Each press of the 1 key will cause the display to toggle between *Charger Enab Yes* and *Charger Enab No*.

4XTMF Supervision

```

SYSTEM SETUP
1=CHARGER ENAB YES
2=4XTM SPV ENAB NO
3=REM SYNC ENAB YES

```

System Setup Screen #5

If a 4XTMF Transmitter Module is installed in the system, supervision must be enabled in user programming. Pressing 2 while viewing System Setup Screen #5 will cause the display to toggle to *4XTM Supv Enab. Yes*, which means there is a 4XTMF installed. Each press of the 1 key will cause the display to toggle between *4XTM Supv Enab. No* and *4XTM Supv Enab. Yes*. Refer to the table on page 49 for permissible settings.

Remote Sync Enable

```

SYSTEM SETUP
1=CHARGER ENAB YES
2=4XTM SPV ENAB NO
3=REM SYNC ENAB YES

```

System Setup Screen #5

Synchronization is a feature that controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time. Refer to Section 2.5, "Remote Synchronization Output", on page 28 for more information. To enable remote synchronization, press the 3 key while viewing System Setup Screen #5. Each press of the key will toggle the screen between *Rem Sync Enab Yes* and *Rem Sync Enab No*.

3.5.6 History

```

PROGRAMMING
1=HISTORY
2=COMMUNICATOR
3=ANNUNCIATORS

```

Programming Screen #3

The History option allows an authorized user to view or erase events which have occurred in the control panel. Pressing 1 while viewing Programming Screen #3 will display the History options as shown in the following display:

```

HISTORY
1=VIEW EVENTS
2=ERASE HISTORY

```

History Screen

View Events

```

HISTORY
1=VIEW EVENTS
2=ERASE HISTORY

```

History Screen

Pressing 1 while viewing the History Screen will allow the user to select the events to be viewed as illustrated in the following:

```

HISTORY
1=VIEW ALL
2=VIEW ALARMS
3=VIEW OTHER EVENTS

```

View Events Screen

While displaying the View Events screen, press 1 to view all events, 2 to view only alarms or 3 to view other events. Use the up and down arrow keys to scroll through all of the displayed events.

Erase History

The Erase History option allows a user to erase all events from the history file. This will provide a clean slate in order to use the history file to track future events. Pressing 2 while viewing the History Screen will display the following screen:

```

ERASE HISTORY
PROCEED ?
1=YES 2=NO

```

Erase History Screen

Pressing *1* while viewing the Erase History Screen will erase all events from the History file. During this process, the display will read as follows:



Erase History Wait Screen

After the History file has been erased, the display will return to the History Screen.

3.5.7 Communicator



Programming Screen #3

The communicator settings allow the user to configure the settings for the pre-installed IPOTS-COM and CELL-MOD/CELL-CAB-FL if installed in the system. Pressing *2* while viewing the Programming Screen #3 will cause the following Communicator options to be displayed:



Communicator Screen #1



Communicator Screen #2



Communicator Screen #3

Communicator Installed

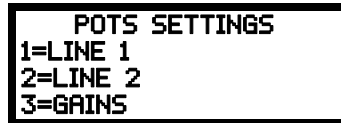
The pre-installed communicator provides communication to a central station. Use of the communicator requires it be enabled in user programming. Pressing *1* while viewing the Communicator Screen #1 will change the display to *Installed No*. Each press of the *1* key will cause the display to toggle between *Installed Yes* and *Installed No*.

POTS Settings



Communicator Screen #1

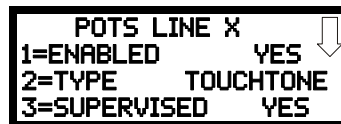
The POTS settings configure the system when telephone lines are used to contact central station. Pressing *2* while viewing the Communicator Screen #1 will display the following.



POTS Settings Screen

■ POTS Line (X)

If telephone lines are connected to the IPOTS-COM board at J4 (Line 1) and J5 (Line 2), their settings can be configured by pressing *1* or *2*, respectively. Pressing *1* or *2* will display the following screen. The programming options for Line 1 and Line 2 are identical.



POTS Line X Screen

Phone Line (X) Enable

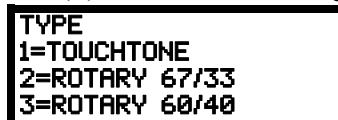


POTS Line X Screen

To enable the phone line, press *1* while viewing the POTS Line (X) Screen #1 to change the display to *Enabled Yes*. Each press of the *1* key will cause the display to toggle between *Enabled Yes* and *Enabled No*.

Type

To select the type, press *2* while viewing the POTS Line (X) Screen #1. The following screen will be displayed:



Type Settings Screen

Press *1* to select Touchtone dialing, *2* to select Rotary dialing with a make/break ratio of 67/33 or *3* to select Rotary dialing with a make/break ratio of 60/40.

Supervised Phone Line

```

POTS LINE X
1=ENABLED      YES
2=TYPE         YES
3=SUPERVISED

```

POTS Line X Screen

The Supervised Phone Line feature allows the user to disable the supervision of Phone Lines when using an alternate means of secondary transmission path. The factory default setting is Phone Line (X) supervised. Supervision must be set to *Yes* if the selected transmission path is POTS.

Pressing *1* for *Supervision* while viewing the POTS Line (X) Screen #2 will change the screen to read *Supervision No*. Each press of the *1* key will toggle the option between *Supervise Yes* and *No*. Refer to the table on page 49 for permissible settings.

■ Gains

```

POTS SETTINGS
1=LINE 1
2=LINE 2
3=GAINS

```

POTS Settings Screen

The Gains value is the telephone's transmitting "volume control". To adjust the settings, press *3* while viewing the POTS Settings screen. The following screen will be displayed:

```

GAINS
1=DIALING      NORM
2=REPORTING    NORM

```

Gains Screen

The Gains value can be adjusted for when the telephones lines are in use for Dialing and Reporting. Press *1* or *2* to change these values, respectively. The following screen will display for both options.

```

GAINS
1=LOW
2=NORMAL
3=HIGH

```

Gains Screen

Press *1* for *Low*, *2* for *Normal*, and *3* for *High*. After the Gains value has been selected, the display will return to the Gains Screen.

IP Settings

```

COMMUNICATOR
1=INSTALLED    YES
2=POTS SETTINGS
3=IP SETTINGS

```

Communicator Screen #1

The IP settings configure the system when the central station will be contacted over the internet. The following screens allow the user to enter the device addresses needed for communication. Pressing *3* while viewing the Communicator Screen #1 will display the following.

```

IP SETTINGS
1=DHCP ENABLED NO
2=STATIC SETTINGS
3=ENTER PIN

```

IP Settings Screen #1

```

IP SETTINGS
1=ETHERNET FAULT 01
2=CELLULAR FAULT 01

```

IP Settings Screen #2

■ DHCP Enabled

If the internet router used by the IPOTS-COM is configured for DHCP (Dynamic Host Configuration Protocol) where addresses are automatically assigned, press *1* while viewing the IP Settings Screen to change the display to *Enabled Yes*. Each press of the *1* key will cause the display to toggle between *Enabled Yes* and *Enabled No*. If the DHCP is enabled, the Static Settings option will disappear since there is no need to enter addresses manually.

■ Static Settings

```

IP SETTINGS
1=DHCP ENABLED NO
2=STATIC SETTINGS
3=ENTER PIN

```

IP Settings Screen

The Static Settings are used to set the addresses manually if the DHCP is not enabled. Press *2* on the IP Settings Screen. The following screens will display:

```

STATIC SETTINGS
DEVICE IP ADDRESS
XXX.XXX.XXX.XXX

```

Device IP Address Screen

```

STATIC SETTINGS
SUBNET MASK
XXX.XXX.XXX.XXX

```

Subnet Mask Screen

```

STATIC SETTINGS
GATEWAY IP ADDRESS
XXX.XXX.XXX.XXX

```

Gateway IP Address Screen

```

STATIC SETTINGS
PREFERRED DNS
XXX.XXX.XXX.XXX

```

Preferred DNS Screen

The A flashing cursor will appear on the first *X* to the left. Enter the twelve digit address. When the address has been entered, press the Enter key to store the address number. The display will return to the IP Settings Screen.

■ PIN

IP SETTINGS
1=DHCP ENABLED NO
2=STATIC SETTINGS
3=ENTER PIN
IP Settings Screen

In the event that the Communicator needs to be replaced, the device will need to be re-registered with AlarmNet. AlarmNet will issue a PIN to be entered into the panel for verification. Pressing 3 on the IP Settings screen will display the following.

IP SETTINGS
ENTER 4 DIGIT
PIN NUMBER

PIN Number Screen

Enter the 4 digit PIN provided by AlarmNet and press Enter. The display will indicate that it is sending the PIN to AlarmNet for verification.

■ Ethernet Fault

IP SETTINGS
1=ETHERNET FAULT 01
2=CELLULAR FAULT 01
IP Settings Screen #2

The Ethernet Fault Time is the duration of the communication loss between the FACP and the Ethernet infrastructure.

Pressing 1 on the IP Settings Screen #2 will display the following:

ETHERNET FAULT TIME
RANGE 1-60 MINUTES
**
Ethernet Fault Time Screen

Select the number of minutes allowed, 1-60, before a fault is shown on the panel.

■ Cellular Fault

The Cellular Fault Time is the duration of the communication loss between the FACP and the cellular infrastructure (e.g. cell tower).

Pressing 2 on the IP Settings Screen #2 will display the following:

CELLULAR FAULT TIME
RANGE 1-60 MINUTES
**
Cellular Fault Time Screen

Select the number of minutes allowed, 1-60, before a fault is shown on the panel.

Primary and Secondary Communication Paths

COMMUNICATOR
1=PRI COMM PATH
2=SEC COMM PATH
3=TBL CALL LIMIT 0
Communicator Screen #1

The Primary and Secondary Communication Path screens are used to configure the methods (primary and backup) for reporting to central station. Pressing 1 for Pri or 2 for Sec will display the following screens.

Note that the following information must be entered for both the Primary and Secondary Communication Paths.

XXX COMM PATH
1=POTS
2=ETHERNET
3=CELLULAR
Comm Path Screen

■ POTS

XXX COMM PATH
1=POTS
2=ETHERNET
3=CELLULAR
Comm Path Screen

To configure the communication method to contact central station as a telephone line, select 1 for POTS. The following screens will display.

POTS XXX COMM PATH
1=ENABLED NO
2=ACCT CODE 000000
POTS (XXX) Path Screen #1

POTS XXX COMM PATH
1=PHONE NUMBER
2035554321
POTS (XXX) Path Screen #2

POTS XXX COMM PATH
1=COMM FORMAT
ADEMCO CONTACT ID
POTS (XXX) Path Screen #3

POTS XXX COMM PATH
1=TEST TIME INT 24
2=24HR TEST TIME 0100
POTS (XXX) Path Screen #4

Enable

To enable the phone line, press *1* while viewing the POTS Line (X) Screen #1 to change the display to *Enabled Yes*. Each press of the *1* key will cause the display to toggle between *Enabled Yes* and *Enabled No*.



NOTE: For UL applications: when POTS is used as the primary communication path, the use of POTS as the secondary transmission path is only allowed with approval of the local AHJ.
For ULC applications: when POTS is used as the primary transmission path, alarm signals will be sent out on both the primary and secondary transmission paths.

Account Code

POTS XXX COMM PATH
1=ENABLED NO
2=ACCT CODE 000000

POTS Comm Path Screen #1

Pressing 3 while viewing POTS (XXX) Path Screen #1 will cause the following screen to be displayed:

ACCOUNT CODE
ENTER 6 DIGITS

Account Codes Screen

The Account Code, which is assigned by a Central Station, depends on the communication format being used. The Account Code screen will have a flashing cursor in the lower left corner. Enter the supplied account code using 0 - 9 and A - F keys.

Phone Number

POTS XXX COMM PATH
1=PHONE NUMBER
2035554321

POTS Comm Path Screen #2

Pressing 2 while viewing POTS XXX Path Screen #2 will cause the following screen to be displayed:

PHONE NUMBER
20 NUMBERS MAXIMUM

Phone Numbers Screen

The Phone Number screen is used to enter the Central Station phone number that the Communicator will be contacting. A maximum of 20 characters can be entered with valid entries being 0 - 9 and A - C where A = *, B = # and C = 2 seconds pause.

A flashing cursor will appear in the lower left corner of the screen. Enter the first digit then press the right arrow key to move the cursor to the right one position. Enter the second digit and repeat the process until all digits are entered. Press the *Enter* key to store the phone number in memory.

Communication Format

POTS XXX COMM PATH
1=COMM FORMAT
ADEMCO CONTACT ID

POTS Comm Path Screen #3

Pressing 1 while viewing Primary/Secondary Screen #3 will cause the following screen to be displayed:

COMM FORMAT
1=ADEMCO CONTACT ID
2=SIA 8
3=SIA 20

The Communication Format is determined by the type of receiver that the Communicator is transmitting to. *Consult your Central Station for proper selection or consult our factory representatives. For any format chosen, the control panel automatically programs all of the event codes.*

Select the Communication Format by pressing the corresponding number key while viewing the Comm Format screen. The following table describes each format:

Screen Selection	Communication Format Description
ADEMCO CONTACT ID	Contact ID, DTMF, 1400/2300 ACK
SIA 8	Security Industry Association, 8 messages per call
SIA 20	Security Industry Association, 20 messages per call

Table 3.2 Communication Formats

Test Time Interval

The test report sent to the Central Station phone number may be sent once every 1, 2, 3, 4, 6, 8, 12, or 24 hours. Pressing *1* while viewing POTS (XXX) Comm Path #4 will toggle the available settings. Refer to the table on page 49 for permissible settings.

24 Hour Test Time

POTS XXX COMM PATH
1=TEST TIME INT 24
2=24HR TEST TIME 0100

POTS Comm Path Screen #4

Pressing 2 while viewing POTS (XXX) Comm Path #4 will cause the following screen to be displayed:

24 HOUR TEST TIME
RANGE 0000-2359

24 Hour Test Time Screen

Use the 24 Hour Test Time screen to program the time that the Communicator will transmit the 24 Hour Test to the Central Station. A flashing cursor will appear in the lower left corner of the screen. Enter a four digit number representing the test time using military time (0000 = midnight and 2359 = 11:59PM).

■ Ethernet

```

XXX COMM PATH
1=POTS
2=ETHERNET
3=CELLULAR
  
```

Comm Path Screen #1

To configure the communication method to contact central station as an Ethernet connection, select 2 for *Ethernet* from the Comm Path Screen. The following screens will display.

```

ETHERNET OPTIONS
1=ENABLED      NO
2=CS ACCOUNT
  
```

Ethernet Options Screen #1

```

ETHERNET OPTIONS
1=SUPV. SETTINGS
NFPA 2010 DUAL PATH
  
```

Ethernet Options Screen #2

Enable

To enable the Ethernet connection, press 1 while viewing the Ethernet Options Screen #1 to change the display to *Enabled Yes*. Each press of the 1 key will cause the display to toggle between *Enabled Yes* and *Enabled No*.

Central Station Account

```

ETHERNET OPTIONS
1=ENABLED      YES
2=CS ACCOUNT
  
```

Ethernet Options Screen #1

Press 2 on Ethernet Options Screen #1 to display the following:

```

CS ACCOUNT
1=CITY ID      0000
2=CS ID        0000
3=ACCT CODE    000000
  
```

24 Hour Test Time Screen

Enter the *City ID*, *Central Station ID*, and *Account Code* all provided by the monitoring station.

NOTE: When using Ethernet as the primary and Cellular as secondary, the three CS account codes must be the same for both paths.

Supervision Settings

```

ETHERNET OPTIONS
1=SUPV. SETTINGS
NFPA 2010 DUAL PATH
  
```

Ethernet Options Screen #2

Pressing 1 while viewing Ethernet Options Screen #2 will cause the display to toggle between the 4 supervision setting options. Toggle to select *NFPA 2010 Sole Path*, *NFPA 2010 Dual Path*, *NFPA 2013 Sole Path*, or *NFPA 2013 Dual Path*. Refer to the table on page 49 for permissible settings.

The Supervision Interval is the time from the check-in at AlarmNet to the FACP. Select *Dual Path* when Ethernet and Cellular communications will be used. Select *Sole Path* when only Ethernet or Cellular is used.

- NFPA 2010 Dual Path: Supervision Interval: 24 Hours
- NFPA 2010 Sole Path: Supervision Interval: 5 min
- NFPA 2013 Dual Path: Supervision Interval: 6 Hours
- NFPA 2013 Sole Path: Supervision Interval: 1 Hour

NOTE: These supervision settings apply to both the Cellular settings and the Ethernet settings.

■ Cellular

```

XXX COMM PATH
1=POTS
2=ETHERNET
3=CELLULAR
  
```

Comm Path Screen #1

To configure the communication method to contact central station as a GSM/Cellular connection, select 3 for *Cellular* from the Comm Path Screen. The following screens will display. Note that a CELL-MOD or CELL-CAB-FL must be installed in the system for use of this feature.

```

CELLULAR OPTIONS
1=ENABLED      NO
2=CS ACCOUNT
  
```

Cellular Options Screen #1

```

CELLULAR OPTIONS
1=SUPV. SETTINGS
NFPA 2010 DUAL PATH
  
```

Cellular Options Screen #2

Enable

To enable the Ethernet connection, press 1 while viewing the Ethernet Options Screen #1 to change the display to *Enabled Yes*. Each press of the 1 key will cause the display to toggle between *Enabled Yes* and *Enabled No*.

Central Station Account

```

CELLULAR OPTIONS
1=ENABLED      YES
2=CS ACCOUNT
  
```

Cellular Options Screen #1

Press 2 on Cellular Options Screen #1 to display the following:

```

CS ACCOUNT
1=CITY ID      0000
2=CS ID        0000
3=ACCT CODE    000000
  
```

Central Station Account Screen

Enter the *City ID*, *Central Station ID*, and *Account Code* all provided by the monitoring station.

Supervision Settings

CELLULAR OPTIONS
1=SUPE. SETTINGS
NFPA 2010 DUAL PATH

Cellular Options Screen #2

Pressing *1* while viewing Ethernet Options Screen #2 will cause the display to toggle between the 4 supervision setting options. Toggle to select *NFPA 2010 Sole Path*, *NFPA 2010 Dual Path*, *NFPA 2013 Sole Path*, or *NFPA 2013 Dual Path*. Refer to the table on page 49 for permissible settings.

The Supervision Interval is the time from the check-in at AlarmNet to the FACP. Select *Dual Path* when Ethernet and Cellular communications will be used. Select *Sole Path* when only Ethernet or Cellular is used.

- NFPA 2010 Dual Path: Supervision Interval: 24 Hours
- NFPA 2010 Sole Path: Supervision Interval: 5 min
- NFPA 2013 Dual Path: Supervision Interval: 6 Hours
- NFPA 2013 Sole Path: Supervision Interval: 1 Hour



NOTE: These supervision settings apply to both the Cellular settings and the Ethernet settings.

Trouble Report Limit (Dialer Runaway Prevention)

COMMUNICATOR
1=PRI COMM PATH
2=SEC COMM PATH
3=TBL REPORT LIMIT 0

Communicator Screen #2

The Report Limit option limits the number of Communicator trouble calls to the Central Station, to a programmed amount between 00 and 99, for each unique trouble within a 24 hour period. Separate limit counters keep track of each unique type of trouble. Note that the number of phone line (communication) faults called to the Central Station are not limited by this feature. No subsequent restoral message is sent to the Central Station(s) for a particular trouble whose call limit has been reached. Local communicator annunciation will still track the particular trouble and restoral.

To set the Trouble Report Limit, press *3* while viewing Communicator Screen #1. The following screen will be displayed.

TROUBLE CALL LIMIT
00-99 RANGE
**

Trouble Report Limit Screen

Enter a value between 00 and 99, then press Enter to set the Report Limit to this value. Refer to the table on page 49 for permissible settings.



NOTE: Entering a value of 00 will disable the Trouble Report Limit allowing the Communicator to call the Central Station an unlimited number of times.

Report Style

COMMUNICATOR
1=REPORT STYLE POINT
2=EVENT CODES

Communicator Screen #3

Pressing *1* while viewing Communicator Screen #3 will cause the Report Style display to toggle between *Point* and *Zone*. Setting the Report Style to Point will program the Communicator to report individual point status to the Central Station. The control panel is capable of monitoring a total of 198 addressable devices. Setting the Report Style to Zone will program the Communicator to report zone status to the Central Station. The control panel is capable of monitoring a total of 99 individual zones.



NOTE:

1. Detector Address 001 will be reported to the Central Station as Point 001, Detector Address 002 as Point 002, with reports continuing in a similar fashion all the way up to Detector Address 99 which will be reported as Point 099.
2. Module Address 001 will be reported to the Central Station as Point 160, Module Address 002 will be reported to the Central Station as Point 161, with reports continuing in a similar fashion all the way up to Module Address 99 which will be reported as Point 258.

Event Codes

COMMUNICATOR
1=REPORT STYLE POINT
2=EVENT CODES

Communicator Screen #3

Pressing *2* while viewing the Communicator Screen #3 will cause the following screen to be displayed:

EVENT CODES
1=ADEMCO CONTACT ID
2=SIA 8
3=SIA 20

Event Code Screen

Select the desired communication format to update Event Code programming.

EVENT CODES
1=PULL STATION
2=MON-USER-DEF-1
3=WATERFLOW

Event Code Screen

Pressing the down arrow key allows viewing of all Events associated with the selected Communication Format. Pressing the number corresponding to the event displayed in each screen will display its default event code which can be customized by the programmer. For example, pressing 1 for Pull Station will display the following screen which allows the Event Code to be changed from the default value.



Event Code Screen

The tables on the following pages list all of the Events and their default Event Codes for the various Communication Formats.

The information shown in Table 3.3 is automatically programmed for the Central Station phone number Event Codes when the Ademco Contact ID or SIA Format is selected. Enter 0s for an Event Code Setting to disable the report. Disabled reports will not get called to the Central Station. The programmer may enable the Event Types in programming as described on the previous page.

Event Description	Ademco Contact ID			SIA	
	Active	Zone	Point	Active	Restoral
PULL STATION	115	Zone	Point	FA	FH
MON-USER-DEF-1	115	Zone	Point	FA	FH
WATERFLOW	113	Zone	Point	SA	SH
MON-USER-DEF-2	113	Zone	Point	SA	SH
SMOKE (PHOTO)	111	Zone	Point	FA	FH
DET-USER-DEF-1	111	Zone	Point	FA	FH
SMOKE (ION)	111	Zone	Point	FA	FH
DET-USER-DEF-2	111	Zone	Point	FA	FH
HEAT DETECT	114	Zone	Point	KA	KH
DET-USER-DEF-3	114	Zone	Point	KA	KH
SMOKE DUCT-P	116	Zone	Point	FA	FH
DET-USER-DEF-4	116	Zone	Point	FA	FH
PHOTO W/HEAT	111	Zone	Point	FA	FH
DET-USER-DEF-5	111	Zone	Point	FA	FH
CO ALARM	162	Zone	Point	GA	GH
DET-USER-DEF-6	200	Zone	Point	FS	FV
DUCT SUPERVISORY	200	Zone	Point	FS	FV
DET-USER-DEF-7	200	Zone	Point	FS	FV
PHOTO SUPER AR	200	Zone	Point	FS	FV
DET-USER-DEF-8	111	Zone	Point	FA	FH
CO SUPERVISORY	200	Zone	Point	GS	GV
DET-USER-DEF-9	111	Zone	Point	FA	FH
PHOTO ADAPT	111	Zone	Point	FA	FH
DET-USER-DEF-10	111	Zone	Point	FA	FH
PHOTO BEAM	111	Zone	Point	FA	FH
DET-USER-DEF-11	111	Zone	Point	FA	FH
MONITOR	110	Zone	Point	FA	FH
MON-USER-DEF-3	110	Zone	Point	FA	FH
SMOKE CONVEN	111	Zone	Point	FA	FH
MON-USER-DEF-5	111	Zone	Point	FA	FH
HEAT CONVENTIONAL	114	Zone	Point	KA	KH
MON-USER-DEF-6	114	Zone	Point	KA	KH
MEDIC ALERT	100	Zone	Point	MA	MH
MON-USER-DEF-7	100	Zone	Point	MA	MH
HAZARD ALERT	150	Zone	Point	PA	PH
MON-USER-DEF-8	150	Zone	Point	PA	PH
TORNADO ALRT	150	Zone	Point	PA	PH
MON-USER-DEF-9	150	Zone	Point	PA	PH

Table 3.3 Event Codes

TAMPER	144	Zone	Point	TA	TH
MON-USER-DEF-11	144	Zone	Point	TA	TH
MON SUPERVISORY	200	Zone	Point	FS	FV
MON-USER-DEF-12	200	Zone	Point	FS	FV
MON SUPERV AUTO	200	Zone	Point	FS	FV
MON-USER-DEF-13	200	Zone	Point	FS	FV
HVAC OVRIDE	200	Zone	Point	FS	FV
POWER MON	330	Zone	Point	AT	AR
MON-USER-DEF-14	330	Zone	Point	AT	AR
TROUBLE MON	POINT_FAULT code will always be transmitted				
MON-USER-DEF-15	POINT_FAULT code will always be transmitted				
PROCESS MON	000	Zone	Point	00	00
MON-USER-DEF-16	000	Zone	Point	00	00
PROC MON AR	000	Zone	Point	00	00
MON-USER-DEF-17	000	Zone	Point	00	00
MON-USER-DEF-18	000	Zone	Point	00	00
POINT FAULT	380	Zone	Point	FT	FJ
POINT DISABLE	570	Zone	Point	FB	FU
MNS EVENT	580	000	000	00	00
MNS OVERRIDE	581	000	000	00	00
MNS MESSAGE	000	000	Message #	00	00
MANUAL EVACUATION	110	000	000	00	00
AC_FAIL	301	000	000	AT	AR
DRILL	604	000	000	FI	FK
SLC 1 SHORT A	372	000	000	ET	ER
SLC 1 SHORT B	372	000	000	ET	ER
SLC 1 OPEN A	371	000	000	ET	ER
SLC 1 OPEN B	371	000	000	ET	ER
SLC 1 GND FAULT POS	310	000	000	ET	ER
SLC 1 GND FAULT NEG	310	000	000	ET	ER
SLC 1 COMM FAULT	330	000	000	EM	EN
PASSWORD FAULT	000	000	000		
GROUND FAULT	310	000	000	ET	ER
LOW BATTERY	302	000	000	YT	YR
NO_BATTERY	311	000	000	YT	YR
TELCO LINE 1	351	000	000	LT	LR
TELCO LINE 2	352	000	000	LT	LR
COMM FAULT 1	354	001	001	YC	YK
COMM FAULT 2	354	002	002	YC	YK
TOTAL COMM FAULT	000	N/A	N/A	00	00
ETHERNET FAULT	350	000	000	YS	YK
CELLULAR FAULT	350	000	000	YS	YK
PRINTER FAULT	336	000	000	VT	VR
NAC 1 FAULT	321	001	001	YA	YR
NAC 2 FAULT	322	002	002	YA	YR
NAC 3 FAULT	326	003	003	YA	YR
NAC 4 FAULT	327	004	004	YA	YR
24 VDC FAULT	300	000	000	YP	YQ
VOICE EVAC FAULT	330	000	000	ET	ER
PRI ANN-BUS FAULT	333	000	000	ET	ER
SEC ANN-BUS FAULT	333	000	000	ET	ER

Table 3.3 Event Codes (Continued)

PRI ANN CLASS A	333	000	000	ET	ER
REMOTE SYNC DIS	520	000	000	ET	ER
NAC 1 DISABLE	521	001	001	ET	ER
NAC 2 DISABLE	522	002	002	ET	ER
NAC 3 DISABLE	526	003	003	ET	ER
NAC 4 DISABLE	527	004	004	ET	ER
MEMORY FAULT	304	000	000		
CHARGER FAULT	300	000	000	YP	YQ
OPTION CARD 1 FAULT	331	000	000	ET	ER
REMOTE SYNC FAULT	300	000	000	OU	OV
ZONE DISABLE	570	000	000	FB	FU
PWRMOD24 FAULT	300	000	000	YP	YQ
AUX 1 CLASS A FAUL	300	000	000	YP	YQ
ANN-BUS COMM FAULT	333	000	000	ET	ER
DISPLAY COMM FAULT	300	000	000	ET	ER
NO_DEVICES_INSTLLD	380	000	000	ET	ER
OFF_NORMAL_MESSAGE	308	000	000	LB	LX
24 HOUR TEST PRI	602	000	000	RP	
24 HOUR TEST SEC	602	000	000	RP	
24 HOUR ABNORMAL PRI	608	000	000	RY	
24 HOUR ABNORMAL SEC	608	000	000	RY	
UPDOWN REQUEST	411	000	000	RB	
UPLOAD SUCCESS	416	000	000	RS	
DOWNLOAD SUCCESS	412	000	000	RS	
UPDOWN FAILURE	413	000	000	RR	
GENERAL ALARM	000	000	000	00	00
GENERAL SUPERVISORY	000	000	000	00	00

Table 3.3 Event Codes (Continued)

3.5.8 Annunciators

```

PROGRAMMING
1=HISTORY
2=COMMUNICATOR
3=ANNUNCIATORS

```

Programming Screen #3

Pressing 3 while viewing Programming Screen #3 will cause the control panel to display the following screens:

```

ANN-BUS SELECT
1=PRIMARY
2=SECONDARY
3=ANN-BUS OPTIONS

```

A printer module, graphic annunciator module, LCD annunciator module, LED annunciator module, and relay module can be programmed into the ES-200X system. These devices communicate with the FACP over the ANN-BUS terminals on the control panel.

ANN-BUS Setup

```

ANNUNCIATORS
1=PRIMARY
2=SECONDARY
3=ANN-BUS OPTIONS

```

Annunciators Screen

Two ANN-BUS circuits are available on the ES-200X. Press 1 to configure the Primary ANN-BUS or press 2 to configure the Secondary ANN-BUS. The following screens will be displayed for either ANN-BUS circuit where (XXX) indicates either *Primary* or *Secondary*.

```

ANN XXX
1=ENABLED NO
2=MODULES INSTALLED
3=AUTO-CONFIGURE

```

ANN-BUS Screen #1

```

ANN XXX
1=CLASS A NO

```

ANN-BUS Screen #2

■ ANN-BUS Enabled

The ANN-BUS must be enabled if any modules are connected to the ANN-BUS terminals. To enable the ANN-BUS, press 1 while viewing ANN-BUS screen #1 so that the display reads *ANN XXX Enabled Yes*. Each press of the 1 key will cause the display to toggle between *ANN XXX Enabled Yes* and *ANN XXX Enabled No*.

■ Modules Installed

```

ANN XXX
1=ENABLED      NO
2=MODULES INSTALLED
3=AUTO-CONFIGURE
ANN XXX Screen #1
  
```

If an ANN-BUS module is installed, press 2 for *Modules Installed* to select ANN-BUS addresses for the module(s). The only difference between the two programming screens are the addresses. The Primary Bus module addresses will have a prefix of “1-” while the Secondary Bus module addresses will have a prefix of “2-”. The following screen will be displayed for either bus circuit.

```

ANN-BUS MODULES
1=ADDR. X-1    NONE
2=ADDR. X-2    NONE
3=ADDR. X-3    NONE
  
```

ANN-BUS Modules Screen #1

Pressing the down arrow key will allow the programmer to view additional screens displaying Addresses 1-8. To select one or more addresses for the installed module(s), press the number key corresponding to the module address in each screen. The following screen will be displayed for each address:

```

ANN-BUS MODULE X-1
ANN-BUS ADDRESS
1=TYPE          NONE
  
```

ANN-BUS Address Screen

Pressing 1 for *Type* will display the following screens:

```

ANN-BUS MODULE TYPE
1=NOT INSTALLED
2=ANN-80 MODULE
3=ANN-100 MODULE
  
```

Module Type Screen #1

```

ANN-BUS MODULE TYPE
1=ANN-I/O MODULE
2=ANN-S/PG MODULE
3=ANN-LED MODULE
  
```

Module Type Screen #2

```

ANN-BUS MODULE TYPE
1=ANN-RLY MODULE
2=ANN-ACC
2=ANN-ECC
  
```

Module Type Screen #3

Press the number corresponding to the module/device type that is installed with the selected address.



NOTE: If the module type selected is the ANN-80, ANN-100, ANN-S/PG, or ANN-ACC or if *Not Installed* is selected, the ANN-BUS Address Screen shown on the previous page will be displayed following the module selection. The options selected for each of these modules will be the same for all modules of the same type (refer to “ANN-S/PG (Print) Options” on page 101 and “ANN-80/100 Options” on page 101).

If ANN-I/O, ANN-LED, or ANN-RLY is the selected module type, the following ANN-BUS Address Screen will be displayed:

```

ANN-BUS MODULE X-1
ANN-BUS ADDRESS
1=TYPE          ANN-I/O
2=MODULE OPTIONS
  
```

ANN-BUS Address Screen

Since the options for each of these module types can be individually set, pressing 2 for *Module Options*, while viewing the ANN-BUS Address Screen will display the available options as described below.

ANN-I/O Options

Pressing 2 for *Module Options* while viewing ANN-BUS Address screen when the ANN-I/O option is selected will display the following screen:

```

ANN-I/O - ADDR X-1
SLC 1 DET 001-030
ACTIVE LEDS ONLY
  
```

ANN-I/O Address Screen #1

```

ANN-I/O - ADDR X-1
1=POINT/ZONE POINT
  
```

ANN-I/O Address Screen #2

```

ANN-I/O - ADDR X-1
1=RANGE PT001-030
2=DET/MOD      DET
  
```

ANN-I/O Address Screen #3

The first screen indicates that the ANN-I/O at ANN-BUS address 1 is programmed to annunciate SLC Loop #1 addressable Detectors with addresses 1 through 30. The programming can be changed using ANN-I/O Address Screens 2 and 3.

Pressing 1 while viewing ANN-I/O Address Screen #2 will program the annunciator module to annunciate either Point (addressable device address) information or Zone information.

Pressing 1 while viewing ANN-I/O Address Screen #3 will select the Point or Zone range to be annunciated (refer to the tables in “ANN-I/O Zone Option” on page 95 and “ANN-I/O Point Option” on page 96).

Pressing 2 while viewing ANN-I/O Address Screen #3 will select either addressable detectors or addressable modules to be annunciated.

ANN-I/O Zone Option

If *Zone* is selected as the module option, the first ten LEDs on the first ANN-I/O module will display the system status information. The remaining 30 LEDs on the first module and 40 LEDs on the remaining modules will display the active/alarm status of each zone in the Zone Range programmed for that particular module. The LED assignments for each ANN-I/O module will be as follows.

Module LED	Zone Range 000-029	Zone Range 030-069	Zone Range 070-099
1	AC Fault	Zone 030	Zone 070
2	Fire Alarm	Zone 031	Zone 071
3	Supervisory	Zone 032	Zone 072
4	Trouble	Zone 033	Zone 073
5	Alarm Silenced	Zone 034	Zone 074
6	Earth Fault	Zone 035	Zone 075
7	Battery Fault	Zone 036	Zone 076
8	Charger Fault	Zone 037	Zone 077
9	NAC Fault	Zone 038	Zone 078
10	Disabled	Zone 039	Zone 079
11	Zone 000	Zone 040	Zone 080
12	Zone 001	Zone 041	Zone 081
13	Zone 002	Zone 042	Zone 082
14	Zone 003	Zone 043	Zone 083
15	Zone 004	Zone 044	Zone 084
16	Zone 005	Zone 045	Zone 085
17	Zone 006	Zone 046	Zone 086
18	Zone 007	Zone 047	Zone 087
19	Zone 008	Zone 048	Zone 088
20	Zone 009	Zone 049	Zone 089
21	Zone 010	Zone 050	Zone 090
22	Zone 011	Zone 051	Zone 091
23	Zone 012	Zone 052	Zone 092
24	Zone 013	Zone 053	Zone 093
25	Zone 014	Zone 054	Zone 094
26	Zone 015	Zone 055	Zone 095
27	Zone 016	Zone 056	Zone 096
28	Zone 017	Zone 057	Zone 097
29	Zone 018	Zone 058	Zone 098
30	Zone 019	Zone 059	Zone 099
31	Zone 020	Zone 060	Not Used
32	Zone 021	Zone 061	Not Used
33	Zone 022	Zone 062	Not Used
34	Zone 023	Zone 063	Not Used
35	Zone 024	Zone 064	Not Used
36	Zone 025	Zone 065	Not Used
37	Zone 026	Zone 066	Not Used
38	Zone 027	Zone 067	Not Used
39	Zone 028	Zone 068	Not Used
40	Zone 029	Zone 069	Not Used

ANN-I/O Point Option

If *Point* is selected as the module option, the first ten LEDs on the first ANN-I/O module will display the system status information. The remaining 30 LEDs on the first module and 40 LEDs on each additional module will display the active/alarm status of each point in the Point Range programmed for that particular module. The points that will be annunciated on a particular ANN-I/O module depend on the programming options selected as far as the device type (detector or module) to be annunciated. The LED assignments for each ANN-I/O module will be as follows.

Module LED	Point Range 001-030	Point Range 031-070	Point Range 071-099
1	AC Fault	Point 031	Point 071
2	Fire Alarm	Point 032	Point 072
3	Supervisory	Point 033	Point 073
4	Trouble	Point 034	Point 074
5	Alarm Silenced	Point 035	Point 075
6	Earth Fault	Point 036	Point 076
7	Battery Fault	Point 037	Point 077
8	Charger Fault	Point 038	Point 078
9	NAC Fault	Point 039	Point 079
10	Disabled	Point 040	Point 080
11	Point 001	Point 041	Point 081
12	Point 002	Point 042	Point 082
13	Point 003	Point 043	Point 083
14	Point 004	Point 044	Point 084
15	Point 005	Point 045	Point 085
16	Point 006	Point 046	Point 086
17	Point 007	Point 047	Point 087
18	Point 008	Point 048	Point 088
19	Point 009	Point 049	Point 089
20	Point 010	Point 050	Point 090
21	Point 011	Point 051	Point 091
22	Point 012	Point 052	Point 092
23	Point 013	Point 053	Point 093
24	Point 014	Point 054	Point 094
25	Point 015	Point 055	Point 095
26	Point 016	Point 056	Point 096
27	Point 017	Point 057	Point 097
28	Point 018	Point 058	Point 098
29	Point 019	Point 059	Point 099
30	Point 020	Point 060	Not Used
31	Point 021	Point 061	Not Used
32	Point 022	Point 062	Not Used
33	Point 023	Point 063	Not Used
34	Point 024	Point 064	Not Used
35	Point 025	Point 065	Not Used
36	Point 026	Point 066	Not Used
37	Point 027	Point 067	Not Used
38	Point 028	Point 068	Not Used
39	Point 029	Point 069	Not Used
40	Point 030	Point 070	Not Used

ANN-LED Options

ANN XXX
1=ENABLED YES
2=MODULES INSTALLED
3=AUTO-CONFIGURE
ANN XXX Screen #2

Pressing 2 for Module Options while viewing the (XXX) ANN-BUS Address Screen when the ANN-LED option is selected, will display the following screen:

ANN-LED - ADDR X-1
SLC 1 DET 001-010
ALARM, TRBL, SUPV

ANN-LED Address Screen #1

ANN-LED - ADDR X-1
1=POINT/ZONE POINT
2=ALARM/ATS ATS

ANN-LED Address Screen #2

ANN-LED - ADDR X-1
1=RANGE PT001-010
2=DET/MOD DET

ANN-LED Address Screen #3

The first screen indicates that the ANN-LED at the selected ANN-BUS address is programmed to annunciate Alarms, Supervisories, and Troubles for SLC Loop #1 addressable Detectors with addresses 001 through 010. The programming can be changed using ANN-LED Address Screens 2 and 3.

Pressing 1 while viewing ANN-LED Address Screen #2 will program the annunciator module to annunciate either Point (addressable device address) information or Zone information.

Pressing 2 while viewing ANN-LED Address Screen #2 will program the annunciator module to annunciate only Alarms for addressable device addresses 001-030 or Alarms, Supervisories, and Troubles for addressable device addresses 001-010.

Pressing 1 while viewing ANN-LED Address Screen #3 will select the Point or Zone range to be annunciated - refer to the tables in “ANN-LED Zone Option - Alarm Only (for use with ANN-RLED module)” on page 97 and “ANN-LED Point Option - Alarm Only (for use with ANN-RLED module)” on page 98.

Pressing 2 while viewing ANN-LED Address Screen #3 will select either addressable detectors or addressable modules to be annunciated.

ANN-LED Zone Option - Alarm Only (for use with ANN-RLED module)

If *Zone* is selected as the module option, and the module is programmed to annunciate **alarms only**, the first ten LEDs on the first ANN-LED module will display the system status information. The remaining 30 LEDs on the first module and the last 30 LEDs on the remaining modules will display the active/alarm status of each zone in the Zone Range programmed for that particular module. The LED assignments for each ANN-LED module will be as follows.

Alarm Silenced	NAC 1 Fault	NAC 2 Fault	NAC 3 Fault	NAC 4 Fault
Earth Fault	Battery Fault	Charger Fault	Disabled	Maintenance
Zone 000 Active/Alarm	Zone 001 Active/Alarm	Zone 002 Active/Alarm	Zone 003 Active/Alarm	Zone 004 Active/Alarm
Zone 005 Active/Alarm	Zone 006 Active/Alarm	Zone 007 Active/Alarm	Zone 008 Active/Alarm	Zone 009 Active/Alarm
Zone 010 Active/Alarm	Zone 011 Active/Alarm	Zone 012 Active/Alarm	Zone 013 Active/Alarm	Zone 014 Active/Alarm
Zone 015 Active/Alarm	Zone 016 Active/Alarm	Zone 017 Active/Alarm	Zone 018 Active Alarm	Zone 019 Active/Alarm
Zone 020 Active/Alarm	Zone 021 Active/Alarm	Zone 022 Active/Alarm	Zone 023 Active/Alarm	Zone 024 Active/Alarm
Zone 025 Active/Alarm	Zone 026 Active/Alarm	Zone 027 Active/Alarm	Zone 028 Active/Alarm	Zone 029 Active/Alarm

Table 3.4 ANN-RLED Module #1

Not Used	Not Used	Not Used	Not Used	Not Used
Not Used	Not Used	Not Used	Not Used	Not Used
Zone 030 Active/Alarm	Zone 031 Active/Alarm	Zone 032 Active/Alarm	Zone 033 Active/Alarm	Zone 034 Active/Alarm
Zone 035 Active/Alarm	Zone 036 Active/Alarm	Zone 037 Active/Alarm	Zone 038 Active/Alarm	Zone 039 Active/Alarm
Zone 040 Active/Alarm	Zone 041 Active/Alarm	Zone 042 Active/Alarm	Zone 043 Active/Alarm	Zone 044 Active/Alarm
Zone 045 Active/Alarm	Zone 046 Active/Alarm	Zone 047 Active/Alarm	Zone 048 Active Alarm	Zone 049 Active/Alarm
Zone 050 Active/Alarm	Zone 051 Active/Alarm	Zone 052 Active/Alarm	Zone 053 Active/Alarm	Zone 054 Active/Alarm
Zone 055 Active/Alarm	Zone 056 Active/Alarm	Zone 057 Active/Alarm	Zone 058 Active/Alarm	Zone 059 Active/Alarm

Table 3.5 ANN-RLED Module #2

The LED assignments for the modules annunciating Zone Ranges 060 - 089 and 090 - 099, will follow the same pattern as the second ANN-RLED module.

ANN-LED Zone Option - Alarm, Trouble and Supervisory

If *Zone* is selected as the module option, and the module is programmed to annunciate **alarms, troubles and supervisorys**, the first ten LEDs on the first ANN-LED module will display the system status information. The remaining 30 LEDs on the first module and the last 30 LEDs on the remaining modules will display the alarm, trouble and supervisory status for each of the ten zones in the Zone Range programmed for that particular module. The LED assignments for each ANN-LED module will be as follows.

Alarm Silenced	NAC 1 Fault	NAC 2 Fault	NAC 3 Fault	NAC 4 Fault
Earth Fault	Battery Fault	Charger Fault	Disabled	Maintenance
Zone 000 Active/Alarm	Zone 001 Active/Alarm	Zone 002 Active/Alarm	Zone 003 Active/Alarm	Zone 004 Active/Alarm
Zone 000 Trouble	Zone 001 Trouble	Zone 002 Trouble	Zone 003 Trouble	Zone 004 Trouble
Zone 000 Supervisory	Zone 001 Supervisory	Zone 002 Supervisory	Zone 003 Supervisory	Zone 004 Supervisory
Zone 005 Active/Alarm	Zone 006 Active/Alarm	Zone 007 Active/Alarm	Zone 008 Active/Alarm	Zone 009 Active/Alarm
Zone 005 Trouble	Zone 006 Trouble	Zone 007 Trouble	Zone 008 Trouble	Zone 009 Trouble
Zone 005 Supervisory	Zone 006 Supervisory	Zone 007 Supervisory	Zone 008 Supervisory	Zone 009 Supervisory

Table 3.6 ANN-LED Module #1

Not Used	Not Used	Not Used	Not Used	Not Used
Not Used	Not Used	Not Used	Not Used	Not Used
Zone 010 Active/Alarm	Zone 011 Active/Alarm	Zone 012 Active/Alarm	Zone 013 Active/Alarm	Zone 014 Active/Alarm
Zone 010 Trouble	Zone 011 Trouble	Zone 012 Trouble	Zone 013 Trouble	Zone 014 Trouble
Zone 010 Supervisory	Zone 011 Supervisory	Zone 012 Supervisory	Zone 013 Supervisory	Zone 014 Supervisory
Zone 015 Active/Alarm	Zone 016 Active/Alarm	Zone 017 Active/Alarm	Zone 018 Active/Alarm	Zone 019 Active/Alarm
Zone 015 Trouble	Zone 016 Trouble	Zone 017 Trouble	Zone 018 Trouble	Zone 019 Trouble
Zone 015 Supervisory	Zone 016 Supervisory	Zone 017 Supervisory	Zone 018 Supervisory	Zone 019 Supervisory

Table 3.7 ANN-LED Module #2

The LED assignments for the modules annunciating Zone Ranges 020 - 029, 030 - 039, 040 - 049, 050 - 059, 060 - 069, 070 - 079, 080 - 089 and 090 - 099, will follow the same pattern as the second ANN-LED module.

ANN-LED Point Option - Alarm Only (for use with ANN-RLED module)

If *Point* is selected as the module option and the module is programmed to annunciate **alarms** only, the first ten LEDs on the first ANN-LED module will display the system status information. The remaining 30 LEDs on the first module and the last 30 LEDs on each additional module will display the active/alarm status of each point in the Point Range programmed for that particular module. The points that will be annunciated on a particular ANN-LED module depend on the programming options selected as far as which SLC loop and the device type (detector or module) to be annunciated. The LED assignments for each ANN-LED module will be as follows.

Alarm Silenced	NAC 1 Fault	NAC 2 Fault	NAC 3 Fault	NAC 4 Fault
Earth Fault	Battery Fault	Charger Fault	Disabled	Maintenance
Point 001 Active/Alarm	Point 002 Active/Alarm	Point 003 Active/Alarm	Point 004 Active/Alarm	Point 005 Active/Alarm
Point 006 Active/Alarm	Point 007 Active/Alarm	Point 008 Active/Alarm	Point 009 Active/Alarm	Point 010 Active/Alarm
Point 011 Active/Alarm	Point 012 Active/Alarm	Point 013 Active/Alarm	Point 014 Active/Alarm	Point 015 Active/Alarm
Point 016 Active/Alarm	Point 017 Active/Alarm	Point 018 Active/Alarm	Point 019 Active/Alarm	Point 020 Active/Alarm
Point 021 Active/Alarm	Point 022 Active/Alarm	Point 023 Active/Alarm	Point 024 Active/Alarm	Point 025 Active/Alarm
Point 026 Active/Alarm	Point 027 Active/Alarm	Point 028 Active/Alarm	Point 029 Active/Alarm	Point 030 Active/Alarm

Table 3.8 ANN-RLED Module #1 (Point Range 001 - 030)

Not Used	Not Used	Not Used	Not Used	Not Used
Not Used	Not Used	Not Used	Not Used	Not Used
Point 031 Active/Alarm	Point 032 Active/Alarm	Point 033 Active/Alarm	Point 034 Active/Alarm	Point 035 Active/Alarm
Point 036 Active/Alarm	Point 037 Active/Alarm	Point 038 Active/Alarm	Point 039 Active/Alarm	Point 040 Active/Alarm
Point 041 Active/Alarm	Point 042 Active/Alarm	Point 043 Active/Alarm	Point 044 Active/Alarm	Point 045 Active/Alarm
Point 046 Active/Alarm	Point 047 Active/Alarm	Point 048 Active/Alarm	Point 049 Active/Alarm	Point 050 Active/Alarm
Point 051 Active/Alarm	Point 052 Active/Alarm	Point 053 Active/Alarm	Point 064 Active/Alarm	Point 055 Active/Alarm
Point 056 Active/Alarm	Point 057 Active/Alarm	Point 058 Active/Alarm	Point 059 Active/Alarm	Point 060 Active/Alarm

Table 3.9 ANN-ILED Module #2 (Point Range 031 - 060)

The LED assignments for the modules annunciating Point Ranges 061 - 090 and 091 - 099, will follow the same pattern as the second ANN-ILED module.

ANN-LED Point Option - Alarm, Trouble and Supervisory

If *Point* is selected as the module option, and the module is programmed to annunciate **alarms, troubles and supervisories**, the first ten LEDs on the first ANN-LED module will display the system status information. The remaining 30 LEDs on the first module and the last 30 LEDs on the remaining modules will display the alarm, trouble and supervisory status for each of the ten zones in the Point Range programmed for that particular module. The LED assignments for each ANN-LED module will be as follows.

Alarm Silenced	NAC 1 Fault	NAC 2 Fault	NAC 3 Fault	NAC 4 Fault
Earth Fault	Battery Fault	Charger Fault	Disabled	Maintenance
Point 001 Active/Alarm	Point 002 Active/Alarm	Point 003 Active/Alarm	Point 004 Active/Alarm	Point 005 Active/Alarm
Point 001 Trouble	Point 002 Trouble	Point 003 Trouble	Point 004 Trouble	Point 005 Trouble
Point 001 Supervisory	Point 002 Supervisory	Point 003 Supervisory	Point 004 Supervisory	Point 005 Supervisory
Point 006 Active/Alarm	Point 007 Active/Alarm	Point 008 Active/Alarm	Point 009 Active/Alarm	Point 010 Active/Alarm
Point 006 Trouble	Point 007 Trouble	Point 008 Trouble	Point 009 Trouble	Point 010 Trouble
Point 006 Supervisory	Point 007 Supervisory	Point 008 Supervisory	Point 009 Supervisory	Point 010 Supervisory

Table 3.10 ANN-LED Module #1 (Point Range 001 - 010)

Not Used	Not Used	Not Used	Not Used	Not Used
Not Used	Not Used	Not Used	Not Used	Not Used
Point 011 Active/Alarm	Point 012 Active/Alarm	Point 013 Active/Alarm	Point 014 Active/Alarm	Point 015 Active/Alarm
Point 011 Trouble	Point 012 Trouble	Point 013 Trouble	Point 014 Trouble	Point 015 Trouble
Point 011 Supervisory	Point 012 Supervisory	Point 013 Supervisory	Point 014 Supervisory	Point 015 Supervisory
Point 016 Active/Alarm	Point 017 Active/Alarm	Point 018 Active/Alarm	Point 019 Active/Alarm	Point 020 Active/Alarm
Point 016 Trouble	Point 017 Trouble	Point 018 Trouble	Point 019 Trouble	Point 020 Trouble
Point 016 Supervisory	Point 017 Supervisory	Point 018 Supervisory	Point 019 Supervisory	Point 020 Supervisory

Table 3.11 ANN-LED Module #2 (Point Range 011 - 020)

The LED assignments for the modules annunciating Point Ranges 021 - 030, 031 - 040 and 041 - 050, 051 - 060, 061 - 070, 071 - 080, 081 - 090, and 091 - 099, will follow the same pattern as the second ANN-LED Module.

ANN-RLY Options

```

ANN XXX
1=ENABLED      YES
2=MODULES INSTALLED
3=AUTO-CONFIGURE
ANN XXX Screen #2
  
```

Pressing 2 for *Module Options* while viewing the ANN-BUS Address Screen when the ANN-RLY option is selected, will cause the following screen to be displayed:

```

ANN-RLY - ADDR. X-1
1=RLY 1      ZONE 000
2=RLY 2      ZONE 001
3=RLY 3      ZONE 002
  
```

ANN-RLY Options Screen

The ANN-RLY module provides ten Form-C relays which can be programmed for various functions. The initial screen displays Relays 1 through 3. Pressing the down arrow key will display the remaining relays for this module.

To program any of the ANN-RLY relays, while viewing the appropriate ANN-RLY Option screen, press the number key corresponding to the relay to be programmed. Following is a list of the available programming options for each relay:

- Alarm
- Supervisory
- Supervisory AR
- Trouble
- Comm Fail
- Process Mon
- Process Mon AR
- AC Loss
- Hazard
- Medical
- Silenceable Alarm
- Zone Active XXX (where XXX = programmed zone 000 to 099)
- Carbon Monoxide

■ Auto-Configure

```

XXX ANN-BUS
1=ENABLED      YES
2=MODULES INSTALLED
3=AUTO-CONFIGURE
(XXX) ANN-BUS Screen #1
  
```

(XXX) ANN-BUS Screen #1

The ANN-BUS Auto-Configure features allows the programmer to quickly bring all installed ANN-BUS modules online on the selected ANN-BUS. The software will search the selected circuit for all ANN-BUS modules and automatically program the device type and address into the system. For the Auto-Configure to work, the selected ANN-BUS must be enabled, the annunciators must be connected/powered, and a unique address must be set on each annunciator. Pressing 3 while viewing ANN-BUS (X) Screen #1 will begin the Auto-Configure process and cause the following screen to be displayed:

```

ANN-BUS
AUTO-CONFIGURE
IN PROGRESS
PLEASE WAIT
  
```

Auto-Configure Screen

■ Class A

```

XXX ANN-BUS
1=CLASS A      NO
ANN-BUS (XXX) Screen #2
  
```

ANN-BUS (XXX) Screen #2

This option applies to the Primary ANN-BUS only. The primary ANN-BUS can be configured for Class A wiring. If wired in Class A configuration, press 1 on ANN-BUS Primary Screen #2 to select *Class A Yes*. Each press of the 1 key toggles between *Class A No* and *Class A Yes*.

ANN-BUS Options

```

ANN-BUS SELECT
1=PRIMARY
2=SECONDARY
3=ANN-BUS OPTIONS
Annunciator Screen
  
```

Annunciator Screen

Three ANN-BUS modules have more programming options. Pressing 3 while viewing the Annunciators screen will display the following.

```

ANN-BUS
1=ANN-S/PG OPTIONS
2=ANN-LED OPTIONS
3=ANN-80/100 OPTIONS
  
```

ANN-BUS Options Screen #1

```

ANN-BUS
1=KEY CTRL ENABLED N
  
```

ANN-BUS Options Screen #2

■ ANN-S/PG (Print) Options

XXX ANN-BUS
1=ANN-S/PG OPTIONS
2=ANN-LED OPTIONS
3=ANN-80/100 OPTIONS
ANN-BUS Options Screen

The Print option allows the programmer to configure the optional printer. Pressing 1 while viewing the ANN-BUS screen will display the following screens:

ANN-S/PG OPTIONS 1=PORT SER 2=PRINTER SUPV N/A 3=OFFLINE TIMER N/A	ANN-S/PG OPTIONS 1=BAUD RATE 9600 2=DATA BITS 7 3=PARITY EVEN	ANN-S/PG OPTIONS 1=STOP BITS 1.0
ANN-S/PG Options Screen #1	ANN-S/PG Options Screen #2	ANN-S/PG Options Screen #3

Pressing 1 for Port while viewing ANN-S/PG Options screen #1 will allow the programmer to select between a Parallel and Serial Port for printer connection. Each press of the 1 key will cause the display to toggle between *Port PAR* (parallel) and *Port SER* (serial). It is important to note that the interface selected determines which options are available to the user.

If the Parallel Port option is selected, the user has the option to supervise the printer and select an offline timer for the supervision by pressing 2 for Printer Supervision while viewing Print Options screen #1. Each press of the 2 key will cause the display to toggle between *Printer Supv NO* for no supervision and *Printer Supv YES* for printer supervision. Note that this option is not selectable if the Serial Port option has been selected.

If the Parallel Port option is selected, the user has the ability to select an *Offline Timer* by pressing 3 while viewing Print Options screen #1. The resultant screen allows the programmer to program the *Offline Timer* for a delay of between 0 and 255 seconds before loss of printer supervision is reported as a trouble.

If the Serial Port option is selected, the *Printer Supv* and *Offline Timer* options will not be available. The Baud Rate, Data Bits, Parity and Stop Bits options are only available when the Serial Port option has been selected.

Pressing 1 for *Baud Rate* while viewing ANN-S/PG Options screen #2 will cause a screen to appear which allow the user to select a Baud Rate of 19200, 9600, or 2400.

Pressing 2 for *Data Bits* while viewing ANN-S/PG Options screen #2 will cause a screen to appear which allows the user to select 7 or 8 *Data Bits*.

Pressing 3 for *Parity* while viewing ANN-S/PG Options screen #2 will cause a screen to appear which allows the user to select between *No Parity*, *Even Parity*, or *Odd Parity*.

Pressing 1 for *Stop Bits* while viewing ANN-S/PG Options screen #3 will cause a screen to appear which allows the user to select between 1.0 or 2.0 *Stop Bits*.

■ ANN-LED Options

XXX ANN-BUS
1=ANN-S/PG OPTIONS
2=ANN-LED OPTIONS
3=ANN-80/100 OPTIONS
ANN-BUS Options Screen

This option allows the programmer to configure the optional ANN-LED annunciator. Pressing 2 while viewing the ANN-BUS screen will display the following screens.

ANN-LED OPTIONS
1=PIEZO ENABLE NO
2=LMP TST ENABLE NO
3=SIL BTN ENABLE NO
ANN-LED Options Screen

The *Piezo Enable* option allows the programmer to select whether the piezo sounder on any installed ANN-LED module will ever sound. Pressing 1 while viewing the ANN-LED Options Screen causes the display to toggle between *Piezo Enable Yes* and *Piezo Enable No*.

The Lamp Test Enable (*LMP TST ENABLE*) option allows the programmer to select whether the Lamp Test button on any installed ANN-LED annunciator will function normally or always be ignored. Pressing 2 while viewing the ANN-LED Options Screen causes the display to toggle between *Lmp Tst Enable Yes* (Lamp Test button functions normally) and *Lmp Tst Enable No* (Lamp Test button never functions).

The Silence Button Enable (*SIL BTN ENABLE*) option allows the programmer to select whether the Silence button on any installed ANN-LED annunciator will function normally or always be ignored. Pressing 3 while viewing the ANN-LED Options Screen causes the display to toggle between *Sil Btn Enable Yes* (Silence button functions normally) and *Sil Btn Enable No* (Silence button never functions).

■ ANN-80/100 Options

XXX ANN-BUS
1=ANN-S/PG OPTIONS
2=ANN-LED OPTIONS
3=ANN-80/100 OPTIONS
ANN-BUS Options Screen

Pressing 3 while viewing the ANN-BUS screen will display the following screen:

ANN-80/100 OPTIONS 1=PIEZO ENABLE YES 2=LOCK ENABLE YES 3=ACK BTN ENABLE YES	ANN-80/100 OPTIONS 1=SIL BTN ENABLE YES 2=RST BTN ENABLE YES 3=DRL BTN ENABLE YES
ANN-80/100 Options Screen #1	ANN-80/100 Options Screen #2

The *Piezo Enable* option allows the programmer to select whether the piezo sounder on any installed ANN-80 or ANN-100 module will ever sound. Pressing 1 while viewing the ANN-80/100 Options Screen #1 causes the display to toggle between *Piezo Enable Yes* and *Piezo Enable No*.

The *Lock Enable* option allows the programmer to select whether or not any installed ANN-80 or ANN-100 annunciator must be unlocked by its key before any annunciator key presses will function. Pressing 2 while viewing the ANN-80/100 Options Screen #1 causes the display to toggle between *Lock Enable Yes* (annunciator must be unlocked for keys to function) and *Lock Enable No* (lock position is ignored). This option is not available in Canadian mode. Refer to the table on page 49 for permissible settings.

The Acknowledge Button Enable (*ACK BTN ENABLE*) option allows the programmer to select whether the Ack/Step button on any installed ANN-80 or ANN-100 annunciator will function normally or always be ignored. Pressing 3 while viewing the ANN-80/100 Options Screen #1 causes the display to toggle between *Ack Btn Enable Yes* (Ack/Step button functions normally) and *Ack Btn Enable No* (Ack/Step button never functions). In Canadian mode, the FACP cannot be controlled by the ANN-100 so the Reset feature is unavailable. This option is called *STEP ENABLE* in Canadian mode. Enabling the Step feature will allow the user to scroll through events on the screen.

The Silence Button Enable (*SIL BTN ENABLE*) option allows the programmer to select whether the Silence button on any installed ANN-80 or ANN-100 annunciator will function normally or always be ignored. Pressing 1 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between *Sil Btn Enable Yes* (Silence button functions normally) and *Sil Btn Enable No* (Silence button never functions).

The Reset Button Enable (*RST BTN ENABLE*) option allows the programmer to select whether the Reset button on any installed ANN-80 or ANN-100 annunciator will function normally or always be ignored. Pressing 2 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between *Rst Btn Enable Yes* (Reset button functions normally) and *Rst Btn Enable No* (Reset button never functions). In Canadian mode, the Reset feature is unavailable. The programming option will change to *LMP BTN ENABLE* in Canadian applications. Pressing 2 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between *Lmp Btn Enable Yes* (the ANN-100 will perform a local test of all LEDs) and *Lmp Btn Enable No*.

The Drill Button Enable (*DRL BTN ENABLE*) option allows the programmer to select whether the Drill button on any installed ANN-80 or ANN-100 annunciator will function normally or always be ignored. Pressing 3 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between *Drl Btn Enable Yes* (Drill button functions normally) and *Drl Btn Enable No* (Drill button never functions). In Canadian mode, the Drill feature is unavailable. The programming option will change to *SND BTN ENABLE* in Canadian applications. Pressing 3 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between *Snd Btn Enable Yes* (the ANN-100 will perform a test of its local sounder by turning it on for 5 seconds) and *Snd Btn Enable No*.

■ Key Control Enable (Canadian Mode Only)

```

XXX ANN-BUS
1=KEY CTRL ENABLED

```

ANN-BUS Options Screen #2

The Key Control feature is only available when the FACP is in Canadian mode of operation. Canadian mode usually limits the functionality of annunciators. Enabling key control allows annunciator key presses to be processed normally. To enable the annunciator Key Control, press 1 while viewing ANN-BUS Options screen #2 so that the display reads *Key Ctrl Enabled Y*. Each press of the 1 key will cause the display to toggle between *Key Ctrl Enabled Y* and *Key Ctrl Enabled N*.

3.5.9 Password Change

```

PROGRAMMING
1=PASSWORD CHANGE
2=CLEAR PROGRAM
3=PROGRAM CHECK

```

Programming Screen #4

The factory set passwords, which have been programmed into the control panel, can be changed by selecting the Password Change option. Pressing 1 while viewing Programming Screen #4 will cause the following screen to be displayed:

```

MODIFY USER X
ENTER PASSWORDS
USER X : *****
NEW: *****

```

Password Change Screen

A flashing cursor will appear in the center of the display. Enter the current user password and enter a new eight digit password. After the eighth digit is entered, the following screen will be displayed:

```

VERIFY NEW PASSWORD
*****

```

Password Change Screen

Re-enter the new password to accept the change. The display will return to the initial Password Change Screen.

Invalid Password

If a password is entered incorrectly, the panel will display *Invalid Message* and a code.

```

MODIFY USER X
USER X PASSWORD
IS INCORRECT
PRESS ENTER OR ESC

```

```

MODIFY USER X
NEW PASSWORD CANNOT
BE ALL THE SAME CHAR
PRESS ENTER OR ESC

```

The programmer may hit the escape key and re-enter the password correctly.

Incorrect Password/Timeout

A user has nine attempts to enter the correct password. If the password is incorrect after the nine attempts, the administrator must wait 30 seconds for another attempt. However, if the password has been forgotten, it will need to be reset by the administrator.

```

INVALID PASSWORD
00 ATTEMPTS
REMAINING
PRESS ENTER OR ESC

```

3.5.10 Clear Program

PROGRAMMING
1=PASSWORD CHANGE
2=CLEAR PROGRAM
3=PROGRAM CHECK

Programming Screen #4

Pressing 2 while viewing Programming Screen #4, will select the Clear Program option. This will cause the LCD to display the following screen:

CLEAR PROGRAM
1=WHOLE SYSTEM
2=ALL POINTS

Clear Program Screen

Pressing 1, for Whole System while viewing the Clear Program Screen, will clear all general system programming options and all programmed addressable devices from the nonvolatile memory of the FACP. *This function is useful when the control panel is first installed, prior to autoprogramming. Note that it is necessary to autoprogram after using the Clear Whole System function.*

Pressing 2, for All Points while viewing the Clear Program Screen, will clear all programming related to the SLC loop and connected addressable devices.

Before executing any of the Clear commands listed above, the control panel will provide a warning to the user by prompting with the following display:

WARNING!
SYSTEM CHANGE!
PROCEED?
1=YES 2=NO

Pressing 1 will cause the control panel to carry out the selected clear option. Pressing 2 will prevent programming from being cleared.

3.5.11 Program Check

PROGRAMMING
1=PASSWORD CHANGE
2=CLEAR PROGRAM
3=PROGRAM CHECK

Programming Screen #4

The Program Check feature allows the programmer to view the zones which have been programmed to the Notification Appliance Circuits on the control panel but have not been programmed to Initiating Devices as well as other circuits with no input or output correlations. Pressing 3 while viewing Programming Screen #4 will cause the following screen to be displayed:

PROGRAM CHECK
1=NACS NO INPUT
2=ZONES NO INPUT
3=ZONES NO OUTPUT

Program Check Screen #1

Pressing 1 while viewing the Program Check Screen will display an NAC screen similar to the following.

NACS NO INPUT
NAC 1
025 031 044 055 067

The example above indicates that NAC 1 has been programmed to Zones 25, 31, 44, 55 and 67 but no input devices have been programmed to any of these zones. Use the up and down arrow keys to view all the NAC zones without input assignments for NAC 1, NAC2, NAC 3 and NAC 4.

Pressing 2 while viewing the Program Check Screen #1 will display a screen similar to the following:

ZONES NO INPUT
005 007 009 010 011
1M001

The Zone No Input screen allows the programmer to view the zones which have not been programmed to at least one input device (not including general alarm Zone 00). The example in the preceding screen indicates that Zones 05, 07, 09, 10 and 11 have been programmed to an addressable module (control module in this example) with an address of 001 on loop 1 but have not been programmed to any input devices. Use the up and down arrow keys to view all the zones without input assignments.

PROGRAM CHECK
1=NACS NO INPUT
2=ZONES NO INPUT
3=ZONES NO OUTPUT

Program Check Screen #1

Pressing 3 while viewing Program Check Screen #1 will cause a screen similar to the following to be displayed:

ZONES NO OUTPUT
005 007 009 010 011
1D001

The Zone No Output feature allows the programmer to view the zones which have not been programmed to at least one output device (not including general alarm Zone 00). The example in the preceding screen indicates that Zones 05, 07, 09, 10 and 11 have been programmed to an addressable detector with an address of 001 on loop 1 but have not been programmed to any output devices. Use the up and down arrow keys to view all the zones without output assignments.

3.6 Maintenance Programming Level

To access Maintenance Programming mode, press the *Enter* key. The LCD will display the following:

```
1=READ STATUS MODE
2=PROGRAMMING MODE
3=FSTOOL UP/DOWNLOAD
4=USB UP/DOWNLOAD
```

To enter the Maintenance Programming mode, press 2. The display will read as follows:

```
PROGRAMMING
ENTER PASSWORD
```

When the **Maintenance** level password (default *11111111*) is entered, the following screen will appear:

```
MAINT PROGRAMMING
1=POINT PROGRAM
2=HISTORY
3=PROGRAM CHECK
```

Note that in the preceding screens, an arrow appears to inform the programmer that additional options can be viewed by pressing the keypad *down* arrow key, as shown in the following screen.

```
MAINT PROGRAMMING
1=WALKTEST
2=SYSTEM
3=ZONE SETUP
```

3.6.1 Disable Point

```
MAINT PROGRAMMING
1=POINT PROGRAM
2=HISTORY
3=PROGRAM CHECK
```

Maintenance Screen #1

Pressing 1 for Point Program, while viewing Maintenance Screen #1 will cause the following screens to be displayed:

```
POINT PROGRAM
1=DETECTOR
2=MODULE
```

Device Select Screen

Select the device type by pressing 1 for an addressable detector or 2 for an addressable module. The operator will be prompted to enter the three digit device address as shown in the following example for a detector:

```
EDIT DETECTOR
ENTER POINT ADDRESS
***
```

Address Select Screen

A flashing cursor will appear in the bottom left corner of the display, prompting for the three digit device address. When the third digit is enter, *001* for example, a screen will appear which will allow enabling or disabling of the selected point, as illustrated in the following example:

```
EDIT DETECTOR 1D001
1=ENABLED YES
```

Enable/Disable Select Screen

Pressing 1 repeatedly will cause the display to toggle between *Enabled Yes* and *Enabled No*.

3.6.2 History

```
PROGRAMMING
1=POINT PROGRAM
2=HISTORY
3=PROGRAM CHECK
```

Maintenance Screen #1

Pressing 2 while viewing Maintenance Screen #1 will cause the following screen to be displayed:

```
HISTORY
1=VIEW EVENTS
2=ERASE HISTORY
```

History Screen

The History feature allows the operator to view control panel events which have been stored in a history file in memory and erase the contents of the history file

Pressing *1* while viewing the History screen will cause the following screen to be displayed:

```

HISTORY
1=VIEW ALL
2=VIEW ALARMS
3=VIEW OTHER EVENTS
  
```

Events Screen

To view all the events which have occurred in the control panel since the history file was last erased, press *1* while viewing the Events screen. To view only alarms which have occurred, press *2* while viewing the Events screen. To view events other than alarms, press *3*. The most recent event will be displayed on the screen. To view all of the selected events, press the up or down arrow keys to scroll through the list of events. If no events have occurred, the display will read *NO EVENTS IN HISTORY*.

Pressing *2* while viewing the History Screen will cause the following screen to be displayed:

```

ERASE HISTORY
PROCEED?
1=YES          2=NO
  
```

Erase History Screen

Pressing *1* while viewing the Erase History Screen will cause the message *ERASING HISTORY, PLEASE WAIT* to be displayed. The display will then return to the History Screen. Pressing *2* will cause the display to return to the History Screen without erasing the History file.

3.6.3 Program Check

```

PROGRAMMING
1=POINT PROGRAM
2=HISTORY
3=PROGRAM CHECK
  
```

Maintenance Screen #1

Pressing *3* while viewing Maintenance Screen #1 will cause the following screen to be displayed:

```

PROGRAM CHECK
1=NACS NO INPUT
2=ZONES NO INPUT
3=ZONES NO OUTPUT
  
```

Program Check Screen #1

The Program Check feature allows the programmer to view the zones which have been programmed to the Notification Appliance Circuits on the control panel but have not been programmed to Initiating Devices as well as other circuits with no input or output correlations. Pressing *1* while viewing Program Check screen will cause a screen similar to the following to be displayed.

```

NACS NO INPUT
NAC 1
025 031 044 055 067
  
```

The example above indicates that NAC 1 has been programmed to Zones 025, 031, 044, 055 and 067 but no input devices have been programmed to any of these zones. Use the up and down arrow keys to view all the NAC zones without input assignments for both NAC 1, NAC 2, NAC 3 and NAC 4.

Pressing *2* while viewing the Program Check screen will display a screen similar to the following:

```

ZONES NO INPUT
005 007 009 010 011
1M001
  
```

The Zone No Input screen allows the programmer to view the zones which have not been programmed to at least one input device (not including general alarm Zone 00). The example in the preceding screen indicates that Zones 005, 007, 009, 010, and 011 have been programmed to an addressable module (control module in this example) with an address of 001 on loop 1 but have not been programmed to any input devices. Use the up and down arrow keys to view all the zones without input assignments.

Pressing *3* while viewing Program Check screen will cause a screen similar to the following to be displayed:

```

ZONES NO OUTPUT
005 007 009 010 011
1D001
  
```

The Zone No Output feature allows the programmer to view the zones which have not been programmed to at least one output device (not including general alarm Zone 00). The example in the preceding screen indicates that Zones 005, 007, 009, 010, and 011 have been programmed to an addressable detector with an address of 001 on loop 1 but have not been programmed to any output devices. Use the up and down arrow keys to view all the zones without output assignments.

3.6.4 Walktest

```

PROGRAMMING
1=WALKTEST
2=SYSTEM
3=ZONE SETUP
Maintenance Screen #2

```

To perform a walktest, press *1* while viewing Maintenance Screen #2. The following screen will be displayed:

```

WALKTEST
1=SILENT
2=AUDIBLE
3=VIEW RESULT
Walktest Screen

```

The operator can press *1* to perform a silent walktest or *2* to perform an audible walktest. Pressing *1* or *2* will cause the control panel to enter Walktest Mode and will display the following screen:

```

UNIT IN WALKTEST
1=VIEW WALKTEST LOG
2=VIEW POINTS
3=VIEW SUMMARY
Unit In Walktest Screen

```

From this screen, it is possible to view the walktest log, untested system points or a summary of the addressable devices tested during the current walktest. The user can select between any of these screens without interrupting the current walktest session. The walktest session will not end until the Unit In Walktest screen is exited by pressing the Escape key to return to the Walktest Screen.

Pressing *1* for *View Walktest Log* while viewing the Unit In Walktest screen will cause a screen similar to one of the following two screens to be displayed:

NO EVENTS IN WALKTEST LOG	OR	ALARM: MONITOR NORTH CLASSROOM Z001 10*15A 012308 1M006
------------------------------	----	--

If there are no events in the current walktest session, the first screen will be displayed, indicating no events have been stored in the walktest log. If any events have been stored, a screen similar to the second will be displayed indicating the latest event. As walktest events occur, the display will change to indicate the latest event. All stored events can be scrolled on the screen by pressing the up or down arrow keys. To return to the first event, press the *1st Event* key.

Pressing *2* for *View Points* while viewing the Unit In Walktest screen will display one of the following screens:

NO POINTS IN SYSTEM	OR	UNTESTED POINTS 010 10001 SMOKE (PHOTO) ***** NOT TESTED
------------------------	----	---

If the system has no points installed, the first screen will be displayed. If points are installed, the second screen will be displayed, which allows the viewing of all untested system points and their status relating to the current walktest session. The up and down arrow keys will allow viewing of all untested points. If a point is tested while it is being displayed, the screen will update and display the next untested point. The first line indicates the total number of untested points. The second line displays information about an untested point. A description on the bottom of the screen will indicate if the displayed point has been disabled, if the Walktest option has been disabled for that point or if the point is not yet tested. The up and down arrow keys allow the user to scroll through all untested points.

Pressing *3* for *View Summary* while viewing the Unit In Walktest screen will display a new screen which will show a total of the tested detectors, tested modules, untested detectors and untested modules for the current walktest session.

To end the Walktest session, press the Escape key to return to the Walktest screen. Pressing *3* for *View Results* while viewing the Walktest screen, after a walktest session has been completed, will allow the operator to view the final results of the most recent walktest.

3.6.5 System

```

PROGRAMMING
1=WALKTEST
2=SYSTEM
3=ZONE SETUP
Maintenance Screen #2

```

Pressing *2* while viewing Maintenance Screen #2, will display the following screen:

```

SYSTEM
1=NACS ENAB 1.2.3.4
2=REM SYNC ENAB YES
System Screen #1

```

```

SYSTEM
1=TIME/DATE
2=CHARGER ENAB YES
3=4XTM SPV ENB YES
System Screen #2

```

```

SYSTEM
1=NACS ENB 1.2.3.4
2=REM SYNC ENAB YES
System Screen #1

```

Pressing *1* while viewing System Screen #1 will display the following:

```

ENABLE NACS
1=NAC1 N 3=NAC3 N
2=NAC2 N 4=NAC4 N
Disable NACs Screen

```

Pressing *1* while viewing NAC Screen #1 will cause the display to change to *NAC1 Yes*. This will allow the selected main circuit board NAC to activate its devices. Each press of the *1* key will cause the display to toggle between *NAC1 Yes* and *NAC1 No*. The same action is performed for the other 3 NAC circuits by selecting the number of the desired output circuit.

To enable remote synchronization, press the *3* key while viewing System Screen #2. Each press of the key will toggle the screen between *Rem Sync Enab Yes* and *Rem Sync Enab No*.

```

SYSTEM
1=TIME/DATE
2=CHARGER ENAB YES
3=4XTM SPV ENAB NO
  
```

System Screen #2

Pressing *1* while viewing System Screen #2 will cause the following screen to be displayed:

```

TIME AND DATE
1=TIME 01:00 AM
2=DATE 05-04-2017
3=CLOCK FORMAT 12HR
  
```

Time and Date Screen

To change the time, press *1* to display the following screen:

```

ENTER TIME

01:00 AM
1=AM          2=PM
  
```

Time Screen

A flashing cursor will appear on the left side of the display. Enter the four digit number corresponding to the time (0000 - 1259). When the fourth digit is entered, the cursor will move one position to the right. Press *1* for AM or *2* for PM to complete entering the time. The display will return to the Time and Date Screen displaying the new time.

To change the date, press *2* while viewing the Time and Date Screen. The following screen will be displayed:

```

ENTER DATE

MONTH DAY YEAR
05-04-17
  
```

Date Screen

A flashing cursor will appear on the left side of the display. Enter the two digit month, two digit day and two digit year. The cursor will move one position to the right after each entry. When the fourth digit of the year has been entered, the display will return to the Time and Date Screen which will show the new date.

```

SYSTEM
1=TIME/DATE
2=CHARGER ENAB YES
3=4XTM SPV ENAB NO
  
```

System Screen #2

To enable the onboard battery charger, press the *2* key while viewing System Screen #2. Each press of the key will toggle the screen between *Charger Enab Yes* and *Charger Enab No*. The setting must say *Charger Enb No* when an external battery charger is being used.

If a 4XTMF Transmitter Module is installed in the system, supervision must enabled in user programming.

Pressing *3* while viewing System Screen #2 will cause the display to toggle to *4XTM Spv Enab. Yes*, which means there is a 4XTMF installed. Each press of the *1* key will cause the display to toggle between *4XTM Spv Enab. No* and *4XTM Spv Enab. Yes*.

3.6.6 Zone Setup

```

PROGRAMMING
1=WALKTEST
2=SYSTEM
3=ZONE SETUP
  
```

Maintenance Screen #2

Pressing *3* while viewing Maintenance Screen #2 will display the following screen:

```

ZONE SETUP
1=ENABLE
2=DISABLE
3=SPECIAL PURPOSE
  
```

Zone Setup Screen

Pressing *1* while viewing Zone Setup screen will display the following screen:

```

ZONE TO ENABLE
Z***
  
```

Enable Screen

A flashing cursor appears to the right of the Z. To enable a zone, enter the three digit zone number (000 - 099). After the second digit is entered, the zone will be enabled and the cursor will return to the original position. The next zone to be enabled can then be entered. Press Esc (Escape) to return to the previous screen.

Pressing 2 while viewing Zone Setup screen will display the following screen:



Disable Screen

A flashing cursor appears to the right of the Z. To disable a zone, enter the three digit zone number (000 - 099). After the second digit is entered, the zone will be disabled and the cursor will return to the original position. The next zone to be disabled can then be entered. Press *Esc* (Escape) to return to the previous screen.

Pressing 3 while viewing Zone Setup screen will display the following screens:



Special Purpose Screen #1



Special Purpose Screen #2

Zones 097, 098, 099, and 096 can be programmed for normal zone operation or for special purpose applications. In the above illustration, the four zones are shown Off, which means they can be programmed to function in the same manner as all other zones, by assigning them to input and output devices in the Programming Zone Assignment Screen.

Pressing 1 will cause the display to change to *PAS 97 On*. Each press of the 1 key will cause the display to toggle between *PAS 97 On* and *PAS 97 Off*. When Zone 097 is programmed On, a PAS (Positive Alarm Sequence) activation of any smoke detector will cause Zone 097 to activate. By assigning Zone 097 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a PAS condition in the control panel. *Do not assign Zone 097 to a Notification Appliance Circuit when using this zone to indicate a PAS condition.*

Pressing 2 will cause the display to change to *Pre-signal 98 On*. Each press of the 2 key will cause the display to toggle between *Pre-signal 98 On* and *Pre-signal 98 Off*. When Zone 098 is programmed On, a Pre-signal activation of any device will cause Zone 098 to activate. By assigning Zone 098 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a Pre-signal condition in the control panel. *Do not assign Zone 098 to a Notification Appliance Circuit when using this zone to indicate a Pre-signal condition.*

Pressing 3 will cause the display to change to *Two Stage 99 On*. Each press of the 3 key will cause the display to toggle between *Two Stage 99 On* and *Two Stage 99 Off*. Refer to "Two Stage Operation" on page 80 for a description of this feature. Two-stage operation cannot be used at the same time as the in-suite silence feature.

Pressing 1 while viewing the Special Purpose Zone Screen #2 will cause the display to change to *Local Alm 96 On*. Each press of the 1 key will cause the display to toggle between *Local Alm 96 On* and *Local Alm 96 Off*. When Zone 096 is programmed On, a Local Alarm activation of any smoke detector will cause Zone 096 to activate. By assigning Zone 096 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a local alarm condition in the control panel. *Local Alarm Zone alarms are not reported to the Central Station.*

Section 4: Operating Instructions

4.1 Panel Control Buttons

4.1.1 Acknowledge

The first press of the *Acknowledge* key silences the piezo sounder, changes flashing LEDs to steady, and also changes the status field on the LCD display from capital letters to small letters. When the piezo is silenced, an *acknowledge* message is sent to the printer and the history file. *Acknowledge* also sends a *silence piezo* command to the optional annunciators connected to the FACP.

When more than one event exists, the first press of the Acknowledge key functions as described in the preceding paragraph. Subsequent pressing of the key *steps* through each off-normal active event, with alarm events having a higher priority than trouble and supervisory events.

4.1.2 Alarm Silence

The *Alarm Silence* key performs the same functions as Acknowledge/Step. In addition, if an alarm exists, it turns off all silenceable NACs (Notification Appliance Circuits) and causes the Alarm Silenced LED to turn on. It also sends an 'alarm silenced' message to the printer, history file and optional annunciators. A subsequent new alarm will resound the system NACs. *Note that the Alarm Silenced LED is turned off by pressing the Reset key, the Drill key or subsequent activation of the NACs.*

4.1.3 Drill/Hold 2 Sec

When the *Drill* key is held for a minimum of two seconds (time required to prevent accidental activations), the FACP turns on both main panel NAC outputs and all silenceable circuits such as control modules that are programmed as silenceable, and turns off the Alarm Silenced LED if it was previously on. A FIRE DRILL ACTIVE system trouble is shown on the LCD display. The same trouble is sent to the printer and history file. The *Alarm Silence* key can be used to turn off all silenceable NAC outputs following activation by the *Drill* key.

4.1.4 Reset

Pressing and releasing the *Reset* key turns off all control modules and NACs, temporarily turns off resettable power to 4-wire detectors, causes a *RESET IN SYSTEM* message to be displayed on the LCD and sends the same message to the printer and history file. It also performs a lamp test by turning on all LEDs (except the Ground LED), piezo sounder and LCD display segments after the *Reset* key is released. Any alarm or trouble that exists after a reset will resound the system.

4.1.5 Function Keys F1-F4

The four function keys are user programmable. These keys can be programmed to allow rapid disable/enable of various fire panel inputs and outputs during scheduled maintenance. Refer to "Function Keys" on page 74 for instructions on programming. Slide-in labels are provided on page 167.

4.2 LED Indicators

The 11 LED indicators, which are located on the front panel, operate as follows:

Fire Alarm

This red LED flashes when one or more alarms occur. It illuminates steady when the *Acknowledge/Step* or *Alarm Silence* key is pressed. The Fire Alarm LED turns off when the *Reset* key is pressed. The LED will remain off if all alarms have been cleared.

CO Alarm

This yellow LED flashes when one or more alarms occur. It illuminates steady when the *Acknowledge/Step* or *Alarm Silence* key is pressed. The CO Alarm LED turns off when the *Reset* key is pressed. The LED will remain off if all alarms have been cleared.

AC Power

This is a green LED which illuminates if AC power is applied to the FACP. A loss of AC power will turn off this LED

Supervisory

This is a yellow LED that flashes when one or more supervisory conditions occur, such as a sprinkler valve tamper condition. It illuminates steady when the *Acknowledge/Step* or *Alarm Silence* key is pressed. It turns off when the *Reset* key is pressed and remains off if all supervisory alarms have been cleared.

Trouble

This is a yellow LED that flashes when one or more trouble conditions occur. It stays on steady when the *Acknowledge/Step* or *Alarm Silence* key is pressed. The LED turns off when all trouble conditions are cleared. This LED will also illuminate if the microprocessor watchdog circuit is activated.

Ground

This is a yellow LED that flashes to indicate a ground fault condition (zero impedance from the FACP to ground).

Battery

This is a yellow LED that flashes to indicate a low battery voltage condition.

Disabled

This is a yellow LED that flashes to indicate that a zone, NAC, detector or module has been temporarily disabled in programming by the user.

Maintenance

This is a yellow LED that flashes to indicate that a smoke detector requires cleaning or replacement due to an invalid chamber reading or excessive drift.

Communication

This is a yellow LED that flashes to indicate a communication fault, including loss of phone lines, communication failure with either Central Station, or total communication failure.

Alarm Silenced

This is a yellow LED that turns on after the *Alarm Silence* key is pressed while an alarm condition exists. It turns off when the *Drill* or *Reset* key is pressed.

4.3 Normal Operation

With no alarms or troubles in the system, the display message is *System Normal* along with the current time and date as shown below. To set the time and date, refer to the appropriate section in this manual.

```

SYSTEM NORMAL
10:00A 072016

```

The ES-200X performs the following functions at regular intervals while in Normal mode:

- ✓ Monitors AC input voltage and battery voltage
- ✓ Monitors and reports status of SLC loop, option cards, and control panel
- ✓ Polls all devices on the SLC loop and flashes each device LED while checking for valid replies, alarms, troubles, etc.
- ✓ Refreshes LCD display and updates time
- ✓ Scans control panel keypad for key presses
- ✓ Performs autotest for all SLC devices
- ✓ Tests memory
- ✓ Updates and reads all communications busses

4.4 Trouble Operation

With no alarms in the system, the detection of a trouble will cause the following:

- The piezo to pulse 1 second On and 1 second Off
- The system Trouble LED to flash one second On and one second Off
- The trouble relay to activate
- *TROUBL* with device type, noun/adjective, address and trouble description will appear on the LCD display
- The same message, along with the time and date, is sent to the optional printer and the history buffer.
- Communicate the trouble conditions to the Central Station
- Terminate upload or download communications

Note that specific troubles will initiate additional actions; for example, loss of AC power will turn off the AC Power LED, a ground fault will turn on the Ground LED, etc.

Addressable Smoke Detectors, Monitor Modules and Control Modules

For addressable devices connected to the SLC loop, the following is a typical message that could appear on the LCD display for a device trouble:

```

TROUBL SMOKE <PHOTO>
<ADJ> <NOUN>
INVREP
10:00A 010816 1D001

```

The information displayed in the above example provides the following information:

- First line in display:
 - ✓ The type of event; in this example *TROUBL* indicating a device trouble
 - ✓ Device type identifier; in this example, *SMOKE (PHOTO)* indicates a Photoelectric smoke detector. Other device type identifiers which can be displayed include *SMOKE (ION)* for Ionization Detector, *HEAT* for Heat Detector, *CONTROL* for Control Module and *MONITOR* for Monitor Module, *PULL STATION* for a manual pull box, etc. Refer to “*Edit Detector*” on page 57, “*Edit Module Screen for Monitor Module*” on page 63 and “*Edit Module Screen for Control Modules*” on page 67 for information on additional device types.
- Second line in display:
 - ✓ <ADJ>; refers to the user programmed adjective descriptor from library list resident in the control panel or custom entry via PC.

- ✓ <NOUN>; refers to the user programmed noun descriptor from library list resident in the control panel or custom entry via PC.
- Third line in display: *INVREP* indicates an invalid reply from the addressable device. Other possible troubles include:
 - *SHORT* - indicating a shorted circuit on an addressable device
 - *OPEN* - indicating an open circuit on an addressable device
 - *DIRTY1* - maintenance alert indicating that a detector is near but below the allowed alarm limit and is in need of maintenance before the performance is compromised
 - *DIRTY2* - maintenance alert indicating that a detector needs immediate maintenance since it has been within 80% of its alarm threshold for 24 hours
 - *INVREP* - maintenance alert indicating a hardware or communication problem in the detector
 - *TEST F* - indicating a detector has failed the automatic test operation which functionally checks its sensing chamber and electronics
 - *INV ID* - indicating that an incorrect device code (Type ID) has been programmed for an installed device (for example, Photo has been programmed but an Ion detector has been installed)
 - *SW TBL* - indicating a module has failed the testing of its Class A switching relay
 - *BLOCK* - indicating that a beam detector's beam is totally blocked
 - *ALIGN* - indicating that a beam detector is in beam alignment mode
- Fourth line in display:
 - ✓ Time; the current time in this example is *10:00A* which represents 10:00 AM
 - ✓ Date; the current month, day and year in this example is *01* for January, *08* for the 8th day of the month and *16* for the year 2016
 - ✓ Device Address; *ID001* in this example *I* represents SLC Loop, *D* represents a detector and *001* represents device address 001

Pressing the *Acknowledge* or *Alarm Silence* key will cause the pulsing piezo to silence and the system Trouble LED to change from flashing to on steady. This block acknowledgment occurs regardless of the number of troubles, alarms and supervisory events active in the system. When the *Acknowledge* key is pressed and at least one new alarm or trouble exists in the system, the 'acknowledge' message is sent to the printer and history file. If the trouble clears, either before or after the *Acknowledge* key is pressed, the 'clear trouble' message is sent to the printer and history file.

If all troubles clear and there are no supervisory or fire conditions active in the system, the system returns to normal mode operation and the *System Normal* message is shown on the LCD display and sent to the history and printer files. The auto-restore feature will restore cleared troubles even if the troubles were never acknowledged. Note that pressing the *Alarm Silence* key when only troubles exist in the system will have the same effect as pressing the *Acknowledge* key except the Alarm Silenced LED will light.

4.5 Alarm Operation

Alarm operation is similar to trouble operation with the following differences:

- The piezo sounder produces a steady output as opposed to a pulsed output
- The Fire Alarm LED flashes 1 second On and 1 second Off
- The LCD displays *Alarm* along with the device name, type, address, adjective/noun, associated zones and time/date
- Communicate the alarm to the Central Station
- Alarms latch and *are not allowed to clear automatically*
- Alarms activate software zones if so programmed
- Timers for Silence Inhibit, Autosilence, and Trouble Reminder are started
- Alarms activate the general alarm relay and general alarm zone Z000
- The trouble relay is not activated
- Store event in history buffer
- Terminate upload or download communications
- Alarms must be Acknowledged before the FACP can be reset

A typical alarm display would be as illustrated below:

```

ALARM PULL STATION
<ADJ> <NOUN>
      Z000
10:00A 010816 1M001
  
```

Note that the device type, which in this example is *PULL STATION*, can be any other programmable alarm type.

The information displayed in the above example provides the following information:

- First line in display:
 - ✓ The type of event; in this example *ALARM* indicating an alarm condition
 - ✓ Device type identifier; in this example, *PULL STATION* indicates a manual pull box. Other device type identifiers which can be displayed include *SMOKE (ION)* for Ionization Detector, *HEAT* for Heat Detector, *CONTROL* for Control Module and *MONITOR* for Monitor Module, *PULL STATION* for a manual pull box, etc. Refer to "Edit Detector" on page 57, "Edit Module Screen for Monitor Module" on page 63 and "Edit Module Screen for Control Modules" on page 67 for information on additional device types.
- Second line in display:
 - ✓ <ADJ>; refers to the user programmed adjective descriptor from library list resident in the control panel or custom entry via PC.
 - ✓ <NOUN>; refers to the user programmed noun descriptor from library list resident in the control panel or custom entry via PC.
- Third line in display: *Z000* indicates the zone programmed to this device which, in this example, is general alarm Zone 000. Note that a single device can be programmed to five different zones but only the first zone will be displayed.
- Fourth line in display:

- ✓ Time; the current time in this example is *10:00A* which represents 10:00 AM
- ✓ Date; the current month, day and year in this example is *01* for January, *08* for the 8th day of the month and *16* for the year 2016
- ✓ Device Address; *1M001* in this example *1* represents SLC Loop, *M* represents a module and *001* represents device address 001

4.6 CO Alarm Operation



NOTE: When using carbon monoxide detection the system must be monitored by a Supervising Station, meeting the Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment, NFPA 72.

When a CO alarm operation occurs:

- The piezo sounder produces a steady Temporal 4 output
- The CO Alarm LED flashes 1 second On and 1 second Off
- The LCD displays *CO Alarm* along with the device name, type, address, adjective/noun, associated zones and time/date
- Communicate the CO alarm to the Central Station
- CO alarms latch and *are not allowed to clear automatically*
- CO alarms activate software zones if so programmed
- Timers for Silence Inhibit, Autosilence, and Alarm Reminder are started
- CO alarms activate the relays programmed for CO alarm
- The trouble relay is not activated
- Store event in history buffer
- Terminate upload or download communications
- CO alarms must be Acknowledged before the FACP can be reset

A typical CO alarm display would be as illustrated below:

```

ALARM CAR MONOXIDE
<ADJ> <NOUN>
      Z002
10:00A 090816 1M001
  
```

The information displayed in the above example provides the following information:

- First line in display:
 - ✓ The type of event; in this example *ALARM* indicating a CO alarm condition
 - ✓ Device type identifier; in this example, *CAR MONOXIDE* indicates a CO detector.
- Second line in display:
 - ✓ <ADJ>; refers to the user programmed adjective descriptor from library list resident in the control panel or custom entry via PC.
 - ✓ <NOUN>; refers to the user programmed noun descriptor from library list resident in the control panel or custom entry via PC.
- Third line in display: *Z002* indicates the zone programmed to this device which, in this example, is general alarm Zone 002. Note that a single device can be programmed to five different zones but only the first zone will be displayed.
- Fourth line in display:
 - ✓ Time; the current time in this example is *10:00A* which represents 10:00 AM
 - ✓ Date; the current month, day and year in this example is *09* for September, *08* for the 8th day of the month and *16* for the year 2016
 - ✓ Device Address; *1M001* in this example *1* represents SLC Loop, *M* represents a module and *001* represents device address 001

4.7 Supervisory Operation

Supervisory operation is similar to alarm operation but with the following differences:

- The piezo sounder pulses ½ second On and ½ second Off
- The Supervisory LED flashes ½ second On and ½ second Off
- The LCD displays the status label *Active Supervisory* along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the supervisory condition to the Central Station
- The supervisory relay is activated
- The alarm relay is not activated
- Silenced alarms are resounded
- Timers are not started
- Store event in history buffer
- Terminate upload or download communications

A typical Supervisory event would be displayed as illustrated in the following:

```

ACTIVE SUPERVISORY
<ADJ> <NOUN>
      Z000
10:00A 012116 1M001
  
```

Note that, like alarms, supervisory signals latch (except when programmed for supervisory autoresettable) and can be assigned to software zones. Supervisory alarms do not cause resound as do other alarm conditions. Open circuits in supervisory wiring are processed by the control panel the same way as other trouble conditions. Refer to “Alarm Operation” on page 111, for a description of the information displayed on the control panel LCD.

4.8 Process Monitor Operation

Process Monitor operation will initiate the following events:

- The piezo sounder pulses ¼ second On and ¼ second Off
- The LCD displays a process monitor message along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the process monitor condition to the Central Station (if the default event code has been changed from 000 to a reportable event code)
- Relays programmed for process monitoring will be activated
- The alarm relay is not activated
- Fire Alarm NACs will not activate
- SLC NACs (control modules) will activate
- Timers are not started
- Store event in history buffer
- Activate appropriate LED on the ANN-LED annunciator (required for this application)
- Each ANN-LED can support up to 10 zones.

Note that, like supervisory, process monitor signals latch (except when programmed for process monitor autoresettable) and can be assigned to software zones.

4.9 Hazard/Tornado Condition Operation

Hazard/Tornado operation is intended for Manual activation.

Hazard/Tornado Condition operation will initiate the following events:

- The piezo sounder pulses 1/4 second On, 1/4 second Off
- The LCD displays a hazard message along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the hazard condition to the Central Station (if the default event code has been changed from 000 to a reportable event code)
- Relays programmed for hazard will be activated
- The alarm relay is not activated
- Fire Alarm NACs will not activate
- SLC NACs (control modules) will activate
- Timers are not started
- Store event in history buffer
- Activate appropriate LED on the ANN-LED annunciator (required for this application)
- Each ANN-LED can support up to 10 zones.

Hazard conditions latch. They can be assigned to software zones.

4.10 Medical Alert Condition Operation

Medical alert operation is:

- not intended for nurse call stations (applications) per UL1069.
- not intended for signaling professional medical staff.
- to be used for summoning security guards or other trained personnel within the facility
- intended for Manual activation.

Medical Alert Condition operation will initiate the following events:

- The piezo sounder 1/4 second On, 1/4 second Off
- The LCD displays a medical alert message along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the medical alert condition to the Central Station
- Relays programmed for medical alert will be activated
- The alarm relay is not activated
- Fire Alarm NACs will not activate
- SLC NACs (control modules) will activate
- Timers are not started
- Store event in history buffer
- Activate appropriate LED on the ANN-LED annunciator (required for this application)
- Each ANN-LED can support up to 10 zones.

Medical alert conditions latch. They can be assigned to software zones.

4.11 Mass Notification Operation

The FACP may be installed with an ECC-50/100 audio system to provide mass notification operation. The FACP must control the ECC-50/100 via the ANN-BUS. Refer to “Automatic Audio Panel Control” on page 47 for details and wiring information.

Some mass notification installations may require that the activation of the audio system results in an override of an active fire notification at the FACP. This is determined by a risk assessment in accordance with the local AHJ. The FACP provides the flexibility to accommodate override or non-override operation. For override operation, FACP NACs and/or other SLC control modules may be deactivated while the mass notification event is active. No other FACP operation is overridden or interrupted. If override operation has been selected, notification for a fire event will resume upon termination of the mass notification event at the audio system.

When mass notification override is enabled, mass notification alarms will result in a mass notification event being sent to the central station. An event code can also be sent indicating which message is playing on the audio system. Message event code transmission must be enabled in programming.

Refer to page 83 for programming mass notification override at the system level.

Refer to page 70 for programming mass notification override for SLC control modules.

Refer to page 81 for programming mass notification override for onboard NACs.

Refer to page 90 for programming message event code transmission to the central station.

4.12 NAC Operation

There are four programmable NACs (Notification Appliance Circuits) resident on the ES-200X main circuit board. All NACs may be programmed as silenceable or nonsilenceable and may also be programmed for steady or coded operation. Coded operation provides a choice between March Time, Temporal or California coding.

4.13 Programmed Zone Operation

Each addressable detector and monitor module can be assigned to a maximum of five software alarm zones. A general alarm zone Z000 may be listed for output (control) points, but it is not necessary to list Z000 for input points, since this is the default zone for all alarm input devices. Zone Z000 is not activated by supervisory points.

When an input device alarms and is not disabled, it activates all software zones assigned to it. An output device that is not disabled is turned on when any of the software zones to which it is programmed become active. Only alarms, hazards/tornado alerts can turn on any of the four main NACs.

4.14 Disable/Enable Operation

Input points which are disabled do not cause an alarm or any zone activation. Disabled output points are held in the off state. All disabled points are treated as if they were in trouble, with the exception being the status label that will be displayed is *DISABL*.

4.15 Waterflow Circuits Operation

If an alarm exists from a monitor module point that has a waterflow type code and its mapped NAC control module outputs are programmed for nonsilenceable operation, the Alarm Silence key will not function. Also, any output zone activated by a waterflow device will not be silenceable if the Waterflow Silenceable option is set to NO in system programming.

4.16 Detector Functions

Maintenance Alert

Each addressable detector is monitored by the control panel for its maintenance status. If a detector is near but below the allowed alarm limit, a ‘maintenance alert’ message will automatically be displayed, signaling that the detector is in need of servicing.

Automatic Test Operation

An automatic test of an addressable detector is performed each minute, resulting in a complete SLC loop test in approximately 5 hours (if the loop has the maximum number of devices installed). The detector’s sensing chamber and electronics are functionally tested for normal, safe operation. A trouble message is displayed upon failure of this test. A System Reset will clear this trouble.

Type Code Supervision

The FACP monitors addressable hardware device codes at slow intervals. Mismatch of any type code, compared to the system program, will cause a device trouble.

System Alarm Verification

The control panel may be programmed to perform alarm verification to help eliminate the nuisance of false alarms. Alarm verification applies to smoke detectors only.

Smoke Detector Data

Smoke detector data is monitored by the FACP, eliminating the need to test the sensitivity of each detector at its location. A printout of each detector’s data can be retrieved from the FACP using an optional printer or Windows® HyperTerminal. Detector sensing ability can decrease with age and should be monitored as part of a system’s routine maintenance.

4.17 Time Functions: Real-Time Clock

The ES-200X includes a crystal-based clock that provides time of day, date and day of week. Time is displayed as 12 or 24 hour time with month/day/year and is stored in RAM. Daylight savings time change-over is programmable and automatic. If both AC and battery are lost, the time must be reset.

4.18 Synchronized NAC Operation

Synchronization is a panel feature that controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time. This is particularly critical when activating strobes which must be synchronized to avoid random activation and a potential hazard or confusion. The FACP can be programmed to operate with a variety of manufacturer's devices. NAC synchronization can only be supported properly by the Remote Power Supply Sync Terminal, which follows NAC 1 programming.

Important: When a Notification Appliance Circuit with a mix of audible and visual devices is programmed for silenceable and the synchronization feature is selected, only the audible devices will be turned off if the Silence key is pressed. The visual devices (strobes, etc.) will continue to operate.

4.19 Coded Operation

The NAC circuits resident on the control panel main circuit board can be programmed for coded operation. The available pulse rates which can be programmed for coded operation are as follows:

- Continuous: Steady output with no pulsing
- March Time: Pulses at 120 ppm (pulses per minute)
- Temporal 3 Code: Pulses at 1/2 second On, 1/2 second Off, 1/2 second On, 1/2 second Off, 1-1/2 second Off
- Temporal 4 Code: Pulses at 1/2 second On, 1/2 second Off, 1/2 second On, 1/2 second Off, 1/2 second On, 1/2 second On, 1/2 second Off, 1-1/2 second Off
- California Code: 10 seconds On, 5 seconds Off
- Two-Stage: Pulses at 20 ppm (pulses per minute) for 3 or 5 minutes (depending on programming) and then changes to Temporal

4.20 Presignal

Presignal option programs an initiating device to delay the activation of NACs and/or control modules while allowing visual verification by a person. Once a detector or monitor module triggers an alarm, the onboard piezo sounds immediately, but the NACs are not activated for a user programmed time duration of up to three minutes. Note that the alarm relay and communicator will respond to the initial alarm immediately. In addition, Zone 098 will activate. This zone can be programmed to a control module which may be used to activate a sounder or indicator which the installer designates as a Presignal indication. *Do not assign Zone 098 to a Notification Appliance Circuit when using this zone to indicate a Pre-signal condition.*

After the programmed delay, the NACs will activate if the source of the alarm is not cleared. Note that if a second alarm occurs during the programmed time delay, the alarm will be processed immediately, causing activation of the appropriate output zones. The events which occur upon Presignal activation are as follows:

- ✓ onboard piezo sounds immediately
- ✓ control panel LCD display will indicate a presignal event and the active point
- ✓ control points programmed to Zone 098 will activate
- ✓ annunciators (if enabled) will sound the local piezo, and pulse the alarm LED and zone LED
- ✓ outputs (NACs and control modules) of associated zones will be inhibited from activating for a user programmed time delay of up to three minutes
- ✓ second alarm occurring anytime during the time delay will cause immediate activation of all associated outputs

Presignal does not affect monitor modules programmed as waterflow, supervisory, process monitoring or remote switches. *Presignal operation requires the approval of the local Authority Having Jurisdiction.*

4.21 Positive Alarm Sequence

PAS (Positive Alarm Sequence) option will program a smoke detector to delay panel activation (including alarm relay and communicator) for a period of 15 seconds. Zone 097, however, will activate immediately and may be used to connect a signaling device to indicate PAS activation. *Do not assign Zone 097 to a Notification Appliance Circuit when using this zone to indicate a PAS condition.*

When a detector triggers an alarm, the onboard piezo sounds immediately, but the NACs are prevented from activating for 15 seconds. This inhibit time is factory set and cannot be changed. Pressing the Alarm Silence or Acknowledge/Step key during the 15 second inhibit time will silence the piezo sounder and start a timer which prevents activation of NACs for an additional time duration which can be user programmed for up to three minutes. After the programmed delay, the NACs will activate if the source of the alarm is not cleared. Note that if a second alarm occurs during either time delay, the alarm will be processed immediately, causing activation of the appropriate output zones.

The events which occur upon PAS activation are as follows:

- ✓ onboard piezo sounds immediately
- ✓ control panel LCD display will indicate a presignal event and the active point
- ✓ control points programmed to Zone 097 will activate
- ✓ outputs (NACs and control modules) of associated zones will be inhibited from activating for a factory set duration of 15 seconds
- ✓ pressing the Alarm Silence or Acknowledge/Step key will start a timer which inhibits output activation for additional time delay of up to three minutes which is user programmable

- ✓ second alarm occurring anytime during either time delay will cause immediate activation of all associated outputs

PAS operation requires the approval of the local Authority Having Jurisdiction.

Note that the *PAS BYPASS* monitor type code, when activated, will inhibit the PAS capability until the *PAS BYPASS* monitor is deactivated. While PAS is inhibited, signaling devices will immediately place the control panel into alarm. This feature may be employed by wiring a normally open device, such as a switch, to a monitor module which has been programmed for *PAS BYPASS*.

4.22 Special System Timers

4.22.1 Silence Inhibit Timer

This option, if selected, prevents the *Alarm Silence* key from functioning for 5 minutes following an alarm. A new alarm during the initial 5 minute period will not cause the timer to restart with a new 5 minutes. *Silence Inhibit operation requires the approval of the local Authority Having Jurisdiction.*

4.22.2 Autosilence Timer

If Autosilence is selected, the notification appliances, programmed as silenceable, will automatically be silenced after a programmable duration of 5 to 30 minutes. Pressing the *Drill* key will restart the timer. *Autosilence operation requires the approval of the local Authority Having Jurisdiction.*

4.22.3 Trouble Reminder

If selected, this feature causes a reminding 'beep' every 15 seconds during an alarm (after the *Alarm Silence* key is pressed) and every two minutes during a trouble condition (after the *Acknowledge/Step* or *Alarm Silence* key is pressed). The 'beeps' from the onboard piezo sounder will occur until the alarm or fault is cleared.

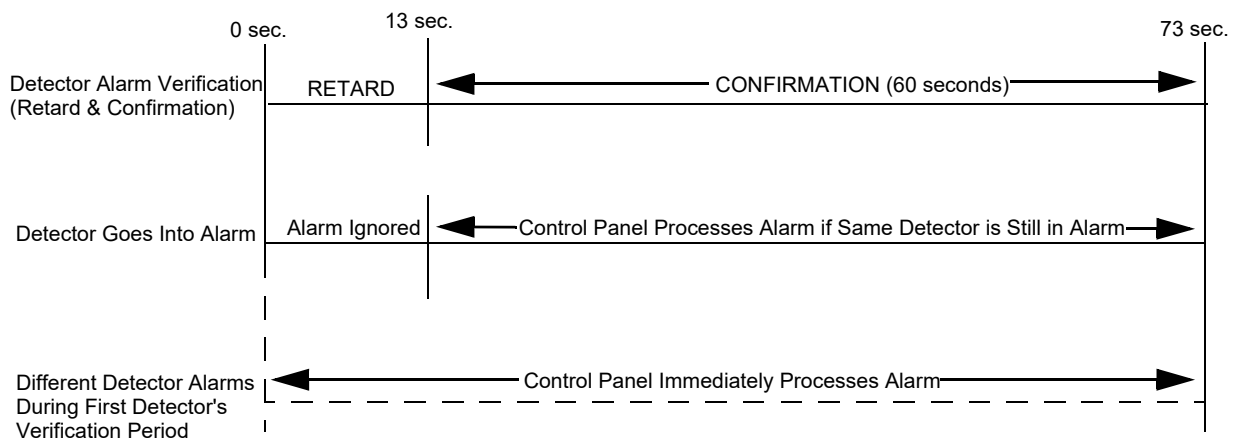
Note that if the trouble is not cleared within 24 hours, the piezo will resound, indicating that the trouble condition still exists.

4.22.4 Waterflow Retard Timer

If selected, this option will delay the activation of a waterflow type alarm for a programmable time duration from 1 to 90 seconds. This delay is in addition to any time delay inherent in the waterflow device. *This feature requires the approval of the local Authority Having Jurisdiction.*

4.22.5 Alarm Verification (None or One Minute)

If alarm verification is selected, an addressable smoke detector's alarm is ignored for a retard time of 13 seconds and the detector's alarm condition is automatically reset. There will be no alarm indication at the FACP during the Retard period. A confirmation period of 60 seconds follows, during which a subsequent alarm from the same detector will cause the panel to immediately activate the appropriate outputs and indicate the alarm condition at the FACP. If a different detector alarms any time during the first detector's verification period, the panel will immediately activate all appropriate outputs and indicate the alarm condition at the FACP. If no additional detector alarms occur within 73 seconds of the first alarm (13 second retard plus 60 second confirmation), the timer resets and the panel is ready to verify any new detector alarms which may occur. The following is a graphic representation of Alarm Verification.



NOTE: Alarm Verification is available only for addressable smoke detectors, not conventional smoke detectors.

4.22.6 Control Module Delay Timer

The control module delay feature, if enabled, will delay activation of a control module after a programmed time of 1-180 seconds after being triggered by an alarm condition. *This feature requires the approval of the local Authority Having Jurisdiction.* See the table on page 49 for allowable settings.

4.23 Walktest

Walktest is a feature which allows one person to test the fire alarm system. An audible walktest will momentarily sound the Notification Appliance Circuits in the building and store the walktest information in a file at the panel. A silent walktest will not sound the NACs but will store the walktest information in a file which can be viewed at the panel. Disabled NAC devices will not activate during walktest.

Alarm/Shorted Condition

When in audible Walktest, the panel responds to each new alarm and activates its programmed control outputs for four seconds, if those outputs have been programmed for silenceable activation. It also stores each alarm in the walktest history file which can be sent to an optional printer. The stored display will be the same as if the device actually activated except the colon (:) in the time stamp is replaced with an asterisk (*).

Note that if the system under test includes one or more enabled monitor modules, the following may apply:

If the monitor module is used for a supervised, 2-wire smoke zone, alarming any monitor module in the system will result in the activation of programmed control outputs for an additional eight seconds or less. This is caused by the temporary removal of 24 VDC resettable power from the monitor module. The monitor module reports this loss of power as an open condition in addition to the alarm condition.

Open Condition

Addressable devices are monitored for fault conditions during Walktest mode. When a new trouble condition occurs, the FACP will activate all NACs and control modules programmed for Walktest and mapped to the faulty device, then shut them off after eight seconds.

While in Walktest, the trouble relay is activated and the system Trouble LED flashes (as in all of the Program and status change operations). The alarm relay is not activated.

4.24 Read Status

Read Status functions do not require a password. The control panel will continue to provide fire protection while in Read Status mode. This mode can be entered while the control panel is in alarm or trouble. If a new alarm or trouble occurs during these functions, the Read Status is exited to prevent confusion.

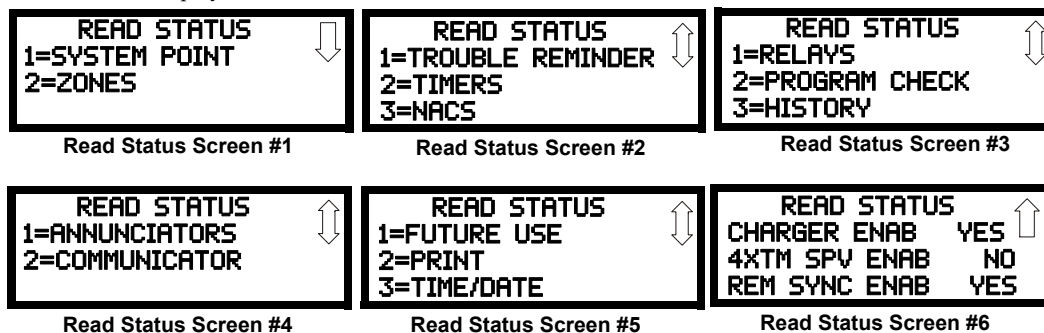
Read Status Entry

When the operator presses the control panel **ENTER** key, the LCD will display the following:

```
1=READ STATUS MODE
2=PROGRAMMING MODE
3=FSTOOL UP/DOWNLOAD
4=USB UP/DOWNLOAD
```

Pressing **1**, while this screen is being displayed, will cause the control panel to enter the Read Status mode which allows the user to view and print the programmed features and status of the control panel.

The following screens will be displayed:



4.24.1 System Point

```
READ STATUS
1=SYSTEM POINT
2=ZONES
```

Read Status Screen #1

Pressing **1** while viewing Read Status Screen #1 will cause the following screen to be displayed:

```
READ SYSTEM POINT
SELECT TYPE
1=DETECTOR
2=MODULE
```

The operator selects the type of device which is to be viewed by pressing **1** for Detector or **2** for Module. If **1** is pressed, the display will change to the following screen:

```
READ SYSTEM POINT
ENTER DETECTOR#
***
```

Entering the three digit detector address will cause the control panel to display the current status of the selected device. For example, if a detector with address *001* on the SLC loop is entered, a display similar to the following will appear:

```

NORMAL SMOKE<PHOTO>
NORTH CLASSROOM
      Z005
V  1D001
  
```

The information in the preceding display includes:

- *NORMAL* - the present status (could also be ALARM, TROUBL, DISABL, etc.)
- *SMOKE (PHOTO)* - the device type which is a photoelectric smoke detector (could also be ION for ionization smoke detector)
- *NORTH CLASSROOM* - the Adjective/Noun label for this device
- *Z005* - the first of five possible assigned software zones
- *1D001* - *I* = SLC Loop, *D* = Detector, *001* = Address 001
- *V* - Alarm Verification Enabled (*V* = Yes, * = No)
- *S* - Silenceable for control modules (*S* = Yes, * = No)
- *W* - Walktestable for control and monitor modules (*W* = Yes, * = No)

Pressing the down arrow key, while viewing the screen shown above, will allow the operator to view additional programming information about the selected device, such as:

- Enable/Disable Status
- Device Type
- Alarm Verification On/Off (for detectors)
- Walktest Yes/No
- PAS (Positive Alarm Sequence) Yes/No (for detectors only)
- Pre-Signal Yes/No (for detectors and monitor modules)
- Zone Assignments (five maximum)
- Chamber Value
- Adjective/Noun descriptor
- Silenceable Yes/No (for control modules)
- MNS Override Enabled/Disabled (for control modules)
- Wireless Yes/No (for detectors only)
- Sounder Base Yes/No (for detectors only)
- Sounder Base Values and Zone Assignments (for detectors only)

4.24.2 Zones

```

READ STATUS
1=SYSTEM POINT
2=ZONES
  
```

Read Status Screen #1

Pressing 2 while viewing Read Status Screen #1 will cause the following screens to be displayed:

```

      ZONES
1=ZONES INSTALLED
2=ZONES ENABLED
3=ZONES DISABLED
  
```

Zones Screen #1

```

      ZONES
1=SPECIAL PURPOSE
2=ZONE TYPE
3=ZONE MESSAGE
  
```

Zones Screen #2

From the preceding screens, the control panel operator can view:

- *Zones Installed* - all software zones programmed into the system (99 maximum)
- *Zones Enabled* - all software zones that are enabled
- *Zones Disabled* - all software zones that have been disabled
- *Special Purpose* - on or off programming for Special Purpose Zones 97 reserved for PAS, 98 reserved for Pre-signal, 99 reserved for Two Stage, and 96 for Local Alarm
- *Zone Type* - the Type assigned to each installed zone (default is Alarm)
- *Zone Message* - the Message assigned to each installed zone

4.24.3 Trouble Reminder

```

READ STATUS
1=TROUBLE REMINDER
2=TIMERS
3=NAC
  
```

Read Status Screen #2

Pressing 1 while viewing Read Status Screen #2 will display the following screen:

```

TROUBLE REMINDER
TROUBLE REM    24HR
  
```

The screen indicates whether the Trouble Reminder feature is set to sound every 4 or 24 hours.

4.24.4 Timers

Pressing 2 while viewing Read Status Screen #2 will cause the following Timer screens to be displayed:

```

    TIMERS
PAS DELAY      000
PRE SIGNAL     000
WATERFLOW      000
  
```

```

    TIMERS
AC LOSS DELAY   2
CON MOD DLY     000
  
```

These screens will indicate the delay time, in seconds, for each of the first three and last possible delay options. The AC Loss Delay time is displayed in hours.

4.24.5 NACs

Each NAC can be programmed individually with unique settings with the exception of Canadian Mode. When the Canadian Option is selected in programming (see "Canadian Option" on page 82), all NAC settings are changed to that of NAC 1. While in Canadian Mode, if any NAC is setting is changed, all other NACs will get those same settings. Pressing 3 while viewing Read Status Screen #2 will display the following screen:

```

    NAC
1=NAC 1      3=NAC 3
2=NAC 2      4=NAC 4
  
```

The operator can press 1 to view the programmed options for NAC 1, 2 to view the programmed options for NAC 2, 3 to view the programmed options for NAC 3, or 4 to view the programmed options for NAC 4. The resulting screens will display the following information:

- Enable/Disable Status
- Circuit Type (Bell, Strobe, etc.)
- Silenceable/Nonsilenceable
- Auto Silence Enable/Disable and time delay (in minutes)
- Coding Selection (Temporal, Steady, etc.)
- Zone Assignments
- Silence Inhibit Enabled/Disabled
- Synchronization Type (System Sensor, Wheelock, or Gentex)
- MNS Override Enabled/Disabled
- MNS Active Yes/No

4.24.6 Relays

```

    READ STATUS
1=RELAYS
2=PROGRAM CHECK
3=HISTORY
  
```

Read Status Screen #3

Pressing 1 while viewing Read Status Screen #3 will display the following screen:

```

    RELAY
1=RELAY 1
2=RELAY 2
3=RELAY 3
  
```

The operator can view the programmed option for each relay by pressing the corresponding number key.

4.24.7 Program Check

Pressing 2 while viewing Read Status Screen #3 will cause a screen similar to the following to be displayed:

```

    PROGRAM CHECK
1=NACS NO INPUT
2=ZONES NO INPUT
3=ZONES NO OUTPUT
  
```

Program Check Screen #1

Pressing 1 while viewing Program Check screen #1 will display a screen which will indicate if any input zones have not been programmed to one of the Notification Appliance Circuits. Use the up and down arrow keys to view all NACs.

Pressing 2 while viewing the Program Check screen #1 will display a screen which will indicate if any output zones have not been programmed to at least one input zone. Use the up and down arrow keys to view all zones.

Pressing 3 while viewing the Program Check screen #1 will display a screen which will indicate if any input zones have not been programmed to at least one output zone. Use the up and down arrow keys to view all zones.

4.24.8 History

Pressing 3 while viewing Read Status Screen #3 will display the following screen:

```

HISTORY
1=VIEW ALL
2=VIEW ALARMS
3=VIEW OTHER EVENTS
  
```

The operator can view all events which have been stored in the history file, only alarms or other events, such as troubles or supervisories, by pressing the corresponding number key.

4.24.9 Annunciators

```

READ STATUS
1=ANNUNCIATORS
2=COMMUNICATOR
  
```

Read Status Screen #4

Pressing 1 while viewing Read Status Screen #4 will display the following screens:

```

ANN-BUS SELECT
1=PRIMARY
2=SECONDARY
3=ANN-BUS OPTIONS
  
```

Annunciator Screen

Pressing 1 or 2 for *ANN-BUS* while viewing the Annunciator Screen allows the operator to view the settings and devices for each ANN-BUS. Press 1 for the *Primary ANN-BUS* and 2 for the *Secondary ANN-BUS*.

```

ANN-BUS
ENABLED          NO
2=MODULES INSTALLED
CLASS A          NO
  
```

ANN-BUS Screen #1

The ANN-BUS Screen #1 indicates if the ANN-BUS has been enabled *Yes* or disabled *No*.

Pressing 2 for *Modules Installed* while viewing ANN-BUS Screen #1 will display screens for ANN-BUS Addresses 1 -8 and the devices installed at each address. A subscreen will display the options that have been programmed for each device.

```

ANN-BUS SELECT
1=PRIMARY
2=SECONDARY
3=ANN-BUS OPTIONS
  
```

Annunciator Screen

Pressing 3 for *ANN-BUS Options* while viewing the Annunciator Screen allows the operator to view the settings for any ANN-S/PG, ANN-LED, ANN-80, and ANN-100 installed in the system.

```

ANN-BUS
1=ANN-S/PG OPTIONS
2=ANN-LED OPTIONS
3=ANN-80/100 OPTIONS
  
```

ANN-BUS Screen #2

Pressing 1 for *ANN-S/PG Options* while viewing ANN-BUS Screen #2 will display the options selected for the installed ANN-S/PG annunciators.

Pressing 2 for *ANN-LED Options* while viewing ANN-BUS Screen #2 will display the options selected for the installed ANN-LED annunciators.

Pressing 3 for *ANN-80/100 Options* while viewing ANN-BUS Screen #2 will display the options selected for the installed ANN-80 or ANN-100 annunciators.

4.24.10 Communicator

```

READ STATUS
1=ANNUNCIATORS
2=COMMUNICATOR
  
```

Read Status Screen #4

Pressing 2 while viewing Read Status Screen #4 will display the following screens:

```

COMMUNICATOR
INSTALLED      YES ↓
2=POTS SETTINGS
3=IP SETTINGS
  
```

Communicator Screen #1

```

COMMUNICATOR
1=PRI COMM PATH ↑
2=SEC COMM PATH
TBL REPORT LIMIT 0
  
```

Communicator Screen #2

```

COMMUNICATOR
1=EVENT CODES ↑
TEST TIME INT    24
24HR TEST TIME   0100
  
```

Communicator Screen #3

```

COMMUNICATOR
REPORT STYLE POINT ↑
  
```

Communicator Screen #4

The Communicator Screen #1 indicates if an IPOTS-COM has been installed *Yes* or *No*.

Pressing 2 for *POTS Settings* while viewing Communicator Screen #1 will display settings for the telephone portion of the Communicator.

```

POTS SETTINGS
1=LINE 1
2=LINE 2
3=GAINS
  
```

Pressing 1 or 2 will display whether each phone line is enabled *Yes* or disabled *No*, whether the phone type is *touchtone* or *rotary*, and whether the phone line is being supervised *Yes* or *No*.

Pressing 3 will display the phone lines' Gains setting. The value for the Dialing Gains and Reporting Gains is shown as *High*, *Normal*, or *Low*.

```

READ STATUS
INSTALLED      YES
2=POTS SETTINGS
3=IP SETTINGS
  
```

Communicator Screen #1

Pressing 3 for *IP Settings* while viewing Communicator Screen #1 will display settings for the Ethernet portion of the Communicator. The screen will indicate if DHCP has been enabled *Yes* or disabled *No*. If the DHCP has not been enabled, the Static Settings will be displayed.

```

COMMUNICATOR
1=PRI COMM PATH
2=SEC COMM PATH
TBL REPORT LIMIT 0
  
```

Communicator Screen #2

Communicator Screen #2 allows the programmer to press 1 to view the *Primary Communication Path* settings or 2 to view the *Secondary (backup) Communication Path* settings for the Communicator and indicates the Call Limit for Communicator trouble calls within a 24 hour period.

Pressing 1 while viewing Communicator screen #2 will cause the following screen to be displayed:

```

COMMUNICATOR
1=POTS
2=ETHERNET
3=CELLULAR
  
```

Pressing 1 for *POTS* indicates whether the receiver has been enabled or disabled. It also provides information on the receiver such as:

- Account Code
- Phone Number Prefix
- Phone Number
- Communication Format

Pressing 2 for *Ethernet* indicates whether the receiver has been enabled or disabled. It also provides information on the receiver such as CS account info.

Pressing 3 for *Cellular* indicates whether the receiver has been enabled or disabled. It also provides information on the receiver such as the CS account.

```

COMMUNICATOR
1=EVENT CODES
TEST TIME INT  24
24HR TEST TIME 0100
  
```

Communicator Screen #3

Communicator Screen #3 allows the user to view the Event Codes for the chosen communication format as well as the Test Time Interval and 24 Hour Test Time.

```

COMMUNICATOR
REPORT STYLE  POINT
  
```

Communicator Screen #4

Communicator Screen #4 allows the user to view whether the reporting style is by *Point* or *Zone*.

4.24.11 Print

```

READ STATUS
1=FUTURE USE
2=PRINT
3=TIME/DATE
  
```

Read Status Screen #5

To print program data or control panel status, press 2 while viewing Read Status Screen #5. The following screens will be displayed:

```

PRINT
1=HISTORY
2=WALKTEST LOG
3=WALKTEST SUMMARY
  
```

Print Screen #1

```

PRINT
1=DETECTOR DATA
2=COMM SETTINGS
3=EXIT PRINTING
  
```

Print Screen #2

Pressing 1 while viewing Print Screen #1 allows the user to print the History file which will detail all of the system activities since the file was last cleared from memory.

Pressing 2 while viewing Print Screen #1 allows the user to print the Walktest log which will detail all of the system activations during walktest since the log was last cleared.

Pressing 3 while viewing Print Screen #1 allows the user to print the Walktest summary which will list the total of each type of input activation.

Pressing *1* while viewing Print Screen #2 allows the user to print the detector data for each addressable smoke detector connected to the system. A printout, similar to the following example, will be generated if an optional printer is connected to the FACP.

DEVICE #	DEVICE TYPE	% DRIFT COMP	CHAMBER	TIME/DATE
1D001	SMOKE (PHOTO)	20	1281	12:01 AM 01-08-2016
1D002	SMOKE (PHOTO)	20	1281	12:01 AM 01-08-2016
1D003	SMOKE (PHOTO)	21	1259	12:01 AM 01-08-2016
1D004	SMOKE (PHOTO)	20	1309	12:02 AM 01-08-2016
1D005	SMOKE (PHOTO)	21	1281	12:02 AM 01-08-2016
1D006	SMOKE (PHOTO)	20	1322	12:02 AM 01-08-2016
1D007	SMOKE (PHOTO)	20	1280	12:02 AM 01-08-2016
1D008	SMOKE (PHOTO)	20	1215	12:02 AM 01-08-2016
1D009	SMOKE (PHOTO)	20	1310	12:02 AM 01-08-2016

Chamber Value

The Chamber value should be within the indicated range for the following smoke detectors:

- SD355CO, SD355(T/R), SD350(T), SD365(T/R), D350(R), and SD300(T) Addressable Photoelectric Smoke Detectors: **405 - 2100** (obscurator of 1.00%/ft to 3.66%/ft.)
- CP355, CP350, and CP300 Addressable Ionization Smoke Detectors: **750 - 2100** (obscurator of 0.50%/ft. to 1.44%/ft.)

If the addressable smoke detector's Chamber reading is not within the acceptable range, clean the detector and check the Chamber value again. If the reading is still not within the acceptable range, immediately replace the detector.

Drift Compensation

Drift compensation uses software algorithms that identify and compensate for long-term changes in the data readings from each addressable smoke detector. These long-term changes in detector data readings are typically caused by dirt and dust accumulation inside the smoke chamber. Drift compensation performs the following functions:

- Samples photoelectric smoke detectors every 6 seconds and ionization smoke detectors every 3 seconds
- Allows a smoke detector to retain its original ability to detect actual smoke and resist false alarms, even as dirt and dust accumulate
- Reduces maintenance requirements by allowing the control panel to automatically perform the periodic sensitivity measurements required by NFPA Standard 72

The FACP software also provides filters to remove transient noise signals, usually caused by electrical interference.

Maintenance Alert

The software determines when the drift compensation for a detector reaches an unacceptable level that can compromise detector performance. When a detector reaches an unacceptable level, the control panel indicates a maintenance alert. Table 4.1 summarizes the three levels of maintenance alert:

Maintenance Level:	FACP Status Displays:	Indicates:
Low Chamber Value	INVREP	A hardware problem in the detector
Maintenance Alert	DIRTY1	Dust accumulation that is near but below the allowed limit. <i>DIRTY 1</i> indicates the need for maintenance before the performance of the detector is compromised
Maintenance Urgent	DIRTY2	Dust accumulation above the allowed limit.

Table 4.1 Maintenance Alert Levels

Figure 4.1 illustrates a graphic representation of the maintenance levels:

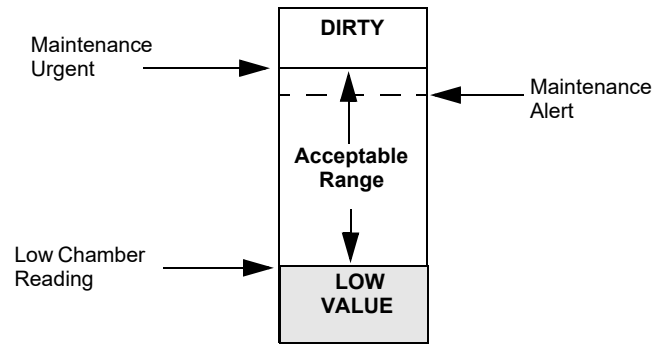
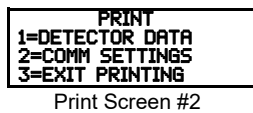


Figure 4.1 Diagram of Maintenance Levels

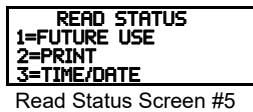


Print Screen #2

Pressing 2 while viewing Print Screen #2 allows the user to print the Communicator's settings. Refer to "Communicator" on page 85 for additional information on the display.

Pressing 3 while viewing Print Screen #2 exits the user from the print menu.

4.24.12 Time-Date

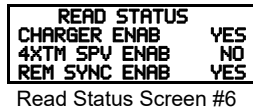


Read Status Screen #5

The operator can view the daylight savings time and the month and week when daylight savings time will begin and end. Pressing 2 while viewing Read Status Screen #5 will display the following screens:



4.24.13 Battery Charger



Read Status Screen #6

Read Status Screen #6 indicates whether the onboard battery charger is enabled or disabled.

4.24.14 4XTM Supervision

Read Status Screen #6 indicates whether 4XTMF Supervision is enabled or disabled.

4.24.15 Remote Sync

Read Status Screen #6 indicates whether remote synchronization is enabled or disabled.

Section 5: Central Station Communications - POTS Transmission

The control panel transmits zone and system status reports to Central Stations via the public switched telephone network. Two supervised telephone line connections are made to interface the control panel to the telephone lines. Two optional 7 foot telephone cords are available for this purpose and can be purchased separately.

The control panel supervises both telephone lines for proper voltage. A delay of two minutes will occur before a fault in either phone line connection is reported as a trouble. When a fault is detected, an audible trouble signal will sound, the yellow trouble LED will blink, the LCD display will indicate the phone line trouble and the trouble condition will be reported to the Central Station over the remaining operational phone line.

The control panel comes with line seizure capability provided for both the primary and secondary telephone line interfaces. Any time that the control panel needs to make a call to a Central Station, line seizure will disconnect any local premises phones sharing the same telephone line.

All transmissions to the Central Stations will be sent over the primary phone line. In the event of noisy phone lines, transmissions will be sent over the backup secondary phone line.

Two phone numbers must be programmed, the primary Central Station phone number and the secondary Central Station phone number. All system reports will be transmitted to the primary Central Station phone number. Reports will automatically be sent to the secondary Central Station phone number if attempts to transmit to the primary Central Station phone number are unsuccessful. If 10 total attempts to communicate are unsuccessful, a Communicator Failure report will be displayed.

The ES-200X meets NFPA 72 National Fire Code reporting requirements for: (a) the type of signal, (b) condition and (c) location of the reporting premises. The general priority reporting structure is:

1. Zone Alarms and Restores
2. Zone Troubles and Restores
3. System Troubles and Restores
4. 24-hour Test

The minimum wire gauge allowed is 26 AWG.

5.1 Transmittal Priorities

The integral communicator transmits highest priority events first. Events, in terms of priority, are listed below in descending order:

1. Alarms (highest priority level)
 - ✓ Pull stations
 - ✓ Waterflow
 - ✓ Smoke detector
 - ✓ Other fire alarm types
 - ✓ CO alarm
2. Supervisory Zone
3. System Troubles
 - ✓ Zone disabled
 - ✓ Fire drill
 - ✓ AC fail (after delay)
 - ✓ Zonal faults
 - ✓ Earth fault
 - ✓ Low battery
 - ✓ Telephone line fault
 - ✓ Notification Appliance Circuits fault
 - ✓ Communication trouble
 - ✓ Annunciator trouble
 - ✓ System off normal
4. Restoral Reports
 - ✓ Zone alarm
 - ✓ Supervisory
 - ✓ Zone(s) enabled
 - ✓ Fire drill
 - ✓ AC
 - ✓ Zone fault
 - ✓ Earth
 - ✓ Battery
 - ✓ Telephone line
 - ✓ Notification Appliance Circuits
 - ✓ Communication
 - ✓ Annunciator trouble
 - ✓ System off normal
5. 24 Hour Test (lowest priority)

Red LEDs are provided on the circuit board to identify which telephone line is activated. Also, a green LED labeled *Kissoff* will turn on whenever the control panel has successfully transmitted reports to the Central Station. The *Kissoff* LED may turn on several times during communications with a Central Station.

The table below shows UL listed receivers which are compatible with the ES-200X.

Format	Ademco 685 (1)	Ademco MX8000 (2)	Silent Knight 9500 (3)	Silent Knight 9800 (4)	Osborne Hoffman 2000E (5)	Radionics 6600 (6)	SurGard MLR2 (7)	SurGard System III (8)	SurGard MLR-2000 (9)	FBI CP220FB (10)	Honeywell Security AlarmNet 7810-ir
0	SIA-DCS-8	✓	✓	✓	✓	✓		✓		✓	
1	SIA-DCS-20		✓	✓	✓	✓		✓		✓	
2	Ademco Contact ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 5.1 Compatible UL Listed Receivers

1. With 685-8 Line Card with Rev. 4.4d software
2. With 124060V206B and 124063 Line Card Rev. B
3. With version V2.4 Receiver and 126047 Line Card Rev. G
4. With 124077V2.00 Receiver and 126047 Line Card Rev. M
5. With V.7301 Receiver S/W
6. With 01.01.03 Receiver S/W and Line Card 01.01.03
7. With software V1.86
8. With software V1.72
9. With DSP4016 and V1.6 Line Card
10. With software V3.9

IMPORTANT! It is the installer's responsibility to ensure that the Digital Alarm Communicator/Transmitter is compatible with the Central Station Receiver, utilized by the monitoring service, prior to installation. The Compatibility Table provides a list of compatible receivers and associated software versions for the receivers. Changes in the hardware and/or software by the receiver manufacturers may affect the receiver compatibility with the FACP DACT. After completing the installation, communication between the DACT and Central Station Receiver must be tested and verified.

Section 6: FS-Tools Upload/Download

Important! The FACP will automatically reset 2 minutes after completion of a user program download via the FS-Tools programming utility. To prevent program corruption, the operator must wait until this panel reset occurs before performing any panel operations.

The control panel may be programmed or interrogated off-site via an Ethernet connection or locally using a USB cable. Any personal computer with Windows[®] 7 or newer, 32 or 64 bit, and Upload/Download software FS-Tools, may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walktest data, current status, system voltages, time and date.

The control panel may also communicate to a local PC at the job-site. The PC must be connected to the USB connector J20 on the FACP main circuit board. A standard USB cable with male-A to male-A connectors, which must be purchased separately, is required.

Important: Remote modification of FACP programming requires that the panel be enabled for remote download (refer to 6.1, "FS-Tools Upload/Download" below). Remote interrogation of panel programming, history logs, detector status, etc., is possible without enabling the remote download option.

CAUTION: After successfully downloading a program, make certain to perform the following steps:

1. Print out all programmed data via Print Mode or manually view programmed entries and compare to intended program data
2. Test all affected panel operations
3. Immediately correct any problems found

6.1 FS-Tools Upload/Download

NFPA 72 requirements state that a technician be on-site and at the control panel whenever the FS-Tools Programming Utility is used to download any information to the FACP. This applies to local and remote programming. For this reason, a new option has been added to the FACP which allows an individual at the FACP to enter a password and either enable the proprietary mode where downloading will be allowed at any time or access a specific password protected screen where downloading will be allowed regardless of the current proprietary setting. The FS-Tools Download option can be selected from the main menu screen as shown below:

1=READ STATUS MODE
2=PROGRAMMING MODE
3=FSSTOOL UP/DOWNLOAD
4=USB UP/DOWNLOAD

1=FIRMWARE UPGRADE

Pressing 3 for FS-Tools Up/Download while viewing the main menu will cause the following screen to be displayed:

FS-TOOLS DOWNLOAD
ENTER PASSWORD

The FS-Tools Download password (default 22222222) must be entered to access the FS-Tools Download feature. Note that the default password can be changed using the Password Change option (refer to "Password Change" on page 102). Entering the correct password will cause the following screen to be displayed:

FS-TOOLS DOWNLOAD
1=PROPRIETARY NO
2=ACCEPT DOWNLOAD

Pressing 1 for *Proprietary No* (factory default setting), while viewing the FS-Tools Download screen, will cause the display to toggle from *Proprietary No* to *Proprietary Yes*. Each press of the 1 key will cause the display to toggle between *Proprietary No* and *Proprietary Yes*. Selecting *Proprietary Yes* will program the FACP to allow remote programming downloads from the FS-Tools programming utility at all times without the need to access the FS-Tools Download screen. Refer to the table on page 49 for permissible settings.

Pressing 2 for *Accept Download* will cause the following screen to be displayed:

ALLOWING DOWNLOADS
IF YOU EXIT THIS
SCREEN DOWNLOADS
WILL BE DISABLED!

While this screen is displayed, remote programming downloads are allowed regardless of the *Proprietary* setting. Exiting this screen will disable any further downloads to the FACP. Also, following 30 minutes of inactivity (including up/downloading), the *Accept Download* screen will time-out, causing the display to return to the *System Normal* screen.

6.2 Transferring a Program

The first time that the control panel is downloaded (whether initiated at the jobsite or remotely), a secret code is loaded in by a Service Terminal. Future upload or download requests cause verification of the secret code by the control panel before processing of data is allowed. If the secret code is not verified, the control panel will terminate the request.

While the control panel is communicating with the Service Terminal, one of the Communicator's red phone line active LED will turn on steady.

In order to download the panel (whether initiated at the jobsite or remotely), the following must be true:

- ✓ The control panel must be in the Normal Mode of operation. Downloading is not possible if the panel is in any other mode

- ✓ There cannot be any active communications ongoing with a Central Station receiver
- ✓ All active events must be successfully 'kissed-off' by the Central Station(s). The communicator must be in a standby state with no new information waiting to be transmitted to a Central Station

6.2.1 Security Features

Upload and download with the control panel have been carefully designed to include key security features to ensure proper functionality. Any time a transfer is initiated, the control panel and the Service Terminal will communicate and transfer data before contacting a Central Station. When the data transfers are completed and the control panel disconnects from the Service Terminal, the control panel will call the Central Station and report one of the following conditions:

- Upload/Download request received
- Upload and/or Download request successful
- Upload/Download failed

The key features are listed and explained in the following sections.

Secret Code Verification

A secret code is stored in the control panel by a Service Terminal to prevent unauthorized access. The secret code is created at the Service Terminal by the master user and cannot be viewed or changed by anyone other than a master user. Viewing of the secret code is prohibited at the control panel. Prior to allowing an upload or download of data, the control panel will verify the secret code transmitted by the Service Terminal.

Time-out at Control Panel

Upon answering an incoming call on the primary Central Station phone line, the control panel will listen for a modem connection signal. If this signal is not received within 50 seconds, the control panel will disconnect the call. Upon successful connection (secret code verified), if no communication occurs within 30 minutes, the panel will disconnect the call. Upon time-out, transfer activity will be reported to the Central Station (if enabled) and the connection will be terminated.

Error Checking

As each block of data is received by the control panel, it is checked for accuracy. If an error is detected, the block is retransmitted until correct, up to a maximum of four times. If the Secret Code is not verified and four errors occur, the call is disconnected and the report that the upload/download was not successful is called to the Central Station(s).

Central Station Data Protection

The primary and secondary Central Station phone numbers, communications format, account code, test time and programmable event codes are vital Central Station information. These blocks of data are protected from partial programming due to faulty phone connections, line noise and other errors. This prevents the panel from being confused due to a wrong phone number, account code, test time and most critical formatting errors.

Section 7: USB Upload/Download

Important! The FACP will automatically reset 2 minutes after completion of a user program download. To prevent program corruption, the operator must wait until this panel reset occurs before performing any panel operations.

CAUTION: After successfully downloading a program, make certain to perform the following steps:

1. Print out all programmed data via Print Mode or manually view programmed entries and compare to intended program data
2. Test all affected panel operations
3. Immediately correct any problems found

7.1 USB Upload/Download

NFPA 72 requirements state that a technician be on-site and at the control panel whenever the FS-Tools Programming Utility is used to download any information to the FACP. This applies to local and remote programming. For this reason, a new option has been added to the FACP which allows an individual at the FACP to enter a password and either enable the proprietary mode where downloading will be allowed at any time or access a specific password protected screen where downloading will be allowed regardless of the current proprietary setting.

The USB upload/download option allows for the transfer of programming information via a flash drive. The USB thumb drive must be in FAT32 file system format. This is typically the default format. Insert a USB flash drive into J20 on the bottom edge of the fire panel's circuit board. The USB Download option can be selected from the main menu screen as shown below:

```
1=READ STATUS MODE
2=PROGRAMMING MODE
3=FS TOOL UP/DOWNLOAD
4=USB UP/DOWNLOAD
```

Pressing 4 for Local Up/Download while viewing the main menu will cause the following screen to be displayed:

```
USB UP/DOWNLOAD
ENTER PASSWORD
*****
```

The Local Upload/Download password (default 22222222) must be entered to access the Local Upload/Download feature. Note that the default password can be changed using the Password Change option (refer to "Password Change" on page 102). Entering the correct password will cause the following screen to be displayed:

```
USB UP/DOWNLOAD
1=UPLOAD PROGRAM
2=DOWNLOAD PROGRAM
```

Pressing 1 for *Upload Program*, while viewing the Local Up/Download screen, will display the following.

```
UPLOAD TO USB
FILENAME:
```

Using the keypad and arrow keys, enter a name for the current FACP configuration to save to the USB drive, and then press Enter.

The following screen will be displayed while the program is sent to the USB drive:

```
USB UP/DOWNLOAD
SYSTEM CONFIGURATION
TRANSFER IN PROCESS
PLEASE WAIT
```

An error message will display if there is no USB drive inserted in the FACP or if there is an existing configuration saved on the drive with the same file name.

While this screen is displayed, USB programming uploads are allowed. Exiting this screen will disable any further uploads to a flash drive. Also, following 30 minutes of inactivity (including up/downloading), the Accept Upload screen will time-out, causing the display to return to the System Normal screen.

Similarly, the following screen will display when 2 for Download Program is pressed.

```
DOWNLOAD FROM USB
FILE: FS_200.cfg
1=NO
2=YES
```

Pressing 2 for *Yes* will cause the following screen to be displayed:

USB UP/DOWNLOAD
SYSTEM CONFIGURATION
TRANSFER IN PROCESS
PLEASE WAIT

An error message will display if there is no USB drive inserted in the FACP or if there is no existing configuration saved on the USB drive. While this screen is displayed, local programming downloads are allowed. Exiting this screen will disable any further downloads to a flash drive. Also, following 30 minutes of inactivity (including up/downloading), the Accept Download screen will time-out, causing the display to return to the System Normal screen.

Important!

The program database created by the FS-Tools programming utility will be called, “FS_200.cfg” on the USB flash drive. Before loading the new database into the fire panel, the existing database will be saved as file, “FS_200.bak” on the USB flash drive. Only one new and one saved database can reside on the USB flash drive.

Section 8: Firmware Upgrade

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product from www.firelite.com prior to commissioning any system. Contact Technical Support with any questions about software and the appropriate version for a specific application.

8.1 Firmware Upgrade

The Firmware Upgrade option can be selected from the main menu screen as shown below:



Panel Programming Screen #1



Panel Programming Screen #2

Pressing 1 for Firmware Upgrade while viewing Main Menu Screen #2 will cause the following screen to be displayed:



The Firmware Upgrade password (default 00000000) must be entered to access the Firmware Upgrade feature. Note that the default password can be changed using the Password Change option (refer to "Password Change" on page 102). Entering the correct password will cause the following screen to be displayed:

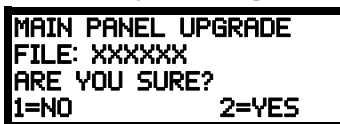


Pressing 1 for *Main Panel* will upgrade the software on the FACP. Pressing 2 for *SLC Loop Card* will update the firmware on the SLC Communication Loop Card. Pressing 3 will update the software for the *IPOTS-COM Communicator* (pre-installed). Pressing any option will cause the following screen to be displayed:



Before upgrading any software, the panel will give the option to save current programming to a flash drive. Press 1 for *No* to bypass programming backup or press 2 for *Yes* to save a copy of the current programming to the flash drive. The USB thumb drive must be in FAT32 file system format. This is typically the default format. An error message will display if there is not enough free memory space on the flash drive, if a backup was selected.

Insert the flash drive with the hardware upgrade downloaded from www.firelite.com into the USB port J20 on the bottom edge of the main panel circuit board. After the backup option screen, the following is an example of the main panel upgrade:



Press 1 for *No* to cancel or 2 for *Yes* to continue with the panel upgrade. The following screen will display if *Yes* is selected.



If the following error message displays, ensure the flash drive is inserted at J20 and it is fully seated.



The following error message will display if the upgrade file is not found on the flash drive. Ensure the file is present and it is a valid file for the type of hardware being updated.



Section 9: Power Supply Calculations

9.1 Overview

This section contains instructions and tables for calculating power supply currents in alarm and standby conditions. This is a four-step process, consisting of the following:

1. Calculating the total amount of AC branch circuit current required to operate the system
2. Calculating the worst-case system current load on the control panel, when primary (AC) power is applied, to assure that the limit of the internal power supply will not be exceeded. This considers the fire alarm condition only.
3. Calculating the total current load on the batteries (secondary power source) in the event of an AC power loss. This considers both standby and fire alarm conditions.
4. Calculating the size of the batteries required to support the system if AC power loss occurs, based on the total battery current load, plus a regulatory agency mandated derating factor.

9.2 Calculating the AC Branch Circuit

The control panel requires connection to a separate, dedicated AC branch circuit, which must be labeled **FIRE ALARM**. This branch circuit must connect to the line side of the main power feed of the protected premises. No other non-fire alarm equipment may be powered from the fire alarm branch circuit. The branch circuit wire must run continuously, without any disconnect devices, from the power source to the control panel. Overcurrent protection for this circuit must comply with Article 760 of the National Electrical Codes as well as local codes. Use 14 AWG (2.00 mm²) wire with 600 volt insulation for this branch circuit.

Use Table 9.1, to determine the total amount of current, in AC amperes (A), that must be supplied to the system.

Device Type	Number of Devices		Current Draw (AC amps)		Total Current per Device
ES-200X	1	X	3.25	=	
CHG-75	[]	X	2.05	=	
CHG-120F	[]	X	2.00	=	
	[]	X	[]	=	
Sum Column for AC Branch Current Required				=	

Table 9.1 AC Branch Circuit Requirements

9.3 Calculating the System Current Load

9.3.1 Overview

The control panel's internal power supply must support all connected devices while primary (AC) power is applied. The continuous system current load is highest during a fire alarm condition. To calculate the fire alarm load on the internal power supply, use Calculation Column 1 in Table 9.3 on page 132.

The secondary power source (batteries) must be able to power the system under both standby and fire alarm conditions upon loss of primary (AC) power. To calculate the fire alarm load on the secondary power source, use Calculation Column 2 in Table 9.3 on page 132. To calculate the standby load on the secondary power source, use Calculation Column 3 in Table 9.3 on page 132.

All currents are given in amperes (A). Table 9.2 shows how to convert milliamperes and microamperes to full amperes.

To convert...	Multiply	Example
Milliamperes (mA) to amperes (A)	$\text{mA} \times 0.001$	$3 \text{ mA} \times 0.001 = 0.003\text{A}$
Microamperes (μA) to amperes (A)	$\mu\text{A} \times 0.000001$	$300 \mu\text{A} \times 0.000001 = 0.0003 \text{ A}$

Table 9.2 Converting to Full Amperes

9.3.2 How to Calculate System Current Load

Use Table 9.3 on page 132 to calculate current load as follows:

1. Enter the quantity of devices in all three columns.
2. Enter the current draw where required. Refer to the Device Compatibility Document and SWIFT Manual for compatible devices and their current draw.
3. Calculate the current draws for each in all columns.
4. Sum the currents for each column. This is the total load.
5. Verify that the total from Column 1 is less than or equal to the value specified in the note.
6. Copy the totals from Column 2 and Column 3 to Table 9.4 on page 133.

Table 9.3 contains columns for calculating current load. For each column, calculate the current and enter the total (in amperes) in the bottom row. When finished, copy the totals from Calculation Column 2 and Calculation Column 3 to Table 9.4 on page 133. For maximum output current available per circuit and per panel, refer to Section 1.2, "Specifications", on page 14.

Device Type	Calculation Column 1 Primary (AC) Power Source Fire Alarm Current (amps)			Calculation Column 2 Secondary (Battery) Power Source Fire Alarm Current (amps)			Calculation Column 3 Secondary (Battery) Power Source Standby Current (amps)		
	Qty	X[current draw]=	Total	Qty	X [current draw]=	Total	Qty	X [current draw]=	Total
Main Circuit Board ¹				1	X[0.257]=		1	X[0.141]=	
IPOTS-COM Communicator	[]	X[0.041]=		[]	X[0.041]=		[]	X[0.040]=	
CELL-MOD/CAB-FL	[]	X[0.100]=		[]	X[0.100]=		[]	X[0.055]=	
PWRMOD24		N/A		[]	X[0.008]=		[]	X[0.007]=	
ANN-80	[]	X[0.040]=		[]	X[0.040]=		[]	X[0.015]=	
ANN-100	[]	X[0.025]=		[]	X[0.025]=		[]	X[0.020]=	
ANN-(R)LED	[]	X[0.068]=		[]	X[0.068]=		[]	X[0.028]=	
ANN-RLY	[]	X[0.075]=		[]	X[0.075]=		[]	X[0.015]=	
ANN-I/O	[]	X[0.200]=		[]	X[0.200]=		[]	X[0.035]=	
ANN-S/PG	[]	X[0.045]=		[]	X[0.045]=		[]	X[0.045]=	
ECC-FFT		N/A		[]	X[0.230]=		[]	X[0.120]=	
4XTMF	[]	X[0.011] ² =		[]	X[0.011]=		[]	X[0.005]=	
4-wire Detector Heads	[]	X[]=		[]	X[] ³ =		[]	X[]=	
Power Supervision Relays ⁴	[]	X[0.025]=		[]	X[0.025]=		[]	X[0.025]=	
CP350, CP355	maximum alarm draw for all devices =	0.400		maximum alarm draw for all devices =	0.400		[]	X[0.00030]=	
SD350, SD355, SD365							[]	X[0.00030]=	
SD355CO							[]	X[0.00030]=	
SD350T, SD355T, SD365T							[]	X[0.00030]=	
AD350, AD355							[]	X[0.00030]=	
H350, H355, H365							[]	X[0.00030]=	
H350R, H355R, H365R							[]	X[0.00030]=	
H355HT, H365HT							[]	X[0.00030]=	
D350P, D350PL							[]	X[0.00030]=	
D350RP, D350RPL							[]	X[0.00030]=	
B501BH, B501BHT ⁵							[]	X[0.001]=	
B224RB Relay Base							[]	X[0.00050]=	
B224BI Isolator Base							[]	X[0.00045]=	
MMF-300							[]	X[0.00040]=	
MMF-300-10							[]	X[0.00350]=	
MDF-300							[]	X[0.00075]=	
MMF-301							[]	X[0.000375]=	
MMF-302							[]	X[0.00027]=	
MMF-302-6							[]	X[0.00200]=	
BG-12LX							[]	X[0.00030]=	
CMF-300							[]	X[0.00039]=	
CMF-300-6							[]	X[0.00225]=	
CRF-300							[]	X[0.00027]=	
CRF-300-6							[]	X[0.00145]=	
I300							[]	X[0.00040]=	
ISO-6							[]	X[0.00045]=	
W-GATE							[]	X[0.040] or [0.024] ⁶	
NAC #1 ⁷	[]	X[]=		[]	X[]=				
NAC #2 ⁷	[]	X[]=		[]	X[]=				
NAC #3 ⁷	[]	X[]=		[]	X[]=				
NAC #4 ⁷	[]	X[]=		[]	X[]=				
FCPS (remote sync)	[]	X[0.02]=		[]	X[0.0217]=				
Current Draw from TB3	[]	[]=		[]	[]=		[]	[]=	
Sum each column for totals	AC Powered, Fire Alarm Load ⁸ =			Battery Powered, Fire Alarm Load ⁹ =			Battery Powered, Standby Load ¹⁰ =		

Table 9.3 System Current Load Calculations

- 1 Main board with display only.
- 2 If using the Reverse Polarity Alarm output, add 0.005 amps; if using the Reverse Polarity Trouble output, add another 0.005 amps.
- 3 Refer to the Device Compatibility Document for standby current.
- 4 Must use compatible listed Power Supervision Relay.
- 5 Maximum alarm current for each sounder base is 0.015 amps which must be supplied by aux. 24VDC source.
- 6 When powered by an external source, use 0.040A. When powered by the SLC, use 0.024A.
- 7 If using Gentex brand NACs, the max number of devices for each NAC output is 35. The "UL Max" current rating, published in their data sheets, must be used in order to maintain performance under low battery conditions with the maximum wire resistances shown in Table D.2 on page 147.
- 8 Total Alarm current load cannot exceed 3.0 amps or 6.0 amps only when the PWRMOD24 option module is installed.
- 9 When AC power is initially applied to the panel and the battery is not fully charged, an initial charge current of up to 5.3 amps may be observed at the battery. This high current is only applied for a very short duration (milliseconds) and does not affect system load or battery size calculations.
- 10 Total Standby current load cannot exceed 2.25 amps.

9.4 Calculating the Battery Size

Use Table 9.4 to calculate the total Standby and Alarm load in ampere hours (AH). This total load determines the battery size (in AH), required to support the system upon loss of primary (AC) power. Complete Table 9.4 as follows:

1. Enter the totals from Table 9.3 on page 132, Calculation Columns 2 and 3 where shown
2. Enter the NFPA Standby and Alarm times (refer to 'NFPA Requirements' below)
3. Calculate the ampere hours for Standby and Alarm, then sum the Standby and Alarm ampere hours
4. Multiply the sum by the derating factor of 1.2 to calculate the proper battery size (in AH)
5. Write the ampere hour requirements on the Protected Premises label located inside the cabinet door

Total Standby Load, Battery Powered (from Table 9.3 Calculation Column 3) []	Required Standby Time (24 hours) X[]	= AH
Total Fire Alarm Load, Battery Powered (from Table 9.3 Calculation Column 2) []	Required Alarm Time (for 5 min., enter 0.084, for 10 min., enter 0.168) X[]	= AH
Sum of Standby and Alarm Ampere Hours		= AH
Multiply by the Derating Factor		X 1.2
Battery Size, Total Ampere Hours Required		= AH

Table 9.4 Total Secondary Power Requirements at 24 VDC

9.4.1 NFPA Battery Requirements

NFPA 72 Local, Proprietary, Central, Auxiliary and Remote Fire Alarm Systems require 24 hours of standby power followed by 5 minutes in alarm

9.4.2 Selecting and Locating Batteries

Select sealed lead acid batteries that meet or exceed the total ampere hours calculated in Table 9.4. The control panel can charge batteries in the 7 AH to 18 AH range. The control panel cabinet is capable of housing batteries up to 18 AH. Batteries larger than 18 AH require a UL listed external battery charger and cabinet such as the BB-26, BB-55F or other UL listed external battery cabinet.

Appendix A: Software Zones

A.1 Correlations

Setup and configuration of an addressable system is different than a conventional system. In a conventional system, assignment of input devices (smoke detectors, pull stations, heat detectors, etc.) to zones is accomplished through wiring. The wiring is direct from clearly marked panel terminals to any device assigned to a particular zone. Connection of output devices (horns, bells, strobes, etc.) in a conventional system is accomplished by direct wiring of the output devices to Notification Appliance Circuit terminals.

In an addressable system, a minimum of a single pair of wires (SLC communication loop) is used to connect all addressable input and output devices. Communications between the FACP (Fire Alarm Control Panel) and all addressable devices takes place over the wire pair which originates from the FACP. Software programming is used to configure the system as opposed to direct wiring. Zone assignments are created via software means, hence the term *software zones*.

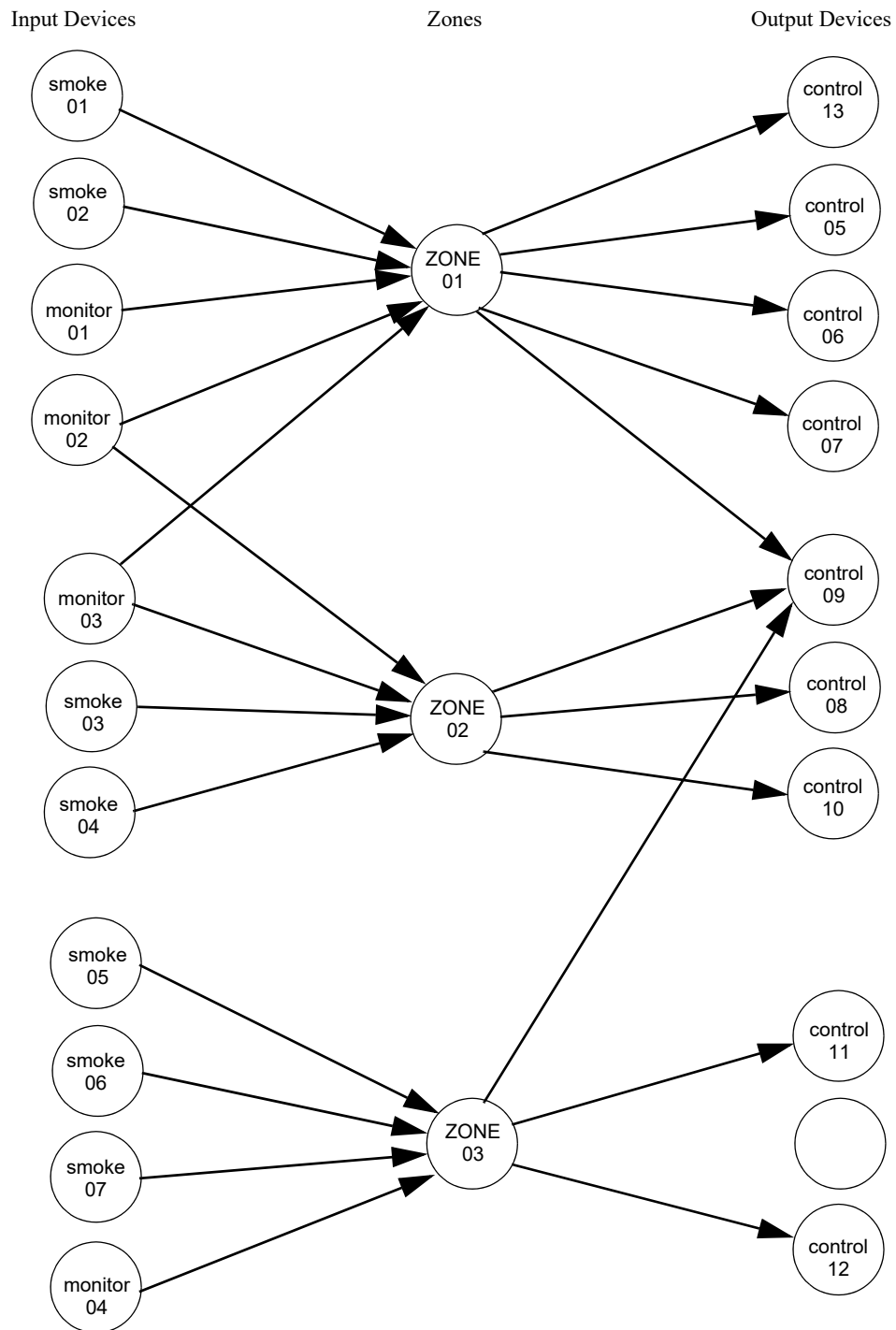
Setup of an ES-200X software zone is accomplished by panel programming. Each addressable device can be assigned to a maximum of five software zones. Each software zone, however, may have from 1 to 99 addressable input devices assigned to it and from 1 to 99 addressable output devices assigned to it.

Monitor and control modules comprise one group of 99 addresses, with each module having a unique address from 1 to 99. Detectors comprise a separate group of 99 addresses, each detector having a unique address from 1 to 99 in its group. Be careful not to duplicate addresses within any one group (modules and detectors). Refer to the following page for an example of zoning.

In the example on the following page:

- Zone 01 has the following addressable devices assigned to it:
 - ✓ smoke detectors with addresses 01 and 02
 - ✓ monitor module with address 01
 - ✓ monitor module with address 02 and 03
 - ✓ control modules with addresses 05, 06, 07, 09 and 13
- Zone 02 has the following addressable devices assigned to it:
 - ✓ monitor module with addresses 02 and 03
 - ✓ smoke detectors with addresses 03 and 04
 - ✓ control modules with addresses 08, 09 and 10
- Zone 03 has the following addressable devices assigned to it:
 - ✓ smoke detectors with addresses 05, 06 and 07
 - ✓ control module with address 04
 - ✓ control modules with addresses 09, 11 and 12

The example points out some of the key assignment features of the ES-200X. Addresses of detectors are not duplicated. Addresses of monitor and control modules are not duplicated. The control module with address 09 is assigned to three software zones (providing floor above and floor below). Be careful to properly plan the installation prior to installing any devices.

Correlation of Input and Output Zones

The zone correlations which are shown graphically above are also presented in Table A.1 on page 136 and Table A.2 on page 137.

DETECTOR ZONE ASSIGNMENT							
Address	Device Type	Zone Number	ADJ/NOUN	Address	Device Type	Zone Number	ADJ/NOUN
01	smoke	1	FIRST HALL	51			
02	smoke	1	ELEV. LOBBY	52			
03	smoke	2	2ND FLOOR	53			
04	smoke	2	ROOM 210	54			
05	smoke	3	3RD FLOOR	55			
06	smoke	3	MEZZANINE	56			
07	smoke	3	MECH. ROOM	57			
08				58			
09				59			
10				60			
11				61			
12				62			
13				63			
14				64			
15				65			
16				66			
17				67			
18				68			
19				69			
20				70			
21				71			
22				72			
23				73			
24				74			
25				75			
26				76			
27				77			
28				78			
29				79			
30				80			
31				81			
32				82			
33				83			
34				84			
35				85			
36				86			
37				87			
38				88			
39				89			
40				90			
41				91			
42				92			
43				93			
44				94			
45				95			
46				96			
47				97			
48				98			
49				99			
50							

Table A.1 Detector Programming Sheet Example

MONITOR/CONTROL MODULE ZONE ASSIGNMENT							
Address	Device Type	Zone Number	ADJ/NOUN	Address	Device Type	Zone Number	ADJ/NOUN
01	monitor	1		51			
02	monitor	1, 2		52			
03	monitor	1, 2		53			
04	monitor	3		54			
05	control	1		55			
06	control	1		56			
07	control	1		57			
08	control	2		58			
09	control	1, 2, 3		59			
10	control	2		60			
11				61			
12				62			
13				63			
14				64			
15				65			
16				66			
17				67			
18				68			
19				69			
20				70			
21				71			
22				72			
23				73			
24				74			
25				75			
26				76			
27				77			
28				78			
29				79			
30				80			
31				81			
32				82			
33				83			
34				84			
35				85			
36				86			
37				87			
38				88			
39				89			
40				90			
41				91			
42				92			
43				93			
44				94			
45				95			
46				96			
47				97			
48				98			
49				99			
50							

Table A.2 Module Programming Sheet Example

DETECTOR ZONE ASSIGNMENT							
Address	Device Type	Zone Number	ADJ/NOUN	Address	Device Type	Zone Number	ADJ/NOUN
01				51			
02				52			
03				53			
04				54			
05				55			
06				56			
07				57			
08				58			
09				59			
10				60			
11				61			
12				62			
13				63			
14				64			
15				65			
16				66			
17				67			
18				68			
19				69			
20				70			
21				71			
22				72			
23				73			
24				74			
25				75			
26				76			
27				77			
28				78			
29				79			
30				80			
31				81			
32				82			
33				83			
34				84			
35				85			
36				86			
37				87			
38				88			
39				89			
40				90			
41				91			
42				92			
43				93			
44				94			
45				95			
46				96			
47				97			
48				98			
49				99			
50							

Table A.3 Blank Detector Programming Sheet

MONITOR/CONTROL MODULE ZONE ASSIGNMENT							
Address	Device Type	Zone Number	ADJ/NOUN	Address	Device Type	Zone Number	ADJ/NOUN
01				51			
02				52			
03				53			
04				54			
05				55			
06				56			
07				57			
08				58			
09				59			
10				60			
11				61			
12				62			
13				63			
14				64			
15				65			
16				66			
17				67			
18				68			
19				69			
20				70			
21				71			
22				72			
23				73			
24				74			
25				75			
26				76			
27				77			
28				78			
29				79			
30				80			
31				81			
32				82			
33				83			
34				84			
35				85			
36				86			
37				87			
38				88			
39				89			
40				90			
41				91			
42				92			
43				93			
44				94			
45				95			
46				96			
47				97			
48				98			
49				99			
50							

Table A.4 Blank Module Programming Sheet

Notes

Appendix B: Default Programming

The following table provides a list of the programming options and their factory default settings.

Program Option	Factory Default	Program Option	Factory Default
Detector Programming	Not Installed	Aux Power Class A	No
Detector Type	Smoke-Photo	Aux Power Resettable	No
Detector Verification	Off	Aux Power 2 Resettable	No
Detector Walktest	Yes	Canadian Option Enabled	No
Detector PAS	No	Waterflow Silenceable	No
Detector Presignal	No	Relay 1	Alarm
Detector Zone Assign.	000 only	Relay 2	Trouble (fixed)
Detector Adj/Noun	none	Relay 3	Supervisory
Module Programming	Not Installed	Communicator Installed	Yes
Module Type	Monitor	POTS, Ethernet, Cellular Enabled	No
Module Walktest	Yes	Ethernet, Cellular Location ID	0000
Module Presignal	No	Ethernet, Cellular CS ID	0000
Module Zone Assign.	000 only	POTS, Ethernet, Cellular Account Code	000000
Module Adj/Noun	none	POTS Enabled	No
Module Control Module Delay	No	POTS Type	Touchtone
Module MNS Override	No	POTS Supervised	No
Message	No Message	Gains Dialing	Normal
Zone Type	Alarm Zone	Gains Reporting	Normal
Zone 000 Enable	Enabled	IP Settings- DHCP	Enabled
Zone 001 Enable	Enabled	Trouble Report Limit	0
Zone 002 Enable	Enabled	Report Style	Point
Zone 003 Enable	Enabled	AC Loss Delay	2
.....through.....		Primary Account Code	000000
Zone 095 Enable	Enabled	Secondary Account Code	000000
Special Purpose Zones 096-099	Off	Test Time	0100
Loop Class	Class B	Primary Phone Number	
Loop Protocol	LITESPEED	Secondary Phone Number	
Trouble Reminder	24 Hr	Primary Comm Format	Ademco Contact ID
Banner		Secondary Comm Format	Ademco Contact ID
Time Format	12 Hr	ANN-Primary Enabled	No
Hours Setting	12	ANN-Primary Modules Addr. 1 - 8	None
Minutes Setting	00	ANN-Secondary Enabled	No
Second Settings	00	ANN-Secondary Modules Addr. 1 - 8	None
AM-PM Setting	AM	ANN-S/PG Port	Serial
Month Setting	01	ANN-S/PG Baud	9600
Day Setting	01	ANN-S/PG Data Bits	7
Year Setting	00	ANN-S/PG Parity	Even
Daylight Savings	Enabled	ANN-S/PG Stop Bits	1
Month Start Daylight Savings	April	ANN-S/PG Offline Timer	60
Week Start Daylight Savings	Week 2	ANN-S/PG Printer Supervision	No
Month End Daylight Savings	November	ANN-80/100 Piezo Enabled	Yes
Week End Daylight Savings	Week 1	ANN-80/100 Lock Enabled	Yes
Alarm Verification	Off	ANN-80/100 Acknowledge Button Enabled	Yes
PAS Timer	0	ANN-80/100 Silence Button Enabled	Yes
Presignal Timer	0	ANN-80/100 Reset Button Enabled	Yes
Waterflow Retard Timer	0	ANN-80/100 Drill Button Enabled	Yes
Control Module Delay Timer	0	ANN-I/O Point/Zone	Zone
NAC 1,2,3, & 4 Enable	Enabled	ANN-I/O Range	00-29
NAC 1,2,3, & 4 Silenceable	Yes	ANN-I/O Active LEDs Only	
NAC 1,2,3, & 4Type	Strobe Sync	ANN-RLY Relay 1	Zone 1
NAC 1,2,3, & 4 Sync Type	System Sensor	through.....	
NAC 1,2,3, & 4 Autosilence	0	ANN-RLY Relay 10	Zone 10
NAC 1,2,3, & 4 Coding	Steady	ANN-LED Point/Zone	Zone
NAC 1,2,3, & 4 Zones	Zone 000 only	ANN-LED Alarms/ATS (Alarm, Trbl, Supv)	ATS
NAC 1,2,3, & 4 Silence Inhibit	No	ANN-LED Range	0 - 9
MNS Active	No	F1 - F4 function keys	Disabled
Charger Enabled	Yes	Master Password	00000000
4XTM Supervision	No	Maintenance Password	11111111
Remote Sync Enabled	Yes	Upload/Download Password	22222222

Appendix C: NFPA Standard-Specific Requirements

The ES-200X has been designed for use in commercial, industrial, and institutional applications and meets the requirements for service under the National Fire Protection Association (NFPA) Standards outlined in this Appendix. The minimum system components required for compliance with the appropriate NFPA standard are listed below:

ES-200X Control Panel

Contains the main control board, cabinet (backbox and door), main power supply transformer and power supply.

Batteries

Refer to “Power Supply Calculations” on page 131, for Standby Power Requirements.

Initiating Devices

Connected to one of the control panel's Initiating Device Circuits.

Notification Appliances

Connected to the control panel's Notification Appliance Circuits via a control module.

The following additional equipment is needed for compliance with the NFPA 72 standards listed below:

NFPA 72 NATIONAL FIRE ALARM STANDARDS FOR:

NFPA 72 Central Station Service (Protected Premises Unit) or Remote Station Service

Onboard Digital Alarm Communicator Transmitter for connection to a compatible listed Central Station DACR or Protected Premises Receiving Unit. This unit must be installed as outlined in “Components” on page 16.

OR

4XTMF Transmitter Module for connection to the RS82 Remote Station Receiver. See Figure C.2, “Remote Station Connection Using 4XTMF Module,” on page 143, for installation instructions for this unit.

NFPA 72 Auxiliary Fire Alarm System

4XTMF Transmitter Module for connection to a compatible listed Local Energy Municipal Box. This unit must be installed as illustrated in the section titled “4XTMF Transmitter Module Installation” on page 31 and as outlined in Figure C.1, “Municipal Box Connected to 4XTMF Transmitter Module” on page 142.

NFPA 72 Proprietary Fire Alarm System

ES-200X Alarm, Trouble and Supervisory contacts connected to Transmitter(s). See Figure C.3, “Proprietary Protective Signaling System,” on page 144, for installation instructions for this unit.

NFPA 72 Auxiliary Fire Alarm System

All connections are power-limited and supervised. This application is not suitable for separate transmission of sprinkler supervisory or trouble conditions.

Notes:

1. 3 ohms maximum loop resistance allowed for wiring from control panel to Municipal Box.
2. Enable 4XTMF supervision in FACP System Setup programming. Refer to page 84 for more information.
3. Slide SW2 to the down position on the ES-50X main circuit board to enable FACP Supervisory relay. See page 11 for location of SW2.
4. Refer to “4XTMF Transmitter Module Installation” on page 31 for detailed information.

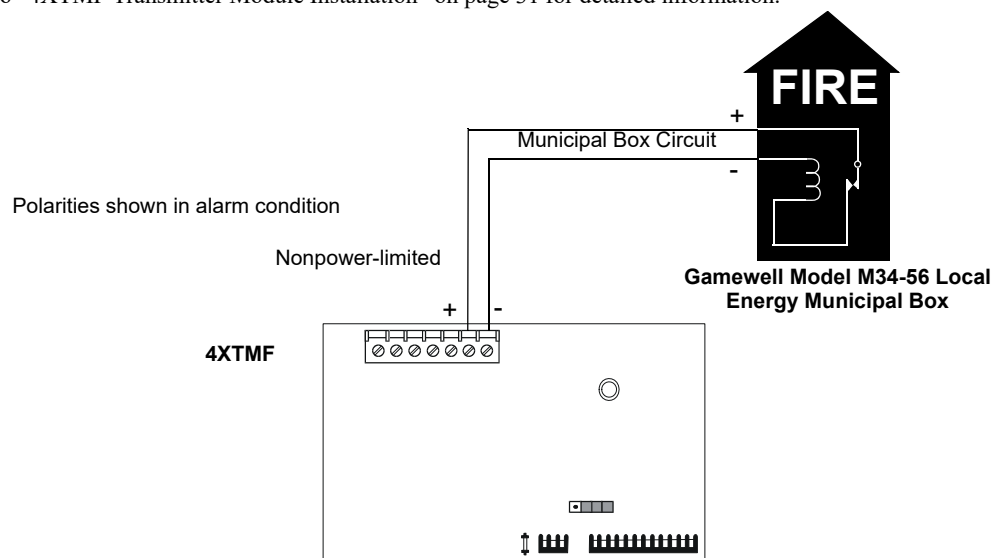


Figure C.1 Municipal Box Connected to 4XTMF Transmitter Module

NFPA 72 Remote Station Protective Signaling System

Notes:

1. Enable 4XTMF supervision in FACP System Setup programming. Refer to page 84 for more information.
2. Refer to "4XTMF Transmitter Module Installation" on page 31 for detailed information.

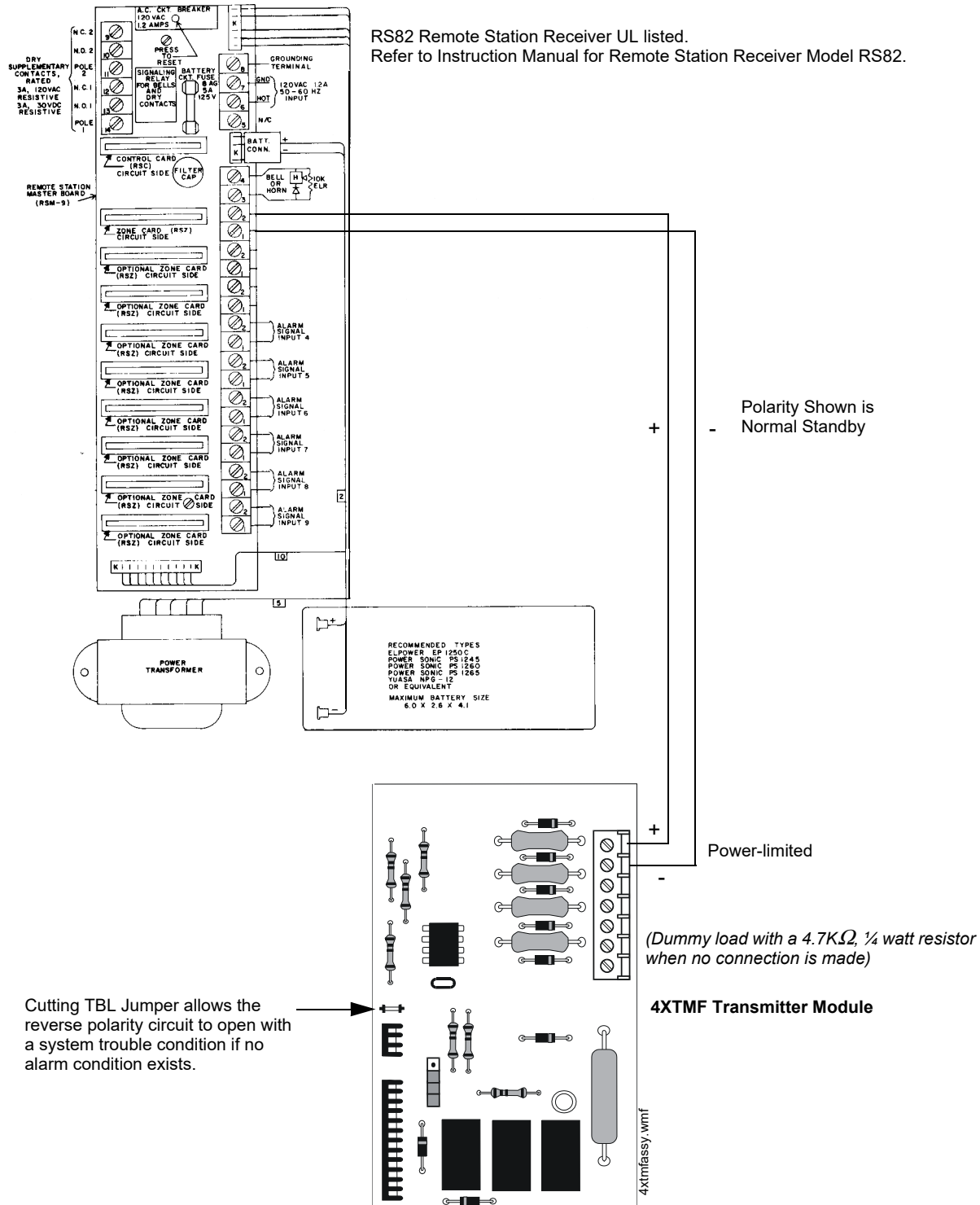


Figure C.2 Remote Station Connection Using 4XTMF Module

NFPA 72 Proprietary Protective Signaling Systems

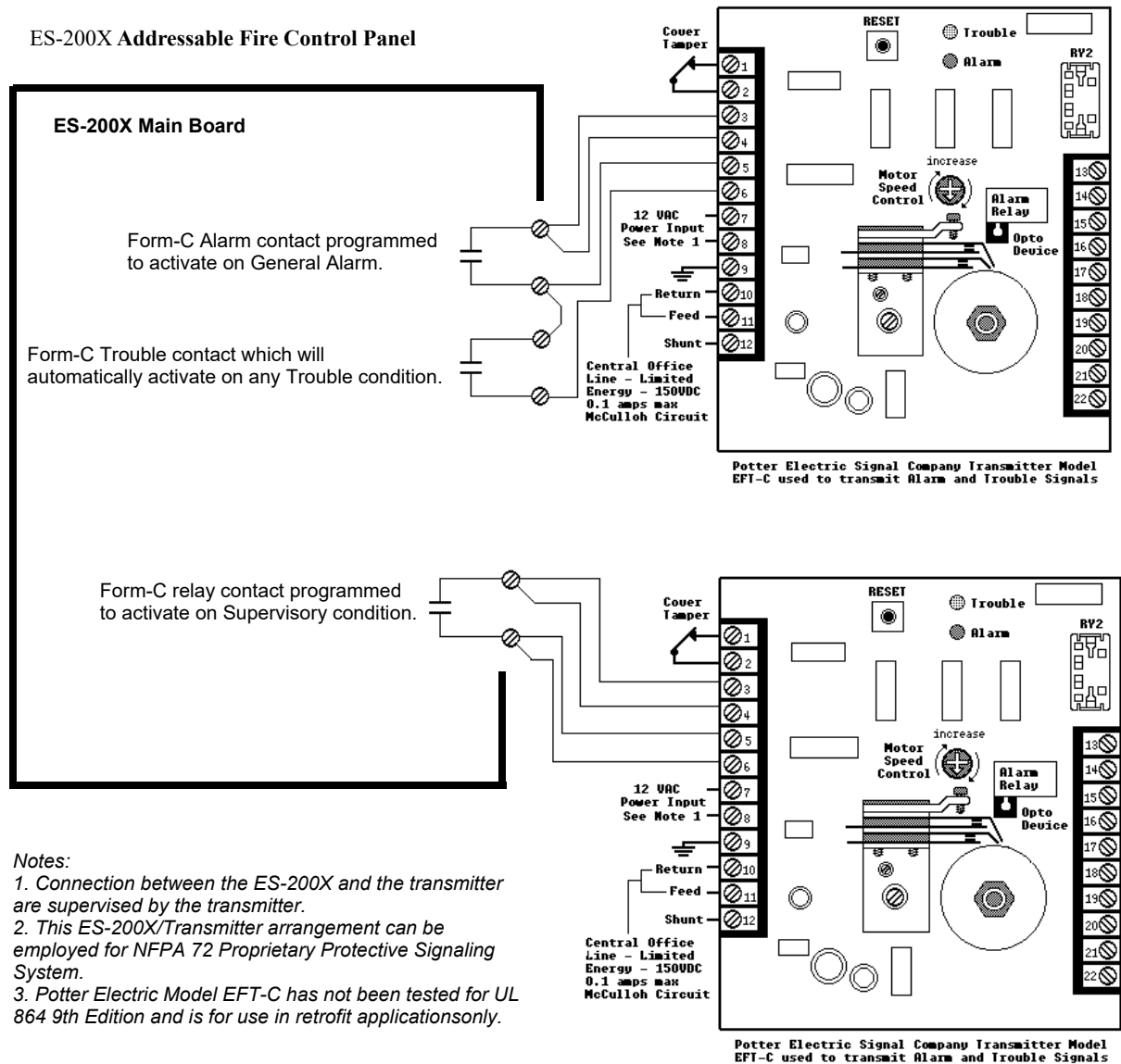
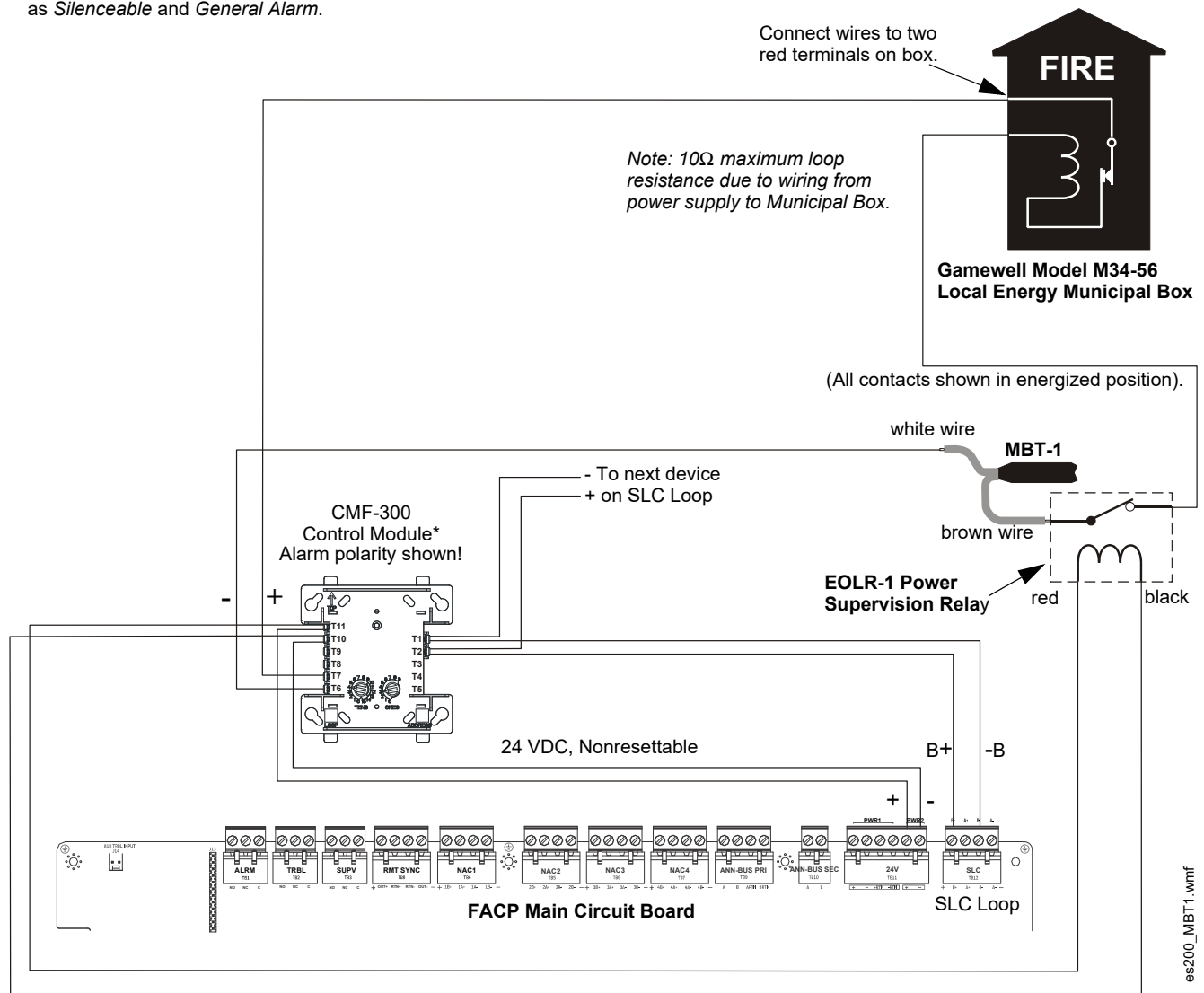


Figure C.3 Proprietary Protective Signaling System

C.1 MBT-1 Municipal Box Trip - Silenceable

The following figure illustrates the connection of the MBT-1 (Municipal Box Trip) between the FACP and a Local Energy Municipal Box. The use of an addressable control module programmed for *General Alarm* and *Silenceable* allows silencing of the Municipal Box without resetting the panel or box.

The addressable Control Module must be programmed as *Silenceable* and *General Alarm*.



*If the SLC device does not match the one in this figure, refer to the SLC manual wiring conversion charts for legacy and newer versions of the modules.

Figure C.4 MBT-1 Silenceable

Appendix D: Wire Requirements

T-tapping of the SLC loop wiring is allowed for 2-wire (Class B) configurations. The total resistance of any branch cannot exceed 40 ohms. The total wire length of all branches cannot exceed 10,000 feet (3,000 m).

Connecting external system accessories to the ES-200X main circuits must be carefully considered to ensure proper operation. It is important to use the correct type of wire, gauge and run length for each ES-200X circuit. Reference the chart below to specify wire requirements and limitations for each ES-200X circuit.

Note:

1. If the SLC loop is to be run in conduit with Notification Appliance Circuits, the risk of encountering problems can be greatly reduced by exclusively employing electronic sounders instead of more electronically noisy notification appliances such as electromechanical bells or horns.
2. The SLC can be programmed to operate in LiteSpeed mode (factory default setting) for a quicker device response time. While shielded wire is not required in LiteSpeed mode, it is recommended that all SLC wiring be twisted-pair to minimize the effects of electrical interference. Use the following table to determine the specific wiring requirements for the SLC when unshielded wire is used:

Refer to Table D.1 on page 146 and Table D.2 on page 147 for wiring requirements.

CIRCUIT CONNECTIONS		WIRE REQUIREMENTS		
Circuit Type	Circuit Function	Wire Type and Limitations	Recommended Max. Distance Feet (meters)	Wire Gauge and Compatible Brands
SLC loop (power-limited)	Connects to Addressable Devices	Twisted, shielded pair 40 ohms maximum per length of Class A loops. 40 ohms per branch maximum for Class B loops	10,000 (3,000 m) 8,000 (2,400 m) 4,875 (1,450 m) 3,225 (980 m)	12 AWG (3.25 mm ²): Genesis 4410, Signal 98230, Belden 9583, WPW999 14 AWG (2.00 mm ²): Genesis 4408 & 4608 Signal 98430, Belden 9581, WPW995 16 AWG (1.30 mm ²): Genesis 4406 & 4606 Signal 98630, Belden 9575, WPW991 <u>Direct Burial Cable</u> Isotec NP713110VNQ-S 18 AWG (0.75 mm ²): Genesis 4402 & 4602 Signal 98300, Belden 9574, WPW975 <u>Direct Burial Cable</u> Isotec NP714110VNQ-S
	CLIP MODE			
	LITESPEED MODE	Twisted, unshielded pair 40 ohms maximum per length of Class A loops. 40 ohms per branch maximum for Class B loops	10,000 (3,000 m) 8,000 (2,400 m) 4,875 (1,450 m) 3,225 (980 m)	12 AWG (3.25 mm ²): Belden 5020UL & 6020UL, Genesis WG-4315 & WG-4515 14 AWG (2.00 mm ²): Belden 5120UL & 6120UL, Genesis WG-4313 & WG-4513 16 AWG (1.30 mm ²): Belden 5220UL & 6220UL, Genesis WG-4311 & WG-4511 18 AWG (0.75 mm ²): Belden 5320UL & 6320UL, Genesis WG-4306 & WG-4506
		Untwisted, unshielded pair ¹	3,000 (900 m)	12-18 AWG (3.25 - 0.75 mm ²) using listed wire
ANN-BUS (EIA-485) (power-limited)	Connects to annunciator modules/ ECC-50/100	Twisted pair Maximum loop wire resistance is 2 ohms for power and 40 ohms for data	6,000 (1,800 m)	Refer to "ANN-BUS Wiring" on page 33 for information on device wiring
monitor module (power-limited)	Initiating Device Circuit: Contact Closure	Maximum loop wire resistance is 1500 ohms	2,500 (760 m)	12-18 AWG (3.25 - 0.75 mm ²)
monitor module (power-limited)	Initiating Device Circuit: Two-wire Modules	No more than a 2.4 volt drop allowed at end of circuit. Maximum loop wire resistance is 25 ohms	2,500 (760 m)	12-18 AWG (3.25 - 0.75 mm ²)
control module (power-limited)	Notification Appliance Circuit	In alarm, no more than a 1.2 volt drop allowed at end of circuit	Distance limitation set by 1.2 volt maximum line drop	12-18 AWG (3.25 - 0.75 mm ²)
Remote Sync Output	Provides strobe and normal sync for remote NAC power supplies	Untwisted, unshielded pair wire	Distance set by 295 ohm resistance limitation	12-18 AWG (3.25 - 0.75 mm ²)

Table D.1 FACP Wire Specifications

- 1 When using untwisted, unshielded wire, full conduit is recommended for optimum EMI/RFI protection.

D.1 NAC Wiring

The following table lists NAC wiring requirements for the FACP.

NAC Load (Amps)	Max. allowable total loop resistance (ohms)	CLASS-B Max. allowable wire pair length (feet)				CLASS-A Max. allowable wire pair length (feet)			
		AWG 12 solid	AWG 14 solid	AWG 16 solid	AWG 18 solid	AWG 12 solid	AWG 14 solid	AWG 16 solid	AWG 18 solid
0.25	14.40	4450	2797	1756	1105	2225	1399	878	553
0.5	7.20	2225	1399	878	553	1112	699	439	276
0.75	4.80	1483	932	585	368	742	466	293	184
1	3.60	1112	699	439	276	556	350	220	138
1.25	2.88	890	559	351	221	445	280	176	111
1.5	2.40	742	466	293	184	371	233	146	92
1.75	2.06	636	400	251	158	318	200	125	79
2	1.80	556	350	220	138	278	175	110	69
2.25	1.60	494	311	195	123	247	155	98	61
2.5	1.44	445	280	176	111	222	140	88	55

Table D.2 NAC Wiring Requirements for FACP

Notes:

1. Calculations are based on Direct-Current Resistance data for **uncoated copper wire**, per National Electrical Code (2005 Edition) Table 8, Conductor Properties.
2. These distances reflect the worst case scenario and are based on the current draw of the highest candela strobes at the low end of the supported NAC voltage with the entire load at the end of the circuit. Further distances can be achieved by performing a point-to-point voltage calculation that more accurately reflects the specific devices used and how they are dispersed on the circuit.
3. If using Gentex brand notification appliances, the "UL Max" current rating published in their data sheets, must be used in order to maintain performance under low battery conditions with the maximum wire resistances shown in the table above.

Appendix E: HVAC Control

The FACP can be programmed to shut down a building's HVAC fans in the event of a fire. The fans cannot be restarted until the fire alarm condition has been cleared and the FACP has been reset to a normal (non-alarm) condition.

IMPORTANT! This HVAC feature is *not* to be used for smoke control. It is only designed to shut down fans during a fire alarm condition.

E.1 Control Module Operation

E.1.1 HVAC SHUTDOWN

The **HVAC SHUTDOWN** type code can be assigned to any addressable control module for the purpose of shutting down HVAC fans during a fire alarm, duct supervisory, photo supervisory, CO alarm, or CO supervisory condition. Devices connected to a relay module with this type code are unsupervised. Devices connected to a NAC module with this type code are supervised. To program this feature in the FACP:

- Program the **HVAC SHUTDN RLY** or **HVAC SHUTDN NAC** type code to the control module which will be used to shut down the fans (refer to *Type* under the section titled “Edit Module Screen for Control Modules” on page 67).
- Program the control module to a software zone and program fire alarm, duct supervisory, photo supervisory, CO alarm, or CO supervisory input devices which, when activated are to cause fan shutdown, to the same software zone (refer to *Zone Assignment* under the section titled “Edit Module Screen for Control Modules” on page 67).
- If using a relay control module for HVAC shutdown, monitor the state of the control module using an addressable monitor module programmed for *Trouble Monitor*. (Refer to *Type Monitor* under section titled “Edit Module Screen for Monitor Module” on page 63.) The monitor module's display label must be programmed to display HVAC SHUTDOWN. When a shutdown event occurs, the control module will both shut down the fans and activate the monitor module. When the control module is active, the monitor module will indicate a trouble condition at the FACP along with the label HVAC SHUTDOWN.

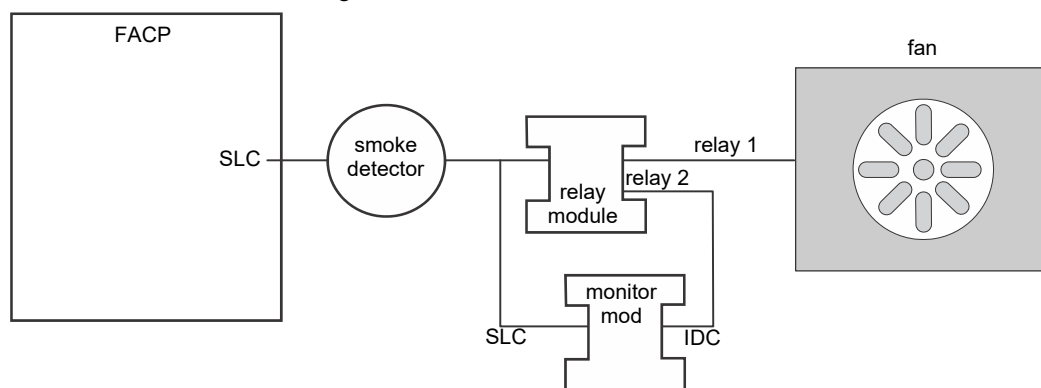


Figure E.1 HVAC RLY Shutdown

- If using a NAC control module for HVAC shutdown, monitor the state of the control module using an addressable monitor module programmed for *Trouble Monitor* and a MR Series relay (MR-101CR). (Refer to *Type Monitor* under section titled “Edit Module Screen for Monitor Module” on page 63.) The monitor module's display label must be programmed to display HVAC SHUTDOWN. When a shutdown event occurs, the control module will activate the MR Series relay which in turn will both shut down the fans and activate the monitor module. When the control module and MR series relay are active, the monitor module will indicate a trouble condition at the FACP along with the label HVAC SHUTDOWN. Note that the 24 VDC power used by the control module must be supervised using another addressable monitor module and a EOLR-1 power supervision relay.

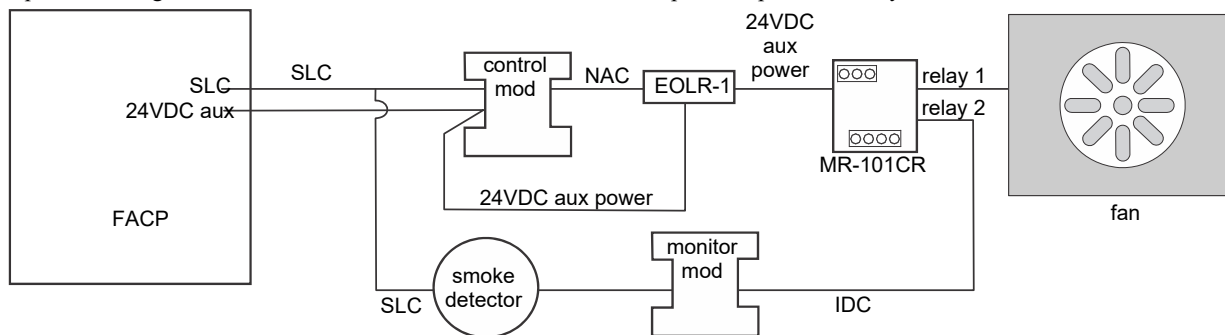


Figure E.2 HVAC NAC Shutdown

Once activated, the HVAC SHUTDOWN control module remains activated, even if the FACP is silenced or reset. After all the fire alarm, duct supervisory, photo supervisory, CO alarm, and CO supervisory condition on the FACP have been cleared and the panel reset, the HVAC SHUTDOWN control module remains activated and the fans remain off. The fans can only be restarted when the HVAC SHUTDOWN control module is deactivated by the HVAC RESTART module.

E.2 Monitor Module Operation

E.2.1 HVAC RESTART

The **HVAC RESTART** type code can be assigned to any addressable monitor module for the purpose of resetting (deactivating) the HVAC SHUTDN control module and turning the fans back on. The **HVAC RESTART** monitor module acts globally throughout the FACP system and therefore is not programmed to a particular software zone. To program this feature in the FACP:

- Program the **HVAC RESTART** type code to the monitor module which will be used to deactivate the HVAC SHUTDN control module and restart the fans (refer to Type Monitor under the section titled “Edit Module Screen for Monitor Module” on page 63).

The HVAC RESTART monitor module does not latch when activated. Pressing a switch connected to the monitor module will deactivate the HVAC SHUTDN control module *only if the event(s) that triggered the shutdown have been cleared*. The HVAC SHUTDN control module can be deactivated if trouble conditions exist on the FACP.

E.2.2 HVAC OVERRIDE

The **HVAC OVERRIDE** type code can be assigned to any addressable monitor module for the purpose of overriding or preventing the HVAC SHUTDN control modules from activating. The **HVAC OVERRIDE** monitor module acts globally throughout the FACP system and therefore is not programmed to a particular software zone. To program this feature in the FACP:

- Program the **HVAC OVERRIDE** type code to the monitor module which will be used to override the HVAC SHUTDN control module and prevent the fans from turning off (refer to Type Monitor under the section titled “Edit Module Screen for Monitor Module” on page 63).

The HVAC OVERRIDE monitor module does not latch when activated. Activating a switch connected to the monitor module will override all HVAC SHUTDN control relay modules in the system, preventing the HVAC SHUTDN modules from activating and causing the FACP LCD to display an active HVAC OVERRIDE module and turn on the Supervisory LED. Releasing the switch will allow the HVAC SHUTDN control relay modules to activate with subsequent events, turning off the fans.

As an example, pressing the HVAC OVERRIDE switch with no fire alarms, duct supervisories, photo supervisories, CO alarms, or CO supervisories in the system will prevent the fans from being turned off when an alarm does occur. As long as the switch is activated, the fans will not shutdown for any alarms. If the system is still in alarm/supervisory condition when the switch is released, the fans will not shutdown unless another alarm/supervisory event occurs after the switch is released.

Important! If an alarm/supervisory event exists in the system and HVAC Shutdown has already occurred, HVAC OVERRIDE will have no effect on the HVAC SHUTDN control relay modules. HVAC OVERRIDE will prevent HVAC Shutdown from occurring only if it is initiated prior to an alarm/supervisory condition.



NOTE: Activation of the HVAC OVERRIDE module causes a supervisory event that will be communicated to the Central Station if enabled.

Appendix F: Ademco Contact ID Format Event Code Descriptions

This appendix describes the various Event Codes and their messages which are available for the Ademco Contact ID Format.

F.1 Transmission Format Between DACT and Receiver

The transmission string for the Ademco Contact ID Format is as follows:

SSSS 18 QXYZ GG CCC where

SSSS Four digit Subscriber ID Account Code
18= Identifies transmission as Contact ID to the receiver at the Central Station
Q= Event Qualifier where 1 = New Event and 3 = New Restore
XYZ= Event code
GG= Group number
CCC= Zone/Point number

Notes:

1. **18**, which is used in the reporting structure to identify the transmission as Contact ID, is not printed out in the alarm and trouble report.
2. **GG** Group Number is fixed at '00'.
3. **CCC** for Zone or Point Number:
 - ✓ Zone Number is transmitted as '01' for zone 1 up to '99' for zone 99
 - ✓ Point Number is transmitted as '01' for point/address 1 up to '99' for point/address 99

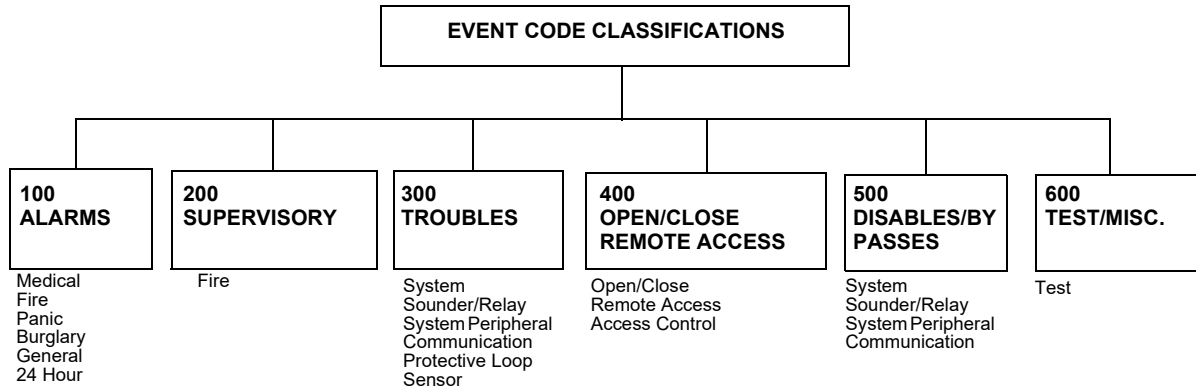
F.2 Ademco Contact ID Typical Printout

A typical printout from a Central Station receiver (such as the Ademco 685) of alarm and trouble reports in the Ademco Contact ID Reporting Structure follows:

Time	Date	Rcvr/Line ID	SSSS	QXYZ	GG	CCCC
11:28	03/25	11	7777	E110	00	C001 - general fire alarm on zone one
11:28	03/25	11	7777	E111	00	C002 - smoke detector alarm on zone two
11:28	03/25	11	7777	E380	00	C003 - fault on zone three
11:28	03/25	11	7777	E570	00	C009 - Zone nine disabled
11:28	03/25	11	7777	R110	00	C001 - Zone one alarm restored
11:28	03/25	11	7777	R111	00	C002 - smoke detector zone two restored
11:28	03/25	11	7777	R380	00	C003 - zone three fault restored
11:28	03/25	11	7777	R570	00	C009 - zone nine reenabled
11:28	03/25	11	7777	E158	00	C006 - high temperature, zone six
11:28	03/25	11	7777	E151	00	C007 - gas detected, zone seven

Notes:

1. **11** is an example of a Receiver/Line Card, showing which receiver and line card the message was transmitted to.
2. **Q**, which is the Event Qualifier for the reporting structure, is printed out in the report as an E for New Event or R for New Restore.



EVENT	MESSAGE
<u>Medical Alarms - 100</u>	
100 Medical	EMERG - Personal Emergency - #
101 Pendant Transmitter	EMERG - Personal Emergency - #
102 Fail to report in	EMERG - Fail to Check-in - #
<u>Fire Alarms - 110</u>	
110 Fire Alarm	FIRE - Fire Alarm - #
111 Smoke	FIRE - Smoke Detector - #
112 Combustion	FIRE - Combustion - #
113 Waterflow	FIRE - Waterflow - #
114 Heat	FIRE - Heat Sensor - #
115 Pull Station	FIRE - Pull Station - #
116 Duct	FIRE - Duct Sensor - #
117 Flame	FIRE - Flame Sensor - #
118 Near Alarm	FIRE - Near Alarm - #
<u>Panic Alarms - 120</u>	
120 Panic Alarm	PANIC - Panic - #
121 Duress	PANIC - Duress - #
122 Silent	PANIC - Silent Panic - #
123 Audible	PANIC - Audible Panic - #
<u>Burglar Alarms - 130</u>	
130 Burglary	BURG - Burglary - #
131 Perimeter	BURG - Perimeter - #
132 Interior	BURG - Interior - #
133 24-Hour	BURG - 24-Hour
134 Entry/Exit	BURG - Entry/Exit - #
135 Day/Night	BURG - Day/Night - #
136 Outdoor	BURG - Outdoor - #
137 Tamper	BURG - Tamper - #
<u>General Alarms - 140</u>	
140 General Alarm	ALARM - General Alarm - #
141 Polling loop open	ALARM - Polling Loop Open - #
142 Polling loop short	ALARM - Polling Loop Short - #
143 Expansion module failure	ALARM - Exp. Module Fail - #
144 Sensor tamper	ALARM - Sensor Tamper - #
145 Expansion module tamper	ALARM - Exp. Module Tamper - #

EVENT	MESSAGE
<u>24-Hour Non-Burglary - 150 and 160</u>	
150 24-Hour Non-Burg	ALARM - 24-Hr. Non-Burg - #
151 Gas detected	ALARM - Gas Detected - #
152 Refrigeration	ALARM - Refrigeration - #
153 Loss of heat	ALARM - Heating System - #
154 Water leakage	ALARM - Water Leakage - #
155 Foil break	ALARM - Foil Break - #
156 Day trouble	ALARM - Day Zone - #
157 Low bottled gas level	ALARM - Low Gas Level - #
158 High Temp	ALARM - High Temperature - #
159 Low Temp	ALARM - Low Temperature - #
161 Loss of air flow	ALARM - Air Flow - #
<u>Fire Supervisory - 200 and 210</u>	
200 Fire supervisory	SUPER. - Fire Supervisory - #
201 Low water pressure	SUPER. - Low Water Pressure - #
202 Low CO2	SUPER. - Low CO2
203 Gate valve sensor	SUPER. - Gate Valve - #
204 Low water level	SUPER. - Low Water Level - #
205 Pump activated	SUPER. - Pump Activation - #
206 Pump failure	SUPER. - Pump Failure - #
<u>System Troubles - 300 and 310</u>	
300 System trouble	TROUBLE - System Trouble
301 AC loss	TROUBLE - AC Power
302 Low system battery	TROUBLE - System Low Battery
303 RAM checksum bad	TROUBLE - RAM Checksum (restore not applicable)
304 ROM checksum bad	TROUBLE - ROM Checksum (restore not applicable)
305 System reset	TROUBLE - System Reset (restore not applicable)
306 Panel program changed	TROUBLE - Prog. Change (restore not applicable)
307 Self-test failure	TROUBLE - Self Test Failure
308 System shutdown	TROUBLE - System Shutdown
309 Battery test failure	TROUBLE - Battery Test Failure
310 Ground fault	TROUBLE - Ground Fault - #
311 No battery	TROUBLE - No Battery
<u>Sounder/Relay Troubles - 320</u>	
320 Sounder/Relay	TROUBLE - Sounder/Relay - #
321 Bell 1	TROUBLE - Bell/Siren #1
322 Bell 2	TROUBLE - Bell/Siren #2
323 Alarm relay	TROUBLE - Alarm Relay
324 Trouble relay	TROUBLE - Trouble Relay
325 Reversing relay	TROUBLE - Reversing Relay
326 Bell 3	TROUBLE - Bell/Siren #3
327 Bell 4	TROUBLE - Bell/Siren #4
<u>System Peripheral Troubles - 330 and 340</u>	
330 System peripheral	TROUBLE - Sys. Peripheral - #
331 Polling loop open	TROUBLE - Polling Loop Open
332 Polling loop short	TROUBLE - Polling Loop Short
333 Expansion module failure	TROUBLE - Expansion Module Failure - #
334 Repeater Failure	TROUBLE - Repeater Failure - #
335 Local printer paper out	TROUBLE - Printer Paper Out
336 Local printer failure	TROUBLE - Local Printer

EVENT	MESSAGE
<u>Communication Troubles - 350 and 360</u>	
350 Communication	TROUBLE - Communication Trouble
351 Telco 1 fault	TROUBLE - Phone Line #1
352 Telco 2 fault	TROUBLE - Phone Line #2
353 Long range radio transmitter fault	TROUBLE - Radio Transmitter
354 Fail to communicate	TROUBLE - Fail to Communicate
355 Loss of radio supervision	TROUBLE - Radio Supervision
356 Loss of central polling	TROUBLE - Central Radio Polling
<u>Protection Loop Troubles - 370</u>	
370 Protection loop	TROUBLE - Protection Loop - #
371 Protection loop open	TROUBLE - Protection Loop Open - #
372 Protection loop short	TROUBLE - Protection Loop Short - #
373 Fire trouble	TROUBLE - Fire Loop - #
<u>Sensor Troubles - 380</u>	
380 Sensor trouble	TROUBLE - Sensor Trouble - #
381 Loss of supervision - RF	TROUBLE - RF Sensor Supervision - #
382 Loss of supervision - RPM	TROUBLE - RPM Sensor Supervision - #
383 Sensor tamper	TROUBLE - Sensor Tamper - #
384 RF transmitter low battery	TROUBLE - RF Sensor Batt. - #
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400 Open/Close	OPENING CLOSING
401 Open/Close by user	OPENING - User # CLOSING - User #
402 Group Open/Close	OPENING - Group User # CLOSING - Group User #
403 Automatic Open/Close	OPENING - Automatic CLOSING - Automatic
404 Late Open/Close	OPENING - Late CLOSING - Late
405 Deferred Open/Close	Opening not used Closing not used
406 Cancel	OPENING - Cancel CLOSING - Cancel
407 Remote arm/disarm	OPENING - Remote CLOSING - Remote
408 Quick arm	Opening not applicable CLOSING - Quick Arm
409 Keyswitch Open/Close	OPENING - Keyswitch CLOSING - Keyswitch
<u>Remote Access - 410</u>	
411 Callback request made	REMOTE - Callback Requested (restore not applicable)
412 Success - download/access	REMOTE - Successful Access (restore not applicable)
413 Unsuccessful access	REMOTE - Unsuccessful Access (restore not applicable)
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415 Dialer shutdown	REMOTE - Dialer Shutdown
416 Success - upload/access	REMOTE - Successful Access (restore not applicable)
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422 Access report by user	ACCESS - Access Granted - User # (restore not used)
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523 Alarm relay disable	DISABLE - Alarm Relay
524 Trouble relay disable	DISABLE - Trouble Relay
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526 Bell 3 disable	DISABLE - Bell/Siren - #3

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571 Fire bypass	BYPASS - Fire Bypass - #
572 24-Hour zone bypass	BYPASS - 24-Hour Bypass - #
573 Burglar bypass	BYPASS - Burg. Bypass - #
574 Group bypass	BYPASS - Group Bypass - #
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601 Manual trigger test	TEST - Manually Triggered (restore not applicable)
602 Periodic test report	TEST - Periodic (restore not applicable)
603 Periodic RF transmission	TEST - Periodic Radio (restore not applicable)
604 Fire test	TEST - Fire Test (restore not used)
605 Status report to follow	STATUS - Status Follows (restore not applicable)
606 Listen-in to follow	LISTEN - Listen-in Active (restore not applicable)
607 Walk test mode	TEST - Walk Test Mode
608 System abnormal test	TEST - System Abnormal Test

Appendix G: Central Station Points

The control panel transmits Central Station Reports in a numerical format which indicates the FACP addressable device address that is reporting. The following table indicates the Central Station Report (CS Report) number that will be transmitted and the addressable device address it represents.

CS Report	Detector Address	CS Report	Detector Address	CS Report	Detector Address	CS Report	Detector Address
001	001	033	033	065	065	097	097
002	002	034	034	066	066	098	098
003	003	035	035	067	067	099	099
004	004	036	036	068	068	100 through 159 not used	not used
005	005	037	037	069	069		
006	006	038	038	070	070		
007	007	039	039	071	071		
008	008	040	040	072	072		
009	009	041	041	073	073		
010	010	042	042	074	074		
011	011	043	043	075	075		
012	012	044	044	076	076		
013	013	045	045	077	077		
014	014	046	046	078	078		
015	015	047	047	079	079		
016	016	048	048	080	080		
017	017	049	049	081	081		
018	018	050	050	082	082		
019	019	051	051	083	083		
020	020	052	052	084	084		
021	021	053	053	085	085		
022	022	054	054	086	086		
023	023	055	055	087	087		
024	024	056	056	088	088		
025	025	057	057	089	089		
026	026	058	058	090	090		
027	027	059	059	091	091		
028	028	060	060	092	092		
029	029	061	061	093	093		
030	030	062	062	094	094		
031	031	063	063	095	095		
032	032	064	064	096	096		

Table G.1 Addressable DETECTORS

CS Report	Module Address	CS Report	Module Address	CS Report	Module Address	CS Report	Module Address
160	001	192	033	224	065	256	097
161	002	193	034	225	066	257	098
162	003	194	035	226	067	258	099
163	004	195	036	227	068		
164	005	196	037	228	069		
165	006	197	038	229	070		
166	007	198	039	230	071		
167	008	199	040	231	072		
168	009	200	041	232	073		
169	010	201	042	233	074		
170	011	202	043	234	075		
171	012	203	044	235	076		
172	013	204	045	236	077		
173	014	205	046	237	078		
174	015	206	047	238	079		
175	016	207	048	239	080		
176	017	208	049	240	081		
177	018	209	050	241	082		
178	019	210	051	242	083		
179	020	211	052	243	084		
180	021	212	053	244	085		
181	022	213	054	245	086		
182	023	214	055	246	087		
183	024	215	056	247	088		
184	025	216	057	248	089		
185	026	217	058	249	090		
186	027	218	059	250	091		
187	028	219	060	251	092		
188	029	220	061	252	093		
189	030	221	062	253	094		
190	031	222	063	254	095		
191	032	223	064	255	096		

Table G.2 Addressable MODULES

Appendix H: NFPA Requirements

The following is the minimum configuration to meet the NFPA requirements.

Module	Local	Aux	RS	CS	Proprietary	Process Management ¹
ES-200X	Y	Y	Y	Y	Y	Y
ES-200XC	Y	Y	Y	Y	Y	Y
IPOTS-COM ² (pre-installed communicator)	Y					
4XTMF	O	Y	O ³	O	O ³	O
DP-ES-R	O	O	O	O	O	O
BB-55F ⁴	O	O	O	O	O	O
ANN-LED ⁴	O	O	O	O	O	Y
ANN-80 ⁴	O	O	O	O	O	Y
ANN-100 ⁴	O	O	O	O	O	Y
ANN-S/PG ⁴	O	O	O	O	O	Y
ANN-I/O ⁴	O	O	O	O	O	Y
ANN-RLED ⁴	O	O	O	O	O	Y
ANN-RLY ⁴	O	O	O	O	O	Y
Where Y = Yes, N = No, and O = Optional						

¹ Non-Emergency

² Not available on the ES-200XI

³ One of the indicated modules is required when the IPOTS-COM is not employed.

⁴ Listed separately

Appendix I: Open/Short/Ground Trip Values

Table I.1 lists the earth fault resistance detection for each applicable terminal on the FACP.

Output Circuit	Terminal	Trip Resistance (in ohms)
Remote Sync	+	360K
Remote Sync	-	330K
NAC 1-2	+	360K
NAC 1-2	-	320K
ANN Bus	A	270K
ANN Bus	B	265K
Aux Power	+	370K
Aux Power	-	320K
SLC	+	125K
SLC	-	320K

Table I.1 Earth Fault Trip Values

Table I.2 lists the open/short trip values and restoral values for the NAC circuits on the FACP.

Circuit	Trip Resistance (in ohms)	Restore Value
NAC 1-2	Shorts below 1.75K	2K
NAC 1-2	Opens above 25K	23K

Table I.2 NAC Open/Short Trip Values

Appendix J: Canadian Applications

- The ES-200XC is supplied standard with the DP-ES-R Dress Panel for Canadian applications.
- When installing and programming the FACP, the Canadian Option must be set to **ON** prior to any other panel programming (refer to “Canadian Option” on page 82 of the Programming Section of this manual).
- At least one ANN-LED must be installed adjacent to the FACP as it is part of the primary operator interface. Wiring to the ANN-LED must be in metal conduit and must be connected to the FACP’s Primary ANN-BUS.
- If remote indicators are desired, they must be connected to the Secondary ANN-BUS circuit.
- The installer must write in the *Date of Final Assembly* on the Master Marking and Warranty Label located on the FACP backbox door.
- Positive Alarm Sequence (PAS) and the Pre-Signal option are not available for Canadian applications.
- The F1 function key is automatically configured to perform a manual alarm signal activation when pressed.
- The F2 function key is automatically configured to perform an automatic alarm signal cancel in two-stage NAC operation. This prevents the NAC from advancing to the second-stage alarm.
- The F3 function key is automatically configured to force active two-stage NACs into the second (alarm) stage. It advances NAC coding directly to the second stage alarm.
- If NACs are set up for two-stage operation, the Silence Inhibit timer is automatically enabled and is fixed at 5 minutes.
- AlarmNet supervision settings for panels communicating by Cellular-only or Ethernet-only method are fixed at 3 minutes and cannot be changed regardless of programming selection.

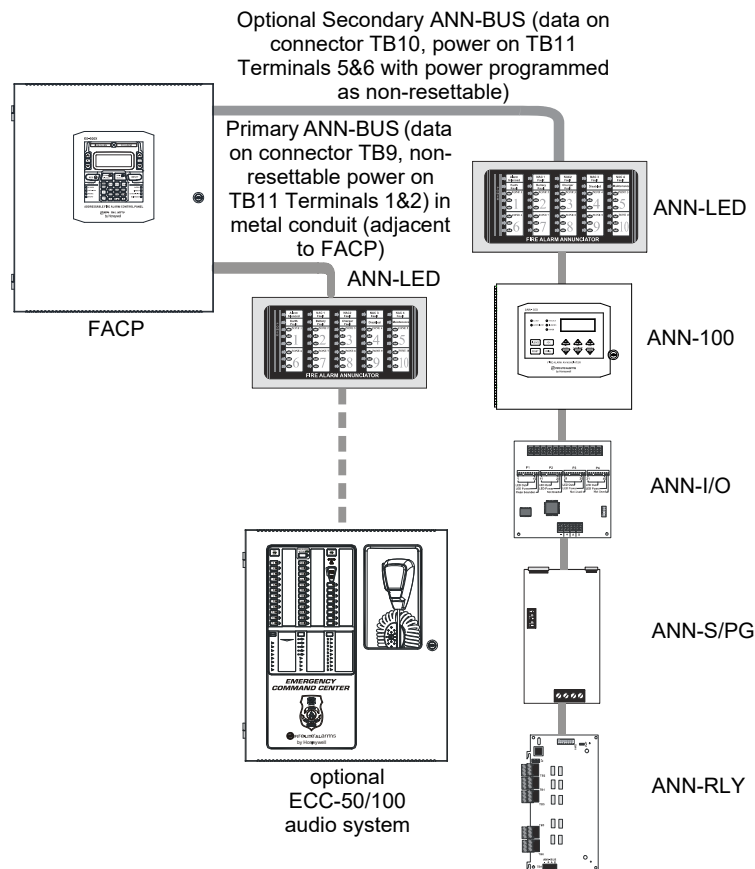
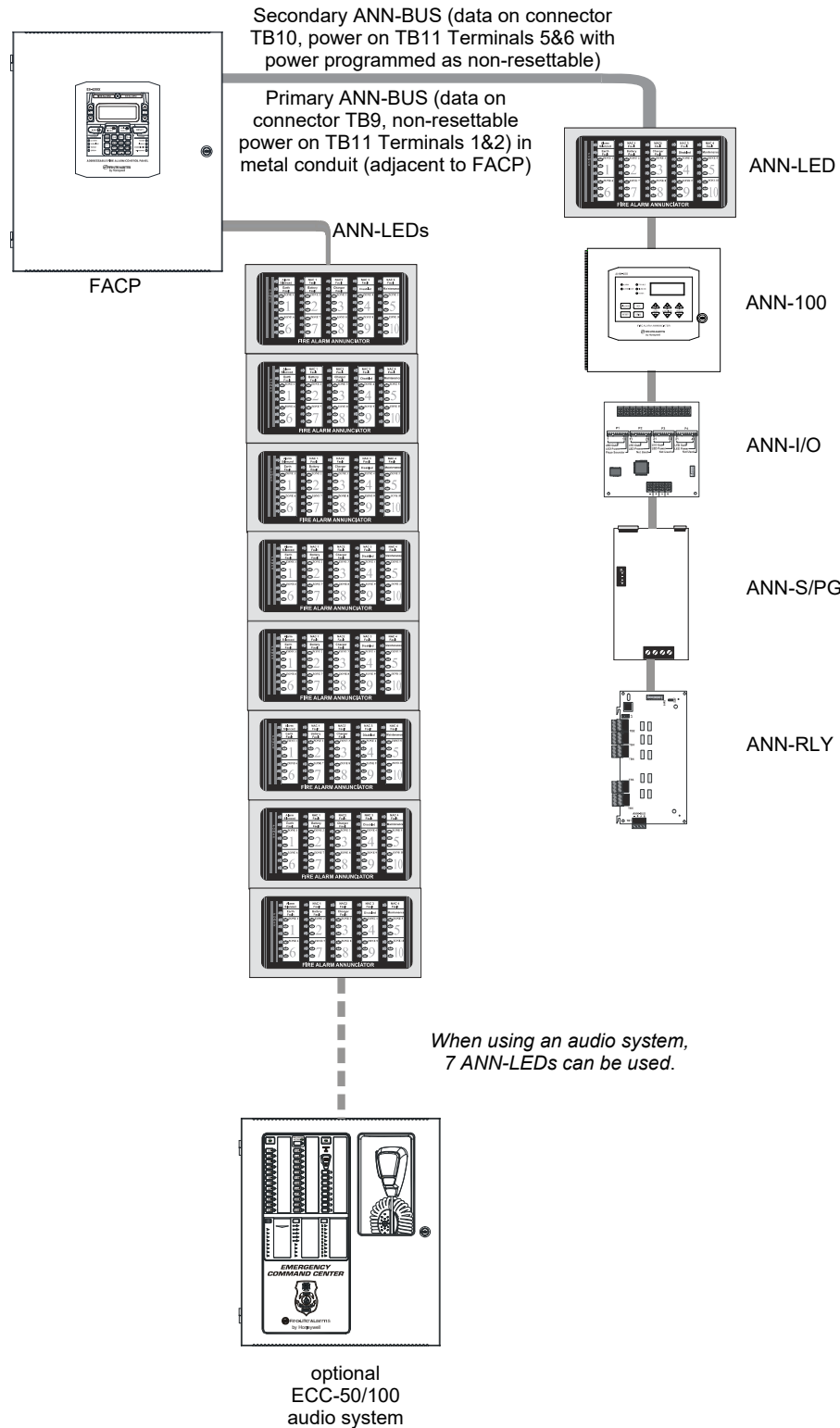


Figure J.1 FACP Minimum Configuration - Single ANN-LED

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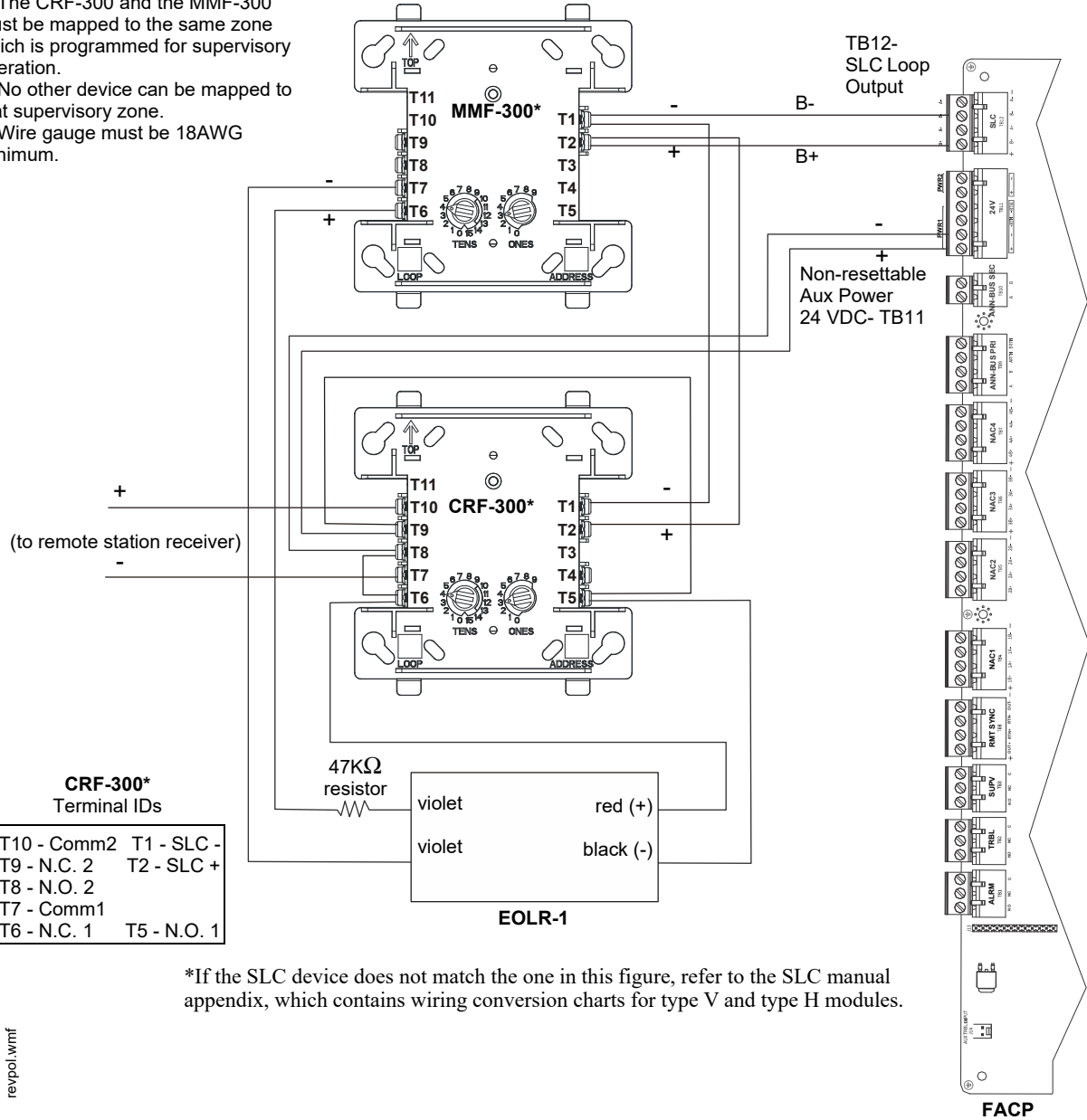


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Figure J.2 FACP Maximum Configuration - Eight ANN-LEDs

Notes:

1. The CRF-300 and the MMF-300 must be mapped to the same zone which is programmed for supervisory operation.
2. No other device can be mapped to that supervisory zone.
3. Wire gauge must be 18AWG minimum.

**Figure J.3 Alternate Transmission for Supervisory Signals**

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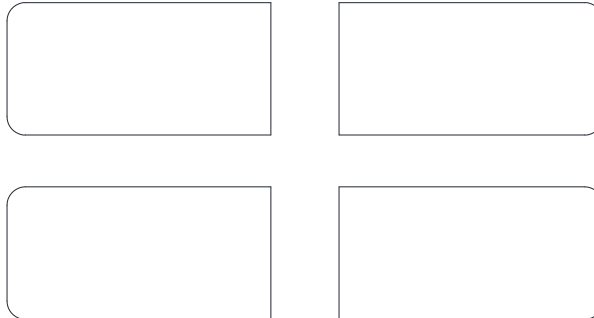
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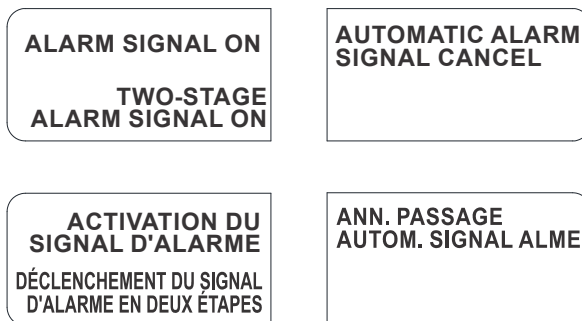
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 list **72**
 zone Z000 **60, 61, 66**
 zone Z094
 in suite silence zone **71**
 zone Z095
 CO active zone **71**
 zone Z096
 local alarm zone **71**
 zone Z097
 PAS zone **59**
 zone Z098
 pre-signal zone **60**
 zone Z099
 two-stage operation **81**
 zones **118, 134**
 disabled **72**
 enabled **72**
 installed **71**
 see also software zones **13**
 zones per device **60**
 zones per sounder base **61**

Slide-in Labels

Carefully cut along the outside of each label. Identify Function (F1-F4) keys as desired and slide the labels into the keypad. Starting at the center of the keypad next to the Function Keys, slide each label into the groove towards the outer edge. Function Keys F1 and F3 are not programmable in Canadian applications. Those keys must use the pre-printed labels below.



Slide-in Labels



Slide-in Labels for Canadian Applications

ES-200X and ES-200XC Fire Alarm Control Panels Operating Instructions

NORMAL - Only AC POWER is illuminated green.
All other indicators are off. LCD display will read SYSTEM NORMAL.

PANEL KEY - The key to open the panel can be found at the following location:

WHEN AUDIBLE DEVICES ARE SOUNDING - FOR AN ALARM

1. Evacuate the protected area
2. Notify the monitoring service and/or the Fire Department immediately. Tell them briefly what happened and what your current status is.

Phones: _____
Fire Department Monitoring Service

3. If the Fire Department is responding, be prepared to provide directions to arriving firefighters.

FOR TROUBLE, SUPERVISORY, AND EMERGENCY ALARMS

1. Notify the monitoring service and/or applicable first responders if this panel is connected to either one, and tell them what is happening.
2. Silence audible devices by unlocking and opening the panel and pressing the ACKNOWLEDGE/STEP button. The applicable indicator will remain illuminated. Contact authorized service personnel immediately! (See Below).

WARNING!

DO NOT ALLOW TROUBLE CONDITIONS TO REMAIN LOGGED IN THE SYSTEM. THE PROTECTION THE SYSTEM OFFERS HAS BEEN COMPROMISED OR ELIMINATED, WHEN A TROUBLE CONDITION EXISTS.

To return to normal after an alarm

1. Do not enter the protected area until safe to do so.
2. Clear all initiating devices. Smoke detectors will not reset if there is still smoke in the area.
3. Reset the control panel (PRESS the RESET button)

Power failure or brownout

If AC power drops too low or fails, AC POWER indicator will extinguish, the system TROUBLE indicator will turn on yellow, and the panel buzzer and any other audible trouble devices will sound. Contact authorized service personnel immediately. See below.

Manual activation (Fire Drill or otherwise)

Notification Appliance Circuits (NACs) can be activated by pressing and holding the DRILL button for at least two seconds.

NOTE: You may want to disconnect the municipal box by sliding the DISCONNECT switch, located on the 4XTMF module, to its disconnect position (to the right). If a DACT is connected, notify the monitoring service before conducting any fire drills or tests.

Alarm Silencing

Notification Appliance Circuits may be silenced by pressing the ALARM SILENCE button. ALARM SILENCED will turn on yellow. Subsequent alarms will reactivate circuits. Press the RESET button to clear the "silenced" condition.

NOTE: Notification Appliance Circuits may be programmed as nonsilenceable. Also, Signal Silence Inhibit, if enabled, will prevent silencing of NACs for five minutes after an alarm (see manual).

To test the indicators, LCD display and piezo

Press and release the RESET button and check all indicators/LEDs. Every indicator/LED should be on, LCD shows all pixels on, piezo sounder beeps.

For more information, refer to the ES-200X Series Manual, Document #LS10131-000FL-E. It is kept in the following location:

**THIS SHEET SHALL BE FRAMED ADJACENT TO THE
CONTROL PANEL**



Fire-Lite Alarms
by Honeywell

In the event of trouble, contact the
local Fire-Lite Service Representative

Name: _____

Company: _____

Address: _____

Telephone Number: _____

Cut along dotted line.

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MS-9200UDLS(E) Rev 3

Intelligent Addressable FACP with Built-In Communicator



Addressable Fire Alarm Control Panel

General

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

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

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

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

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

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

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

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

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



Features

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

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

NOTE: Only detectors may participate in PAS.

SLC LOOP:

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

NOTIFICATION APPLIANCE CIRCUITS (NACS):

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

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

PROGRAMMING AND SOFTWARE:

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

User Interface

LED INDICATORS

- AC Power (green)
- Fire Alarm (red)

- Supervisory (yellow)
- Alarm Silenced (yellow)
- System Trouble (yellow)
- Maintenance/Presignal (yellow)
- Disabled (yellow)
- Battery Fault (yellow)
- Ground Fault (yellow)

KEYPAD CONTROLS

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

Product Line Information

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

COMPATIBLE ANNUNCIATORS

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

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

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

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

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

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

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

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

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

LITESPEED COMPATIBLE ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

CP355: Addressable low-profile ionization smoke detector.

SD355: Addressable low-profile photoelectric smoke detector.

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

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

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

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

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

AD355(A): Low-profile, intelligent, "Adapt" multi-sensor detector (B350LP base included).

BEAM355: Intelligent beam smoke detector.

BEAM355S: Intelligent beam smoke detector with integral sensitivity test.

D355PL: Innovair Flex low-flow non-relay duct-detector housing. SD355R included.

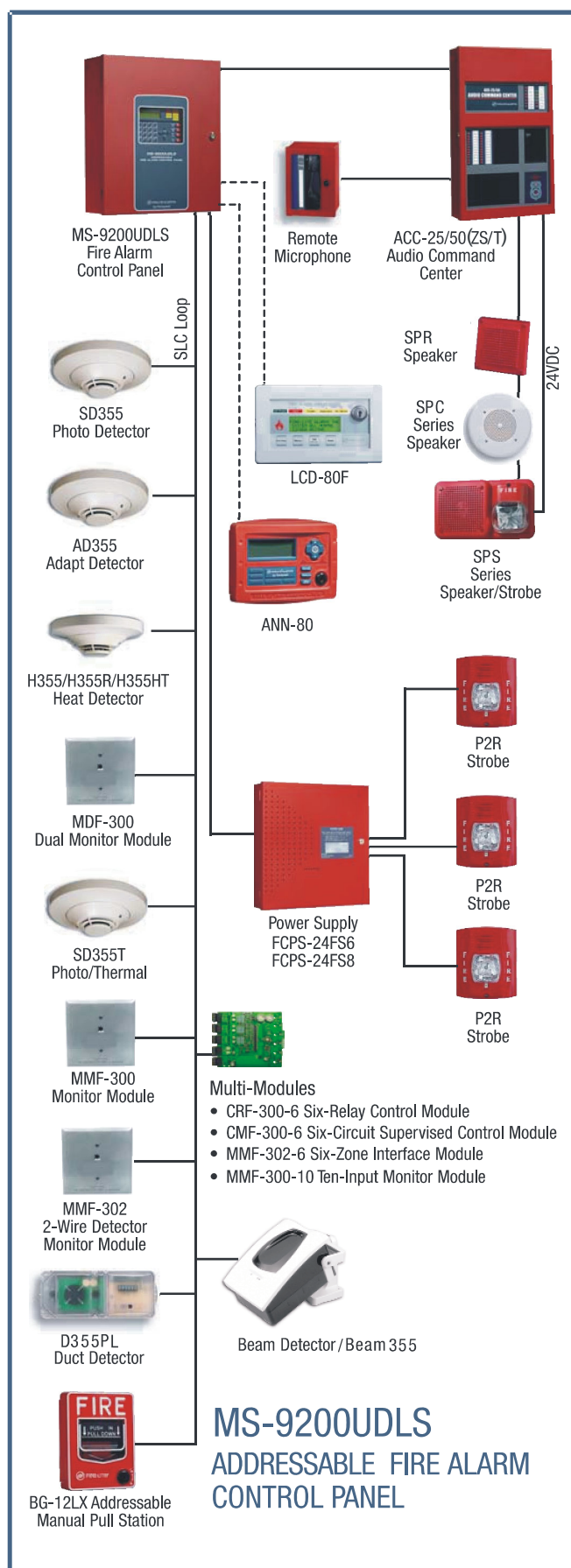
DNRW: Innovair Flex low-flow non-relay duct-detector housing, with NEMA-4 rating. Watertight. (Order SD355R separately.)

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

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

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

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



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

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

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

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

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

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

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

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

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

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

Wiring Requirements

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

SYSTEM SPECIFICATIONS

System Capacity

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

Electrical Specifications

AC Power: MS-9200UDLS Rev 3: 120 VAC, 60 Hz, 3.0 amps. MS-9200UDLS Rev 3E: 240 VAC, 50 Hz, 1.5 amps. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation.

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

Communication Loop: Supervised and power-limited.

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

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

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

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

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

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

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.12" (.30 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x

16.65" (42.29 cm.) wide x 5.20" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

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

Temperature and Humidity Ranges

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

NFPA Standards

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

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

Agency Listings and Approvals

The listings and approvals below apply to the basic MS-9200UDLS Rev 3 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S624
- **FM approved**
- **CSFM:** 7165-0075:0208
- **MEA:** 120-06-E

For ULC-listed version, see DF-60599.

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Made in the U.S.A.

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

FCPS-24FS6(C/E)

6 Amp, 24 Volt Remote Power Supply



Power Supplies

The **Fire-Lite FCPS-24FS6(C/E)** is a compact, cost-effective, 6-amp remote power supplies with battery charger. The FCPS-24FS6(C/E) may be connected to any 12 or 24 volt fire alarm control panel (FACP) or may stand-alone. Primary applications include notification appliance (bell) circuit (NAC) expansion (to support ADA requirements and NAC synchronization) or auxiliary power to support 24 volt system accessories. The FCPS provides *regulated and filtered* 24 VDC power to four notification appliance circuits configured as either two Class B (Style Y) and Class A (Style Z, with ZNAC-4 option module) or four class B only. Alternately, the four outputs may be configured as any combination of resettable/non-resettable power outputs (optimal for powering four-wire smoke detectors). The FCPS-24FS6(C/E) also contains a battery charger capable of charging up to 7.0 AH batteries. The FCPS-24FS6C is ULC-listed.

NOTE: Unless otherwise specified, the term FCPS-24FS6 used in this document refers to the FCPS-24FS6, FCPS-24FS6C, and FCPS-24FS6E.

Features

- UL-Listed Notification Appliance Circuit (NAC) synchronization using System Sensor®, Wheelock®, or Gentex® "Commander²" appliances
- Operates as a "sync-follower" or as a "sync-generator" (default) See note on page 2.
- Contains two fully-isolated input/control circuits - triggered from FACP NAC (NAC expander mode) or jumped permanently "ON" (stand-alone mode)
- Two Class B (Style Y) or Class A (Style Z, with ZNAC-4 module) NACs (circuits 1 & 3)
- 6-amp full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864)
- 4-amp continuous output in stand-alone mode (UL 1481)
- Compatible with coded inputs; signals passed through
- Optional power-supervision relay (EOLR-1)
- In stand-alone mode, output power circuits may be configured as: resettable, (reset line from FACP required), non-resettable, or a mix of two and two
- Fully regulated and filtered power output - optimal for powering four-wire smoke detectors, annunciators, and other system peripherals requiring regulated/filtered power
- Power-limiting technology meets UL power-limiting requirements
- Form-C normally-closed trouble relay
- Fully supervised power supply, battery, and NACs
- Selectable earth fault detection
- AC trouble report selectable for immediate 2-hour delay
- Works with virtually any UL 864 fire alarm control which utilizes an industry-standard reverse-polarity notification circuit (including unfiltered and unregulated bell power)
- Requires input trigger voltage of 9 - 32 VDC
- Self-contained in compact, locking cabinet - 15"H x 14.5"W x 2.75"D (cm: 38.1H x 36.83W x 6.985D)
- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries
- Battery charger may be disabled via DIP switch for applications requiring larger batteries
- Fixed, clamp-type terminal blocks accommodate up to 12 AWG (3.1mm²) wire



Specifications

Primary (AC) Power:

- **FCPS-24FS6/C:** 120 VAC, 60 Hz, 3.2A maximum
- **FCPS-24FS6E:** 240 VAC, 50 Hz, 1.6A maximum
- Wire Size: minimum #14 AWG (2.0mm²) with 600 V insulation

Control Input Circuit:

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

Trouble Contact Rating: 5 A at 24 VDC

Auxiliary Power Output: Special application power 500 mA maximum

Output Circuits:

- +24 VDC filtered, regulated
- **3.0 A maximum for any one circuit**
- Total continuous current for all outputs (stand-alone mode): 4.0 A maximum
- Total short-term current for all outputs (NAC expander mode): 6.0 A maximum

Secondary Power (Battery) Charging Circuit:

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

Applications

Example 1: Expand notification appliance power an additional 6.0 A. Use up to four Class B (Style Y) outputs or four Class A (Style Z) outputs (using ZNAC-4). For example, the FACP notification appliance circuits will activate the FCPS when reverse-polarity activation occurs. Trouble conditions on the FCPS are sensed by the FACP through the notification appliance circuit.

Example 2: Use the FCPS to expand auxiliary regulated 24-volt system power up to 4.0 A. Both resettable and non-resettable power options are available. Resettable outputs are created by connecting the resettable output from the FACP to one or both of the FCPS inputs.

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

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

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

Sync Follower/Generator Note

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strobes accomplish this by monitoring very short timing pulses on the NAC power which are created by the FACP. When installed at the end of a NAC wire run, the FCPS-24FS6 can track (i.e. "follow") the strobe synchronization timing pulses on the existing NAC wire run. This maintains the overall system flash timing of the additional strobes attaches to the FCPS.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync follower," the FCPS' NAC outputs track the strobe synchronization pulses present at the FCPS' sync input terminal. The pulses originate from an upstream FACP or other power supply.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync generator," the FCPS' sync input terminals are not used. Rather, the FCPS is the originator of the strobe synchronization pulses on the FCPS' NAC outputs. In "sync generator" mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

Standards and Codes

The FCPS-24FS6 complies with the following standards:

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

Agency Listings and Approvals

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

- **UL Listed:** S2424, S1287
- **ULC Listed:** S2424
- **CSFM Approved:** 7315-0075:0206
- **MEA:** 387-94E
- **FM Approved**

Ordering Information

FCPS-24FS6: 6.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

FCPS-24FS6C: Same as FCPS-24FS6, ULC-listed

FCPS-24FS6E: 6.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

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

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

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

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

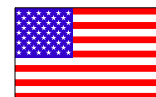
90286: Optional module mounting kit, is required to install an addressable module on the power supply main circuit board

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www.firelite.com



Country of Origin: USA

ANN-80

80-Character Serial LCD Annunciator



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. The 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.

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 (non-condensing) 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

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.

WIRE REQUIREMENTS: POWER CIRCUIT

- 14 to 18 AWG (0.75 - 2.08 mm²) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop from 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.

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.

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.

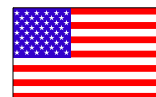
- **UL:** S2424
- **FM approved**
- **CSFM:** 7120-0075:0211
- **MEA:** 442-06-E

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www.firelite.com



Country of Origin: USA

CRF-300(A)

Relay Module



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 μ A direct poll (CLIP mode), 255 μ A 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



Addressable Devices

General

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

Features

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

Construction

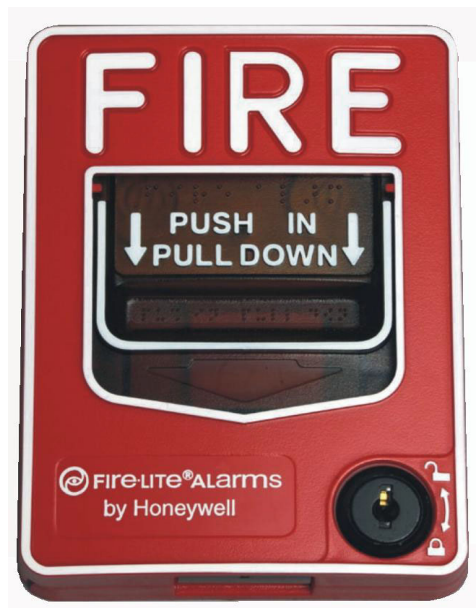
Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC standby current:** 375 μ A.
- **Maximum SLC alarm current:** 5 mA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**

Installation

The BG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the BG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is



FL PullStation.jpg

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

Operation

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

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

Architectural/Engineering Specifications

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

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

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

Product Line Information

BG-12LX: Dual-action addressable pull station. Includes key locking feature. (Listed for Canadian and non-Canadian applications.)

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/ULC Listed:** S711 (listed for Canadian and non-Canadian applications).
- **MEA:** 67-02-E.
- **CSFM:** 7150-0075:0184.
- **FM Approved.**

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

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D365PL(A) and DNRW

Intelligent Non-relay Photoelectric Duct Smoke Detectors



Addressable Devices

The Fire•Lite D365PL(A) intelligent non-relay photoelectric duct smoke detector and DNRW watertight non-relay photoelectric duct smoke detector feature a pivoting housing that fits both square and rectangular footprints capable of mounting to a round or rectangular duct.

The DNRW duct smoke detector, with its NEMA-4 rating, is listed as a watertight, UV resistant enclosure providing protection against falling dirt, rain, and windblown dust, splashing and hose directed water, allowing operators to use the detector in the most extreme environments.

These units sense smoke in the most challenging conditions, operating in airflow speeds of 100 to 4,000 feet per minute (0.5 – 20.32 m/s), temperatures of -4°F – 158°F (-20°C – 70°C), and a humidity range of 0 – 93 percent (non-condensing).

An improved cover design isolates the sensor head, which allows for ease of maintenance. A cover tamper feature indicates a trouble signal for a removed or improperly installed sensor cover. The housing provides a 3/4-inch conduit knockout and ample space to facilitate easy wiring and mounting of a relay module.

The Fire•Lite D365PL(A) duct smoke detectors can be customized to meet local codes and specifications without additional wiring and are compatible with all previous models, including remote test accessories.

Features

- Photoelectric, integrated low-flow technology
- Air velocity rating from 100 ft/min – 4,000 ft/min (0.5 m/s – 20.32 m/s)
- Versatile mounting options: square or rectangular configuration
- Broad ranges for operating temperature (-4°F – 158°F, -20°C – 70°C) and humidity (0% – 93% non-condensing)
- Sampling tube installs from front or back of the detector with no tools required
- Cover tamper signal
- Increased wiring space with a newly added 3/4" conduit knockout
- Easily accessible code wheels on sensor head (Included with D365PL/D365PLA)
- Clear cover for convenient visual inspection (D365PL(A) only)
- Remote testing capability
- Requires com line power only
- Housing accommodates an addressable relay module, sold separately, (CRF-300) for applications requiring a Form-C relay

Specifications

Size: (Rectangle) 14.38 in (37 cm) Length; 5 in (12.7 cm) Width; 2.5 in (6.6 cm) Depth

Size: (Square) 7.75 in (19.7 cm) Length; 9 in (22.9 cm) Width; 2.5 in (6.35 cm) Depth

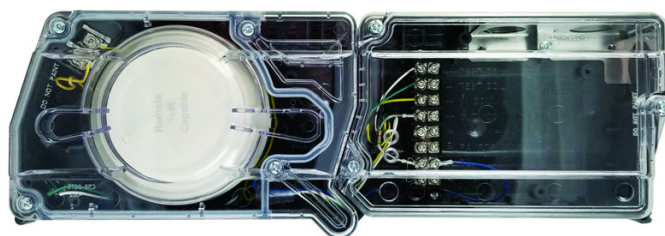
Weight: 1.6 lb (0.73 kg)

Operating Temperature Range: -4°F – 158°F (-20°C – 70°C)

Storage Temperature Range: -22°F – 158°F (-30°C – 70°C)

Operating Humidity Range: 0% – 93% relative humidity (non-condensing)

Air Duct Velocity: 100 – 4,000 ft/min (0.5 – 20.32 m/s)



Accessories

Fire•Lite provides system flexibility with a variety of accessories, including two remote test stations and different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detectors accessories are UL listed.

ACCESSORY CURRENT LOADS AT 24 VDC

Device	Standby	Alarm
RA100Z	0mA	12mA Max
RTS151/RTS151KEY	0mA	12mA Max

Agency Listings and Approvals

Consult product manual for lists of compatible UL-Listed devices. 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:** S1059
- **ULC:** S1059
- **CSFM:** 3242-0075:0508
- **FM approved**

Product Line Information

NOTE: "A" suffix indicates ULC listed model.

D365PL(A): Intelligent non-relay photoelectric low flow smoke detector housing. Includes SD365R(A)-IV detector.

DNRW: Watertight intelligent non-relay photoelectric low flow duct smoke detector housing. Requires photoelectric smoke detector (sold separately). NEMA-4 rated.

SD365R(A)-IV: Remote test capable addressable low-profile photoelectric smoke detector; ivory; supports CLIP and LiteSpeed™ protocols

SD365R(A): Remote test capable addressable low-profile photoelectric smoke detector; white; supports LiteSpeed protocol only

SD365(A)-IV: Addressable low-profile photoelectric smoke detector; ivory; supports CLIP and LiteSpeed protocols

SD365(A): Addressable low-profile photoelectric smoke detector; white; supports LiteSpeed protocol only

SD365T(A): Addressable low-profile photoelectric smoke detector with a built-in 135°F (57°C) fixed-temperature thermal device; white; supports LiteSpeed protocol only

SD365T(A)-IV: Addressable low-profile photoelectric smoke detector with a built-in 135°F (57°C) fixed-temperature thermal device; ivory; supports LiteSpeed protocol only

DUCTCOV: Retrofit D355PL(A) cover for detectors manufactured prior to April 2014

DUCTCOVW: Retrofit DNRW cover for detectors manufactured prior to April 2014

DST1: Metal sampling tube duct width up to 1 ft (0.3 m)

DST1.5: Metal sampling tube duct widths up to 1 ft – 2 ft (0.3 – 0.6 m)

DST3: Metal sampling tube duct widths up to 2 ft – 4 ft (0.6 – 1.2 m)

DST5: Metal sampling tube duct widths up to 4 ft – 8 ft (1.2 – 2.4 m)

DST10: Metal sampling tube duct widths up to 8 ft – 12 ft (2.4 – 3.7 m)

DH400OE-1: Weatherproof enclosure

ETX: Metal exhaust tube duct, width 1 ft (0.3 m)

M02-04-00: Test magnet

P48-21-00: End cap for metal sampling tubes

RA100Z(A): Remote annunciator alarm LED

RTS151: Remote test station

RTS151KEY(-A): Remote test station with key lock

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Country of Origin: Mexico

SD365 Series

Addressable Photoelectric Smoke Detectors



Addressable Devices

The Fire•Lite® Alarms SD365(A), SD365R(A), and SD365HT(A) intelligent plug-in smoke detectors are designed for both performance and aesthetics, and are direct replacements for the SD355 Series. A new modern, sleek, contemporary design and enhanced optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources in accordance with more stringent code standards.

Exclusively for use with Fire•Lite's addressable fire alarm control panels, the SD365(A) Series point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for emergency personnel to 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.

The SD365(A) Series also offers 135°F (57°C) fixed temperature thermal sensing on the SD365T(A) and a remote test capable detector on the SD365R(A) for use with DNR(A)/DNRW duct smoke detector housings.

Features

SLC LOOP:

- Two-wire SLC loop connection
- Unit uses base for wiring
- Compatible with LiteSpeed™ and CLIP protocol systems
- Stable communication technique with noise immunity

ADDRESSING:

- Addressable by device
- Rotary, decimal addressing
(Refer to the *Fire•Lite panel manuals* for device capacity.)

ARCHITECTURE:

- Sleek, low-profile, stylish design
- Unique single-source design to respond quickly and dependably to a broad range of fires
- Integral communications and built-in device-type identification
- Built-in tamper resistant feature
- Remote test feature from the panel
- Walk test with address display (an address on 121 will blink the detector LED: 12-[pause]-1 (*LiteSpeed systems only*))
- Built-in functional test switch activated by external magnet
- Removable cover and insect-resistant screen for simple field cleaning
- Expanded color options

OPERATION:

- Designed to meet UL 268 7th Edition
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level
- LED "blinks" when the unit is polled (communicating with the fire panel) and latches in alarm.
- Low standby current

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

OPTIONS:

- Optional relay, isolator, and sounder bases

Installation

SD365 Series plug-in intelligent smoke detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount detector base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DF-60059*.

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 Class "B" wiring only.

When using relay or sounder bases, consult the *I300(A) installation sheet I56-3626* for device limitations between isolator modules and isolator bases.

Construction

These detectors are constructed of fire-resistant plastic. The SD365 Series plug-in intelligent smoke detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each SD365 Series detector uses one of the panel's addresses (total limit is panel dependent) on the Fire•Lite Signaling Line Circuit (SLC). 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 SD365 Series offers features and performance that represent the latest in smoke detector technology.

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 an Fire•Lite addressable fire alarm control panel. The results of the sensitivity test can be printed for record keeping.

Product Line Information

NOTE: “-IV” suffix indicates CLIP and LiteSpeed device.

NOTE: “A” suffix indicates Canadian version.

SD365: White, low-profile intelligent photoelectric sensor, LiteSpeed only

SD365A: Same as SD365 but with ULC listing

SD365-IV: Ivory, low-profile intelligent photoelectric sensor

SD365A-IV: Same as SD365-IV but with ULC listing

SD365T: White, same as **SD365** but includes a built-in 135°F (57°C) fixed-temperature thermal device, LiteSpeed only

SD365TA: Same as SD365T but with ULC listing

SD365T-IV: Ivory, same as SD365T but includes a built-in 135°F (57°C) fixed-temperature thermal device

SD365TA-IV: Same as SD365T-IV but with ULC listing

SD365R: White, low-profile intelligent photoelectric sensor, remote test capable, for use with DNR/DNRW, LiteSpeed only

SD365RA: Same as SD365R but with ULC listing, for use with DNRA

SD365R-IV: Ivory, low-profile intelligent photoelectric sensor, remote test capable, for use with DNR/DNRW

SD365RA-IV: Same as SD365R-IV but with ULC listing, for use with DNRA

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DF-60059.

B300-6: White, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300-6-IV: Ivory, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300A-6: Same as B300-6, ULC listed

B300A-6-IV: Ivory, 6” standard flanged low-profile mounting base, ULC listed

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-BL: Black, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-IV: Ivory color, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10

B224RB-WH: White, relay base (CSFM: 7300-1653:0216)

B224RB-IV: Ivory, relay base (CSFM: 7300-1653:0216)

B224RBA-WH: White, relay base, ULC listing

B224RBA-IV: Ivory, relay base, ULC listing

B224BI-WH: White, isolator detector base (CSFM: 7300-1653:0216)

B224BI-IV: Ivory isolator detector base (CSFM: 7300-1653:0216)

B224BIA-WH: White, isolator detector base, ULC listing

B224BIA-IV: Ivory isolator detector base, ULC listing

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses LiteSpeed protocol. (CSFM: 7300-1653:0213)

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses LiteSpeed protocol. (CSFM: 7300-1653:0213)

B200SA-WH: Same as B200S-WH, ULC listing

B200SA-IV: Same as B200S-IV, ULC listing

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications)

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications, ULC listing)

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SRA-WH: Same as B200SR-WH with, ULC listing

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base

TR300-IV: Ivory, replacement flange for B210LP(A) base

RA100Z(A): Remote LED annunciator. 3-32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300-6(A).

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: Color Kit (includes cover and trim ring), white, 10-pack

CK300-IV: Color Kit (includes cover and trim ring), ivory, 10-pack

CK300-BL: Color Kit (includes cover and trim ring), black, 10-pack

SYSTEM SPECIFICATIONS

Sensitivity:

- UL Applications: 0.5% to 4.0% per foot obscuration.
- ULC Applications: 0.5% to 3.5% per foot obscuration

Size: 2.0" (51mm) high; base determines diameter

- **B300-6:** 6.1" (15.6 cm) diameter
- **B501:** 4" (10.2 cm) diameter

For a complete list of detector bases see DF-60983

Shipping weight: 3.4 oz. (95 g)

Operating temperature range:

- SD365: 32°F to 122°F (0°C to 50°C)
- SD365T Series: 32°F to 100°F (0°C to 38°C)
- SD365R Series installed in a DNR/DNRW, -4°F to 158°F (-20°C to 70°C)

UL/ULC Listed Velocity Range: 0-4000 ft/min. (1219.2 m/min.), suitable for installation in ducts

Relative humidity: 10% – 93% non-condensing

Thermal ratings: fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak

Standby current (max. avg.): 200µA @ 24 VDC (one communication every 5 seconds with LED enabled)

Max current: 4.5 mA @ 24 VDC ("ON")

DETECTOR SPACING AND APPLICATIONS

Fire•Lite recommends spacing detectors in compliance with NFPA 72. In low airflow applications with smooth ceiling, space detectors 30 feet (9.1m). For specific information regarding detector spacing, placement, and special applications refer to NFPA 72. A *System Smoke Detector Application Guide*, document SPAG91, is available at www.systemsensor.com.

Listings and Approvals

Listings and approvals below apply to the SD365 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.

- UL/ULC Listing: S1059
- FM Approved
- CSFM: 7272-0075:0502

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

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

Country of Origin: Mexico

H365 Series

Addressable Heat Detectors



Addressable Devices

The Fire-Lite® Alarms H365(A), H365R(A), and H365HT(A) addressable plug-in thermal detectors are designed for both performance and aesthetics and are a direct replacement for the H355 Series. A new modern, sleek, contemporary design and advanced thermal technologies make the H365(A) Series ideal for both system operation and building design.

Exclusively for use with Fire-Lite's addressable fire alarm control panels, the H365(A) Series point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for emergency personnel to 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.

The H365(A) Series includes fixed temperature, rate-of-rise and high heat fixed temperature detectors that provide effective, intelligent property protection for a variety of applications. Detectors are available for both LiteSpeed™ and CLIP applications as designated.

Features

SLC LOOP:

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

ADDRESSING:

- Addressable by device
- Rotary, decimal addressing
(Refer to the *Fire-Lite panel manuals* for device capacity.)

ARCHITECTURE:

- Designed to meet UL 268 7th Edition
- 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:

- Fixed temperature model (H365(A)) factory preset to 135°F (57°C)
- Rate-of-rise model (H365R(A)), 15°F (8.3°C) per minute
- High-temperature model (H365HT(A)) factory preset to 190°F (88°C)
- 360°-field viewing angle of the two visual alarm indicators, LEDs blink red in Normal condition and turn on steady red in Alarm
- LEDs blink every time the unit is polled

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



OPTIONS:

- Remote LED output connection to optional RA100Z remote LED annunciator

Installation

H365 Series plug-in intelligent thermal detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount detector base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see DF-60059.

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. When using relay or sounder bases, consult the I300(A) installation sheet I56-3626 for device limitations between isolator modules and isolator bases.

Applications

Use thermal detectors for protection of property. For further information, refer to I56-6525, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

Construction

These detectors are constructed of fire-resistant plastic. The H365 Series plug-in intelligent thermal detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each H365 Series detector uses one of the panel's addresses (total limit is panel dependent) on the Fire-LiteJCI Signaling Line Circuit (SLC). 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 H365 Series offers features and performance that represent the latest in thermal detector technology.

Product Line Information

NOTE: “-IV” suffix indicates CLIP and LiteSpeed device.

NOTE: “A” suffix indicates Canadian version.

H365: White, low-profile intelligent 135°F fixed thermal sensor, LiteSpeed only

H365A: Same as H365 but with ULC listing

H365-IV: Ivory, low-profile intelligent 135°F fixed thermal sensor, LiteSpeed and CLIP

H365A-IV: Same as H365-IV but with ULC listing

H365R: White, low-profile intelligent rate-of-rise thermal sensor, LiteSpeed only

H365RA: Same as H365R but with ULC listing

H365R-IV: Ivory, low-profile intelligent rate-of-rise fixed thermal sensor, LiteSpeed and CLIP

H365RA-IV: Same as H365R-IV but with ULC listing

H365HT: White, low-profile intelligent 190°F fixed thermal sensor, LiteSpeed only

H365HTA: Same as H365H but with ULC listing

H365HT-IV: Ivory, low-profile intelligent 190°F thermal sensor, LiteSpeed and CLIP

H365HTA-IV: Same as H365H-IV but with ULC listing

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DF-60059.

B300-6: White, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300-6-IV: Ivory, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300A-6: Same as B300-6, ULC listed

B300A-6-IV: Ivory, 6” standard flanged low-profile mounting base, ULC listed

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-BL: Black, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-IV: Ivory color, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10

B224RB-WH: White, relay base (CSFM: 7300-1653:0216)

B224RB-IV: Ivory, relay base (CSFM: 7300-1653:0216)

B224RBA-WH: White, relay base, ULC listing

B224RBA-IV: Ivory, relay base, ULC listing

B224BI-WH: White, isolator detector base (CSFM: 7300-1653:0216)

B224BI-IV: Ivory isolator detector base (CSFM: 7300-1653:0216)

B224BIA-WH: White, isolator detector base, ULC listing

B224BIA-IV: Ivory isolator detector base, ULC listing

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. (CSFM: 7300-1653:0213)

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. (CSFM: 7300-1653:0213)

B200SA-WH: Same as B200S-WH, ULC listing

B200SA-IV: Same as B200S-IV, ULC listing

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications)

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications, ULC listing)

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SRA-WH: Same as B200SR-WH with, ULC listing

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base

TR300-IV: Ivory, replacement flange for B210LP(A) base

RA100Z(A): Remote LED annunciator. 3-32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300-6(A).

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: Color Kit (includes cover and trim ring), white, 10-pack

CK300-IV: Color Kit (includes cover and trim ring), ivory, 10-pack

CK300-BL: Color Kit (includes cover and trim ring), black, 10-pack

SYSTEM SPECIFICATIONS

Size: 2.0" (5.3 cm) high; base determines diameter

- **B300-6:** 6.1" (15.6 cm) diameter
- **B501:** 4" (10.2 cm) diameter

For a complete list of detector bases see DF-60983

Shipping weight: 3.4 oz. (95 g)

Operating temperature range:

- H365, H365R Series: –4°F to 100°F (–20°C to 38°C)
- H365H Series: –4°F to 150°F (–20°C to 66°C)

Detector spacing: UL approved for 50 ft. (15.24 m) center-to-center, FM approved for 25 x 25 ft. (7.62 x 7.62 m) spacing

Relative humidity: 10% – 93% non-condensing

Thermal ratings: fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

Mounting: B300-6(A) flanged base, included

See “**Product Line Information: Intelligent Bases,**” if using a different base.

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak

Standby current (max. avg.): 200µA @ 24 VDC (one communication every 5 seconds with LED enabled)

Max current: 4.5 mA @ 24 VDC (“ON”)

Listings and Approvals

Listings and approvals below apply to the H365 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.

- UL/ULC Listing: S2517
- FM Approved
- CSFM: 7272-0075:0501

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

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

Country of Origin: Mexico



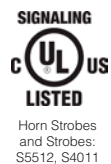
L-Series and L-Series with LED Indoor Selectable Horns, Strobes and Horn Strobes

System Sensor L-Series and L-Series with LED audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- LED technology provides lower current draw
- Digital Voltage Meter (DVM) diagnostic test points for Horn Strobes and Strobes
- Common aesthetics across the L-Series platform
- Standard and compact sizes
- Tamper-resistant construction
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Field-selectable candela settings on ceiling units: 15, 30, 75, 95, 115, 150, and 177
- Rotary switches for candela, tone and volume selections
- Mounting plate provides plug-in design for easier installation and shorting springs to check wiring continuity
- Electrically compatible with legacy SpectrAlert, SpectrAlert Advance and L-series devices
- Synchronization through use of UL approved power supplies that support System Sensor Sync protocol or System Sensor MDL3 Sync Module
- Horns, Strobes and Horn Strobes listed for wall or ceiling use

Agency Listings



The System Sensor L-Series and L-Series with LED

platform offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draw and modern aesthetics. LED lighting technology offers significantly lower current draw compared to older Xenon bulbs across a full candela range. This improves design flexibility for notification appliance circuits (NACs) while also reducing power supply requirements allowing for simpler and lower cost installations.

Flexible design options meet virtually any application requirement: wall or ceiling mount, standard or compact sizes, red or white color choices, bezel kits for alternate markings and languages, and LED color lenses for distinctive visual signaling. In addition, installers can easily adapt devices using field selectable candela, tone and volume settings using rotary switches.

The L-Series and L-Series with LED line is developed to simplify installation. All devices feature plug-in designs with minimal intrusion into the back box, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults. The universal mounting plate includes an onboard shorting spring, so installers can test wiring continuity before the device is installed.

In addition, the System Sensor L-Series with LED notification appliances offer a new diagnostic test point feature that allows you to measure device voltage with a digital voltage meter (DVM) without removing the appliance from the wall or ceiling. The DVM test points are discreetly located on the face of the notification appliance which enable faster troubleshooting and end of line (EOL) voltage checks while greatly reducing the risk of misplacing or damaging appliances during troubleshooting.

L-Series and L-Series with LED Specifications

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, LED Strobes and Horn Strobes	Regulated 24 VDC
Nominal Voltage, Horns	Regulated 12 VDC or regulated 24 DC/FWR
Operating Voltage Range, LED Strobes and Horn Strobes	16 to 33 V (24 V nominal)
Operating Voltage Range, Horns	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG

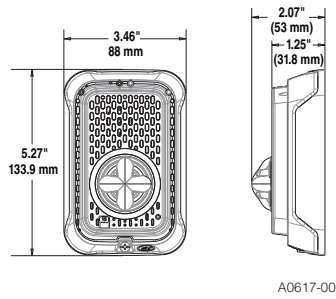
UL/ULC Current Draw Data, Horn Tones, and Sound Output Data

UL/ULC Maximum Strobe Current Draw (mA)			
	Candela Rating	16–33 Volts	
		Wall	Ceiling
Candela Range	15	18	18
	30	22	22
	75	70	70
	95	75	75
	110	85	—
	115	—	90
	135	105	—
	150	—	110
	177	—	115
	185	120	—

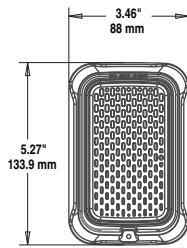
UL/ULC Maximum Horn Current Draw (mA RMS)				
Sound Pattern	dB	8–17.5 Volts	16–33 Volts	
		DC	DC	FWR
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

UL/ULC Maximum Horn Strobe Current Draw (mA) and Sound Output (dBA)													
Current Draw (mA RMS), Horn Strobe, Candela Range (15-185 cd)													Sound Output (dBA)
Switch Pos.	Sound Pattern	Volume Setting	16-33 Volts										16-33V
			15cd	30cd	75cd	95cd	110cd WALL	115cd CEILING	135cd WALL	150cd CEILING	177cd CEILING	185cd WALL	DC
1	Temporal 3	High	35	38	87	92	94	120	189	189	190	190	87
2	Temporal 3	Low	35	38	87	92	94	120	135	135	145	145	79
3	Non-Temporal	High	50	52	87	92	94	120	127	127	135	135	87
4	Non-Temporal	Low	35	38	87	92	94	120	125	125	130	130	79
5	3.1KHz Temporal 3	High	35	38	87	89	91	115	155	155	165	165	86
6	3.1KHz Temporal 3	Low	35	38	87	89	91	115	128	130	135	135	80
7	3.1KHz Non-Temporal	High	40	42	87	89	91	115	125	125	135	135	86
8	3.1KHz Non-Temporal	Low	35	38	87	89	91	115	120	120	130	130	80

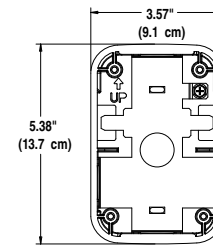
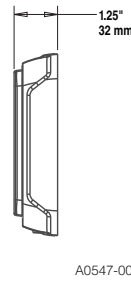
L-Series with LED Dimensions: Wall-Mounted Equipment



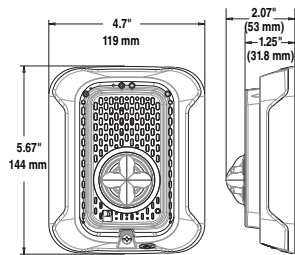
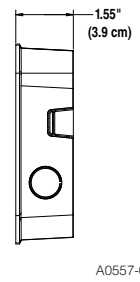
**Compact Strobe, Horn Strobe
for Wall**



Compact Horn

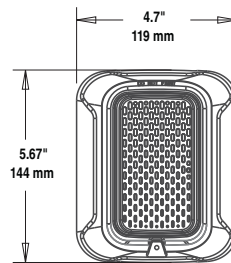


**Compact Surface Mount Back Box
for Walls (SBBGRL, SBBGWL)**

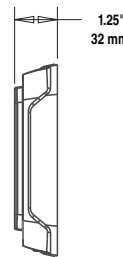


**Strobes, Horn Strobes
for Walls**

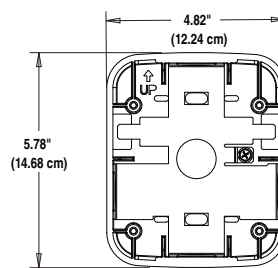
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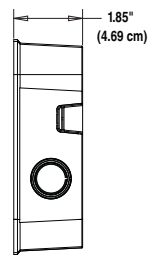
Horn



A0549-00

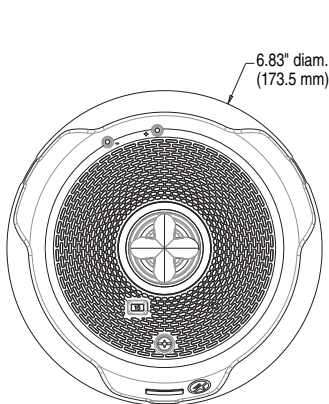


**Surface Mount Back Box
for Walls (SBBRL/SBBWL)**

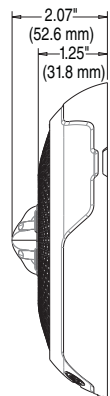


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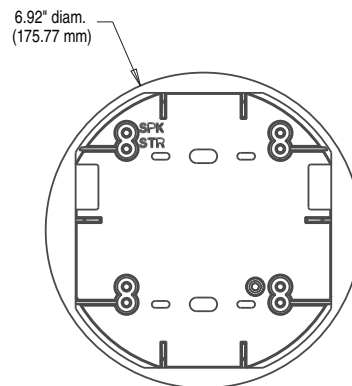
L-Series with LED Dimensions: Ceiling-Mounted Equipment



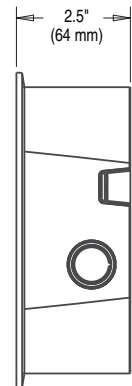
**Strobes and Horn Strobes
for Ceilings**



A0608-00



**Surface Mount Back Box
for Ceilings (SBBCL, SBCWL)**



A0546-00

L-Series with LED: Ordering Information

Model	Description
L-Series with LED Horn Strobes	
P2RLED	2-Wire, Horn Strobe, Wall, Red
P2RLED-B	2-Wire, Horn Strobe, Wall, Red, Bilingual
P2WLED	2-Wire, Horn Strobe, Wall, White
P2WLED-B	2-Wire, Horn Strobe, Wall, White, Bilingual
P2GRLED	2-Wire, Compact Horn Strobe, Wall, Red
P2GRLED-B	2-Wire, Compact Horn Strobe, Wall, Red, Bilingual
P2GWLED	2-Wire, Compact Horn Strobe, Wall, White
P2GWLED-B	2-Wire, Compact Horn Strobe, Wall, White, Bilingual
P2RLED-P	2-Wire, Horn Strobe, Wall, Red, Plain
P2WLED-P	2-Wire, Horn Strobe, Wall, White, Plain
P2RLED-SP	2-Wire, Horn Strobe, Wall, Red, FUEGO
P2WLED-SP	2-Wire, Horn Strobe, Wall, White, FUEGO
PC2RLED	2-Wire, Horn Strobe, Ceiling, Red
PC2RLED-B	2-Wire, Horn Strobe, Ceiling, Red, Bilingual
PC2WLED	2-Wire, Horn Strobe, Ceiling, White
PC2WLED-B	2-Wire, Horn Strobe, Ceiling, White, Bilingual
L-Series with LED Strobes	
SRLED	Strobe, Wall, Red
SRLED-B	Strobe, Wall, Red, Bilingual
SWLED	Strobe, Wall, White
SWLED-B	Strobe, Wall, White, Bilingual
SGRLED	Strobe, Compact, Wall, Red
SGRLED-B	Strobe, Compact, Wall, Red, Bilingual
SGWLED	Strobe, Compact, Wall, White
SGWLED-B	Strobe, Compact, Wall, White, Bilingual
SRLED-P	Strobe, Wall, Red, Plain
SWLED-P	Strobe, Wall, White, Plain
SRLED-SP	Strobe, Wall, Red, FUEGO
SWLED-CLR-ALERT	Strobe, Wall, White, ALERT
SWLED-ALERT	Strobe, Wall, White, ALERT, Amber Lens
SCRLED	Strobe, Ceiling, Red
SCRLED-B	Strobe, Ceiling, Red, Bilingual
SCRLED-P	Strobe, Ceiling, White, Plain
SCWLED	Strobe, Ceiling, White
SCWLED-B	Strobe, Ceiling, White, Bilingual
SCWLED-P	Strobe, Ceiling, White, Plain
SCWLED-CLR-ALERT	Strobe, Ceiling, White, ALERT
L-Series Horns	
HRL*	Horn, Red
HRLA*	Horn, Red, Plain, ULC
HWL*	Horn, White
HWLA*	Horn, White, Plain, ULC
HGRL*	Compact Horn, Red
HGRLA*	Compact Horn, Red, Plain, ULC
HGWL*	Compact Horn, White
HGWLA*	Compact Horn, White, Plain, ULC

Model	Description
LED Lenses	
LENS-A3	Lens LED Amber Wall/Ceiling
LENS-B3	Lens LED Blue Wall/Ceiling
LENS-G3	Lens LED Green Wall/Ceiling
LENS-R3	Lens LED Red Wall/Ceiling
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White
TRC-2	Universal Ceiling Trim Ring, Red
TRC-2W	Universal Ceiling Trim Ring, White
SBBCRL	Ceiling Surface Mount Back Box, Red
SBBCWL	Ceiling Surface Mount Back Box, White
Bezels†	
BZR	Wall Red Bezel Kit
BZW	Wall White Bezel Kit
BZGR	Compact Wall Red Bezel Kit
BZGW	Compact Wall White Bezel Kit
BZRC	Horn Strobe Ceiling Red Bezel Kit
BZWC	Horn Strobe Ceiling White Bezel Kit

Notes for L-Series With LED Horn Strobes and Strobes:

All -P models have a plain housing (no "FIRE" marking on cover).
 All -SP models have "FUEGO" marking on cover.
 All -ALERT models have "ALERT" marking on cover.
 All -B models have "FIRE/FEU" marking on cover for use in Canadian applications.
 Amber lenses are not for use in Canadian applications

Notes for L-Series Horns:

*Horn-only models are listed for wall or ceiling use.

Notes for Bezels:

†Each bezel pack ships in a package of 5.
 Add one of the following extensions for print/language options: -F (FIRE), -AL (ALERT), -EV (EVAC), -AG (AGENT), -P (Plain), -FR (FEU), -PG (FOGO), -SP (FUEGO), -SPE (FUEGO/FIRE).

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 AVDS916-01 • 10/03/2023

MS-9200UDLS(E) Rev 3

Intelligent Addressable FACP with Built-In Communicator



Addressable Fire Alarm Control Panel

General

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

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

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

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

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

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

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

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

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



Features

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

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

NOTE: Only detectors may participate in PAS.

SLC LOOP:

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

NOTIFICATION APPLIANCE CIRCUITS (NACS):

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

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

PROGRAMMING AND SOFTWARE:

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

User Interface

LED INDICATORS

- AC Power (green)
- Fire Alarm (red)

- Supervisory (yellow)
- Alarm Silenced (yellow)
- System Trouble (yellow)
- Maintenance/Presignal (yellow)
- Disabled (yellow)
- Battery Fault (yellow)
- Ground Fault (yellow)

KEYPAD CONTROLS

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

Product Line Information

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

COMPATIBLE ANNUNCIATORS

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

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

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

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

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

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

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

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

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

LITESPEED COMPATIBLE ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

CP355: Addressable low-profile ionization smoke detector.

SD355: Addressable low-profile photoelectric smoke detector.

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

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

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

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

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

AD355(A): Low-profile, intelligent, "Adapt" multi-sensor detector (B350LP base included).

BEAM355: Intelligent beam smoke detector.

BEAM355S: Intelligent beam smoke detector with integral sensitivity test.

D355PL: Innovair Flex low-flow non-relay duct-detector housing. SD355R included.

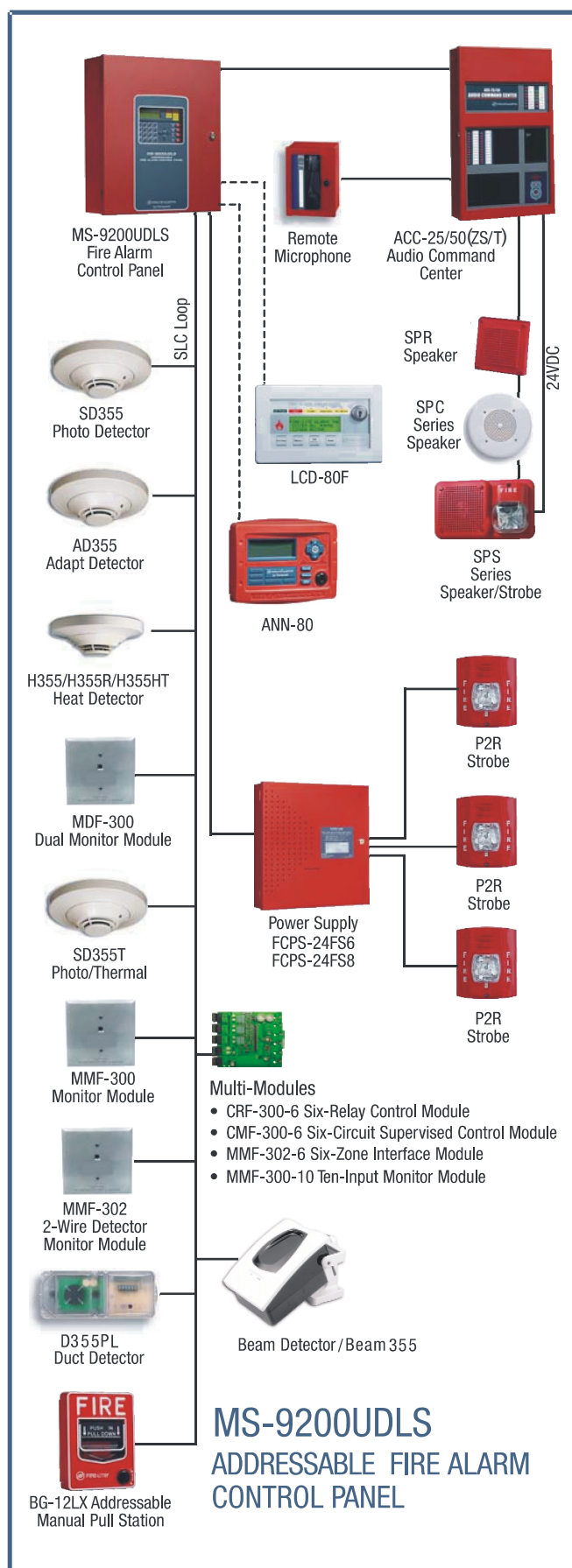
DNRW: Innovair Flex low-flow non-relay duct-detector housing, with NEMA-4 rating. Watertight. (Order SD355R separately.)

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

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

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

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



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

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

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

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

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

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

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

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

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

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

Wiring Requirements

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

SYSTEM SPECIFICATIONS

System Capacity

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

Electrical Specifications

AC Power: MS-9200UDLS Rev 3: 120 VAC, 60 Hz, 3.0 amps. MS-9200UDLS Rev 3E: 240 VAC, 50 Hz, 1.5 amps. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation.

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

Communication Loop: Supervised and power-limited.

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

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

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

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

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

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

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.12" (.30 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x

16.65" (42.29 cm.) wide x 5.20" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

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

Temperature and Humidity Ranges

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

NFPA Standards

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

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

Agency Listings and Approvals

The listings and approvals below apply to the basic MS-9200UDLS Rev 3 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S624
- **FM approved**
- **CSFM:** 7165-0075:0208
- **MEA:** 120-06-E

For ULC-listed version, see DF-60599.

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www.firelite.com

FCPS-24FS6(C/E)

6 Amp, 24 Volt Remote Power Supply



Power Supplies

The **Fire-Lite FCPS-24FS6(C/E)** is a compact, cost-effective, 6-amp remote power supplies with battery charger. The FCPS-24FS6(C/E) may be connected to any 12 or 24 volt fire alarm control panel (FACP) or may stand-alone. Primary applications include notification appliance (bell) circuit (NAC) expansion (to support ADA requirements and NAC synchronization) or auxiliary power to support 24 volt system accessories. The FCPS provides *regulated and filtered* 24 VDC power to four notification appliance circuits configured as either two Class B (Style Y) and Class A (Style Z, with ZNAC-4 option module) or four class B only. Alternately, the four outputs may be configured as any combination of resettable/non-resettable power outputs (optimal for powering four-wire smoke detectors). The FCPS-24FS6(C/E) also contains a battery charger capable of charging up to 7.0 AH batteries. The FCPS-24FS6C is ULC-listed.

NOTE: Unless otherwise specified, the term FCPS-24FS6 used in this document refers to the FCPS-24FS6, FCPS-24FS6C, and FCPS-24FS6E.

Features

- UL-Listed Notification Appliance Circuit (NAC) synchronization using System Sensor®, Wheelock®, or Gentex® "Commander²" appliances
- Operates as a "sync-follower" or as a "sync-generator" (default) See note on page 2.
- Contains two fully-isolated input/control circuits - triggered from FACP NAC (NAC expander mode) or jumped permanently "ON" (stand-alone mode)
- Two Class B (Style Y) or Class A (Style Z, with ZNAC-4 module) NACs (circuits 1 & 3)
- 6-amp full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864)
- 4-amp continuous output in stand-alone mode (UL 1481)
- Compatible with coded inputs; signals passed through
- Optional power-supervision relay (EOLR-1)
- In stand-alone mode, output power circuits may be configured as: resettable, (reset line from FACP required), non-resettable, or a mix of two and two
- Fully regulated and filtered power output - optimal for powering four-wire smoke detectors, annunciators, and other system peripherals requiring regulated/filtered power
- Power-limiting technology meets UL power-limiting requirements
- Form-C normally-closed trouble relay
- Fully supervised power supply, battery, and NACs
- Selectable earth fault detection
- AC trouble report selectable for immediate 2-hour delay
- Works with virtually any UL 864 fire alarm control which utilizes an industry-standard reverse-polarity notification circuit (including unfiltered and unregulated bell power)
- Requires input trigger voltage of 9 - 32 VDC
- Self-contained in compact, locking cabinet - 15"H x 14.5"W x 2.75"D (cm: 38.1H x 36.83W x 6.985D)
- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries
- Battery charger may be disabled via DIP switch for applications requiring larger batteries
- Fixed, clamp-type terminal blocks accommodate up to 12 AWG (3.1mm²) wire



Specifications

Primary (AC) Power:

- **FCPS-24FS6C:** 120 VAC, 60 Hz, 3.2A maximum
- **FCPS-24FS6E:** 240 VAC, 50 Hz, 1.6A maximum
- Wire Size: minimum #14 AWG (2.0mm²) with 600 V insulation

Control Input Circuit:

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

Trouble Contact Rating: 5 A at 24 VDC

Auxiliary Power Output: Special application power 500 mA maximum

Output Circuits:

- +24 VDC filtered, regulated
- **3.0 A maximum for any one circuit**
- Total continuous current for all outputs (stand-alone mode): 4.0 A maximum
- Total short-term current for all outputs (NAC expander mode): 6.0 A maximum

Secondary Power (Battery) Charging Circuit:

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

Applications

Example 1: Expand notification appliance power an additional 6.0 A. Use up to four Class B (Style Y) outputs or four Class A (Style Z) outputs (using ZNAC-4). For example, the FACP notification appliance circuits will activate the FCPS when reverse-polarity activation occurs. Trouble conditions on the FCPS are sensed by the FACP through the notification appliance circuit.

Example 2: Use the FCPS to expand auxiliary regulated 24-volt system power up to 4.0 A. Both resettable and non-resettable power options are available. Resettable outputs are created by connecting the resettable output from the FACP to one or both of the FCPS inputs.

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

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

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

Sync Follower/Generator Note

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strobes accomplish this by monitoring very short timing pulses on the NAC power which are created by the FACP. When installed at the end of a NAC wire run, the FCPS-24FS6 can track (i.e. "follow") the strobe synchronization timing pulses on the existing NAC wire run. This maintains the overall system flash timing of the additional strobes attaches to the FCPS.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync follower," the FCPS' NAC outputs track the strobe synchronization pulses present at the FCPS' sync input terminal. The pulses originate from an upstream FACP or other power supply.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync generator," the FCPS' sync input terminals are not used. Rather, the FCPS is the originator of the strobe synchronization pulses on the FCPS' NAC outputs. In "sync generator" mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

Standards and Codes

The FCPS-24FS6 complies with the following standards:

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

Agency Listings and Approvals

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

- **UL Listed:** S2424, S1287
- **ULC Listed:** S2424
- **CSFM Approved:** 7315-0075:0206
- **MEA:** 387-94E
- **FM Approved**

Ordering Information

FCPS-24FS6: 6.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

FCPS-24FS6C: Same as FCPS-24FS6, ULC-listed

FCPS-24FS6E: 6.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

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

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

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

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

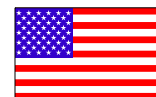
90286: Optional module mounting kit, is required to install an addressable module on the power supply main circuit board

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www.firelite.com



Country of Origin: USA

ANN-80

80-Character Serial LCD Annunciator



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. The 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.

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 (non-condensing) 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

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.

WIRE REQUIREMENTS: POWER CIRCUIT

- 14 to 18 AWG (0.75 - 2.08 mm²) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop from 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.

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.

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.

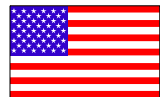
- **UL:** S2424
- **FM approved**
- **CSFM:** 7120-0075:0211
- **MEA:** 442-06-E

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www.firelite.com



Country of Origin: USA

CRF-300(A)

Relay Module



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 μ A direct poll (CLIP mode), 255 μ A 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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BG-12LX

Addressable Manual Pull Station



Addressable Devices

General

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

Features

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

Construction

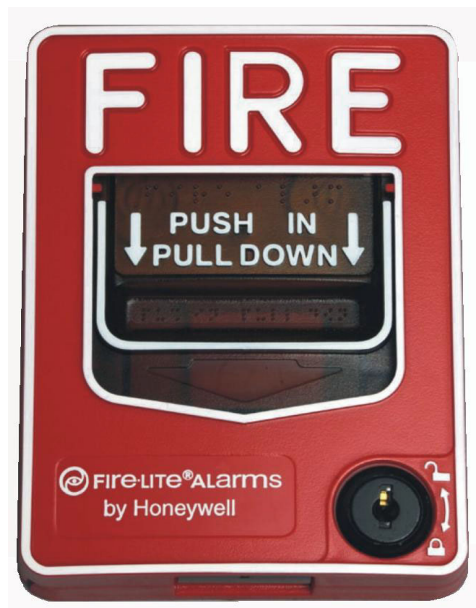
Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC standby current:** 375 μ A.
- **Maximum SLC alarm current:** 5 mA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**

Installation

The BG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the BG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is



FL PullStation.jpg

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

Operation

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

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

Architectural/Engineering Specifications

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

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

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

Product Line Information

BG-12LX: Dual-action addressable pull station. Includes key locking feature. (Listed for Canadian and non-Canadian applications.)

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/ULC Listed:** S711 (listed for Canadian and non-Canadian applications).
- **MEA:** 67-02-E.
- **CSFM:** 7150-0075:0184.
- **FM Approved.**

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

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D365PL(A) and DNRW

Intelligent Non-relay Photoelectric Duct Smoke Detectors



Addressable Devices

The Fire•Lite D365PL(A) intelligent non-relay photoelectric duct smoke detector and DNRW watertight non-relay photoelectric duct smoke detector feature a pivoting housing that fits both square and rectangular footprints capable of mounting to a round or rectangular duct.

The DNRW duct smoke detector, with its NEMA-4 rating, is listed as a watertight, UV resistant enclosure providing protection against falling dirt, rain, and windblown dust, splashing and hose directed water, allowing operators to use the detector in the most extreme environments.

These units sense smoke in the most challenging conditions, operating in airflow speeds of 100 to 4,000 feet per minute (0.5 – 20.32 m/s), temperatures of -4°F – 158°F (-20°C – 70°C), and a humidity range of 0 – 93 percent (non-condensing).

An improved cover design isolates the sensor head, which allows for ease of maintenance. A cover tamper feature indicates a trouble signal for a removed or improperly installed sensor cover. The housing provides a 3/4-inch conduit knockout and ample space to facilitate easy wiring and mounting of a relay module.

The Fire•Lite D365PL(A) duct smoke detectors can be customized to meet local codes and specifications without additional wiring and are compatible with all previous models, including remote test accessories.

Features

- Photoelectric, integrated low-flow technology
- Air velocity rating from 100 ft/min – 4,000 ft/min (0.5 m/s – 20.32 m/s)
- Versatile mounting options: square or rectangular configuration
- Broad ranges for operating temperature (-4°F – 158°F, -20°C – 70°C) and humidity (0% – 93% non-condensing)
- Sampling tube installs from front or back of the detector with no tools required
- Cover tamper signal
- Increased wiring space with a newly added 3/4" conduit knockout
- Easily accessible code wheels on sensor head (Included with D365PL/D365PLA)
- Clear cover for convenient visual inspection (D365PL(A) only)
- Remote testing capability
- Requires com line power only
- Housing accommodates an addressable relay module, sold separately, (CRF-300) for applications requiring a Form-C relay

Specifications

Size: (Rectangle) 14.38 in (37 cm) Length; 5 in (12.7 cm) Width; 2.5 in (6.6 cm) Depth

Size: (Square) 7.75 in (19.7 cm) Length; 9 in (22.9 cm) Width; 2.5 in (6.35 cm) Depth

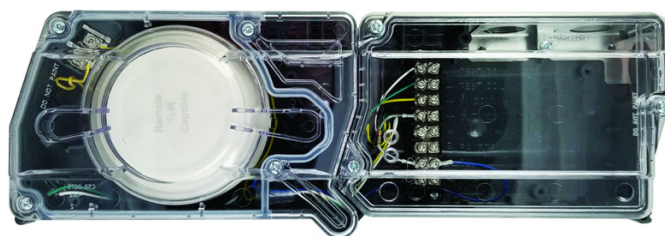
Weight: 1.6 lb (0.73 kg)

Operating Temperature Range: -4°F – 158°F (-20°C – 70°C)

Storage Temperature Range: -22°F – 158°F (-30°C – 70°C)

Operating Humidity Range: 0% – 93% relative humidity (non-condensing)

Air Duct Velocity: 100 – 4,000 ft/min (0.5 – 20.32 m/s)



Accessories

Fire•Lite provides system flexibility with a variety of accessories, including two remote test stations and different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detectors accessories are UL listed.

ACCESSORY CURRENT LOADS AT 24 VDC

Device	Standby	Alarm
RA100Z	0mA	12mA Max
RTS151/RTS151KEY	0mA	12mA Max

Agency Listings and Approvals

Consult product manual for lists of compatible UL-Listed devices. 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:** S1059
- **ULC:** S1059
- **CSFM:** 3242-0075:0508
- **FM approved**

Product Line Information

NOTE: "A" suffix indicates ULC listed model.

D365PL(A): Intelligent non-relay photoelectric low flow smoke detector housing. Includes SD365R(A)-IV detector.

DNRW: Watertight intelligent non-relay photoelectric low flow duct smoke detector housing. Requires photoelectric smoke detector (sold separately). NEMA-4 rated.

SD365R(A)-IV: Remote test capable addressable low-profile photoelectric smoke detector; ivory; supports CLIP and LiteSpeed™ protocols

SD365R(A): Remote test capable addressable low-profile photoelectric smoke detector; white; supports LiteSpeed protocol only

SD365(A)-IV: Addressable low-profile photoelectric smoke detector; ivory; supports CLIP and LiteSpeed protocols

SD365(A): Addressable low-profile photoelectric smoke detector; white; supports LiteSpeed protocol only

SD365T(A): Addressable low-profile photoelectric smoke detector with a built-in 135°F (57°C) fixed-temperature thermal device; white; supports LiteSpeed protocol only

SD365T(A)-IV: Addressable low-profile photoelectric smoke detector with a built-in 135°F (57°C) fixed-temperature thermal device; ivory; supports LiteSpeed protocol only

DUCTCOV: Retrofit D355PL(A) cover for detectors manufactured prior to April 2014

DUCTCOVW: Retrofit DNRW cover for detectors manufactured prior to April 2014

DST1: Metal sampling tube duct width up to 1 ft (0.3 m)

DST1.5: Metal sampling tube duct widths up to 1 ft – 2 ft (0.3 – 0.6 m)

DST3: Metal sampling tube duct widths up to 2 ft – 4 ft (0.6 – 1.2 m)

DST5: Metal sampling tube duct widths up to 4 ft – 8 ft (1.2 – 2.4 m)

DST10: Metal sampling tube duct widths up to 8 ft – 12 ft (2.4 – 3.7 m)

DH400OE-1: Weatherproof enclosure

ETX: Metal exhaust tube duct, width 1 ft (0.3 m)

M02-04-00: Test magnet

P48-21-00: End cap for metal sampling tubes

RA100Z(A): Remote annunciator alarm LED

RTS151: Remote test station

RTS151KEY(-A): Remote test station with key lock

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

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

Country of Origin: Mexico

SD365 Series

Addressable Photoelectric Smoke Detectors



Addressable Devices

The Fire•Lite® Alarms SD365(A), SD365R(A), and SD365HT(A) intelligent plug-in smoke detectors are designed for both performance and aesthetics, and are direct replacements for the SD355 Series. A new modern, sleek, contemporary design and enhanced optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources in accordance with more stringent code standards.

Exclusively for use with Fire•Lite's addressable fire alarm control panels, the SD365(A) Series point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for emergency personnel to 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.

The SD365(A) Series also offers 135°F (57°C) fixed temperature thermal sensing on the SD365T(A) and a remote test capable detector on the SD365R(A) for use with DNR(A)/DNRW duct smoke detector housings.

Features

SLC LOOP:

- Two-wire SLC loop connection
- Unit uses base for wiring
- Compatible with LiteSpeed™ and CLIP protocol systems
- Stable communication technique with noise immunity

ADDRESSING:

- Addressable by device
- Rotary, decimal addressing
(Refer to the *Fire•Lite panel manuals* for device capacity.)

ARCHITECTURE:

- Sleek, low-profile, stylish design
- Unique single-source design to respond quickly and dependably to a broad range of fires
- Integral communications and built-in device-type identification
- Built-in tamper resistant feature
- Remote test feature from the panel
- Walk test with address display (an address on 121 will blink the detector LED: 12-[pause]-1 (*LiteSpeed systems only*))
- Built-in functional test switch activated by external magnet
- Removable cover and insect-resistant screen for simple field cleaning
- Expanded color options

OPERATION:

- Designed to meet UL 268 7th Edition
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level
- LED "blinks" when the unit is polled (communicating with the fire panel) and latches in alarm.
- Low standby current

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

OPTIONS:

- Optional relay, isolator, and sounder bases

Installation

SD365 Series plug-in intelligent smoke detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount detector base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DF-60059*.

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 Class "B" wiring only.

When using relay or sounder bases, consult the *I300(A) installation sheet I56-3626* for device limitations between isolator modules and isolator bases.

Construction

These detectors are constructed of fire-resistant plastic. The SD365 Series plug-in intelligent smoke detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each SD365 Series detector uses one of the panel's addresses (total limit is panel dependent) on the Fire•Lite Signaling Line Circuit (SLC). 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 SD365 Series offers features and performance that represent the latest in smoke detector technology.

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 an Fire•Lite addressable fire alarm control panel. The results of the sensitivity test can be printed for record keeping.

Product Line Information

NOTE: “-IV” suffix indicates CLIP and LiteSpeed device.

NOTE: “A” suffix indicates Canadian version.

SD365: White, low-profile intelligent photoelectric sensor, LiteSpeed only

SD365A: Same as SD365 but with ULC listing

SD365-IV: Ivory, low-profile intelligent photoelectric sensor

SD365A-IV: Same as SD365-IV but with ULC listing

SD365T: White, same as **SD365** but includes a built-in 135°F (57°C) fixed-temperature thermal device, LiteSpeed only

SD365TA: Same as SD365T but with ULC listing

SD365T-IV: Ivory, same as SD365T but includes a built-in 135°F (57°C) fixed-temperature thermal device

SD365TA-IV: Same as SD365T-IV but with ULC listing

SD365R: White, low-profile intelligent photoelectric sensor, remote test capable, for use with DNR/DNRW, LiteSpeed only

SD365RA: Same as SD365R but with ULC listing, for use with DNRA

SD365R-IV: Ivory, low-profile intelligent photoelectric sensor, remote test capable, for use with DNR/DNRW

SD365RA-IV: Same as SD365R-IV but with ULC listing, for use with DNRA

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DF-60059.

B300-6: White, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300-6-IV: Ivory, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300A-6: Same as B300-6, ULC listed

B300A-6-IV: Ivory, 6” standard flanged low-profile mounting base, ULC listed

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-BL: Black, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-IV: Ivory color, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10

B224RB-WH: White, relay base (CSFM: 7300-1653:0216)

B224RB-IV: Ivory, relay base (CSFM: 7300-1653:0216)

B224RBA-WH: White, relay base, ULC listing

B224RBA-IV: Ivory, relay base, ULC listing

B224BI-WH: White, isolator detector base (CSFM: 7300-1653:0216)

B224BI-IV: Ivory isolator detector base (CSFM: 7300-1653:0216)

B224BIA-WH: White, isolator detector base, ULC listing

B224BIA-IV: Ivory isolator detector base, ULC listing

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses LiteSpeed protocol. (CSFM: 7300-1653:0213)

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses LiteSpeed protocol. (CSFM: 7300-1653:0213)

B200SA-WH: Same as B200S-WH, ULC listing

B200SA-IV: Same as B200S-IV, ULC listing

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications)

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications, ULC listing)

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SRA-WH: Same as B200SR-WH with, ULC listing

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base

TR300-IV: Ivory, replacement flange for B210LP(A) base

RA100Z(A): Remote LED annunciator. 3-32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300-6(A).

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: Color Kit (includes cover and trim ring), white, 10-pack

CK300-IV: Color Kit (includes cover and trim ring), ivory, 10-pack

CK300-BL: Color Kit (includes cover and trim ring), black, 10-pack

SYSTEM SPECIFICATIONS

Sensitivity:

- UL Applications: 0.5% to 4.0% per foot obscuration.
- ULC Applications: 0.5% to 3.5% per foot obscuration

Size: 2.0" (51mm) high; base determines diameter

- **B300-6:** 6.1" (15.6 cm) diameter
- **B501:** 4" (10.2 cm) diameter

For a complete list of detector bases see DF-60983

Shipping weight: 3.4 oz. (95 g)

Operating temperature range:

- SD365: 32°F to 122°F (0°C to 50°C)
- SD365T Series: 32°F to 100°F (0°C to 38°C)
- SD365R Series installed in a DNR/DNRW, -4°F to 158°F (-20°C to 70°C)

UL/ULC Listed Velocity Range: 0-4000 ft/min. (1219.2 m/min.), suitable for installation in ducts

Relative humidity: 10% – 93% non-condensing

Thermal ratings: fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak

Standby current (max. avg.): 200µA @ 24 VDC (one communication every 5 seconds with LED enabled)

Max current: 4.5 mA @ 24 VDC ("ON")

DETECTOR SPACING AND APPLICATIONS

Fire•Lite recommends spacing detectors in compliance with NFPA 72. In low airflow applications with smooth ceiling, space detectors 30 feet (9.1m). For specific information regarding detector spacing, placement, and special applications refer to NFPA 72. A *System Smoke Detector Application Guide*, document SPAG91, is available at www.systemsensor.com.

Listings and Approvals

Listings and approvals below apply to the SD365 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.

- UL/ULC Listing: S1059
- FM Approved
- CSFM: 7272-0075:0502

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We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

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

Country of Origin: Mexico

H365 Series

Addressable Heat Detectors



Addressable Devices

The Fire•Lite® Alarms H365(A), H365R(A), and H365HT(A) addressable plug-in thermal detectors are designed for both performance and aesthetics and are a direct replacement for the H355 Series. A new modern, sleek, contemporary design and advanced thermal technologies make the H365(A) Series ideal for both system operation and building design.

Exclusively for use with Fire•Lite's addressable fire alarm control panels, the H365(A) Series point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for emergency personnel to 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.

The H365(A) Series includes fixed temperature, rate-of-rise and high heat fixed temperature detectors that provide effective, intelligent property protection for a variety of applications. Detectors are available for both LiteSpeed™ and CLIP applications as designated.

Features

SLC LOOP:

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

ADDRESSING:

- Addressable by device
- Rotary, decimal addressing
(Refer to the *Fire•Lite panel manuals* for device capacity.)

ARCHITECTURE:

- Designed to meet UL 268 7th Edition
- 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:

- Fixed temperature model (H365(A)) factory preset to 135°F (57°C)
- Rate-of-rise model (H365R(A)), 15°F (8.3°C) per minute
- High-temperature model (H365HT(A)) factory preset to 190°F (88°C)
- 360°-field viewing angle of the two visual alarm indicators, LEDs blink red in Normal condition and turn on steady red in Alarm
- LEDs blink every time the unit is polled

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



OPTIONS:

- Remote LED output connection to optional RA100Z remote LED annunciator

Installation

H365 Series plug-in intelligent thermal detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount detector base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see DF-60059.

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. When using relay or sounder bases, consult the I300(A) installation sheet I56-3626 for device limitations between isolator modules and isolator bases.

Applications

Use thermal detectors for protection of property. For further information, refer to I56-6525, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

Construction

These detectors are constructed of fire-resistant plastic. The H365 Series plug-in intelligent thermal detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each H365 Series detector uses one of the panel's addresses (total limit is panel dependent) on the Fire•LiteJCI Signaling Line Circuit (SLC). 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 H365 Series offers features and performance that represent the latest in thermal detector technology.

Product Line Information

NOTE: “-IV” suffix indicates CLIP and LiteSpeed device.

NOTE: “A” suffix indicates Canadian version.

H365: White, low-profile intelligent 135°F fixed thermal sensor, LiteSpeed only

H365A: Same as H365 but with ULC listing

H365-IV: Ivory, low-profile intelligent 135°F fixed thermal sensor, LiteSpeed and CLIP

H365A-IV: Same as H365-IV but with ULC listing

H365R: White, low-profile intelligent rate-of-rise thermal sensor, LiteSpeed only

H365RA: Same as H365R but with ULC listing

H365R-IV: Ivory, low-profile intelligent rate-of-rise fixed thermal sensor, LiteSpeed and CLIP

H365RA-IV: Same as H365R-IV but with ULC listing

H365HT: White, low-profile intelligent 190°F fixed thermal sensor, LiteSpeed only

H365HTA: Same as H365H but with ULC listing

H365HT-IV: Ivory, low-profile intelligent 190°F thermal sensor, LiteSpeed and CLIP

H365HTA-IV: Same as H365H-IV but with ULC listing

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DF-60059.

B300-6: White, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300-6-IV: Ivory, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300A-6: Same as B300-6, ULC listed

B300A-6-IV: Ivory, 6” standard flanged low-profile mounting base, ULC listed

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-BL: Black, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-IV: Ivory color, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10

B224RB-WH: White, relay base (CSFM: 7300-1653:0216)

B224RB-IV: Ivory, relay base (CSFM: 7300-1653:0216)

B224RBA-WH: White, relay base, ULC listing

B224RBA-IV: Ivory, relay base, ULC listing

B224BI-WH: White, isolator detector base (CSFM: 7300-1653:0216)

B224BI-IV: Ivory isolator detector base (CSFM: 7300-1653:0216)

B224BIA-WH: White, isolator detector base, ULC listing

B224BIA-IV: Ivory isolator detector base, ULC listing

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. (CSFM: 7300-1653:0213)

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. (CSFM: 7300-1653:0213)

B200SA-WH: Same as B200S-WH, ULC listing

B200SA-IV: Same as B200S-IV, ULC listing

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications)

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications, ULC listing)

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SRA-WH: Same as B200SR-WH with, ULC listing

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base

TR300-IV: Ivory, replacement flange for B210LP(A) base

RA100Z(A): Remote LED annunciator. 3-32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300-6(A).

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: Color Kit (includes cover and trim ring), white, 10-pack

CK300-IV: Color Kit (includes cover and trim ring), ivory, 10-pack

CK300-BL: Color Kit (includes cover and trim ring), black, 10-pack

SYSTEM SPECIFICATIONS

Size: 2.0" (5.3 cm) high; base determines diameter

- **B300-6:** 6.1" (15.6 cm) diameter
- **B501:** 4" (10.2 cm) diameter

For a complete list of detector bases see DF-60983

Shipping weight: 3.4 oz. (95 g)

Operating temperature range:

- H365, H365R Series: –4°F to 100°F (–20°C to 38°C)
- H365H Series: –4°F to 150°F (–20°C to 66°C)

Detector spacing: UL approved for 50 ft. (15.24 m) center-to-center, FM approved for 25 x 25 ft. (7.62 x 7.62 m) spacing

Relative humidity: 10% – 93% non-condensing

Thermal ratings: fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

Mounting: B300-6(A) flanged base, included

See “**Product Line Information: Intelligent Bases,**” if using a different base.

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak

Standby current (max. avg.): 200µA @ 24 VDC (one communication every 5 seconds with LED enabled)

Max current: 4.5 mA @ 24 VDC (“ON”)

Listings and Approvals

Listings and approvals below apply to the H365 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.

- UL/ULC Listing: S2517
- FM Approved
- CSFM: 7272-0075:0501

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We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

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

Country of Origin: Mexico

RTS151 Remote Test Station

SPECIFICATIONS

Dimensions:	4.8" H × 2.90" W × 1.4" D
Weight:	.16 lbs.
Power Requirements	
Alarm LED:	2.8 – 32 VDC, 10 mA max.
Coil Current:	95 mA max.
Test Switch:	10 VA @ 32 VDC
Reset Switch:	10 VA @ 32 VDC
Alarm Response Time:	40 sec. max.
Temperature:	-10°C to 60°C (14°F to 140°F)
Humidity:	95% RH Non-condensing Max
Listing:	UL, FM, CE

NOTE: RTS151 replaces RTS451.

NOTICE: This manual shall be left with the owner/user of this equipment.

NOTE: A test coil is required only for use with D2/DNR/DH400/DH500 models. For D2 models order part #DCoil. For the DH400/500 models order part is #Coil.

GENERAL INFORMATION

System Sensor's RTS151 is an automatic fire detector accessory designed to test a remotely located detector. Consult detector installation instructions for additional information.

The National Fire Protection Association has published codes, standards, and recommended practices for the installation and use of the above product. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local authority having jurisdiction.

RTS151 CONTENTS

- 1 RTS151 remote test station
- 1 screw pack (2 mounting screws)
- 1 M02-04 test magnet

WIRING OF RTS151

Consult the appropriate detector installation instructions for the applicable wiring diagram. The RTS151 mounts to a single gang box (2 1/2" minimum depth), or directly to the wall or ceiling.

See Figure 8 for wiring diagram of RTS151 with Duct Smoke Detectors.

In Canadian applications, the RTS151 is intended to be located in the same room as the smoke detector and within 60 feet of the unit.

OPERATION

Test Function

Place and hold the painted side of the magnet to the test location RTS151.

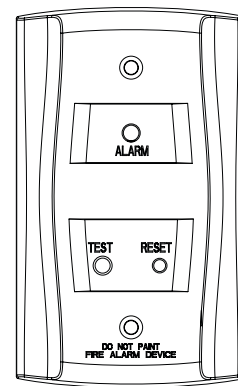
Alarm Indication

With the magnet in place some time will elapse (40 sec. maximum) depending on the detector type, before the alarm indicating LED will light.

Reset Function

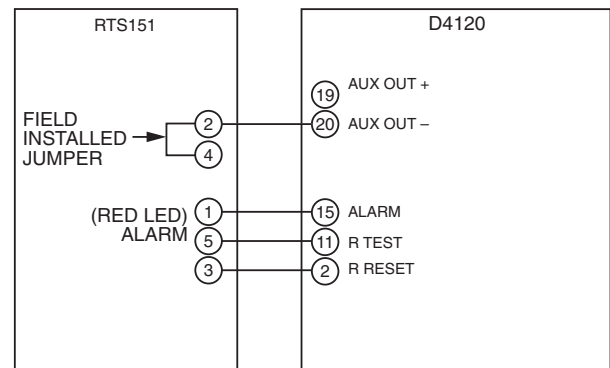
Gently insert a 1/8" maximum diameter tool into the hole until it stops and LED turns off. The RTS151 is capable of resetting only certain System Sensor models of detectors. Refer to detector installation instructions for additional information.

FIGURE 1. RTS151 REMOTE TEST STATION:



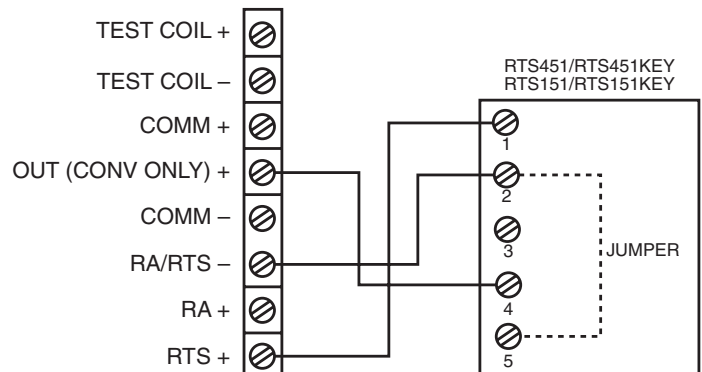
H0196-01

FIGURE 2. WIRING DIAGRAM FOR RTS151 TO D4120 4-WIRE DUCT SMOKE DETECTOR:



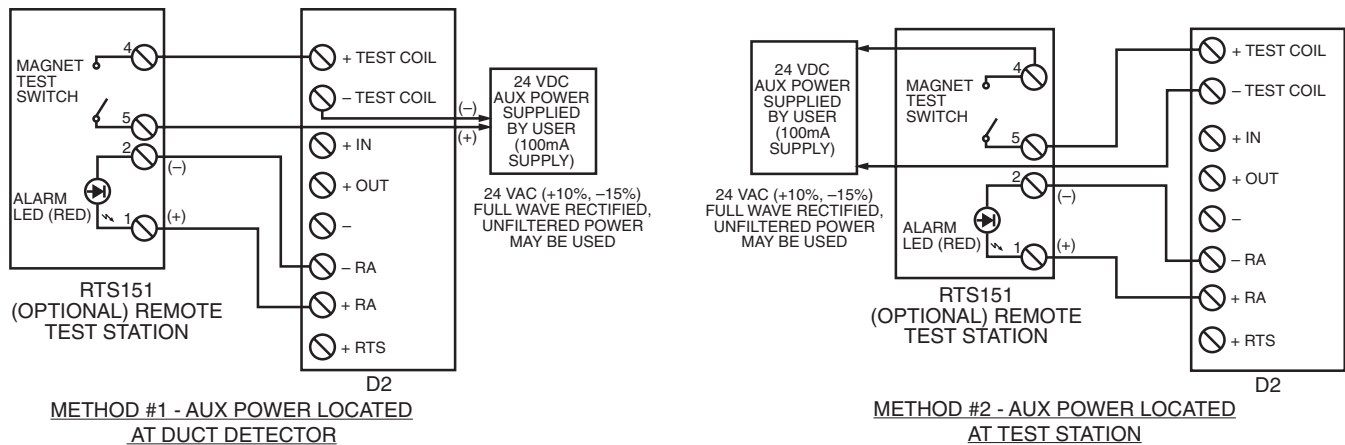
H0582-20

FIGURE 3. WIRING DIAGRAM FOR RTS151 TO DNR 2-WIRE DUCT SMOKE DETECTOR WITH REMOTE TEST CAPABLE HEAD:



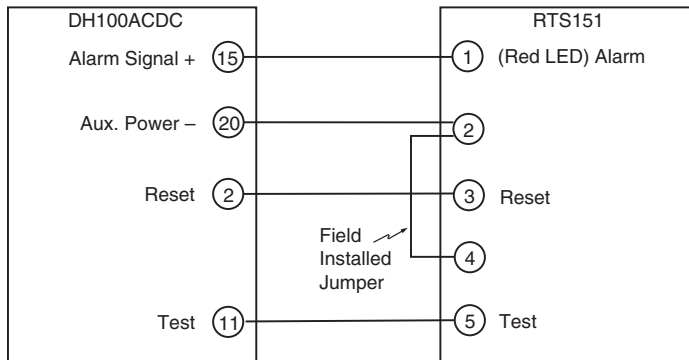
H0633-00

FIGURE 4. WIRING DIAGRAM FOR RTS151 TO D2-2WIRE DUCT SMOKE DETECTOR:



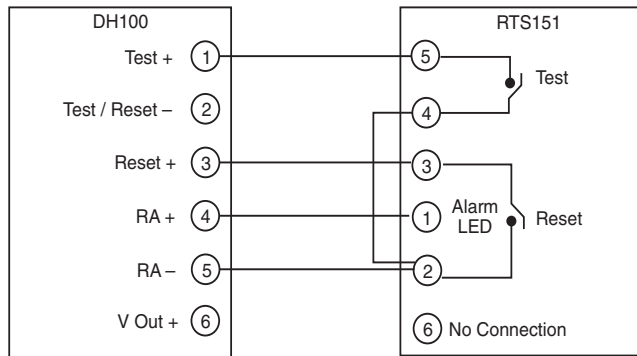
H0612-11

FIGURE 5. WIRING DIAGRAM FOR RTS151 TO DH100ACDC 4-WIRE DUCT SMOKE DETECTOR:



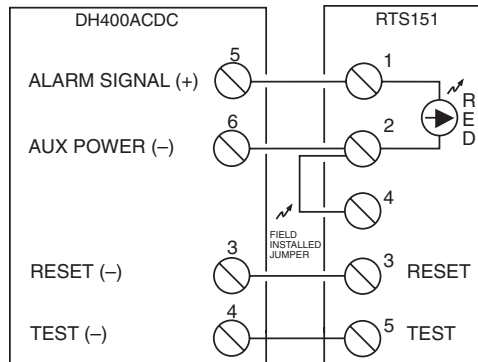
H0197-01

FIGURE 6. WIRING DIAGRAM FOR RTS151 TO DH100 2-WIRE DUCT SMOKE DETECTOR:



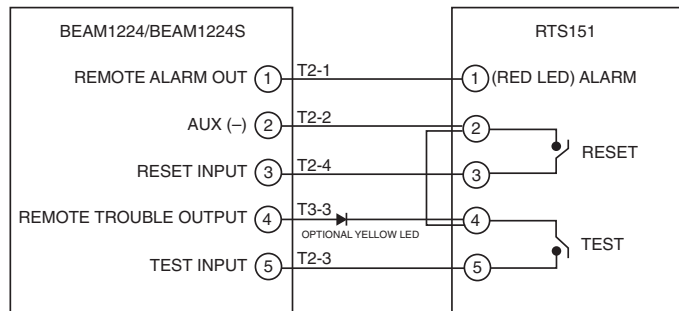
H0198-04

FIGURE 7. WIRING DIAGRAM FOR RTS151 TO DH400ACDC DUCT SMOKE DETECTOR:



H0149-02

FIGURE 8. WIRING DIAGRAM FOR RTS151 TO BEAM1224/BEAM1224S SMOKE DETECTOR:



H0586-03

THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed product to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for the enclosed product. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the replacement of any part of the product which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to Honeywell, 12220 Rojas Drive, Suite 700, El Paso, TX 79936, USA.

Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



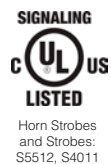
L-Series and L-Series with LED Indoor Selectable Horns, Strobes and Horn Strobes

System Sensor L-Series and L-Series with LED audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- LED technology provides lower current draw
- Digital Voltage Meter (DVM) diagnostic test points for Horn Strobes and Strobes
- Common aesthetics across the L-Series platform
- Standard and compact sizes
- Tamper-resistant construction
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Field-selectable candela settings on ceiling units: 15, 30, 75, 95, 115, 150, and 177
- Rotary switches for candela, tone and volume selections
- Mounting plate provides plug-in design for easier installation and shorting springs to check wiring continuity
- Electrically compatible with legacy SpectrAlert, SpectrAlert Advance and L-series devices
- Synchronization through use of UL approved power supplies that support System Sensor Sync protocol or System Sensor MDL3 Sync Module
- Horns, Strobes and Horn Strobes listed for wall or ceiling use

Agency Listings



The System Sensor L-Series and L-Series with LED

platform offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draw and modern aesthetics. LED lighting technology offers significantly lower current draw compared to older Xenon bulbs across a full candela range. This improves design flexibility for notification appliance circuits (NACs) while also reducing power supply requirements allowing for simpler and lower cost installations.

Flexible design options meet virtually any application requirement: wall or ceiling mount, standard or compact sizes, red or white color choices, bezel kits for alternate markings and languages, and LED color lenses for distinctive visual signaling. In addition, installers can easily adapt devices using field selectable candela, tone and volume settings using rotary switches.

The L-Series and L-Series with LED line is developed to simplify installation. All devices feature plug-in designs with minimal intrusion into the back box, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults. The universal mounting plate includes an onboard shorting spring, so installers can test wiring continuity before the device is installed.

In addition, the System Sensor L-Series with LED notification appliances offer a new diagnostic test point feature that allows you to measure device voltage with a digital voltage meter (DVM) without removing the appliance from the wall or ceiling. The DVM test points are discreetly located on the face of the notification appliance which enable faster troubleshooting and end of line (EOL) voltage checks while greatly reducing the risk of misplacing or damaging appliances during troubleshooting.

L-Series and L-Series with LED Specifications

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, LED Strobes and Horn Strobes	Regulated 24 VDC
Nominal Voltage, Horns	Regulated 12 VDC or regulated 24 DC/FWR
Operating Voltage Range, LED Strobes and Horn Strobes	16 to 33 V (24 V nominal)
Operating Voltage Range, Horns	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG

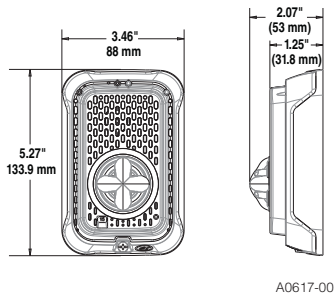
UL/ULC Current Draw Data, Horn Tones, and Sound Output Data

UL/ULC Maximum Strobe Current Draw (mA)			
Candela Range	Candela Rating	16–33 Volts	
		Wall	Ceiling
	15	18	18
	30	22	22
	75	70	70
	95	75	75
	110	85	—
	115	—	90
	135	105	—
	150	—	110
	177	—	115
	185	120	—

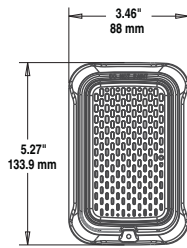
UL/ULC Maximum Horn Current Draw (mA RMS)				
Sound Pattern	dB	8–17.5 Volts	16–33 Volts	
		DC	DC	FWR
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

UL/ULC Maximum Horn Strobe Current Draw (mA) and Sound Output (dBA)													
Current Draw (mA RMS), Horn Strobe, Candela Range (15-185 cd)													Sound Output (dBA)
Switch Pos.	Sound Pattern	Volume Setting	16-33 Volts										16-33V
			15cd	30cd	75cd	95cd	110cd WALL	115cd CEILING	135cd WALL	150cd CEILING	177cd CEILING	185cd WALL	DC
1	Temporal 3	High	35	38	87	92	94	120	189	189	190	190	87
2	Temporal 3	Low	35	38	87	92	94	120	135	135	145	145	79
3	Non-Temporal	High	50	52	87	92	94	120	127	127	135	135	87
4	Non-Temporal	Low	35	38	87	92	94	120	125	125	130	130	79
5	3.1KHz Temporal 3	High	35	38	87	89	91	115	155	155	165	165	86
6	3.1KHz Temporal 3	Low	35	38	87	89	91	115	128	130	135	135	80
7	3.1KHz Non-Temporal	High	40	42	87	89	91	115	125	125	135	135	86
8	3.1KHz Non-Temporal	Low	35	38	87	89	91	115	120	120	130	130	80

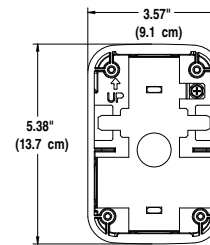
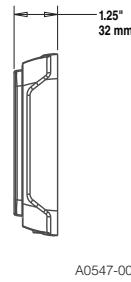
L-Series with LED Dimensions: Wall-Mounted Equipment



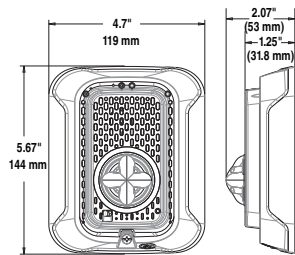
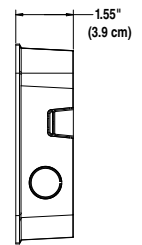
**Compact Strobe, Horn Strobe
for Wall**



Compact Horn

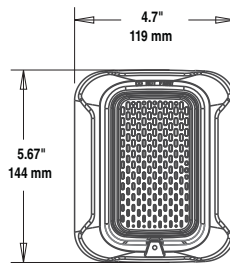


**Compact Surface Mount Back Box
for Walls (SBBGRL, SBBGWL)**

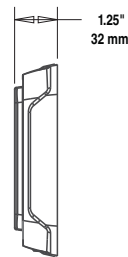


**Strobes, Horn Strobes
for Walls**

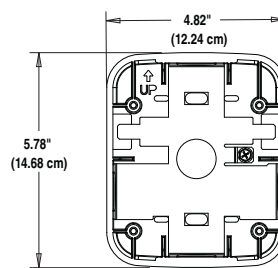
A0613-00



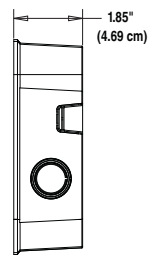
Horn



A0549-00

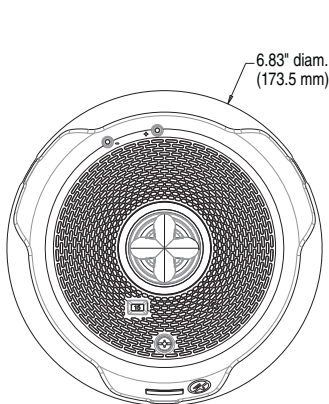


**Surface Mount Back Box
for Walls (SBBRL/SBBWL)**

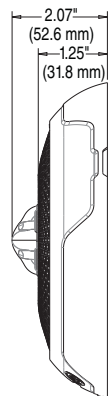


A0554-01

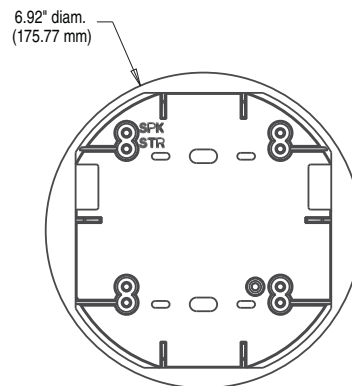
L-Series with LED Dimensions: Ceiling-Mounted Equipment



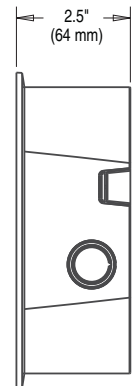
**Strobes and Horn Strobes
for Ceilings**



A0608-00



**Surface Mount Back Box
for Ceilings (SBBCRL, SBCWL)**



A0546-00

L-Series with LED: Ordering Information

Model	Description
L-Series with LED Horn Strobes	
P2RLED	2-Wire, Horn Strobe, Wall, Red
P2RLED-B	2-Wire, Horn Strobe, Wall, Red, Bilingual
P2WLED	2-Wire, Horn Strobe, Wall, White
P2WLED-B	2-Wire, Horn Strobe, Wall, White, Bilingual
P2GRLED	2-Wire, Compact Horn Strobe, Wall, Red
P2GRLED-B	2-Wire, Compact Horn Strobe, Wall, Red, Bilingual
P2GWLED	2-Wire, Compact Horn Strobe, Wall, White
P2GWLED-B	2-Wire, Compact Horn Strobe, Wall, White, Bilingual
P2RLED-P	2-Wire, Horn Strobe, Wall, Red, Plain
P2WLED-P	2-Wire, Horn Strobe, Wall, White, Plain
P2RLED-SP	2-Wire, Horn Strobe, Wall, Red, FUEGO
P2WLED-SP	2-Wire, Horn Strobe, Wall, White, FUEGO
PC2RLED	2-Wire, Horn Strobe, Ceiling, Red
PC2RLED-B	2-Wire, Horn Strobe, Ceiling, Red, Bilingual
PC2WLED	2-Wire, Horn Strobe, Ceiling, White
PC2WLED-B	2-Wire, Horn Strobe, Ceiling, White, Bilingual
L-Series with LED Strobes	
SRLED	Strobe, Wall, Red
SRLED-B	Strobe, Wall, Red, Bilingual
SWLED	Strobe, Wall, White
SWLED-B	Strobe, Wall, White, Bilingual
SGRLED	Strobe, Compact, Wall, Red
SGRLED-B	Strobe, Compact, Wall, Red, Bilingual
SGWLED	Strobe, Compact, Wall, White
SGWLED-B	Strobe, Compact, Wall, White, Bilingual
SRLED-P	Strobe, Wall, Red, Plain
SWLED-P	Strobe, Wall, White, Plain
SRLED-SP	Strobe, Wall, Red, FUEGO
SWLED-CLR-ALERT	Strobe, Wall, White, ALERT
SWLED-ALERT	Strobe, Wall, White, ALERT, Amber Lens
SCRLED	Strobe, Ceiling, Red
SCRLED-B	Strobe, Ceiling, Red, Bilingual
SCRLED-P	Strobe, Ceiling, White, Plain
SCWLED	Strobe, Ceiling, White
SCWLED-B	Strobe, Ceiling, White, Bilingual
SCWLED-P	Strobe, Ceiling, White, Plain
SCWLED-CLR-ALERT	Strobe, Ceiling, White, ALERT
L-Series Horns	
HRL*	Horn, Red
HRLA*	Horn, Red, Plain, ULC
HWL*	Horn, White
HWLA*	Horn, White, Plain, ULC
HGRL*	Compact Horn, Red
HGRLA*	Compact Horn, Red, Plain, ULC
HGWL*	Compact Horn, White
HGWLA*	Compact Horn, White, Plain, ULC

Model	Description
LED Lenses	
LENS-A3	Lens LED Amber Wall/Ceiling
LENS-B3	Lens LED Blue Wall/Ceiling
LENS-G3	Lens LED Green Wall/Ceiling
LENS-R3	Lens LED Red Wall/Ceiling
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White
TRC-2	Universal Ceiling Trim Ring, Red
TRC-2W	Universal Ceiling Trim Ring, White
SBBCRL	Ceiling Surface Mount Back Box, Red
SBBCWL	Ceiling Surface Mount Back Box, White
Bezels†	
BZR	Wall Red Bezel Kit
BZW	Wall White Bezel Kit
BZGR	Compact Wall Red Bezel Kit
BZGW	Compact Wall White Bezel Kit
BZRC	Horn Strobe Ceiling Red Bezel Kit
BZWC	Horn Strobe Ceiling White Bezel Kit

Notes for L-Series With LED Horn Strobes and Strobes:

All -P models have a plain housing (no "FIRE" marking on cover).
 All -SP models have "FUEGO" marking on cover.
 All -ALERT models have "ALERT" marking on cover.
 All -B models have "FIRE/FEU" marking on cover for use in Canadian applications.
 Amber lenses are not for use in Canadian applications

Notes for L-Series Horns:

*Horn-only models are listed for wall or ceiling use.

Notes for Bezels:

†Each bezel pack ships in a package of 5.
 Add one of the following extensions for print/language options: -F (FIRE), -AL (ALERT), -EV (EVAC), -AG (AGENT), -P (Plain), -FR (FEU), -PG (FOGO), -SP (FUEGO), -SPE (FUEGO/FIRE).

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 for current product information, including the latest version of this data sheet.
 AVDS916-01 • 10/03/2023



Outdoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

SpectrAlert® Advance outdoor audible visible products are rich with features that cut installation times and maximize profits.

Features

- Weatherproof per NEMA 4X, IP56
- Listed to UL 1638 (strobe) and UL 464 (horn)
- Compatible with System Sensor synchronization protocol and legacy SpectrAlert products
- Field-selectable candela settings: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Rotary switch for horn tone and three volume selections
- Horn rated at 88+ dBA at 16 volts
- Rated from -40°F to 151°F
- Universal mounting plate with an onboard shorting spring that tests wiring continuity before devices are installed
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Listed for ceiling or wall mounting



SPECTRAlert®
ADVANCE
from System Sensor

SpectrAlert Advance offers the broadest line of outdoor horns, strobes, and horn strobes in the industry. With white or red plastic housings, wall or ceiling mounting options, and plain or FIRE-printed devices, SpectrAlert Advance can meet virtually any application requirement, including indoor, outdoor, wet, and dry applications in temperatures from -40°F to 151°F.

Like the entire SpectrAlert Advance line, outdoor horns, strobes, and horn strobes for wall applications include a variety of features that increase application flexibility and simplify installation. First, field-selectable settings, including candela, automatic selection of 12- or 24-volt operation, horn tones, and three volume options enable installers to easily adapt devices to meet requirements.

Next, SpectrAlert Advance devices use a universal mounting plate for both wall and ceiling applications. This mounting plate includes an onboard shorting spring that ensures wiring continuity before devices are installed, so installers can verify proper wiring without mounting the devices and exposing them to potential construction damage. Once the plates are mounted, all SpectrAlert Advance devices utilize a plug-in design with a single captured screw to speed installation and virtually eliminate costly ground faults.

Outdoor devices ship with weatherproof plastic back boxes (metal back boxes are available separately) that accommodate in-and-out wiring for daisy chaining devices. Plastic back boxes feature removable side flanges and improved resistance to saltwater corrosion. Knock-outs located on the back eliminate the need to drill holes for screw-in mounting. Plastic and metal weatherproof back boxes come with 3/4-inch top and bottom conduit entries and 3/4-inch knock-outs at the back. A screw-in NPT plug with an O-ring gasket for a watertight seal is included with each back box.

Agency Listings



S4011 (chimes, horn strobes, horns)
S3593 (outdoor and alert strobes)



3023572



MEA452-05-E



7300-1653:187 (outdoor strobes)
7125-1653:188 (horn strobes,
chime strobes)
7135-1653:189 (horns, chimes)

SpectrAlert Advance Outdoor Horn, Strobe, and Horn Strobe Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance outdoor horns, strobes, and horn strobes shall mount to a weatherproof 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 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Outdoor SpectrAlert Advance products shall operate between –40 and 151 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. The strobe must be installed with its weatherproof back box in order to remain outdoor approved per UL. The strobe shall be suitable for use in wet environments.

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 shall be set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn or horn strobe models shall operate on a coded or non-coded power supply. The horn strobe must be installed with its weatherproof back box in order to remain outdoor approved per UL. The horn strobe shall be suitable for use in wet environments.

Physical/Electrical Specifications

Operating Temperature	–40°F to 151°F (–40°C to 66°C)
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)
Operating Voltage with MLD3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6" L x 4.7" W x 2.5" D (142 mm L x 119 mm W x 64 mm D)
Horn Dimensions	5.6" L x 4.7" W x 1.3" D (142 mm L x 119 mm W x 33 mm D)
Wall-Mount Weatherproof Back Box Dimensions (SA-WBB)	5.7" L x 5.1" W x 2.0" D (145 mm L x 130 mm W x 51 mm D)

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. 2. P, S, PC, and SC products will operate at 12 V nominal only for 15 and 15/75 cd.

UL Current Draw Data

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

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, Standard Candela Range (15–115 cd)									
DC Input	8–17.5 Volts			16–33 Volts					
	15	15/75	15	15/75	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)									
DC Input	16–33 Volts				FWR Input	16–33 Volts			
	135	150	177	185		135	150	177	185
Temporal High	245	259	290	297	Temporal High	215	231	258	265
Temporal Medium	235	253	288	297	Temporal Medium	209	224	250	258
Temporal Low	232	251	282	292	Temporal Low	207	221	248	256
Non-Temporal High	255	270	303	309	Non-Temporal High	233	248	275	281
Non-Temporal Medium	242	259	293	299	Non-Temporal Medium	219	232	262	267
Non-Temporal Low	238	254	291	295	Non-Temporal Low	214	229	256	262

Candela Derating

For K series products used at low temperatures, listed candela ratings must be reduced in accordance with this table.

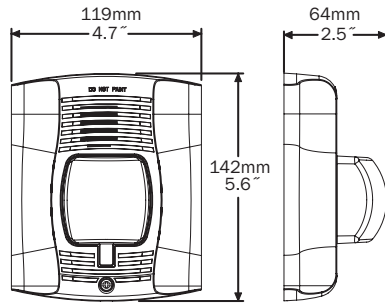
Strobe Output (cd)	
Listed Candela	Candela rating at –40°F
15	Do not use below 32°F
15/75	
30	
75	
95	44
110	70
115	110
135	135
150	150
177	177
185	185

Horn Tones and Sound Output Data

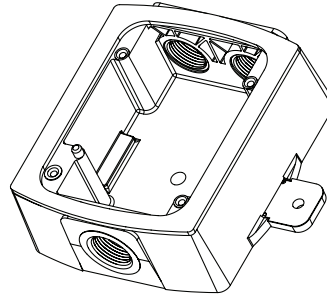
Horn and Horn Strobe Output (dBA)										
Switch Position	Sound Pattern	dB	8–17.5 Volts		16–33 Volts		24-Volt Nominal			
							Reverberant		Anechoic	
			DC	FWR	DC	FWR	DC	FWR	DC	FWR
1	Temporal	High	78	78	84	84	88	88	99	98
2	Temporal	Medium	74	74	80	80	86	86	96	96
3	Temporal	Low	71	73	76	76	83	80	94	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.

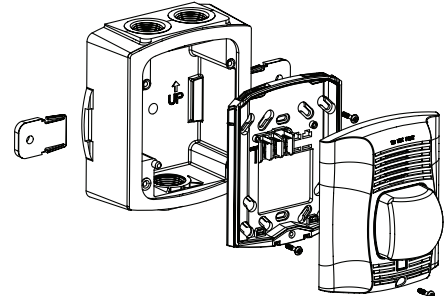
SpectrAlert Advance Diagrams



Wall-Mount Horn Strobes



Wall Plastic Weatherproof Back Box



Wall-Mount Horn Strobe with Plastic Weatherproof Back Box

SpectrAlert Advance Ordering Information

Model	Description	
Red	White	
Wall Horn Strobes		
P2RK	P2WK	2-Wire Horn Strobe, Standard cd, Outdoor (includes plastic weatherproof back box)
P2RK-P	P2WK-P	2-Wire Horn Strobe, Standard cd, Outdoor, Plain (includes plastic weatherproof back box)
P2RK-R	P2WK-R	2-Wire Horn Strobe, Standard cd, Outdoor (does not include plastic weatherproof back box)
P2RHK	P2WHK	2-Wire Horn Strobe, High cd, Outdoor (includes plastic weatherproof back box)
P2RHK-P	P2WHK-P	2-Wire Horn Strobe, High cd, Outdoor, Plain (includes plastic weatherproof back box)
P2RHK-R	P2WHK-R	2-Wire Horn Strobe, High cd, Outdoor (does not include plastic weatherproof back box)
P4RK	P4WK	4-Wire Horn Strobe, Standard cd, Outdoor (includes plastic weatherproof back box)
P4RK-R	—	4-Wire Horn Strobe, Standard cd, Outdoor (does not include plastic weatherproof back box)
P2RHK-120	—	2-Wire Horn Strobe, High cd, Outdoor, 120 V (includes plastic weatherproof back box)
Wall Strobes		
SRK	SWK	Strobe, Standard cd, Outdoor (includes plastic weatherproof back box)
SRK-P	SWK-P	Strobe, Standard cd, Outdoor, Plain (includes plastic weatherproof back box)
SRK-R	SWK-R	Strobe, Standard cd, Outdoor (does not include plastic weatherproof back box)
SRHK	SWHK	Strobe, High cd, Outdoor (includes plastic weatherproof back box)
SRHK-P	SWHK-P	Strobe, High cd, Outdoor, Plain (includes plastic weatherproof back box)
SRHK-R	SWHK-R	Strobe, High cd, Outdoor (does not include plastic weatherproof back box)
Horns		
HRK	—	Horn, Red, Outdoor (includes plastic weatherproof back box)
HRK-R	—	Horn, Red, Outdoor (does not include plastic weatherproof back box)
Accessories		
SA-WBB	SA-WBBW	Metal Weatherproof Back Box
WTP	WTPW	Metal Weatherproof Outdoor Flush-mounting Plate

Notes:

All -P models have a plain housing (no "FIRE" marking on cover). All -R models require metal weatherproof outdoor flush mounting plate or a metal weatherproof outdoor back box (order separately). "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. **When replacing standard outdoor units both the device and back box must be replaced.**



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AVDS115-02 • 12/3/2019



Indoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

System Sensor L-Series audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- Updated Modern Aesthetics
- Small profile devices for Horns and Horn Strobes
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and two volume selections
- Mounting plate for all standard and all compact wall units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically compatible with legacy SpectrAlert and SpectrAlert Advance devices
- Compatible with MDL3 sync module
- Strobes and Horn Strobes listed for wall mounting only
- Horns listed for wall or ceiling use

Agency Listings



The System Sensor L-Series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draws and modern aesthetics. With white and red plastic housings, standard and compact devices, and plain, FIRE, and FUEGO-printed devices, System Sensor L-Series can meet virtually any application requirement.

The L-Series line of wall-mount 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, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults.

To further simplify installation and protect devices from construction damage, the L-Series utilizes a universal mounting plate for all models with an onboard shorting spring, so installers can test wiring continuity before the device is installed.

Installers can also easily adapt devices to suit a wide range of application requirements using field-selectable candela settings, automatic selection of 12- or 24-volt operation, and a rotary switch for horn tones with two volume selections.

L-Series Specifications

Architect/Engineer Specifications

General

L-Series standard horns, strobes, and horn strobes shall mount to a standard 2 x 4 x 1⁷/₈-inch back box, 4 x 4 x 1¹/₂-inch back box, 4-inch octagon back box, or double-gang back box. L-Series compact products shall mount to a single-gang 2 x 4 x 1⁷/₈-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products for all standard models and a separate universal mounting plate shall be used for mounting wall compact models. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, L-Series 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 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Indoor L-Series 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, 30, 75, 95, 110, 135, and 185.

Strobe

The strobe shall be a System Sensor L-Series 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 L-Series 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 two 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. 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 MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize 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 4¹¹/₁₆ x 4¹¹/₁₆ x 2¹/₈-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical/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 or regulated 24 DC/FWR ¹
Operating Voltage Range²	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Operating Voltage Range MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6" L x 4.7" W x 1.91" D (143 mm L x 119 mm W x 49 mm D)
Compact Wall-Mount Dimensions (including lens)	5.26" L x 3.46" W x 1.91" D (133 mm L x 88 mm W x 49 mm D)
Horn Dimensions	5.6" L x 4.7" W x 1.25" D (143 mm L x 119 mm W x 32 mm D)
Compact Horn Dimensions	5.25" L x 3.45" W x 1.25" D (133 mm L x 88 mm W x 32 mm D)

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. Strobe products will operate at 12 V nominal only for 15 cd and 30 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)				
	Candela	8–17.5 Volts	16–33 Volts	FWR
		DC	DC	
Candela Range	15	88	43	60
	30	143	63	83
	75	N/A	107	136
	95	N/A	121	155
	110	N/A	148	179
	135	N/A	172	209
	185	N/A	222	257

UL Max. Horn Current Draw (mA RMS)				
	dB	8–17.5 Volts	16–33 Volts	FWR
		DC	DC	
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

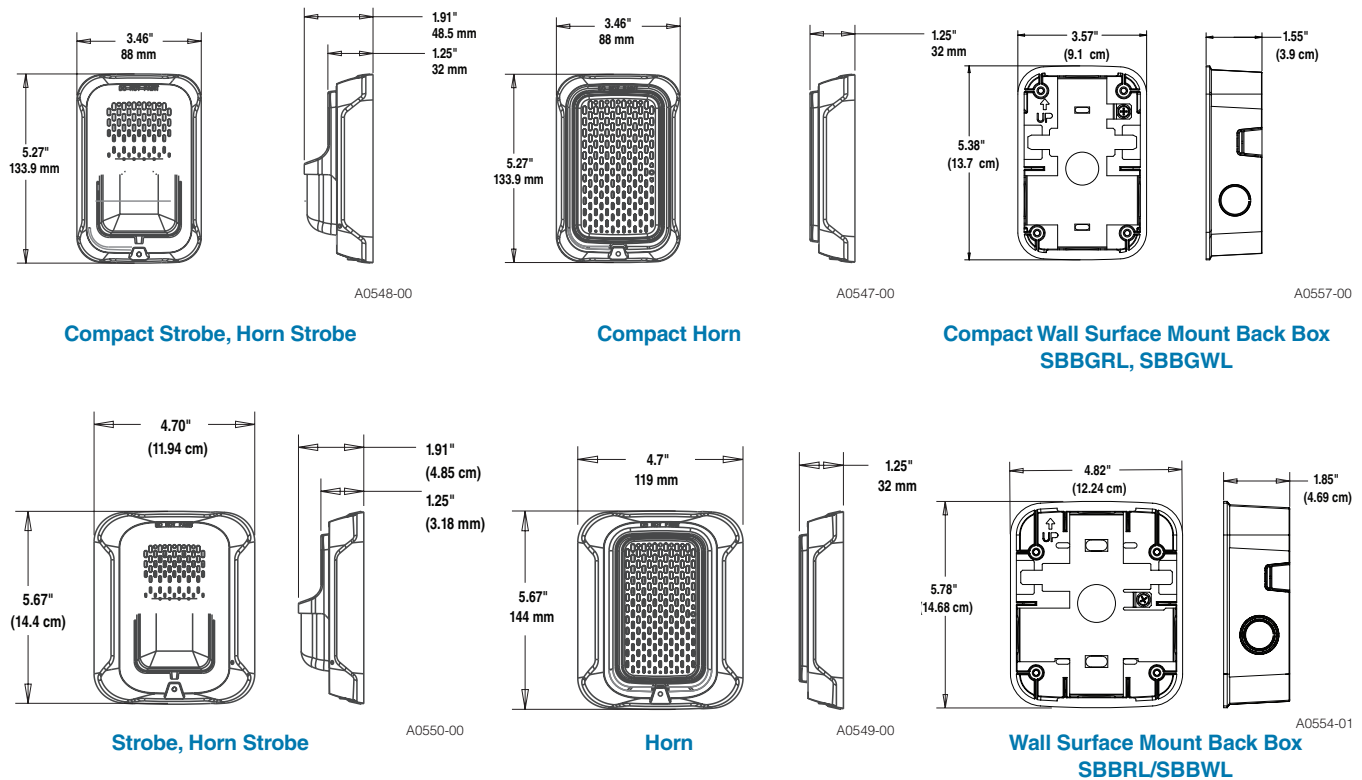
UL Max. Current Draw (mA RMS), Wall Horn Strobe, Candela Range (15–185 cd)									
DC Input	8–17.5 Volts		16–33 Volts						
	15cd	30cd	15cd	30cd	75cd	95cd	110cd	135cd	185cd
Temporal High	98	158	54	74	121	142	162	196	245
Temporal Low	93	154	44	65	111	133	157	184	235
Non-Temporal High	106	166	73	94	139	160	182	211	262
Non-Temporal Low	93	156	51	71	119	139	162	190	239
3.1K Temporal High	93	156	53	73	119	140	164	190	242
3.1K Temporal Low	91	154	45	66	112	133	160	185	235
3.1K Non-Temporal High	99	162	69	90	135	157	175	208	261
3.1K Non-Temporal Low	93	156	52	72	119	138	162	192	242
FWR Input	16–33 Volts								
	15cd	30cd	75cd	95cd	110cd	135cd	185cd		
Temporal High	83	107	156	177	198	234	287		
Temporal Low	68	91	145	165	185	223	271		
Non-Temporal High	111	135	185	207	230	264	316		
Non-Temporal Low	79	104	157	175	197	235	283		
3.1K Temporal High	81	105	155	177	196	234	284		
3.1K Temporal Low	68	90	145	166	186	222	276		
3.1K Non-Temporal High	104	131	177	204	230	264	326		
3.1K Non-Temporal Low	77	102	156	177	199	234	291		

Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)					
Switch Position	Sound Pattern	dB	8–17.5 Volts	16–33 Volts	FWR
			DC	DC	
1	Temporal	High	84	89	89
2	Temporal	Low	75	83	83
3	Non-Temporal	High	85	90	90
4	Non-Temporal	Low	76	84	84
5	3.1 KHz Temporal	High	83	88	88
6	3.1 KHz Temporal	Low	76	82	82
7	3.1 KHz Non-Temporal	High	84	89	89
8	3.1 KHz Non-Temporal	Low	77	83	83
9*	Coded	High	85	90	90
10*	3.1 KHz Coded	High	84	89	89

* Settings 9 and 10 are not available on 2-wire horn strobes. Temporal coding must be provided by the NAC. If the NAC voltage is held constant, the horn output remains constantly on.

L-Series Dimensions



L-Series Ordering Information

Model	Description
Wall Horn Strobes	
P2RL	2-Wire, Horn Strobe, Red
P2WL	2-Wire, Horn Strobe, White
P2GRL	2-Wire, Compact Horn Strobe, Red
P2GWL	2-Wire, Comp 2 fils act Horn Strobe, White
P2RL-P	2-Wire, Horn Strobe, Red, Plain
P2WL-P	2-Wire, Horn Strobe, White, Plain
P2RL-SP	2-Wire, Horn Strobe, Red, FUEGO
P2WL-SP	2-Wire, Horn Strobe, White, FUEGO
P4RL	4-Wire, Horn Strobe, Red
P4WL	4-Wire, Horn Strobe, White
Wall Strobes	
SRL	Strobe, Red
SWL	Strobe, White
SGRL	Compact Strobe, Red
SGWL	Compact Strobe, White
SRL-P	Strobe, Red, Plain
SWL-P	Strobe, White, Plain
SRL-SP	Strobe, Red, FUEGO
SWL-CLR-ALERT	Strobe, White, ALERT

Model	Description
Horns*	
HRL*	Horn, Red
HWL*	Horn, White
HGRL*	Compact Horn, Red
HGWL*	Compact Horn, White
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White

Notes:

All -P models have a plain housing (no "FIRE" marking on cover).
 All -SP models have "FUEGO" marking on cover.
 All -ALERT models have "ALERT" marking on cover.
 *Horn-only models are listed for wall or ceiling use.



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 AVDS865-05 • 2/22/2018

ES-200X

Intelligent Addressable FACP with Communicator



Addressable Fire Alarm Control Panels

General

The **ES-200X** is the latest intelligent addressable Fire Alarm Control Panel (FACP) from Fire-Lite Alarms and is a direct replacement for the MS-9200UDLS. The ES-200X comes with a pre-installed communicator and supports up to 198 addressable devices (99 detectors and 99 modules). With an extensive list of powerful features, the ES-200X programs just like Fire-Lite's other addressable products, yet fits into applications previously served only by conventional panels.

The pre-installed IPOTS-COM is a dual technology (POTS and IP) communicator. The POTS transmits system status (alarms, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. The IP communicator's internet monitoring capability sends alarm signals over the Internet saving the monthly cost of two dedicated business telephone lines. Although not required, the secondary telephone line may be retained providing backup communication over the public switched telephone line. Optional cellular reporting is available using the CELL-MOD or CELL-CAB-FL.

Remote and local programming of the control panel is possible using the FS-Tools Upload/Download utility. Programming databases can be uploaded/downloaded via the panel's USB port (and USB cable) or via an ethernet connection using the IPOTS-COM communicator. The USB port also allows for the download or upload of the entire program, history file, walk-test data, current status and system voltages by means of a USB flash drive.

The power supply and all electronics are contained on a circuit board supported on a new quick install chassis and housed in a metal cabinet. Available accessories include local and remote upload/download software, remote annunciators, and reverse polarity/city box transmitter (4XTMF).

Features

- Listed to UL Standard 864, 10th edition
- Pre-installed IPOTS-COM Ethernet IP and POTS (Plain Old Telephone Service) Central Station Communicator over AlarmNet
- Optional CELL-MOD or CELL-CAB-FL GSM Central Station Communicator over AlarmNet®
- Automated activation of the ECC-50/100 Emergency Command Center
- ECC-FFT Firefighter Telephone option
- Compatible with SWIFT® wireless devices
- Auto-programming (learn mode) reduces installation time. Reports two devices set to the same address
- Four built-in, independently programmable Style Z (Class A) or Style Y (Class B) NAC circuits
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices
- Notification Appliance Circuit End of Line resistor matching
- Four programmable function keys for ease of maintenance
- Two programmable relays and one fixed trouble relay
- Built-in Programmer
- Integral 80-character LCD display with backlighting
- Real-time clock/calendar with automatic daylight savings control
- History file with 1,000 event capacity
- Addressable sounder base compatibility
- Multi-criteria detector (smoke, heat, CO) with programmable response
- Control module delay timer
- Automatic detector sensitivity testing (NFPA 72 compliant)
- Automatic device type-code verification
- Point trouble identification
- Waterflow selection per module point



- Alarm verification selection per detector point
- Maintenance alert warns when smoke detector dust accumulation is excessive
- One-person audible or silent walk test with walk-test log and printout
- System alarm verification selection per detector point
- PAS (Positive Alarm Sequence) and Pre-signal per point (NFPA 72 compliant)
- Up to 16 ANN-BUS annunciators- 8 per each ANN-Bus
- Remote Acknowledge, Alarm Silence, Reset and Drill via addressable modules or remote annunciator
- Upload/Download of program and data via USB with optional FS-Tools Programming Utility

SLC COMMUNICATION LOOP

- Supports LiteSpeed™ and CLIP protocols
- SLC operates up to 10,000 ft. (3,000 m) in LiteSpeed mode with twisted, unshielded wire
- Single addressable SLC loop which meets NFPA Class B and Class A requirements
- 198 addressable device capacity (99 addressable detectors and 99 modules)
- Compatible with Fire-Lite's addressable devices (refer to the *SLC Wiring Manual*)

NOTIFICATION APPLIANCE CIRCUITS (NACS)

- Four independently programmable output circuits. Circuits can be configured for the following outputs:

– **Style Y** (Class B)

– **Style Z** (Class A)

- Silence Inhibit and Autosilence timer options
- Continuous, March Time, Temporal, or California code for main circuit board NACs with two-stage capability
- Selectable strobe synchronization per NAC
- 2.5 A special application, 250mA regulated, total power for NACs

NOTE: Maximum or total 24VDC system power shared between all NAC circuits and the ANN-BUS is 2.7 A

PROGRAMMING AND SOFTWARE

- Autoprogramming (learn mode) reduces installation time
- Custom English labels (per point) may be manually entered or selected from an internal library file
- Two programmable Form-C relay outputs
- 99 software zones
- Continuous fire protection during online programming
- Program Check automatically catches common errors not linked to any zone or input point
- **OFFLINE PROGRAMMING:** Create the entire program in your office using FS-Tools, a Windows®-based software package, and upload/download system programming locally. Offline programming requires an ethernet connection. FS-Tools is available on www.firelite.com.

User interface

LED INDICATORS

- Fire Alarm (red)
- CO Alarm (red)
- AC Power (green)
- Supervisory (yellow)
- Trouble (yellow)
- Ground fault (yellow)
- Battery fault (yellow)
- Disabled (yellow)
- Maintenance (yellow)
- Communication (yellow)
- Alarm Silenced (yellow)
- F1-F4 Programmable Function Keys (yellow)

KEYPAD

- 16 key alpha-numeric pad
- Acknowledge
- Alarm Silence
- Drill (Manual Evacuate)
- Four (4) programmable function keys
- Reset (lamp test)

PRODUCT LINE INFORMATION

ES-200X: Addressable Fire Alarm Control Panel with one SLC loop. Includes main circuit board with display, pre-installed communicator, chassis with transformer, backbox with door, plastic bag containing screws, cables, key, etc. (For ES-200XC, refer to DF-60958.)

FS-Tools: Programming software for Windows®-based PC computer. Available for download at www.firelite.com.

CELL-CAB-FL/CELL-MOD: Optional GSM communicators.

IPOTS-COM: Dual technology (POTS and IP) communicator. (replacement board)

DP-ES-R: Optional dress panel for the ES-200X.

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

BB-2F: Optional cabinet for one or two modules.

BB-6F: Optional cabinet for up to six modules mounted on CHS-6 chassis.

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

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

CHS-6: Chassis, mounts up to six multi-modules in a BB-6F cabinet.

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

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

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

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

OPTIONAL MODULES

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

PWRMOD24 Power Expander Module: Optional power module. Increases alarm power output to 6 amps.

COMPATIBLE ANNUNCIATORS

ANN-80: Remote LCD annunciator mimics the information displayed on the FACP LCD display. Recommended wire type is unshielded.

ANN-100: Remote LCD annunciator mimics the information displayed on the FACP LCD display. Recommended wire type is unshielded. For use in FM applications only.

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

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 provides 10 programmable Form-C relays. Can be mounted inside the cabinet. (See DF-52431.)

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

ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

SD365: Addressable low-profile photoelectric smoke detector. LiteSpeed only.

SD365-IV: Addressable low-profile photoelectric smoke detector. Ivory. LiteSpeed and CLIP mode.

SD365T: Addressable low-profile photoelectric smoke detector with thermal sensor. LiteSpeed only.

SD365T-IV: Addressable low-profile photoelectric smoke detector with thermal sensor. Ivory. LiteSpeed and CLIP mode.

SD365R: Remote test capable addressable photoelectric smoke detector for use with DNR(W) duct detector housing. LiteSpeed only.

SD365R-IV: Remote test capable addressable photoelectric smoke detector for use with DNR(W) duct detector housing. Ivory. LiteSpeed and CLIP mode.

H365: Low-profile 135°F fixed thermal sensor. LiteSpeed only.

H365-IV: Low-profile 135°F fixed thermal sensor. Ivory. LiteSpeed and CLIP mode.

H365R: Low-profile, intelligent, rate-of-rise thermal sensor. LiteSpeed only.

H365R-IV: Low-profile, intelligent, rate-of-rise thermal sensor. Ivory. LiteSpeed and CLIP mode.

H365HT: Low-profile intelligent 190°F/88°C fixed thermal sensor. LiteSpeed only.

H365HT-IV: Low-profile intelligent 190°F/88°C fixed thermal sensor. Ivory. LiteSpeed and CLIP mode.

Legacy Devices

CP355: Addressable low-profile ionization smoke detector.

SD355: Addressable low-profile photoelectric smoke detector.

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

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

SD355CO: Addressable, low-profile device that provides fire, heat, and carbon monoxide (CO) detection.

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 at 190°F/88°C.

AD355: Low-profile, intelligent, "Adapt" multi-sensor detector (B350LP base included).

B200S: Programmable, addressable sounder base.

B200SR: Addressable sounder base.

BEAM355: Intelligent beam smoke detector.

BEAM355S: Intelligent beam smoke detector with integral sensitivity test.

D355PL: InnovairFlex low-flow non-relay duct-detector housing; includes SD355R.

DNR: InnovairFlex low-flow non-relay duct-detector housing. (Order SD355R/SD365R separately.)

DNRW: InnovairFlex low-flow non-relay duct-detector housing, with NEMA-4 rating. Watertight. (Order SD355R/SD365R separately.)

Addressable Modules

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. Addressable Monitor Module for one zone of conventional two-wire detectors. Requires resettable 24 VDC power. Refer to the *Device Compatibility Document* for listed compatible devices and quantity limitation.

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. NAC 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).

ISO-6: Six-fault isolator 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 cabinet.

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

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

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 cabinet.

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 cabinet.

CRF-300-6: Six-relay control module (Form-C relays). 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 cabinet.

SWIFT Wireless Devices

W-GATE: LiteSpeed Wireless Gateway

W-SD355: LiteSpeed intelligent, wireless photo detector.

W-H355R: LiteSpeed intelligent wireless rate of rise (135°) heat detector.

W-SD355T: Intelligent wireless photo/heat detector.

W-H355: LiteSpeed intelligent wireless fixed-temperature (135°) heat detector.

W-MMF: LiteSpeed Intelligent wireless monitor module.

W-CRF: LiteSpeed Intelligent wireless relay module.

W-BG12LX: LiteSpeed Intelligent wireless pull station.

WAV-RL, WAV-WL, WAV-CRL, WAV-CWL: LiteSpeed Intelligent AV bases.

W-USB: Wireless USB radio/antenna dongle that plugs into the USB port of a PC running SWIFT Tools.

SWIFT Tools: Programming and diagnostic utility for the Wireless Gateway and devices. Available for download from firelite.com.

NOTE: For more information on Compatible Addressable Devices for use with the ES-200X, see the following data sheets (document numbers): SD365 Series (DF-61010), H365 Series (DF-61011), AD355 (DF-52386), BG-12LX (DF-52013), CMF-300-6 (DF-52365), CRF-300-6 (DF-52374), CMF/CRF Series (DF-52130), CP355 (DF-52383), H355 Series (DF-52385), I300 (DF-52389), ISO-6 (DF-60485), MMF-300 Series/MDF-300 (DF-52121), MMF-300-10 (DF-52347), MMF-302-6 (DF-52356), SD355/SD355T (DF-52384), and SLC Wiring Manual (51309).

NOTE: Legacy 300 Series detection devices such as the CP300/CP350, SD300(T)/SD350(T) and older modules such as the M300, M301, M302, C304, and BG-10LX are not compatible with LiteSpeed polling. If the SLC contains one of these devices, polling must be set for standard CLIP protocol. Please consult factory for further information on previous 300 Series devices.

ADDRESSABLE DEVICE ACCESSORIES

End-of-Line Resistor Assembly (R-47K and R-3.9K): The 47k ohm assembly supervises the MMF-300, MDF-300, MMF-301, and CMF-300 module circuits. The 3.9k ohm assembly supervises the MMF-302 module circuit. These resistors are included with each module.

Power Supervision Relay: Supervises the power to 4-wire smoke detectors and notification appliances.

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 Signaling Line Circuits..... 1
- Addressable device capacity 198
- Programmable software zones 99
- Annunciators..... 16

Electrical Specifications

AC Power: Operates in either 120 or 240 VAC, 50/60 Hz, 3.25 A, auto-sensing- no switch required. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation. Nonpower-limited, supervised.

Battery: Two 12 V 18 AH lead-acid batteries. Battery Charger Capacity: 7-18 AH (ES-200X cabinet holds maximum of two 18 AH batteries.)

Communication Loop: Supervised and power-limited.

Notification Appliance Circuits: Terminal Block provides connections for four NACs, Style Y (Class B) or Style Z (Class A). Special Application power. Power-limited, supervised circuitry. Maximum signaling current per circuit: 2.5 amps special application, 250mA regulated. End-of-Line Resistor: 4.7k ohm, ½ watt (P/N 71252 UL listed) for Style Y (Class B) NAC; system capable of 1.9 kΩ - 22 kΩ ELR range. Refer to the *Fire•Lite Device Compatibility Document* for listed compatible devices.

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

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.72" (1.82 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x 16.65" (42.29 cm.) wide x 5.25" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

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

Temperature and Humidity Ranges

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

NFPA Standards

The ES-200X complies with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTMF).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Where a DACT is not accepted, the alarm, trouble and supervisory relays may be connected to UL 864 listed transmitters. For reverse polarity signaling of alarm and trouble, 4XTMF is required.)
- **PROPRIETARY** (Automatic, Manual and Waterflow).
- **CENTRAL STATION** (Automatic, Manual and Waterflow, and Sprinkler Supervised).
- **OT, PSDN** (Other Technologies, Packet-switched Data Network)
- **IBC 2012, IBC 2009, IBC 2006, IBC 2003, IBC 2000** (Seismic).
- **CBC 2007** (Seismic)

Agency Listings and Approvals

The listings and approvals below apply to the basic ES-200X control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S624
- **FM approved**
- **CSFM:** 7165-0075:500
- **FDNY:** COA #6261

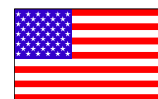
NOTE: See DF-60958 for ULC-listed model.

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



Country of Origin: USA

SYSTEM SPECIFICATIONS

System Capacity

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

Electrical Specifications

AC Power: MS-9200UDLS Rev 3: 120 VAC, 60 Hz, 3.0 amps. MS-9200UDLS Rev 3E: 240 VAC, 50 Hz, 1.5 amps. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation.

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

Communication Loop: Supervised and power-limited.

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

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

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

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

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

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

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.12" (.30 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x

16.65" (42.29 cm.) wide x 5.20" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

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

Temperature and Humidity Ranges

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

NFPA Standards

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

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

Agency Listings and Approvals

The listings and approvals below apply to the basic MS-9200UDLS Rev 3 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S624
- **FM approved**
- **CSFM:** 7165-0075:0208
- **MEA:** 120-06-E

For ULC-listed version, see DF-60599.

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Made in the U.S.A.

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www.firelite.com

FCPS-24FS6(C/E)

6 Amp, 24 Volt Remote Power Supply



Power Supplies

The **Fire-Lite FCPS-24FS6(C/E)** is a compact, cost-effective, 6-amp remote power supplies with battery charger. The FCPS-24FS6(C/E) may be connected to any 12 or 24 volt fire alarm control panel (FACP) or may stand-alone. Primary applications include notification appliance (bell) circuit (NAC) expansion (to support ADA requirements and NAC synchronization) or auxiliary power to support 24 volt system accessories. The FCPS provides *regulated and filtered* 24 VDC power to four notification appliance circuits configured as either two Class B (Style Y) and Class A (Style Z, with ZNAC-4 option module) or four class B only. Alternately, the four outputs may be configured as any combination of resettable/non-resettable power outputs (optimal for powering four-wire smoke detectors). The FCPS-24FS6(C/E) also contains a battery charger capable of charging up to 7.0 AH batteries. The FCPS-24FS6C is ULC-listed.

NOTE: Unless otherwise specified, the term FCPS-24FS6 used in this document refers to the FCPS-24FS6, FCPS-24FS6C, and FCPS-24FS6E.

Features

- UL-Listed Notification Appliance Circuit (NAC) synchronization using System Sensor®, Wheelock®, or Gentex® "Commander²" appliances
- Operates as a "sync-follower" or as a "sync-generator" (default) See note on page 2.
- Contains two fully-isolated input/control circuits - triggered from FACP NAC (NAC expander mode) or jumped permanently "ON" (stand-alone mode)
- Two Class B (Style Y) or Class A (Style Z, with ZNAC-4 module) NACs (circuits 1 & 3)
- 6-amp full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864)
- 4-amp continuous output in stand-alone mode (UL 1481)
- Compatible with coded inputs; signals passed through
- Optional power-supervision relay (EOLR-1)
- In stand-alone mode, output power circuits may be configured as: resettable, (reset line from FACP required), non-resettable, or a mix of two and two
- Fully regulated and filtered power output - optimal for powering four-wire smoke detectors, annunciators, and other system peripherals requiring regulated/filtered power
- Power-limiting technology meets UL power-limiting requirements
- Form-C normally-closed trouble relay
- Fully supervised power supply, battery, and NACs
- Selectable earth fault detection
- AC trouble report selectable for immediate 2-hour delay
- Works with virtually any UL 864 fire alarm control which utilizes an industry-standard reverse-polarity notification circuit (including unfiltered and unregulated bell power)
- Requires input trigger voltage of 9 - 32 VDC
- Self-contained in compact, locking cabinet - 15"H x 14.5"W x 2.75"D (cm: 38.1H x 36.83W x 6.985D)
- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries
- Battery charger may be disabled via DIP switch for applications requiring larger batteries
- Fixed, clamp-type terminal blocks accommodate up to 12 AWG (3.1mm²) wire



Specifications

Primary (AC) Power:

- **FCPS-24FS6/C:** 120 VAC, 60 Hz, 3.2A maximum
- **FCPS-24FS6E:** 240 VAC, 50 Hz, 1.6A maximum
- Wire Size: minimum #14 AWG (2.0mm²) with 600 V insulation

Control Input Circuit:

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

Trouble Contact Rating: 5 A at 24 VDC

Auxiliary Power Output: Special application power 500 mA maximum

Output Circuits:

- +24 VDC filtered, regulated
- **3.0 A maximum for any one circuit**
- Total continuous current for all outputs (stand-alone mode): 4.0 A maximum
- Total short-term current for all outputs (NAC expander mode): 6.0 A maximum

Secondary Power (Battery) Charging Circuit:

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

Applications

Example 1: Expand notification appliance power an additional 6.0 A. Use up to four Class B (Style Y) outputs or four Class A (Style Z) outputs (using ZNAC-4). For example, the FACP notification appliance circuits will activate the FCPS when reverse-polarity activation occurs. Trouble conditions on the FCPS are sensed by the FACP through the notification appliance circuit.

Example 2: Use the FCPS to expand auxiliary regulated 24-volt system power up to 4.0 A. Both resettable and non-resettable power options are available. Resettable outputs are created by connecting the resettable output from the FACP to one or both of the FCPS inputs.

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

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

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

Sync Follower/Generator Note

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strobes accomplish this by monitoring very short timing pulses on the NAC power which are created by the FACP. When installed at the end of a NAC wire run, the FCPS-24FS6 can track (i.e. "follow") the strobe synchronization timing pulses on the existing NAC wire run. This maintains the overall system flash timing of the additional strobes attaches to the FCPS.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync follower," the FCPS' NAC outputs track the strobe synchronization pulses present at the FCPS' sync input terminal. The pulses originate from an upstream FACP or other power supply.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync generator," the FCPS' sync input terminals are not used. Rather, the FCPS is the originator of the strobe synchronization pulses on the FCPS' NAC outputs. In "sync generator" mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

Standards and Codes

The FCPS-24FS6 complies with the following standards:

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

Agency Listings and Approvals

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

- **UL Listed:** S2424, S1287
- **ULC Listed:** S2424
- **CSFM Approved:** 7315-0075:0206
- **MEA:** 387-94E
- **FM Approved**

Ordering Information

FCPS-24FS6: 6.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

FCPS-24FS6C: Same as FCPS-24FS6, ULC-listed

FCPS-24FS6E: 6.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

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

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

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

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

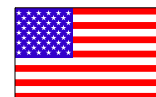
90286: Optional module mounting kit, is required to install an addressable module on the power supply main circuit board

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www.firelite.com



Country of Origin: USA

ANN-80

80-Character Serial LCD Annunciator



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. The 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.

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 (non-condensing) 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

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.

WIRE REQUIREMENTS: POWER CIRCUIT

- 14 to 18 AWG (0.75 - 2.08 mm²) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop from 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.

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.

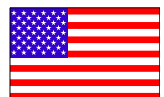
Agency Listings and Approvals

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:** 7120-0075:0211
- **MEA:** 442-06-E

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



Country of Origin: USA

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



StarLink[®] FIRE MAX 2

AT&T + verizon

DUAL SIM/DUAL PATH
AT&T and VERIZON
Cell &/or IP UNIVERSAL 5G
COMMERCIAL FIRE LTE-M COMMUNICATORS

AT&T + verizon NAPCO

- **Easiest installation, powered by panel, NO extra power supply, NO extra conduit.** (Excludes Metal Direct AC-Powered Model, shown below.)
- **Labor-Saving Supervision Features Save Time & Money** - Uniquely including 4 supervised, programmable EOLR zone inputs; 2 Form C Relay outputs (no extra supervision modules to buy or install); plus, 2 Telephone style jacks for easy FACU-connection. Self-supervised on 4 wires.
- **Easy-Repeat Account Templates** - Save your typical account setup and reuse for goof-proof communicator programming & fast deployment.



- **Free StarLink FACU-Saver App** - Smartphone Pro sales tool for calculating/demonstrating account's cellular cost-savings with dealer by number of lines & locations vs. copper POTs lines leased from phone co. **FREE download** on Apple Store or Google Play.

- **Pro Incentive Instant Rebate Program** - Dealers save on new and retrofit installations, replacing POTs, old radios, sunset networks and even new installations. (Nothing to mail in/fill out; Service credit automatically applied upon valid plan activation. See details online; scan QR code on back)
- **UL & NFPA 72 Fire Code-Compliant**, the StarLink Max2 Fire Series Wireless Commercial Fire Alarm Sole Path & Dual Path Communicators provide universal support for any brand 12V to 24V fire alarm control panel (FACU), reporting in Contact ID and 4/2. With broadest nationwide coverage footprint, Verizon or AT&T, using proven StarLink circuitry, they are also available in locking metal models.
- **Over-the-Air Upgradeable Firmware** for updates without a truck-roll.

StarLink Fire MAX 2: SLE-MAX2-Series The Power of 2: Dual SIM, Dual Path by Napco

- **Dual SIM, Dual Path Universal** full data 5G LTE-M cellular &/or IP commercial fire alarm reporting from any panel brand, virtually anywhere nationwide
- **One Model to Stock:** Provides both Verizon® & AT&T® Cell Networks plus either sole or dual path cell/IP reporting (selectable by plan)
- **Auto-Network-Select by Site** - Upon power up, the signal-strength provided by each cell carrier is analyzed at the site, and the unit will lock-in the best carrier automatically, i.e., AT&T or Verizon. Thereafter, it's periodically reviewed and dynamically swapped when needed.
- **EZ Cell-Network ID- Red or Blue Indicators** - Inside the unit, the Carrier Indicators will light Blue for AT&T or Red for Verizon connection (also test button indicates signal strength on each for manual check)
- **See /Set SIM Status Remotely** - using a PC or smart device, the StarLink Network Operations Center (NOC), in Napco Headquarters, NY, can be accessed allowing you used to set parameters or view current status, Dual SIM status of accounts
- **Supports 12V-24V FACUs**, No Panel Reprogramming with those that communicate using Contact ID and 4/2 (such as on legacy panels), as primary or backup.
- **UL & NFPA Code-compliant**, replaces 2 POTs lines per FACU saves thousands of dollars per year over the leased landlines. (Show accounts savings -Free Sales Tool /Calculator App left)
- **Proven StarLink Reliability & Best 5G LTE-M Performance** - Works where others can't - Signal Boost™ Circuitry & unique dual-diversity twin antennas, maximizing signal acquisition and eliminating the multiphase-effect signal-clash/drop-outs single-antenna units are prone to.



Universal Panel-Powered Commercial Fire FACU Communicator:
Dual SIM for 2 Networks; Dual Path Cell or Cell/IP all in One Model

verizon + AT&T

One Dual SIM Dual Path Model is Both Verizon and AT&T and Sole or Dual Path with Cellular + Internet Option. StarLink Fire provides full data reporting, in sole & dual path, as a primary or backup, to any central station of your choice, w/o requiring any special equipment on premises. The units are very easily activated, plans for dual or sole path & check-in periods are selected, and 24/7 account management is provided all through www.napcocomnet.com.

Easy, Universal Installation at Every Application; standardly w/ Panel- Powered Technology™ or metal units with choice of power source. StarLink Fire Communicators are easily connected to any 12V to 24V panel or Fire Alarm Control Panel (FACU) using easy Quick-Connect FACP modular jacks. For any application, StarLink Max Fire 2 Series comes in standard, ABS plastic Panel-Powered Technology™ (powered by the panel), models, or in metal housings w/ or w/o & choice of power options, i.e., direct-connect 120VAC or Plug-in transformer. **Quick Tip: Using StarLink Fire Max 2 with Power Supply models (suffix -PS) eliminates the need to do recalculations on the fire system being retrofitted as well.**

StarLink Fire is End-to-End UL 864 Listed to protect signal reliability, speed & performance for critical life and safety alarm reports for maximum life safety & liability protection. UL-Listed from the UL 864 StarLink Fire Max 2 communicator, to Napco's NY UL 864 Network Operations Center (shown below in map), to any Central Station's UL Listed Receiver. (It is also backed by Disaster Recovery NOC in PA for immediate, mirrored emergency switchover.)

**STARLINK: ALL SIGNALS,
ALWAYS IN THE USA**



SLE-MAX2-CFBP

SLE-MAX2-CFBP

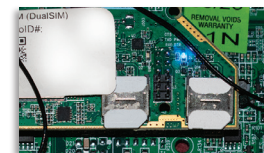
Miami Dade County Department of Regulatory Affairs and Economic Resources
32260000 Dual Path Special Fire MAX2 also available in Metal enclosures with or without power supply

verizon + AT&T



SLE-MAX2 SERIES Fire Dual SIM/Dual Path Commercial Fire Alarm Cell Communicators

- Dual SIM models auto-select optimal cell carrier - and Red or Blue LED Indicators inside signal Verizon or AT&T respectively, shown right.
- LED Status /Trouble Indicators 3 Radio Status LED Indicators (visible from outside standard model housing) - Green, Signal Strength; Amber - Busy/Activation; Red-Trouble. (Additional internal LEDs, not visible with cover closed, i.e., for troubleshooting and for AT&T or Verizon network selection, status). Power LED indicator viewable on outer metal enclosure models.
- Sole or Dual Path 5G LTE-M Cell Commercial Fire Alarm Communicator in One - Simply select Cell or Cell/IP Service Plan & check-in period: 5 minutes, 60 minutes, 6 hours or 24 hours.
- Signal Boost and Patented Switching Dual Diversity Antenna for maximum signal acquisition & null /signal-clash avoidance, receiving signals on both antennas (2 supplied, nothing extra to buy.)
- "Return Receipt" Fully-Supervised Communication Path between premise & central station, keeping channel open until *kiss-off* is received from Central Station receiver



SPECIFICATIONS: (Apply to all models unless otherwise stated)

SLE-MAX2-FIRE & SLE-MAX2-CFB:

Electrical Ratings for +12V / 24V (Models w/o Power Supply)

- Input Voltage: 10-24VDC regulated (power-limited output from UL Certified FACU/panel Aux/Remote Fire Power).
- Input Current: 24VDC standby: 85mA

SLE-MAX2-CFBPS:

Electrical Ratings for 120VAC, 60Hz (Models with Power Supply)

- Input Voltage: 120VAC nominal
- Input Current: 200mA maximum
- Maximum Charging Current: 200mA

Electrical Ratings Fire Input 1:

- Input Voltage: 9-25VDC
- Max Input Current: Up to 2mA from FACU NAC circuit

Electrical Ratings for Inputs 2 to 5 (Class B):

- Maximum Loop Voltage: 25VDC
- Maximum Loop Current: 1.2mA (metal models); 1.7mA (plastic)
- End of Line Resistor (EOLR) Value: 10K

Electrical Ratings for PGM3 Output:

- Open Collector Output: Max Voltage 3V when active; 25V max. when not.
- PGM Max Sink Current: 50mA (up to 15VDC), 25mA (15.1VDC -25VDC)

Physical & Environmental

- Plastic Housing: 8 x 5 1/2 x 1 1/2" (WHD) + antennas (2ea, supplied) 8 1/4" H
- Metal Housing: 11 1/2 x 9 1/2 x 3 1/2" (WHD) + antennas (2ea, supplied) 8 1/4" H
- Housings: 2 Keyholes for wall mount
- Operating Temp. 32 to 120°F, 93% Humidity Max.

COMPLIANCES:

NFPA 72 Eds: 2022, 2019, 2016, 2013, 2010; UL 2610, UL 985, UL1023, UL864 10th Ed., CSFM, NYC FD, LAFD Napco US Network Operations Center (NOC) UL 864 10th Ed., UL 1610, UL 1635

ORDERING INFORMATION

Model	Description	Dual SIM/ Dual Path	Verizon ✓	AT&T	Sole Path Cell	Dual Path Cell/IP	Low Current Draw, Standby (@24V)	Current Draw, Peak (@24V)
SLE-MAX2-FIRE	Universal Fire Communicator, Dual SIM, Dual Path, Panel-Powered Technology, ABS Plastic Housing	✓	✓	✓	✓	✓	85mA	325mA
SLE-MAX2-CFB	Universal Fire Communicator, Dual SIM, Dual Path, Panel-Powered Technology	✓	✓	✓	✓	✓	85mA	325mA
SLE-MAX2-CFBPS	Universal Fire Communicator, Dual SIM, Dual Path, Direct AC Power 120VAC Metal Housing w/ Provision. For Plug-in TRF12 XFormer, 16VAC, 20VA (w/ provision for backup battery)	✓	✓	✓	✓	✓	200mA	200mA

OPTIONS/ACCESSORIES:

SLE-WIFI-MODULE: Optionally connects supported dual path models to Internet via WiFi, eliminating Ethernet cable connection. Requires 7AH battery. (see WI2191)

SLE-ANTEXT30: StarLink Omni-X Optional Extended Range Marine-Grade Complete Antenna Kit, w/ 30' of ultra low-noise LMR 300 cable, all hardware & ground fault isolator plate.

SLE-ANTEXT50: as above, 50' cable

SLE-ANTEXT75: as above, 75' cable

SLE-ANTEXT100: as above, 100' cable

SLE-ANTEXT04: as above, 4' cable

SLE-FIRE-VR: FACU Voltage Drop Kit, maintains safe input voltage < 27.5VDC

TRF12: Plug in AC Transformer, used w/ SLE-MAX2-CFBPS model, 16.5V / 20VA (use subject to local code).

GEM-TAMPERKIT: Tamper switches and screws to protect metal housing where required.

SLE-ULPS-R: Power Supply, for installations where FACU cannot provide Aux Power.

SLE-FMBB: Opt. Metal Cable Management Backbox for surface mounting plastic StarLink communicator models adjacent to FACUs on same plane. Radio easily snaps in on 4 stand-offs, no rewiring. Red metal enclosure w/ 3/4" cable knockouts; 2 Connectors & 4" Conduit, supplied.

Also See FireLink FACUs with built-in StarLink Communicators & LCD Touchpads on Door, addressable & conventional, cloud-programmable.



Coming soon for Canada



www.StarLinkFire.com

Addressable, Conventional Fire Alarm Systems & Leading Commercial Fire Cellular Communications

Miami Dade County Department of Regulatory and Economic Resources - Job Copy
3226007430 1/8/2026 11:15:52 AM
FA Specs_V3.pdf
Preliminary data & promotions subject to change without notice. © NAPCO 2024.1 A852



FOR MORE



CRF-300(A)

Relay Module



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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Made in the U.S. A.

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www.firelite.com

BG-12LX

Addressable Manual Pull Station



Addressable Devices

General

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

Features

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

Construction

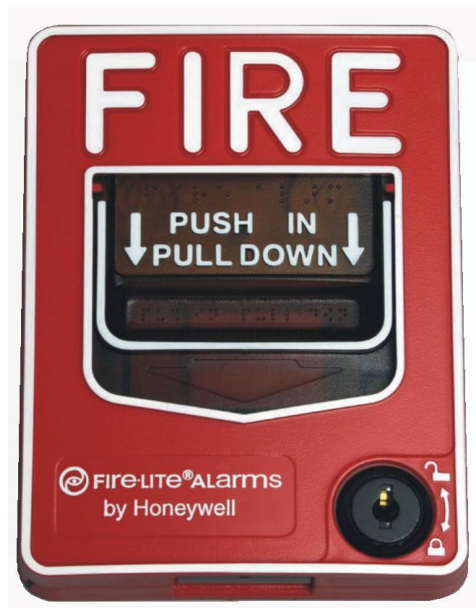
Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC standby current:** 375 μ A.
- **Maximum SLC alarm current:** 5 mA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**

Installation

The BG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the BG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is



FL PullStation.jpg

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

Operation

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

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

Architectural/Engineering Specifications

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

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

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

Product Line Information

BG-12LX: Dual-action addressable pull station. Includes key locking feature. (Listed for Canadian and non-Canadian applications.)

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/ULC Listed:** S711 (listed for Canadian and non-Canadian applications).
- **MEA:** 67-02-E.
- **CSFM:** 7150-0075:0184.
- **FM Approved.**

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

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www.firelite.com

D365PL(A) and DNRW

Intelligent Non-relay Photoelectric Duct Smoke Detectors



Addressable Devices

The Fire•Lite D365PL(A) intelligent non-relay photoelectric duct smoke detector and DNRW watertight non-relay photoelectric duct smoke detector feature a pivoting housing that fits both square and rectangular footprints capable of mounting to a round or rectangular duct.

The DNRW duct smoke detector, with its NEMA-4 rating, is listed as a watertight, UV resistant enclosure providing protection against falling dirt, rain, and windblown dust, splashing and hose directed water, allowing operators to use the detector in the most extreme environments.

These units sense smoke in the most challenging conditions, operating in airflow speeds of 100 to 4,000 feet per minute (0.5 – 20.32 m/s), temperatures of -4°F – 158°F (-20°C – 70°C), and a humidity range of 0 – 93 percent (non-condensing).

An improved cover design isolates the sensor head, which allows for ease of maintenance. A cover tamper feature indicates a trouble signal for a removed or improperly installed sensor cover. The housing provides a 3/4-inch conduit knockout and ample space to facilitate easy wiring and mounting of a relay module.

The Fire•Lite D365PL(A) duct smoke detectors can be customized to meet local codes and specifications without additional wiring and are compatible with all previous models, including remote test accessories.

Features

- Photoelectric, integrated low-flow technology
- Air velocity rating from 100 ft/min – 4,000 ft/min (0.5 m/s – 20.32 m/s)
- Versatile mounting options: square or rectangular configuration
- Broad ranges for operating temperature (-4°F – 158°F, -20°C – 70°C) and humidity (0% – 93% non-condensing)
- Sampling tube installs from front or back of the detector with no tools required
- Cover tamper signal
- Increased wiring space with a newly added 3/4" conduit knockout
- Easily accessible code wheels on sensor head (Included with D365PL/D365PLA)
- Clear cover for convenient visual inspection (D365PL(A) only)
- Remote testing capability
- Requires com line power only
- Housing accommodates an addressable relay module, sold separately, (CRF-300) for applications requiring a Form-C relay

Specifications

Size: (Rectangle) 14.38 in (37 cm) Length; 5 in (12.7 cm) Width; 2.5 in (6.6 cm) Depth

Size: (Square) 7.75 in (19.7 cm) Length; 9 in (22.9 cm) Width; 2.5 in (6.35 cm) Depth

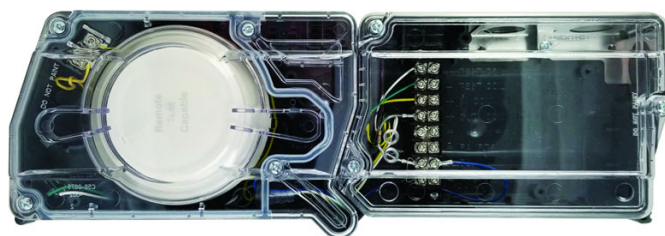
Weight: 1.6 lb (0.73 kg)

Operating Temperature Range: -4°F – 158°F (-20°C – 70°C)

Storage Temperature Range: -22°F – 158°F (-30°C – 70°C)

Operating Humidity Range: 0% – 93% relative humidity (non-condensing)

Air Duct Velocity: 100 – 4,000 ft/min (0.5 – 20.32 m/s)



Accessories

Fire•Lite provides system flexibility with a variety of accessories, including two remote test stations and different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detectors accessories are UL listed.

ACCESSORY CURRENT LOADS AT 24 VDC

Device	Standby	Alarm
RA100Z	0mA	12mA Max
RTS151/RTS151KEY	0mA	12mA Max

Agency Listings and Approvals

Consult product manual for lists of compatible UL-Listed devices. 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:** S1059
- **ULC:** S1059
- **CSFM:** 3242-0075:0508
- **FM approved**

Product Line Information

NOTE: "A" suffix indicates ULC listed model.

D365PL(A): Intelligent non-relay photoelectric low flow smoke detector housing. Includes SD365R(A)-IV detector.

DNRW: Watertight intelligent non-relay photoelectric low flow duct smoke detector housing. Requires photoelectric smoke detector (sold separately). NEMA-4 rated.

SD365R(A)-IV: Remote test capable addressable low-profile photoelectric smoke detector; ivory; supports CLIP and LiteSpeed™ protocols

SD365R(A): Remote test capable addressable low-profile photoelectric smoke detector; white; supports LiteSpeed protocol only

SD365(A)-IV: Addressable low-profile photoelectric smoke detector; ivory; supports CLIP and LiteSpeed protocols

SD365(A): Addressable low-profile photoelectric smoke detector; white; supports LiteSpeed protocol only

SD365T(A): Addressable low-profile photoelectric smoke detector with a built-in 135°F (57°C) fixed-temperature thermal device; white; supports LiteSpeed protocol only

SD365T(A)-IV: Addressable low-profile photoelectric smoke detector with a built-in 135°F (57°C) fixed-temperature thermal device; ivory; supports LiteSpeed protocol only

DUCTCOV: Retrofit D355PL(A) cover for detectors manufactured prior to April 2014

DUCTCOVW: Retrofit DNRW cover for detectors manufactured prior to April 2014

DST1: Metal sampling tube duct width up to 1 ft (0.3 m)

DST1.5: Metal sampling tube duct widths up to 1 ft – 2 ft (0.3 – 0.6 m)

DST3: Metal sampling tube duct widths up to 2 ft – 4 ft (0.6 – 1.2 m)

DST5: Metal sampling tube duct widths up to 4 ft – 8 ft (1.2 – 2.4 m)

DST10: Metal sampling tube duct widths up to 8 ft – 12 ft (2.4 – 3.7 m)

DH400OE-1: Weatherproof enclosure

ETX: Metal exhaust tube duct, width 1 ft (0.3 m)

M02-04-00: Test magnet

P48-21-00: End cap for metal sampling tubes

RA100Z(A): Remote annunciator alarm LED

RTS151: Remote test station

RTS151KEY(-A): Remote test station with key lock

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www.firelite.com

Country of Origin: Mexico

SD365 Series

Addressable Photoelectric Smoke Detectors



Addressable Devices

The Fire•Lite® Alarms SD365(A), SD365R(A), and SD365HT(A) intelligent plug-in smoke detectors are designed for both performance and aesthetics, and are direct replacements for the SD355 Series. A new modern, sleek, contemporary design and enhanced optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources in accordance with more stringent code standards.

Exclusively for use with Fire•Lite's addressable fire alarm control panels, the SD365(A) Series point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for emergency personnel to 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.

The SD365(A) Series also offers 135°F (57°C) fixed temperature thermal sensing on the SD365T(A) and a remote test capable detector on the SD365R(A) for use with DNR(A)/DNRW duct smoke detector housings.

Features

SLC LOOP:

- Two-wire SLC loop connection
- Unit uses base for wiring
- Compatible with LiteSpeed™ and CLIP protocol systems
- Stable communication technique with noise immunity

ADDRESSING:

- Addressable by device
- Rotary, decimal addressing
(Refer to the *Fire•Lite panel manuals* for device capacity.)

ARCHITECTURE:

- Sleek, low-profile, stylish design
- Unique single-source design to respond quickly and dependably to a broad range of fires
- Integral communications and built-in device-type identification
- Built-in tamper resistant feature
- Remote test feature from the panel
- Walk test with address display (an address on 121 will blink the detector LED: 12-[pause]-1 (*LiteSpeed systems only*))
- Built-in functional test switch activated by external magnet
- Removable cover and insect-resistant screen for simple field cleaning
- Expanded color options

OPERATION:

- Designed to meet UL 268 7th Edition
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level
- LED "blinks" when the unit is polled (communicating with the fire panel) and latches in alarm.
- Low standby current

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

OPTIONS:

- Optional relay, isolator, and sounder bases

Installation

SD365 Series plug-in intelligent smoke detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount detector base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DF-60059*.

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 Class "B" wiring only.

When using relay or sounder bases, consult the *I300(A) installation sheet I56-3626* for device limitations between isolator modules and isolator bases.

Construction

These detectors are constructed of fire-resistant plastic. The SD365 Series plug-in intelligent smoke detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each SD365 Series detector uses one of the panel's addresses (total limit is panel dependent) on the Fire•Lite Signaling Line Circuit (SLC). 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 SD365 Series offers features and performance that represent the latest in smoke detector technology.

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 an Fire•Lite addressable fire alarm control panel. The results of the sensitivity test can be printed for record keeping.

Product Line Information

NOTE: “-IV” suffix indicates CLIP and LiteSpeed device.

NOTE: “A” suffix indicates Canadian version.

SD365: White, low-profile intelligent photoelectric sensor, LiteSpeed only

SD365A: Same as SD365 but with ULC listing

SD365-IV: Ivory, low-profile intelligent photoelectric sensor

SD365A-IV: Same as SD365-IV but with ULC listing

SD365T: White, same as **SD365** but includes a built-in 135°F (57°C) fixed-temperature thermal device, LiteSpeed only

SD365TA: Same as SD365T but with ULC listing

SD365T-IV: Ivory, same as SD365T but includes a built-in 135°F (57°C) fixed-temperature thermal device

SD365TA-IV: Same as SD365T-IV but with ULC listing

SD365R: White, low-profile intelligent photoelectric sensor, remote test capable, for use with DNR/DNRW, LiteSpeed only

SD365RA: Same as SD365R but with ULC listing, for use with DNRA

SD365R-IV: Ivory, low-profile intelligent photoelectric sensor, remote test capable, for use with DNR/DNRW

SD365RA-IV: Same as SD365R-IV but with ULC listing, for use with DNRA

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DF-60059.

B300-6: White, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300-6-IV: Ivory, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300A-6: Same as B300-6, ULC listed

B300A-6-IV: Ivory, 6” standard flanged low-profile mounting base, ULC listed

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-BL: Black, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-IV: Ivory color, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10

B224RB-WH: White, relay base (CSFM: 7300-1653:0216)

B224RB-IV: Ivory, relay base (CSFM: 7300-1653:0216)

B224RBA-WH: White, relay base, ULC listing

B224RBA-IV: Ivory, relay base, ULC listing

B224BI-WH: White, isolator detector base (CSFM: 7300-1653:0216)

B224BI-IV: Ivory isolator detector base (CSFM: 7300-1653:0216)

B224BIA-WH: White, isolator detector base, ULC listing

B224BIA-IV: Ivory isolator detector base, ULC listing

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses LiteSpeed protocol. (CSFM: 7300-1653:0213)

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses LiteSpeed protocol. (CSFM: 7300-1653:0213)

B200SA-WH: Same as B200S-WH, ULC listing

B200SA-IV: Same as B200S-IV, ULC listing

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications)

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications, ULC listing)

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SRA-WH: Same as B200SR-WH with, ULC listing

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base

TR300-IV: Ivory, replacement flange for B210LP(A) base

RA100Z(A): Remote LED annunciator. 3-32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300-6(A).

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: Color Kit (includes cover and trim ring), white, 10-pack

CK300-IV: Color Kit (includes cover and trim ring), ivory, 10-pack

CK300-BL: Color Kit (includes cover and trim ring), black, 10-pack

SYSTEM SPECIFICATIONS

Sensitivity:

- UL Applications: 0.5% to 4.0% per foot obscuration.
- ULC Applications: 0.5% to 3.5% per foot obscuration

Size: 2.0" (51mm) high; base determines diameter

- **B300-6:** 6.1" (15.6 cm) diameter
- **B501:** 4" (10.2 cm) diameter

For a complete list of detector bases see DF-60983

Shipping weight: 3.4 oz. (95 g)

Operating temperature range:

- SD365: 32°F to 122°F (0°C to 50°C)
- SD365T Series: 32°F to 100°F (0°C to 38°C)
- SD365R Series installed in a DNR/DNRW, -4°F to 158°F (-20°C to 70°C)

UL/ULC Listed Velocity Range: 0-4000 ft/min. (1219.2 m/min.), suitable for installation in ducts

Relative humidity: 10% – 93% non-condensing

Thermal ratings: fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak

Standby current (max. avg.): 200µA @ 24 VDC (one communication every 5 seconds with LED enabled)

Max current: 4.5 mA @ 24 VDC ("ON")

DETECTOR SPACING AND APPLICATIONS

Fire•Lite recommends spacing detectors in compliance with NFPA 72. In low airflow applications with smooth ceiling, space detectors 30 feet (9.1m). For specific information regarding detector spacing, placement, and special applications refer to NFPA 72. A *System Smoke Detector Application Guide*, document SPAG91, is available at www.systemsensor.com.

Listings and Approvals

Listings and approvals below apply to the SD365 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.

- UL/ULC Listing: S1059
- FM Approved
- CSFM: 7272-0075:0502

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

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

Country of Origin: Mexico

H365 Series

Addressable Heat Detectors



Addressable Devices

The Fire-Lite® Alarms H365(A), H365R(A), and H365HT(A) addressable plug-in thermal detectors are designed for both performance and aesthetics and are a direct replacement for the H355 Series. A new modern, sleek, contemporary design and advanced thermal technologies make the H365(A) Series ideal for both system operation and building design.

Exclusively for use with Fire-Lite's addressable fire alarm control panels, the H365(A) Series point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for emergency personnel to 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.

The H365(A) Series includes fixed temperature, rate-of-rise and high heat fixed temperature detectors that provide effective, intelligent property protection for a variety of applications. Detectors are available for both LiteSpeed™ and CLIP applications as designated.

Features

SLC LOOP:

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

ADDRESSING:

- Addressable by device
- Rotary, decimal addressing
(Refer to the *Fire-Lite panel manuals* for device capacity.)

ARCHITECTURE:

- Designed to meet UL 268 7th Edition
- 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:

- Fixed temperature model (H365(A)) factory preset to 135°F (57°C)
- Rate-of-rise model (H365R(A)), 15°F (8.3°C) per minute
- High-temperature model (H365HT(A)) factory preset to 190°F (88°C)
- 360°-field viewing angle of the two visual alarm indicators, LEDs blink red in Normal condition and turn on steady red in Alarm
- LEDs blink every time the unit is polled

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



OPTIONS:

- Remote LED output connection to optional RA100Z remote LED annunciator

Installation

H365 Series plug-in intelligent thermal detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount detector base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see DF-60059.

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. When using relay or sounder bases, consult the I300(A) installation sheet I56-3626 for device limitations between isolator modules and isolator bases.

Applications

Use thermal detectors for protection of property. For further information, refer to I56-6525, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

Construction

These detectors are constructed of fire-resistant plastic. The H365 Series plug-in intelligent thermal detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each H365 Series detector uses one of the panel's addresses (total limit is panel dependent) on the Fire-LiteJCI Signaling Line Circuit (SLC). 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 H365 Series offers features and performance that represent the latest in thermal detector technology.

Product Line Information

NOTE: “-IV” suffix indicates CLIP and LiteSpeed device.

NOTE: “A” suffix indicates Canadian version.

H365: White, low-profile intelligent 135°F fixed thermal sensor, LiteSpeed only

H365A: Same as H365 but with ULC listing

H365-IV: Ivory, low-profile intelligent 135°F fixed thermal sensor, LiteSpeed and CLIP

H365A-IV: Same as H365-IV but with ULC listing

H365R: White, low-profile intelligent rate-of-rise thermal sensor, LiteSpeed only

H365RA: Same as H365R but with ULC listing

H365R-IV: Ivory, low-profile intelligent rate-of-rise fixed thermal sensor, LiteSpeed and CLIP

H365RA-IV: Same as H365R-IV but with ULC listing

H365HT: White, low-profile intelligent 190°F fixed thermal sensor, LiteSpeed only

H365HTA: Same as H365H but with ULC listing

H365HT-IV: Ivory, low-profile intelligent 190°F thermal sensor, LiteSpeed and CLIP

H365HTA-IV: Same as H365H-IV but with ULC listing

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DF-60059.

B300-6: White, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300-6-IV: Ivory, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300A-6: Same as B300-6, ULC listed

B300A-6-IV: Ivory, 6” standard flanged low-profile mounting base, ULC listed

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-BL: Black, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-IV: Ivory color, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10

B224RB-WH: White, relay base (CSFM: 7300-1653:0216)

B224RB-IV: Ivory, relay base (CSFM: 7300-1653:0216)

B224RBA-WH: White, relay base, ULC listing

B224RBA-IV: Ivory, relay base, ULC listing

B224BI-WH: White, isolator detector base (CSFM: 7300-1653:0216)

B224BI-IV: Ivory isolator detector base (CSFM: 7300-1653:0216)

B224BIA-WH: White, isolator detector base, ULC listing

B224BIA-IV: Ivory isolator detector base, ULC listing

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. (CSFM: 7300-1653:0213)

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. (CSFM: 7300-1653:0213)

B200SA-WH: Same as B200S-WH, ULC listing

B200SA-IV: Same as B200S-IV, ULC listing

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications)

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications, ULC listing)

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SRA-WH: Same as B200SR-WH with, ULC listing

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base

TR300-IV: Ivory, replacement flange for B210LP(A) base

RA100Z(A): Remote LED annunciator. 3-32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300-6(A).

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: Color Kit (includes cover and trim ring), white, 10-pack

CK300-IV: Color Kit (includes cover and trim ring), ivory, 10-pack

CK300-BL: Color Kit (includes cover and trim ring), black, 10-pack

SYSTEM SPECIFICATIONS

Size: 2.0" (5.3 cm) high; base determines diameter

- **B300-6:** 6.1" (15.6 cm) diameter
- **B501:** 4" (10.2 cm) diameter

For a complete list of detector bases see DF-60983

Shipping weight: 3.4 oz. (95 g)

Operating temperature range:

- H365, H365R Series: –4°F to 100°F (–20°C to 38°C)
- H365H Series: –4°F to 150°F (–20°C to 66°C)

Detector spacing: UL approved for 50 ft. (15.24 m) center-to-center, FM approved for 25 x 25 ft. (7.62 x 7.62 m) spacing

Relative humidity: 10% – 93% non-condensing

Thermal ratings: fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

Mounting: B300-6(A) flanged base, included

See “**Product Line Information: Intelligent Bases,**” if using a different base.

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak

Standby current (max. avg.): 200µA @ 24 VDC (one communication every 5 seconds with LED enabled)

Max current: 4.5 mA @ 24 VDC (“ON”)

Listings and Approvals

Listings and approvals below apply to the H365 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.

- UL/ULC Listing: S2517
- FM Approved
- CSFM: 7272-0075:0501

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

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

Country of Origin: Mexico

RTS151 Remote Test Station

SPECIFICATIONS

Dimensions:	4.8" H × 2.90" W × 1.4" D
Weight:	.16 lbs.
Power Requirements	
Alarm LED:	2.8 – 32 VDC, 10 mA max.
Coil Current:	95 mA max.
Test Switch:	10 VA @ 32 VDC
Reset Switch:	10 VA @ 32 VDC
Alarm Response Time:	40 sec. max.
Temperature:	-10°C to 60°C (14°F to 140°F)
Humidity:	95% RH Non-condensing Max
Listing:	UL, FM, CE

NOTE: RTS151 replaces RTS451.

NOTICE: This manual shall be left with the owner/user of this equipment.

NOTE: A test coil is required only for use with D2/DNR/DH400/DH500 models. For D2 models order part #DCoil. For the DH400/500 models order part is #Coil.

GENERAL INFORMATION

System Sensor's RTS151 is an automatic fire detector accessory designed to test a remotely located detector. Consult detector installation instructions for additional information.

The National Fire Protection Association has published codes, standards, and recommended practices for the installation and use of the above product. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local authority having jurisdiction.

RTS151 CONTENTS

- 1 RTS151 remote test station
- 1 screw pack (2 mounting screws)
- 1 M02-04 test magnet

WIRING OF RTS151

Consult the appropriate detector installation instructions for the applicable wiring diagram. The RTS151 mounts to a single gang box (2 1/2" minimum depth), or directly to the wall or ceiling.

See Figure 8 for wiring diagram of RTS151 with Duct Smoke Detectors.

In Canadian applications, the RTS151 is intended to be located in the same room as the smoke detector and within 60 feet of the unit.

OPERATION

Test Function

Place and hold the painted side of the magnet to the test location RTS151.

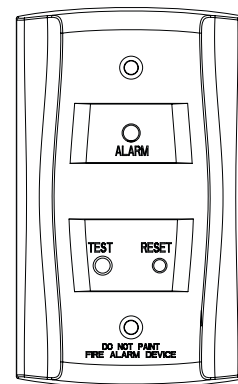
Alarm Indication

With the magnet in place some time will elapse (40 sec. maximum) depending on the detector type, before the alarm indicating LED will light.

Reset Function

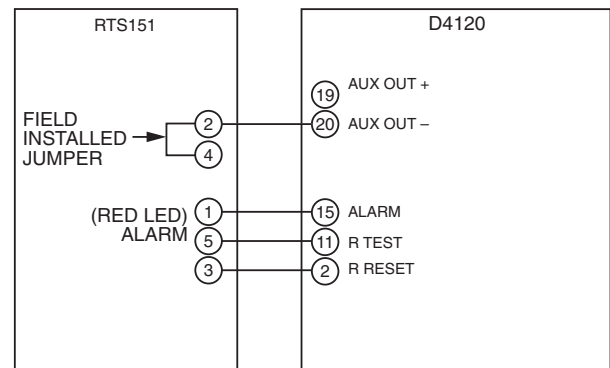
Gently insert a 1/8" maximum diameter tool into the hole until it stops and LED turns off. The RTS151 is capable of resetting only certain System Sensor models of detectors. Refer to detector installation instructions for additional information.

FIGURE 1. RTS151 REMOTE TEST STATION:



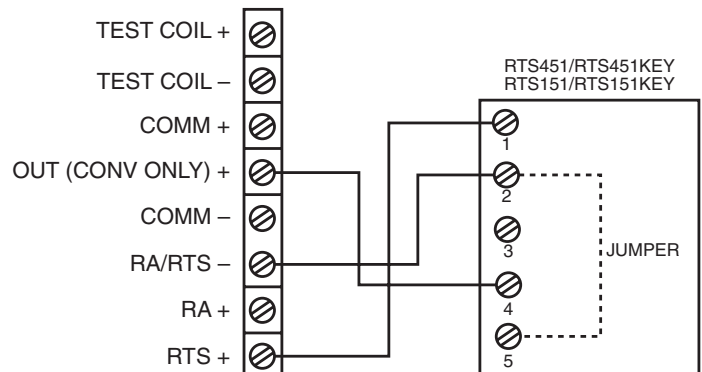
H0196-01

FIGURE 2. WIRING DIAGRAM FOR RTS151 TO D4120 4-WIRE DUCT SMOKE DETECTOR:



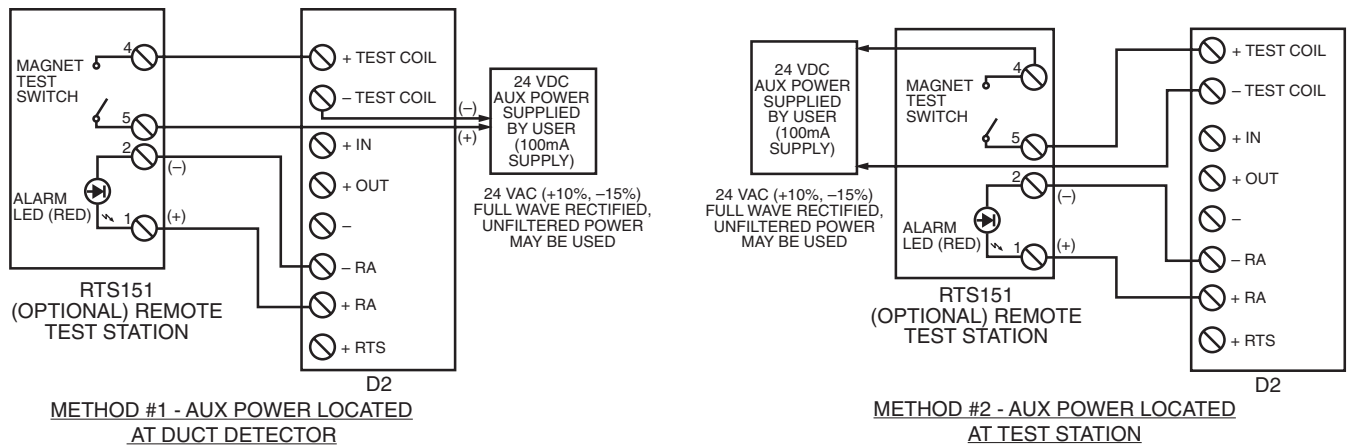
H0582-20

FIGURE 3. WIRING DIAGRAM FOR RTS151 TO DNR 2-WIRE DUCT SMOKE DETECTOR WITH REMOTE TEST CAPABLE HEAD:



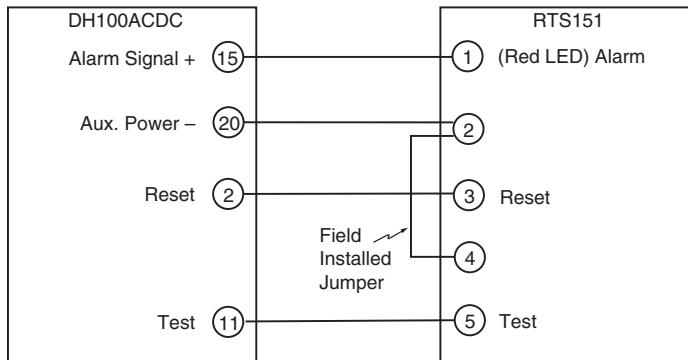
H0633-00

FIGURE 4. WIRING DIAGRAM FOR RTS151 TO D2-2WIRE DUCT SMOKE DETECTOR:



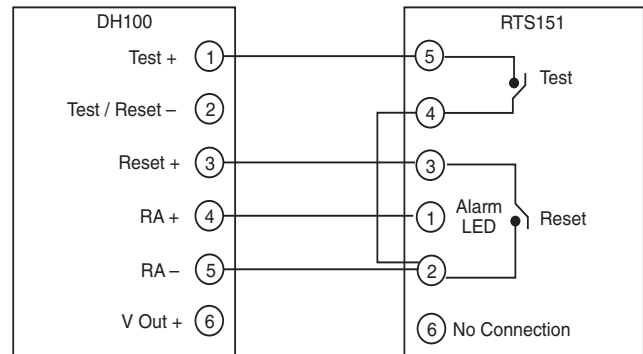
H0612-11

FIGURE 5. WIRING DIAGRAM FOR RTS151 TO DH100ACDC 4-WIRE DUCT SMOKE DETECTOR:



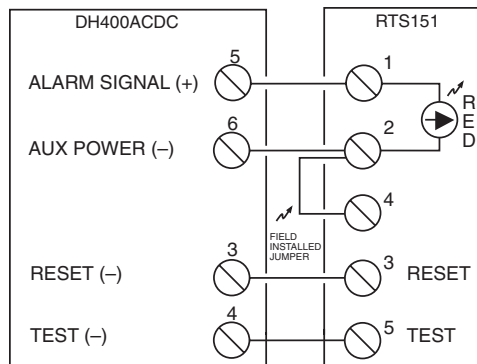
H0197-01

FIGURE 6. WIRING DIAGRAM FOR RTS151 TO DH100 2-WIRE DUCT SMOKE DETECTOR:



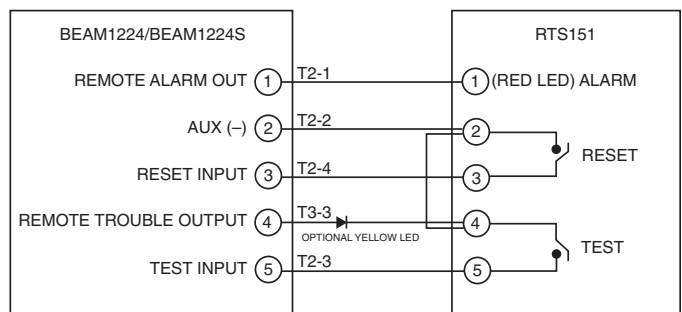
H0198-04

FIGURE 7. WIRING DIAGRAM FOR RTS151 TO DH400ACDC DUCT SMOKE DETECTOR:



H0149-02

FIGURE 8. WIRING DIAGRAM FOR RTS151 TO BEAM1224/BEAM1224S SMOKE DETECTOR:



H0586-03

THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed product to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for the enclosed product. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the replacement of any part of the product which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to Honeywell, 12220 Rojas Drive, Suite 700, El Paso, TX 79936, USA.

Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



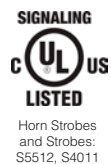
L-Series and L-Series with LED Indoor Selectable Horns, Strobes and Horn Strobes

System Sensor L-Series and L-Series with LED audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- LED technology provides lower current draw
- Digital Voltage Meter (DVM) diagnostic test points for Horn Strobes and Strobes
- Common aesthetics across the L-Series platform
- Standard and compact sizes
- Tamper-resistant construction
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Field-selectable candela settings on ceiling units: 15, 30, 75, 95, 115, 150, and 177
- Rotary switches for candela, tone and volume selections
- Mounting plate provides plug-in design for easier installation and shorting springs to check wiring continuity
- Electrically compatible with legacy SpectrAlert, SpectrAlert Advance and L-series devices
- Synchronization through use of UL approved power supplies that support System Sensor Sync protocol or System Sensor MDL3 Sync Module
- Horns, Strobes and Horn Strobes listed for wall or ceiling use

Agency Listings



The System Sensor L-Series and L-Series with LED

platform offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draw and modern aesthetics. LED lighting technology offers significantly lower current draw compared to older Xenon bulbs across a full candela range. This improves design flexibility for notification appliance circuits (NACs) while also reducing power supply requirements allowing for simpler and lower cost installations.

Flexible design options meet virtually any application requirement: wall or ceiling mount, standard or compact sizes, red or white color choices, bezel kits for alternate markings and languages, and LED color lenses for distinctive visual signaling. In addition, installers can easily adapt devices using field selectable candela, tone and volume settings using rotary switches.

The L-Series and L-Series with LED line is developed to simplify installation. All devices feature plug-in designs with minimal intrusion into the back box, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults. The universal mounting plate includes an onboard shorting spring, so installers can test wiring continuity before the device is installed.

In addition, the System Sensor L-Series with LED notification appliances offer a new diagnostic test point feature that allows you to measure device voltage with a digital voltage meter (DVM) without removing the appliance from the wall or ceiling. The DVM test points are discreetly located on the face of the notification appliance which enable faster troubleshooting and end of line (EOL) voltage checks while greatly reducing the risk of misplacing or damaging appliances during troubleshooting.

L-Series and L-Series with LED Specifications

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, LED Strobes and Horn Strobes	Regulated 24 VDC
Nominal Voltage, Horns	Regulated 12 VDC or regulated 24 DC/FWR
Operating Voltage Range, LED Strobes and Horn Strobes	16 to 33 V (24 V nominal)
Operating Voltage Range, Horns	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG

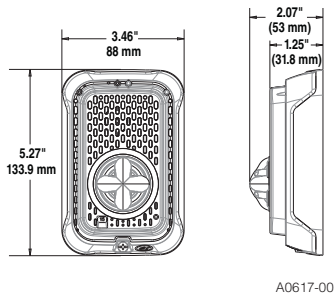
UL/ULC Current Draw Data, Horn Tones, and Sound Output Data

UL/ULC Maximum Strobe Current Draw (mA)			
	Candela Rating	16–33 Volts	
		Wall	Ceiling
Candela Range	15	18	18
	30	22	22
	75	70	70
	95	75	75
	110	85	—
	115	—	90
	135	105	—
	150	—	110
	177	—	115
	185	120	—

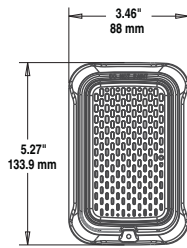
UL/ULC Maximum Horn Current Draw (mA RMS)				
Sound Pattern	dB	8–17.5 Volts	16–33 Volts	
		DC	DC	FWR
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

UL/ULC Maximum Horn Strobe Current Draw (mA) and Sound Output (dBA)													
Current Draw (mA RMS), Horn Strobe, Candela Range (15-185 cd)													Sound Output (dBA)
Switch Pos.	Sound Pattern	Volume Setting	16-33 Volts										16-33V
			15cd	30cd	75cd	95cd	110cd	115cd	135cd	150cd	177cd	185cd	DC
			WALL	CEILING	WALL	CEILING	CEILING	WALL					
1	Temporal 3	High	35	38	87	92	94	120	189	189	190	190	87
2	Temporal 3	Low	35	38	87	92	94	120	135	135	145	145	79
3	Non-Temporal	High	50	52	87	92	94	120	127	127	135	135	87
4	Non-Temporal	Low	35	38	87	92	94	120	125	125	130	130	79
5	3.1KHz Temporal 3	High	35	38	87	89	91	115	155	155	165	165	86
6	3.1KHz Temporal 3	Low	35	38	87	89	91	115	128	130	135	135	80
7	3.1KHz Non-Temporal	High	40	42	87	89	91	115	125	125	135	135	86
8	3.1KHz Non-Temporal	Low	35	38	87	89	91	115	120	120	130	130	80

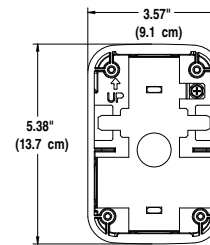
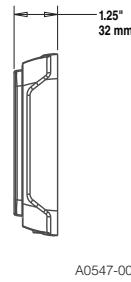
L-Series with LED Dimensions: Wall-Mounted Equipment



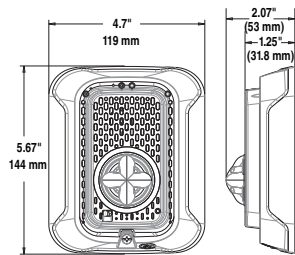
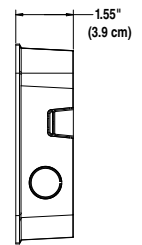
**Compact Strobe, Horn Strobe
for Wall**



Compact Horn

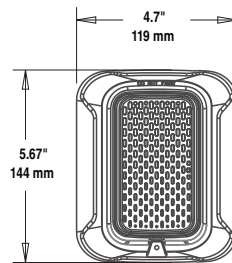


**Compact Surface Mount Back Box
for Walls (SBBGRL, SBBGWL)**

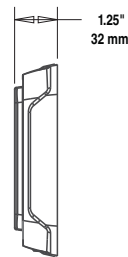


**Strobes, Horn Strobes
for Walls**

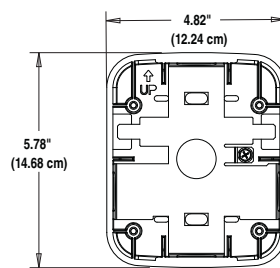
A0613-00



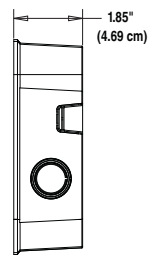
Horn



A0549-00

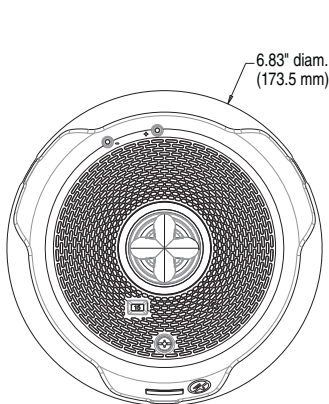


**Surface Mount Back Box
for Walls (SBBRL/SBBWL)**

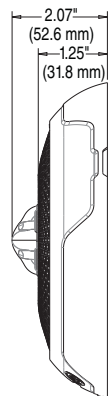


A0554-01

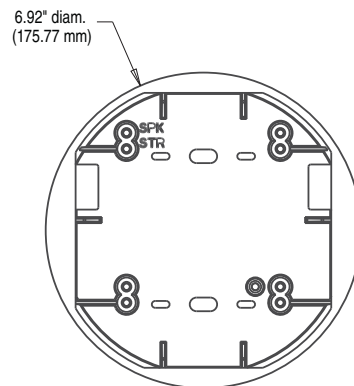
L-Series with LED Dimensions: Ceiling-Mounted Equipment



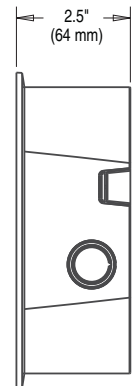
**Strobes and Horn Strobes
for Ceilings**



A0608-00



**Surface Mount Back Box
for Ceilings (SBBCL, SBCWL)**



A0546-00

L-Series with LED: Ordering Information

Model	Description
L-Series with LED Horn Strobes	
P2RLED	2-Wire, Horn Strobe, Wall, Red
P2RLED-B	2-Wire, Horn Strobe, Wall, Red, Bilingual
P2WLED	2-Wire, Horn Strobe, Wall, White
P2WLED-B	2-Wire, Horn Strobe, Wall, White, Bilingual
P2GRLED	2-Wire, Compact Horn Strobe, Wall, Red
P2GRLED-B	2-Wire, Compact Horn Strobe, Wall, Red, Bilingual
P2GWLED	2-Wire, Compact Horn Strobe, Wall, White
P2GWLED-B	2-Wire, Compact Horn Strobe, Wall, White, Bilingual
P2RLED-P	2-Wire, Horn Strobe, Wall, Red, Plain
P2WLED-P	2-Wire, Horn Strobe, Wall, White, Plain
P2RLED-SP	2-Wire, Horn Strobe, Wall, Red, FUEGO
P2WLED-SP	2-Wire, Horn Strobe, Wall, White, FUEGO
PC2RLED	2-Wire, Horn Strobe, Ceiling, Red
PC2RLED-B	2-Wire, Horn Strobe, Ceiling, Red, Bilingual
PC2WLED	2-Wire, Horn Strobe, Ceiling, White
PC2WLED-B	2-Wire, Horn Strobe, Ceiling, White, Bilingual
L-Series with LED Strobes	
SRLED	Strobe, Wall, Red
SRLED-B	Strobe, Wall, Red, Bilingual
SWLED	Strobe, Wall, White
SWLED-B	Strobe, Wall, White, Bilingual
SGRLED	Strobe, Compact, Wall, Red
SGRLED-B	Strobe, Compact, Wall, Red, Bilingual
SGWLED	Strobe, Compact, Wall, White
SGWLED-B	Strobe, Compact, Wall, White, Bilingual
SRLED-P	Strobe, Wall, Red, Plain
SWLED-P	Strobe, Wall, White, Plain
SRLED-SP	Strobe, Wall, Red, FUEGO
SWLED-CLR-ALERT	Strobe, Wall, White, ALERT
SWLED-ALERT	Strobe, Wall, White, ALERT, Amber Lens
SCRLED	Strobe, Ceiling, Red
SCRLED-B	Strobe, Ceiling, Red, Bilingual
SCRLED-P	Strobe, Ceiling, White, Plain
SCWLED	Strobe, Ceiling, White
SCWLED-B	Strobe, Ceiling, White, Bilingual
SCWLED-P	Strobe, Ceiling, White, Plain
SCWLED-CLR-ALERT	Strobe, Ceiling, White, ALERT
L-Series Horns	
HRL*	Horn, Red
HRLA*	Horn, Red, Plain, ULC
HWL*	Horn, White
HWLA*	Horn, White, Plain, ULC
HGRL*	Compact Horn, Red
HGRLA*	Compact Horn, Red, Plain, ULC
HGWL*	Compact Horn, White
HGWLA*	Compact Horn, White, Plain, ULC

Model	Description
LED Lenses	
LENS-A3	Lens LED Amber Wall/Ceiling
LENS-B3	Lens LED Blue Wall/Ceiling
LENS-G3	Lens LED Green Wall/Ceiling
LENS-R3	Lens LED Red Wall/Ceiling
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White
TRC-2	Universal Ceiling Trim Ring, Red
TRC-2W	Universal Ceiling Trim Ring, White
SBBCRL	Ceiling Surface Mount Back Box, Red
SBBCWL	Ceiling Surface Mount Back Box, White
Bezels†	
BZR	Wall Red Bezel Kit
BZW	Wall White Bezel Kit
BZGR	Compact Wall Red Bezel Kit
BZGW	Compact Wall White Bezel Kit
BZRC	Horn Strobe Ceiling Red Bezel Kit
BZWC	Horn Strobe Ceiling White Bezel Kit

Notes for L-Series With LED Horn Strobes and Strobes:

All -P models have a plain housing (no "FIRE" marking on cover).
 All -SP models have "FUEGO" marking on cover.
 All -ALERT models have "ALERT" marking on cover.
 All -B models have "FIRE/FEU" marking on cover for use in Canadian applications.
 Amber lenses are not for use in Canadian applications

Notes for L-Series Horns:

*Horn-only models are listed for wall or ceiling use.

Notes for Bezels:

†Each bezel pack ships in a package of 5.
 Add one of the following extensions for print/language options: -F (FIRE), -AL (ALERT), -EV (EVAC), -AG (AGENT), -P (Plain), -FR (FEU), -PG (FOGO), -SP (FUEGO), -SPE (FUEGO/FIRE).

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 for current product information, including the latest version of this data sheet.
 AVDS916-01 • 10/03/2023



Outdoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

SpectrAlert® Advance outdoor audible visible products are rich with features that cut installation times and maximize profits.

Features

- Weatherproof per NEMA 4X, IP56
- Listed to UL 1638 (strobe) and UL 464 (horn)
- Compatible with System Sensor synchronization protocol and legacy SpectrAlert products
- Field-selectable candela settings: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Rotary switch for horn tone and three volume selections
- Horn rated at 88+ dBA at 16 volts
- Rated from -40°F to 151°F
- Universal mounting plate with an onboard shorting spring that tests wiring continuity before devices are installed
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Listed for ceiling or wall mounting



SPECTRAlert®
ADVANCE
from System Sensor

SpectrAlert Advance offers the broadest line of outdoor horns, strobes, and horn strobes in the industry. With white or red plastic housings, wall or ceiling mounting options, and plain or FIRE-printed devices, SpectrAlert Advance can meet virtually any application requirement, including indoor, outdoor, wet, and dry applications in temperatures from -40°F to 151°F.

Like the entire SpectrAlert Advance line, outdoor horns, strobes, and horn strobes for wall applications include a variety of features that increase application flexibility and simplify installation. First, field-selectable settings, including candela, automatic selection of 12- or 24-volt operation, horn tones, and three volume options enable installers to easily adapt devices to meet requirements.

Next, SpectrAlert Advance devices use a universal mounting plate for both wall and ceiling applications. This mounting plate includes an onboard shorting spring that ensures wiring continuity before devices are installed, so installers can verify proper wiring without mounting the devices and exposing them to potential construction damage. Once the plates are mounted, all SpectrAlert Advance devices utilize a plug-in design with a single captured screw to speed installation and virtually eliminate costly ground faults.

Outdoor devices ship with weatherproof plastic back boxes (metal back boxes are available separately) that accommodate in-and-out wiring for daisy chaining devices. Plastic back boxes feature removable side flanges and improved resistance to saltwater corrosion. Knock-outs located on the back eliminate the need to drill holes for screw-in mounting. Plastic and metal weatherproof back boxes come with 3/4-inch top and bottom conduit entries and 3/4-inch knock-outs at the back. A screw-in NPT plug with an O-ring gasket for a watertight seal is included with each back box.

Agency Listings



S4011 (chimes, horn strobes, horns)
S3593 (outdoor and alert strobes)



APPROVED
3023572



MEAA452-05-E



7300-1653:187 (outdoor strobes)
7125-1653:188 (horn strobes,
chime strobes)
7135-1653:189 (horns, chimes)

SpectrAlert Advance Outdoor Horn, Strobe, and Horn Strobe Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance outdoor horns, strobes, and horn strobes shall mount to a weatherproof 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 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Outdoor SpectrAlert Advance products shall operate between –40 and 151 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. The strobe must be installed with its weatherproof back box in order to remain outdoor approved per UL. The strobe shall be suitable for use in wet environments.

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 shall be set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn or horn strobe models shall operate on a coded or non-coded power supply. The horn strobe must be installed with its weatherproof back box in order to remain outdoor approved per UL. The horn strobe shall be suitable for use in wet environments.

Physical/Electrical Specifications

Operating Temperature	–40°F to 151°F (–40°C to 66°C)
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)
Operating Voltage with MLD3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6" L x 4.7" W x 2.5" D (142 mm L x 119 mm W x 64 mm D)
Horn Dimensions	5.6" L x 4.7" W x 1.3" D (142 mm L x 119 mm W x 33 mm D)
Wall-Mount Weatherproof Back Box Dimensions (SA-WBB)	5.7" L x 5.1" W x 2.0" D (145 mm L x 130 mm W x 51 mm D)

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. 2. P, S, PC, and SC products will operate at 12 V nominal only for 15 and 15/75 cd.

UL Current Draw Data

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

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, Standard Candela Range (15–115 cd)									
DC Input	8–17.5 Volts		16–33 Volts						
	15	15/75	15	15/75	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)									
DC Input	16–33 Volts				FWR Input	16–33 Volts			
	135	150	177	185		135	150	177	185
Temporal High	245	259	290	297	Temporal High	215	231	258	265
Temporal Medium	235	253	288	297	Temporal Medium	209	224	250	258
Temporal Low	232	251	282	292	Temporal Low	207	221	248	256
Non-Temporal High	255	270	303	309	Non-Temporal High	233	248	275	281
Non-Temporal Medium	242	259	293	299	Non-Temporal Medium	219	232	262	267
Non-Temporal Low	238	254	291	295	Non-Temporal Low	214	229	256	262

Candela Derating

For K series products used at low temperatures, listed candela ratings must be reduced in accordance with this table.

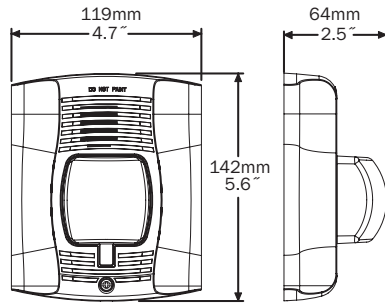
Strobe Output (cd)	
Listed Candela	Candela rating at –40°F
15	Do not use below 32°F
15/75	
30	
75	
95	44
110	70
115	110
135	115
150	150
177	177
185	185

Horn Tones and Sound Output Data

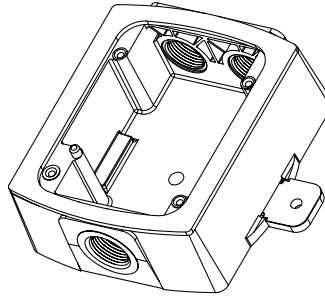
Horn and Horn Strobe Output (dBA)										
Switch Position	Sound Pattern	dB	8–17.5 Volts		16–33 Volts		24-Volt Nominal			
							Reverberant		Anechoic	
			DC	FWR	DC	FWR	DC	FWR	DC	FWR
1	Temporal	High	78	78	84	84	88	88	99	98
2	Temporal	Medium	74	74	80	80	86	86	96	96
3	Temporal	Low	71	73	76	76	83	80	94	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.

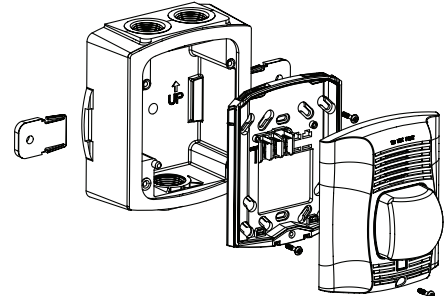
SpectrAlert Advance Diagrams



Wall-Mount Horn Strobes



Wall Plastic Weatherproof Back Box



Wall-Mount Horn Strobe with Plastic Weatherproof Back Box

SpectrAlert Advance Ordering Information

Model	Description	
Red	White	
Wall Horn Strobes		
P2RK	P2WK	2-Wire Horn Strobe, Standard cd, Outdoor (includes plastic weatherproof back box)
P2RK-P	P2WK-P	2-Wire Horn Strobe, Standard cd, Outdoor, Plain (includes plastic weatherproof back box)
P2RK-R	P2WK-R	2-Wire Horn Strobe, Standard cd, Outdoor (does not include plastic weatherproof back box)
P2RHK	P2WHK	2-Wire Horn Strobe, High cd, Outdoor (includes plastic weatherproof back box)
P2RHK-P	P2WHK-P	2-Wire Horn Strobe, High cd, Outdoor, Plain (includes plastic weatherproof back box)
P2RHK-R	P2WHK-R	2-Wire Horn Strobe, High cd, Outdoor (does not include plastic weatherproof back box)
P4RK	P4WK	4-Wire Horn Strobe, Standard cd, Outdoor (includes plastic weatherproof back box)
P4RK-R	—	4-Wire Horn Strobe, Standard cd, Outdoor (does not include plastic weatherproof back box)
P2RHK-120	—	2-Wire Horn Strobe, High cd, Outdoor, 120 V (includes plastic weatherproof back box)
Wall Strobes		
SRK	SWK	Strobe, Standard cd, Outdoor (includes plastic weatherproof back box)
SRK-P	SWK-P	Strobe, Standard cd, Outdoor, Plain (includes plastic weatherproof back box)
SRK-R	SWK-R	Strobe, Standard cd, Outdoor (does not include plastic weatherproof back box)
SRHK	SWHK	Strobe, High cd, Outdoor (includes plastic weatherproof back box)
SRHK-P	SWHK-P	Strobe, High cd, Outdoor, Plain (includes plastic weatherproof back box)
SRHK-R	SWHK-R	Strobe, High cd, Outdoor (does not include plastic weatherproof back box)
Horns		
HRK	—	Horn, Red, Outdoor (includes plastic weatherproof back box)
HRK-R	—	Horn, Red, Outdoor (does not include plastic weatherproof back box)
Accessories		
SA-WBB	SA-WBBW	Metal Weatherproof Back Box
WTP	WTPW	Metal Weatherproof Outdoor Flush-mounting Plate

Notes:

All -P models have a plain housing (no "FIRE" marking on cover). All -R models require metal weatherproof outdoor flush mounting plate or a metal weatherproof outdoor back box (order separately). "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. **When replacing standard outdoor units both the device and back box must be replaced.**



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for current product information, including the latest version of this data sheet.
AVDS115-02 • 12/3/2019



Indoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

System Sensor L-Series audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- Updated Modern Aesthetics
- Small profile devices for Horns and Horn Strobes
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and two volume selections
- Mounting plate for all standard and all compact wall units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically compatible with legacy SpectrAlert and SpectrAlert Advance devices
- Compatible with MDL3 sync module
- Strobes and Horn Strobes listed for wall mounting only
- Horns listed for wall or ceiling use

Agency Listings



The System Sensor L-Series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draws and modern aesthetics. With white and red plastic housings, standard and compact devices, and plain, FIRE, and FUEGO-printed devices, System Sensor L-Series can meet virtually any application requirement.

The L-Series line of wall-mount 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, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults.

To further simplify installation and protect devices from construction damage, the L-Series utilizes a universal mounting plate for all models with an onboard shorting spring, so installers can test wiring continuity before the device is installed.

Installers can also easily adapt devices to suit a wide range of application requirements using field-selectable candela settings, automatic selection of 12- or 24-volt operation, and a rotary switch for horn tones with two volume selections.

L-Series Specifications

Architect/Engineer Specifications

General

L-Series standard horns, strobes, and horn strobes shall mount to a standard 2 x 4 x 1⁷/₈-inch back box, 4 x 4 x 1¹/₂-inch back box, 4-inch octagon back box, or double-gang back box. L-Series compact products shall mount to a single-gang 2 x 4 x 1⁷/₈-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products for all standard models and a separate universal mounting plate shall be used for mounting wall compact models. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, L-Series 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 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Indoor L-Series 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, 30, 75, 95, 110, 135, and 185.

Strobe

The strobe shall be a System Sensor L-Series 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 L-Series 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 two 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. 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 MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize 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 4¹¹/₁₆ x 4¹¹/₁₆ x 2¹/₈-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical/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 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)
Operating Voltage Range MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6" L x 4.7" W x 1.91" D (143 mm L x 119 mm W x 49 mm D)
Compact Wall-Mount Dimensions (including lens)	5.26" L x 3.46" W x 1.91" D (133 mm L x 88 mm W x 49 mm D)
Horn Dimensions	5.6" L x 4.7" W x 1.25" D (143 mm L x 119 mm W x 32 mm D)
Compact Horn Dimensions	5.25" L x 3.45" W x 1.25" D (133 mm L x 88 mm W x 32 mm D)

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. Strobe products will operate at 12 V nominal only for 15 cd and 30 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)				
	Candela	8–17.5 Volts	16–33 Volts	FWR
		DC	DC	
Candela Range	15	88	43	60
	30	143	63	83
	75	N/A	107	136
	95	N/A	121	155
	110	N/A	148	179
	135	N/A	172	209
	185	N/A	222	257

UL Max. Horn Current Draw (mA RMS)				
	dB	8–17.5 Volts	16–33 Volts	FWR
		DC	DC	
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

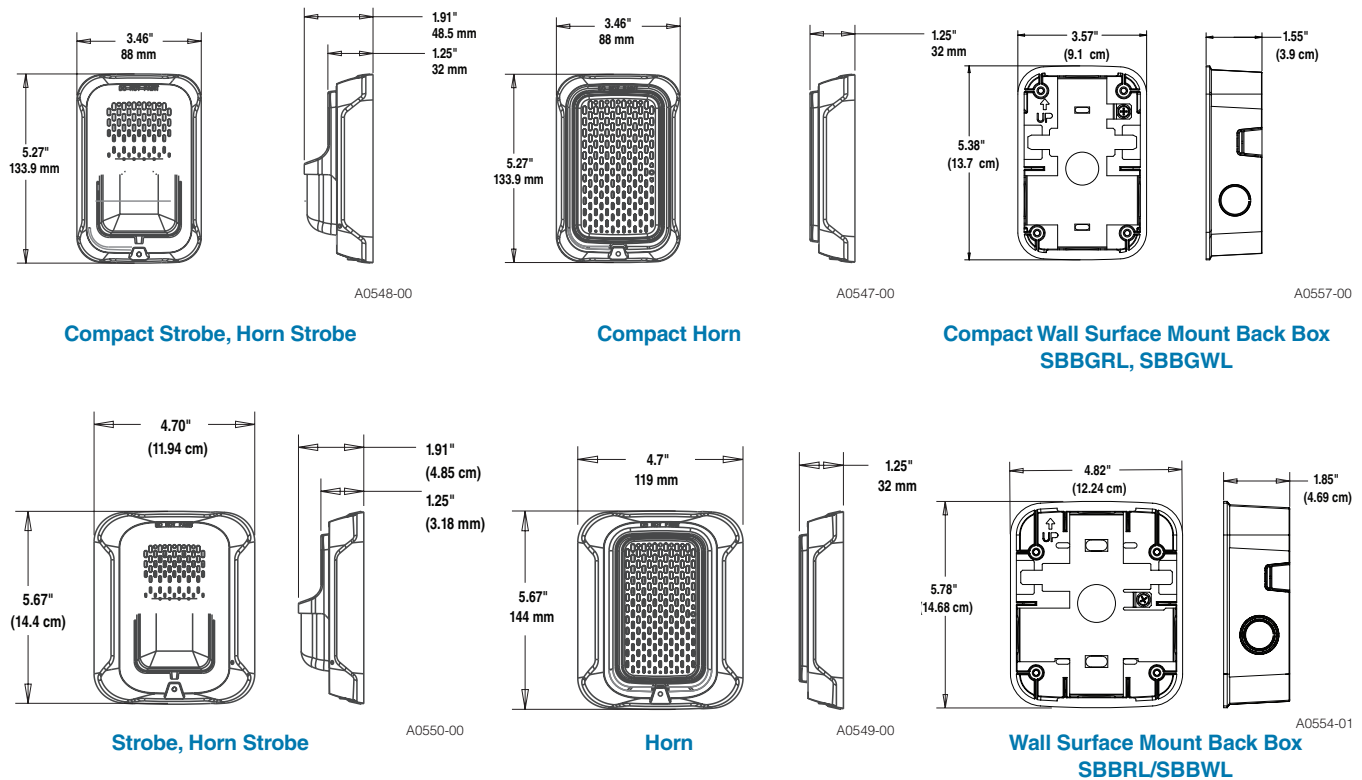
UL Max. Current Draw (mA RMS), Wall Horn Strobe, Candela Range (15–185 cd)									
DC Input	8–17.5 Volts		16–33 Volts						
	15cd	30cd	15cd	30cd	75cd	95cd	110cd	135cd	185cd
Temporal High	98	158	54	74	121	142	162	196	245
Temporal Low	93	154	44	65	111	133	157	184	235
Non-Temporal High	106	166	73	94	139	160	182	211	262
Non-Temporal Low	93	156	51	71	119	139	162	190	239
3.1K Temporal High	93	156	53	73	119	140	164	190	242
3.1K Temporal Low	91	154	45	66	112	133	160	185	235
3.1K Non-Temporal High	99	162	69	90	135	157	175	208	261
3.1K Non-Temporal Low	93	156	52	72	119	138	162	192	242
FWR Input	16–33 Volts								
	15cd	30cd	75cd	95cd	110cd	135cd	185cd		
Temporal High	83	107	156	177	198	234	287		
Temporal Low	68	91	145	165	185	223	271		
Non-Temporal High	111	135	185	207	230	264	316		
Non-Temporal Low	79	104	157	175	197	235	283		
3.1K Temporal High	81	105	155	177	196	234	284		
3.1K Temporal Low	68	90	145	166	186	222	276		
3.1K Non-Temporal High	104	131	177	204	230	264	326		
3.1K Non-Temporal Low	77	102	156	177	199	234	291		

Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)					
Switch Position	Sound Pattern	dB	8–17.5 Volts	16–33 Volts	FWR
			DC	DC	
1	Temporal	High	84	89	89
2	Temporal	Low	75	83	83
3	Non-Temporal	High	85	90	90
4	Non-Temporal	Low	76	84	84
5	3.1 KHz Temporal	High	83	88	88
6	3.1 KHz Temporal	Low	76	82	82
7	3.1 KHz Non-Temporal	High	84	89	89
8	3.1 KHz Non-Temporal	Low	77	83	83
9*	Coded	High	85	90	90
10*	3.1 KHz Coded	High	84	89	89

* Settings 9 and 10 are not available on 2-wire horn strobes. Temporal coding must be provided by the NAC. If the NAC voltage is held constant, the horn output remains constantly on.

L-Series Dimensions



L-Series Ordering Information

Model	Description
Wall Horn Strobes	
P2RL	2-Wire, Horn Strobe, Red
P2WL	2-Wire, Horn Strobe, White
P2GRL	2-Wire, Compact Horn Strobe, Red
P2GWL	2-Wire, Comp 2 fils act Horn Strobe, White
P2RL-P	2-Wire, Horn Strobe, Red, Plain
P2WL-P	2-Wire, Horn Strobe, White, Plain
P2RL-SP	2-Wire, Horn Strobe, Red, FUEGO
P2WL-SP	2-Wire, Horn Strobe, White, FUEGO
P4RL	4-Wire, Horn Strobe, Red
P4WL	4-Wire, Horn Strobe, White
Wall Strobes	
SRL	Strobe, Red
SWL	Strobe, White
SGRL	Compact Strobe, Red
SGWL	Compact Strobe, White
SRL-P	Strobe, Red, Plain
SWL-P	Strobe, White, Plain
SRL-SP	Strobe, Red, FUEGO
SWL-CLR-ALERT	Strobe, White, ALERT

Model	Description
Horns*	
HRL*	Horn, Red
HWL*	Horn, White
HGRL*	Compact Horn, Red
HGWL*	Compact Horn, White
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White

Notes:

All -P models have a plain housing (no "FIRE" marking on cover).
 All -SP models have "FUEGO" marking on cover.
 All -ALERT models have "ALERT" marking on cover.
 *Horn-only models are listed for wall or ceiling use.



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 for current product information, including the latest version of this data sheet.
 AVDS865-05 • 2/22/2018



DTK-HW Series

Parallel Connected Surge Protective Device

DITEK's DTK-HW Series of surge protective devices are designed and manufactured to meet the standards of the life safety industry. These compact, parallel-mount SPD's are available for 120V, 240V and 120/240V systems; and are widely used to protect fire alarm panels and other dedicated branch circuit loads. Their small footprint enables installation in a variety of locations.



Product Features

- Approved for 20A circuit breakers
- NEMA 4X weatherproof enclosure allows for use in harsh environments
- Diagnostic LED provides positive indication of system power and SPD function
- Complies with ANSI/IEEE C62.41 and C62.45 Category B standards

Applications

- Fire Alarm Control Panels
- Residential Electrical Panels
- Equipment Panels
- Pumps, Motors, Lift Pump Stations

Accessories

- Flush Mount Kit – DTK-FMK

Technical Specifications

Part Number:	DTK-120HW	DTK-240HW	DTK-120/240HW
Voltage Configuration:	Single Φ (2W +G) 120VAC	Single Φ (2W +G) 240VAC	Split Φ (3W +G) 120/240VAC
MCOV:	150V/300V	320V/640V	150V/300V
Voltage Protection Rating:	700V L-G, L-N 1500V N-G	1200V L-G, L-N 2000V N-G	700V L-G, L-N 1500V L-L, N-G
Surge Current Rating:	50,000A	50,000A	100,000A
SCCR:	100,000A		
Nominal Discharge Current Rating (I_n):	10kA		

Mechanical Specifications

Connection Method:	3/4" NPT Male, 18-inch 12 AWG Leads
Housing:	NEMA 4X Polycarbonate
Operating Temperature:	-31°F - 176°F (-35°C - 80°C)
Maximum Humidity:	95% non-condensing
Dimensions:	3.5" L x 1.89" W x 3.4" H (88.9 mm x 48.3 mm x 86.4 mm)
Weight:	0.55 lb (0.25 kg)

Quality Standards & Approvals

Certifications:	UL1449 4 th Edition, CSA C22.2 No. 269.1-17
SPD Type:	Type 1
Warranty:	10 Year Limited Warranty



ES-200X**Intelligent Addressable FACP
with Communicator****Addressable Fire Alarm Control Panels****General**

The **ES-200X** is the latest intelligent addressable Fire Alarm Control Panel (FACP) from Fire-Lite Alarms and is a direct replacement for the MS-9200UDLS. The ES-200X comes with a pre-installed communicator and supports up to 198 addressable devices (99 detectors and 99 modules). With an extensive list of powerful features, the ES-200X programs just like Fire-Lite's other addressable products, yet fits into applications previously served only by conventional panels.

The pre-installed IPOTS-COM is a dual technology (POTS and IP) communicator. The POTS transmits system status (alarms, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. The IP communicator's internet monitoring capability sends alarm signals over the Internet saving the monthly cost of two dedicated business telephone lines. Although not required, the secondary telephone line may be retained providing backup communication over the public switched telephone line. Optional cellular reporting is available using the CELL-MOD or CELL-CAB-FL.

Remote and local programming of the control panel is possible using the FS-Tools Upload/Download utility. Programming databases can be uploaded/downloaded via the panel's USB port (and USB cable) or via an ethernet connection using the IPOTS-COM communicator. The USB port also allows for the download or upload of the entire program, history file, walk-test data, current status and system voltages by means of a USB flash drive.

The power supply and all electronics are contained on a circuit board supported on a new quick install chassis and housed in a metal cabinet. Available accessories include local and remote upload/download software, remote annunciators, and reverse polarity/city box transmitter (4XTMF).

Features

- Listed to UL Standard 864, 10th edition
- Pre-installed IPOTS-COM Ethernet IP and POTS (Plain Old Telephone Service) Central Station Communicator over AlarmNet
- Optional CELL-MOD or CELL-CAB-FL GSM Central Station Communicator over AlarmNet®
- Automated activation of the ECC-50/100 Emergency Command Center
- ECC-FFT Firefighter Telephone option
- Compatible with SWIFT® wireless devices
- Auto-programming (learn mode) reduces installation time. Reports two devices set to the same address
- Four built-in, independently programmable Style Z (Class A) or Style Y (Class B) NAC circuits
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices
- Notification Appliance Circuit End of Line resistor matching
- Four programmable function keys for ease of maintenance
- Two programmable relays and one fixed trouble relay
- Built-in Programmer
- Integral 80-character LCD display with backlighting
- Real-time clock/calendar with automatic daylight savings control
- History file with 1,000 event capacity
- Addressable sounder base compatibility
- Multi-criteria detector (smoke, heat, CO) with programmable response
- Control module delay timer
- Automatic detector sensitivity testing (NFPA 72 compliant)
- Automatic device type-code verification
- Point trouble identification
- Waterflow selection per module point



- Alarm verification selection per detector point
- Maintenance alert warns when smoke detector dust accumulation is excessive
- One-person audible or silent walk test with walk-test log and printout
- System alarm verification selection per detector point
- PAS (Positive Alarm Sequence) and Pre-signal per point (NFPA 72 compliant)
- Up to 16 ANN-BUS annunciators- 8 per each ANN-Bus
- Remote Acknowledge, Alarm Silence, Reset and Drill via addressable modules or remote annunciator
- Upload/Download of program and data via USB with optional FS-Tools Programming Utility

SLC COMMUNICATION LOOP

- Supports LiteSpeed™ and CLIP protocols
- SLC operates up to 10,000 ft. (3,000 m) in LiteSpeed mode with twisted, unshielded wire
- Single addressable SLC loop which meets NFPA Class B and Class A requirements
- 198 addressable device capacity (99 addressable detectors and 99 modules)
- Compatible with Fire-Lite's addressable devices (refer to the *SLC Wiring Manual*)

NOTIFICATION APPLIANCE CIRCUITS (NACS)

- Four independently programmable output circuits. Circuits can be configured for the following outputs:

– **Style Y** (Class B)

– **Style Z** (Class A)

- Silence Inhibit and Autosilence timer options
- Continuous, March Time, Temporal, or California code for main circuit board NACs with two-stage capability
- Selectable strobe synchronization per NAC
- 2.5 A special application, 250mA regulated, total power for NACs

NOTE: Maximum or total 24VDC system power shared between all NAC circuits and the ANN-BUS is 2.7 A

PROGRAMMING AND SOFTWARE

- Autoprogramming (learn mode) reduces installation time
- Custom English labels (per point) may be manually entered or selected from an internal library file
- Two programmable Form-C relay outputs
- 99 software zones
- Continuous fire protection during online programming
- Program Check automatically catches common errors not linked to any zone or input point
- **OFFLINE PROGRAMMING:** Create the entire program in your office using FS-Tools, a Windows®-based software package, and upload/download system programming locally. Offline programming requires an ethernet connection. FS-Tools is available on www.firelite.com.

User interface

LED INDICATORS

- Fire Alarm (red)
- CO Alarm (red)
- AC Power (green)
- Supervisory (yellow)
- Trouble (yellow)
- Ground fault (yellow)
- Battery fault (yellow)
- Disabled (yellow)
- Maintenance (yellow)
- Communication (yellow)
- Alarm Silenced (yellow)
- F1-F4 Programmable Function Keys (yellow)

KEYPAD

- 16 key alpha-numeric pad
- Acknowledge
- Alarm Silence
- Drill (Manual Evacuate)
- Four (4) programmable function keys
- Reset (lamp test)

PRODUCT LINE INFORMATION

ES-200X: Addressable Fire Alarm Control Panel with one SLC loop. Includes main circuit board with display, pre-installed communicator, chassis with transformer, backbox with door, plastic bag containing screws, cables, key, etc. (For ES-200XC, refer to DF-60958.)

FS-Tools: Programming software for Windows®-based PC computer. Available for download at www.firelite.com.

CELL-CAB-FL/CELL-MOD: Optional GSM communicators.

IPOTS-COM: Dual technology (POTS and IP) communicator. (replacement board)

DP-ES-R: Optional dress panel for the ES-200X.

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

BB-2F: Optional cabinet for one or two modules.

BB-6F: Optional cabinet for up to six modules mounted on CHS-6 chassis.

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

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

CHS-6: Chassis, mounts up to six multi-modules in a BB-6F cabinet.

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

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

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

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

OPTIONAL MODULES

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

PWRMOD24 Power Expander Module: Optional power module. Increases alarm power output to 6 amps.

COMPATIBLE ANNUNCIATORS

ANN-80: Remote LCD annunciator mimics the information displayed on the FACP LCD display. Recommended wire type is unshielded.

ANN-100: Remote LCD annunciator mimics the information displayed on the FACP LCD display. Recommended wire type is unshielded. For use in FM applications only.

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

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 provides 10 programmable Form-C relays. Can be mounted inside the cabinet. (See DF-52431.)

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

ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

SD365: Addressable low-profile photoelectric smoke detector. LiteSpeed only.

SD365-IV: Addressable low-profile photoelectric smoke detector. Ivory. LiteSpeed and CLIP mode.

SD365T: Addressable low-profile photoelectric smoke detector with thermal sensor. LiteSpeed only.

SD365T-IV: Addressable low-profile photoelectric smoke detector with thermal sensor. Ivory. LiteSpeed and CLIP mode.

SD365R: Remote test capable addressable photoelectric smoke detector for use with DNR(W) duct detector housing. LiteSpeed only.

SD365R-IV: Remote test capable addressable photoelectric smoke detector for use with DNR(W) duct detector housing. Ivory. LiteSpeed and CLIP mode.

H365: Low-profile 135°F fixed thermal sensor. LiteSpeed only.

H365-IV: Low-profile 135°F fixed thermal sensor. Ivory. LiteSpeed and CLIP mode.

H365R: Low-profile, intelligent, rate-of-rise thermal sensor. LiteSpeed only.

H365R-IV: Low-profile, intelligent, rate-of-rise thermal sensor. Ivory. LiteSpeed and CLIP mode.

H365HT: Low-profile intelligent 190°F/88°C fixed thermal sensor. LiteSpeed only.

H365HT-IV: Low-profile intelligent 190°F/88°C fixed thermal sensor. Ivory. LiteSpeed and CLIP mode.

Legacy Devices

CP355: Addressable low-profile ionization smoke detector.

SD355: Addressable low-profile photoelectric smoke detector.

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

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

SD355CO: Addressable, low-profile device that provides fire, heat, and carbon monoxide (CO) detection.

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 at 190°F/88°C.

AD355: Low-profile, intelligent, "Adapt" multi-sensor detector (B350LP base included).

B200S: Programmable, addressable sounder base.

B200SR: Addressable sounder base.

BEAM355: Intelligent beam smoke detector.

BEAM355S: Intelligent beam smoke detector with integral sensitivity test.

D355PL: InnovairFlex low-flow non-relay duct-detector housing; includes SD355R.

DNR: InnovairFlex low-flow non-relay duct-detector housing. (Order SD355R/SD365R separately.)

DNRW: InnovairFlex low-flow non-relay duct-detector housing, with NEMA-4 rating. Watertight. (Order SD355R/SD365R separately.)

Addressable Modules

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. Addressable Monitor Module for one zone of conventional two-wire detectors. Requires resettable 24 VDC power. Refer to the *Device Compatibility Document* for listed compatible devices and quantity limitation.

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. NAC 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).

ISO-6: Six-fault isolator 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 cabinet.

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

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

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 cabinet.

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 cabinet.

CRF-300-6: Six-relay control module (Form-C relays). 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 cabinet.

SWIFT Wireless Devices

W-GATE: LiteSpeed Wireless Gateway

W-SD355: LiteSpeed intelligent, wireless photo detector.

W-H355R: LiteSpeed intelligent wireless rate of rise (135°) heat detector.

W-SD355T: Intelligent wireless photo/heat detector.

W-H355: LiteSpeed intelligent wireless fixed-temperature (135°) heat detector.

W-MMF: LiteSpeed Intelligent wireless monitor module.

W-CRF: LiteSpeed Intelligent wireless relay module.

W-BG12LX: LiteSpeed Intelligent wireless pull station.

WAV-RL, WAV-WL, WAV-CRL, WAV-CWL: LiteSpeed Intelligent AV bases.

W-USB: Wireless USB radio/antenna dongle that plugs into the USB port of a PC running SWIFT Tools.

SWIFT Tools: Programming and diagnostic utility for the Wireless Gateway and devices. Available for download from firelite.com.

NOTE: For more information on Compatible Addressable Devices for use with the ES-200X, see the following data sheets (document numbers): SD365 Series (DF-61010), H365 Series (DF-61011), AD355 (DF-52386), BG-12LX (DF-52013), CMF-300-6 (DF-52365), CRF-300-6 (DF-52374), CMF/CRF Series (DF-52130), CP355 (DF-52383), H355 Series (DF-52385), I300 (DF-52389), ISO-6 (DF-60485), MMF-300 Series/MDF-300 (DF-52121), MMF-300-10 (DF-52347), MMF-302-6 (DF-52356), SD355/SD355T (DF-52384), and SLC Wiring Manual (51309).

NOTE: Legacy 300 Series detection devices such as the CP300/CP350, SD300(T)/SD350(T) and older modules such as the M300, M301, M302, C304, and BG-10LX are not compatible with LiteSpeed polling. If the SLC contains one of these devices, polling must be set for standard CLIP protocol. Please consult factory for further information on previous 300 Series devices.

ADDRESSABLE DEVICE ACCESSORIES

End-of-Line Resistor Assembly (R-47K and R-3.9K): The 47k ohm assembly supervises the MMF-300, MDF-300, MMF-301, and CMF-300 module circuits. The 3.9k ohm assembly supervises the MMF-302 module circuit. These resistors are included with each module.

Power Supervision Relay: Supervises the power to 4-wire smoke detectors and notification appliances.

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 Signaling Line Circuits..... 1
- Addressable device capacity 198
- Programmable software zones 99
- Annunciators..... 16

Electrical Specifications

AC Power: Operates in either 120 or 240 VAC, 50/60 Hz, 3.25 A, auto-sensing- no switch required. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation. Nonpower-limited, supervised.

Battery: Two 12 V 18 AH lead-acid batteries. Battery Charger Capacity: 7-18 AH (ES-200X cabinet holds maximum of two 18 AH batteries.)

Communication Loop: Supervised and power-limited.

Notification Appliance Circuits: Terminal Block provides connections for four NACs, Style Y (Class B) or Style Z (Class A). Special Application power. Power-limited, supervised circuitry. Maximum signaling current per circuit: 2.5 amps special application, 250mA regulated. End-of-Line Resistor: 4.7k ohm, ½ watt (P/N 71252 UL listed) for Style Y (Class B) NAC; system capable of 1.9 kΩ - 22 kΩ ELR range. Refer to the *Fire•Lite Device Compatibility Document* for listed compatible devices.

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

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.72" (1.82 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x 16.65" (42.29 cm.) wide x 5.25" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

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

Temperature and Humidity Ranges

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

NFPA Standards

The ES-200X complies with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTMF).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Where a DACT is not accepted, the alarm, trouble and supervisory relays may be connected to UL 864 listed transmitters. For reverse polarity signaling of alarm and trouble, 4XTMF is required.)
- **PROPRIETARY** (Automatic, Manual and Waterflow).
- **CENTRAL STATION** (Automatic, Manual and Waterflow, and Sprinkler Supervised).
- **OT, PSDN** (Other Technologies, Packet-switched Data Network)
- **IBC 2012, IBC 2009, IBC 2006, IBC 2003, IBC 2000** (Seismic).
- **CBC 2007** (Seismic)

Agency Listings and Approvals

The listings and approvals below apply to the basic ES-200X control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S624
- **FM approved**
- **CSFM:** 7165-0075:500
- **FDNY:** COA #6261

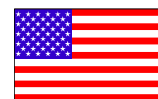
NOTE: See DF-60958 for ULC-listed model.

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



Country of Origin: USA

SYSTEM SPECIFICATIONS

System Capacity

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

Electrical Specifications

AC Power: MS-9200UDLS Rev 3: 120 VAC, 60 Hz, 3.0 amps. MS-9200UDLS Rev 3E: 240 VAC, 50 Hz, 1.5 amps. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation.

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

Communication Loop: Supervised and power-limited.

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

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

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

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

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

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

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.12" (.30 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x

16.65" (42.29 cm.) wide x 5.20" (13.34 cm.) deep. **Trim Ring (TR-CE):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

Shipping Specifications

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

Temperature and Humidity Ranges

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

NFPA Standards

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

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

Agency Listings and Approvals

The listings and approvals below apply to the basic MS-9200UDLS Rev 3 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S624
- **FM approved**
- **CSFM:** 7165-0075:0208
- **MEA:** 120-06-E

For ULC-listed version, see DF-60599.

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Made in the U.S.A.

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www.firelite.com

FCPS-24FS6(C/E)

6 Amp, 24 Volt Remote Power Supply



Power Supplies

The Fire-Lite FCPS-24FS6(C/E) is a compact, cost-effective, 6-amp remote power supplies with battery charger. The FCPS-24FS6(C/E) may be connected to any 12 or 24 volt fire alarm control panel (FACP) or may stand-alone. Primary applications include notification appliance (bell) circuit (NAC) expansion (to support ADA requirements and NAC synchronization) or auxiliary power to support 24 volt system accessories. The FCPS provides *regulated and filtered* 24 VDC power to four notification appliance circuits configured as either two Class B (Style Y) and Class A (Style Z, with ZNAC-4 option module) or four class B only. Alternately, the four outputs may be configured as any combination of resettable/non-resettable power outputs (optimal for powering four-wire smoke detectors). The FCPS-24FS6(C/E) also contains a battery charger capable of charging up to 7.0 AH batteries. The FCPS-24FS6C is ULC-listed.

NOTE: Unless otherwise specified, the term FCPS-24FS6 used in this document refers to the FCPS-24FS6, FCPS-24FS6C, and FCPS-24FS6E.

Features

- UL-Listed Notification Appliance Circuit (NAC) synchronization using System Sensor®, Wheelock®, or Gentex® "Commander²" appliances
- Operates as a "sync-follower" or as a "sync-generator" (default) See note on page 2.
- Contains two fully-isolated input/control circuits - triggered from FACP NAC (NAC expander mode) or jumped permanently "ON" (stand-alone mode)
- Two Class B (Style Y) or Class A (Style Z, with ZNAC-4 module) NACs (circuits 1 & 3)
- 6-amp full load output, with 3 amps maximum/circuit, in NAC expander mode (UL 864)
- 4-amp continuous output in stand-alone mode (UL 1481)
- Compatible with coded inputs; signals passed through
- Optional power-supervision relay (EOLR-1)
- In stand-alone mode, output power circuits may be configured as: resettable, (reset line from FACP required), non-resettable, or a mix of two and two
- Fully regulated and filtered power output - optimal for powering four-wire smoke detectors, annunciators, and other system peripherals requiring regulated/filtered power
- Power-limiting technology meets UL power-limiting requirements
- Form-C normally-closed trouble relay
- Fully supervised power supply, battery, and NACs
- Selectable earth fault detection
- AC trouble report selectable for immediate 2-hour delay
- Works with virtually any UL 864 fire alarm control which utilizes an industry-standard reverse-polarity notification circuit (including unfiltered and unregulated bell power)
- Requires input trigger voltage of 9 - 32 VDC
- Self-contained in compact, locking cabinet - 15"H x 14.5"W x 2.75"D (cm: 38.1H x 36.83W x 6.985D)
- Includes integral battery charger capable of charging up to 18 AH batteries. Cabinet capable of housing 7.0 AH batteries
- Battery charger may be disabled via DIP switch for applications requiring larger batteries
- Fixed, clamp-type terminal blocks accommodate up to 12 AWG (3.1mm²) wire



Specifications

Primary (AC) Power:

- FCPS-24FS6/C: 120 VAC, 60 Hz, 3.2A maximum
- FCPS-24FS6E: 240 VAC, 50 Hz, 1.6A maximum
- Wire Size: minimum #14 AWG (2.0mm²) with 600 V insulation

Control Input Circuit:

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

Trouble Contact Rating: 5 A at 24 VDC

Auxiliary Power Output: Special application power 500 mA maximum

Output Circuits:

- +24 VDC filtered, regulated
- **3.0 A maximum for any one circuit**
- Total continuous current for all outputs (stand-alone mode): 4.0 A maximum
- Total short-term current for all outputs (NAC expander mode): 6.0 A maximum

Secondary Power (Battery) Charging Circuit:

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

Applications

Example 1: Expand notification appliance power an additional 6.0 A. Use up to four Class B (Style Y) outputs or four Class A (Style Z) outputs (using ZNAC-4). For example, the FACP notification appliance circuits will activate the FCPS when reverse-polarity activation occurs. Trouble conditions on the FCPS are sensed by the FACP through the notification appliance circuit.

Example 2: Use the FCPS to expand auxiliary regulated 24-volt system power up to 4.0 A. Both resettable and non-resettable power options are available. Resettable outputs are created by connecting the resettable output from the FACP to one or both of the FCPS inputs.

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

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

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

Sync Follower/Generator Note

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strobes accomplish this by monitoring very short timing pulses on the NAC power which are created by the FACP. When installed at the end of a NAC wire run, the FCPS-24FS6 can track (i.e. "follow") the strobe synchronization timing pulses on the existing NAC wire run. This maintains the overall system flash timing of the additional strobes attaches to the FCPS.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync follower," the FCPS' NAC outputs track the strobe synchronization pulses present at the FCPS' sync input terminal. The pulses originate from an upstream FACP or other power supply.

When the FCPS-24FS6 is configured (via DIP switch settings) as a "sync generator," the FCPS' sync input terminals are not used. Rather, the FCPS is the originator of the strobe synchronization pulses on the FCPS' NAC outputs. In "sync generator" mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switch settings.

Standards and Codes

The FCPS-24FS6 complies with the following standards:

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

Agency Listings and Approvals

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

- **UL Listed:** S2424, S1287
- **ULC Listed:** S2424
- **CSFM Approved:** 7315-0075:0206
- **MEA:** 387-94E
- **FM Approved**

Ordering Information

FCPS-24FS6: 6.0 A, 120 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

FCPS-24FS6C: Same as FCPS-24FS6, ULC-listed

FCPS-24FS6E: 6.0 A, 240 VAC remote charger power supply. Includes main printed circuit board, transformers, enclosure (15"H x 14.5"W x 2.75"D [cm: 38.1H x 36.83W x 6.985D]), and installation instructions

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

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

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

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

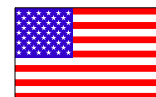
90286: Optional module mounting kit, is required to install an addressable module on the power supply main circuit board

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www.firelite.com



Country of Origin: USA

ANN-80

80-Character Serial LCD Annunciator



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. The 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.

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 (non-condensing) 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

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.

WIRE REQUIREMENTS: POWER CIRCUIT

- 14 to 18 AWG (0.75 - 2.08 mm²) wire for 24 VDC power circuit is acceptable. Power wire distance limitation is set by 1.2 volt maximum line drop from 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.

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.

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.

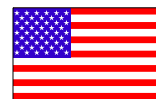
- **UL:** S2424
- **FM approved**
- **CSFM:** 7120-0075:0211
- **MEA:** 442-06-E

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www.firelite.com



Country of Origin: USA

StarLink[®] FIRE MAX 2

AT&T + verizon

DUAL SIM/DUAL PATH
AT&T and VERIZON
Cell &/or IP UNIVERSAL 5G
COMMERCIAL FIRE LTE-M COMMUNICATORS

AT&T + verizon NAPCO

- **Easiest installation, powered by panel, NO extra power supply, NO extra conduit.** (Excludes Metal Direct AC-Powered Model, shown below.)
- **Labor-Saving Supervision Features Save Time & Money** - Uniquely including 4 supervised, programmable EOLR zone inputs; 2 Form C Relay outputs (no extra supervision modules to buy or install); plus, 2 Telephone style jacks for easy FACU-connection. Self-supervised on 4 wires.
- **Easy-Repeat Account Templates** - Save your typical account setup and reuse for goof-proof communicator programming & fast deployment.
- **Free StarLink FACU-Saver App** - Smartphone Pro sales tool for calculating/demonstrating account's cellular cost-savings with dealer by number of lines & locations vs. copper POTs lines leased from phone co. **FREE download** on Apple Store or Google Play.
- **Pro Incentive Instant Rebate Program** - Dealers save on new and retrofit installations, replacing POTs, old radios, sunset networks and even new installations. (Nothing to mail in/fill out; Service credit automatically applied upon valid plan activation. See details online; scan QR code on back)
- **UL & NFPA 72 Fire Code-Compliant**, the StarLink Max2 Fire Series Wireless Commercial Fire Alarm Sole Path & Dual Path Communicators provide universal support for any brand 12V to 24V fire alarm control panel (FACU), reporting in Contact ID and 4/2. With broadest nationwide coverage footprint, Verizon or AT&T, using proven StarLink circuitry, they are also available in locking metal models.
- **Over-the-Air Upgradeable Firmware** for updates without a truck-roll.



StarLink Fire MAX 2: SLE-MAX2-Series The Power of 2: Dual SIM, Dual Path by Napco

- **Dual SIM, Dual Path Universal** full data 5G LTE-M cellular &/or IP commercial fire alarm reporting from any panel brand, virtually anywhere nationwide
- **One Model to Stock:** Provides both Verizon® & AT&T® Cell Networks plus either sole or dual path cell/IP reporting (selectable by plan)
- **Auto-Network-Select by Site** - Upon power up, the signal-strength provided by each cell carrier is analyzed at the site, and the unit will lock-in the best carrier automatically, i.e., AT&T or Verizon. Thereafter, it's periodically reviewed and dynamically swapped when needed.
- **EZ Cell-Network ID- Red or Blue Indicators** - Inside the unit, the Carrier Indicators will light Blue for AT&T or Red for Verizon connection (also test button indicates signal strength on each for manual check)
- **See /Set SIM Status Remotely** - using a PC or smart device, the StarLink Network Operations Center (NOC), in Napco Headquarters, NY, can be accessed allowing you used to set parameters or view current status, Dual SIM status of accounts
- **Supports 12V-24V FACUs**, No Panel Reprogramming with those that communicate using Contact ID and 4/2 (such as on legacy panels), as primary or backup.
- **UL & NFPA Code-compliant**, replaces 2 POTs lines per FACU saves thousands of dollars per year over the leased landlines. (Show accounts savings -Free Sales Tool /Calculator App left)
- **Proven StarLink Reliability & Best 5G LTE-M Performance** - Works where others can't - Signal Boost™ Circuitry & unique dual-diversity twin antennas, maximizing signal acquisition and eliminating the multiphase-effect signal-clash/drop-outs single-antenna units are prone to.



Universal Panel-Powered Commercial Fire FACU Communicator:
 Dual SIM for 2 Networks; Dual Path Cell or Cell/IP all in One Model

verizon + AT&T

One Dual SIM Dual Path Model is Both Verizon and AT&T and Sole or Dual Path with Cellular + Internet Option. StarLink Fire provides full data reporting, in sole & dual path, as a primary or backup, to any central station of your choice, w/o requiring any special equipment on premises. The units are very easily activated, plans for dual or sole path & check-in periods are selected, and 24/7 account management is provided all through www.napcocomnet.com.

Easy, Universal Installation at Every Application; standardly w/ Panel- Powered Technology™ or metal units with choice of power source. StarLink Fire Communicators are easily connected to any 12V to 24V panel or Fire Alarm Control Panel (FACU) using easy Quick-Connect FACP modular jacks. For any application, StarLink Max Fire 2 Series comes in standard, ABS plastic Panel-Powered Technology™ (powered by the panel), models, or in metal housings w/ or w/o & choice of power options, i.e., direct-connect 120VAC or Plug-in transformer. **Quick Tip: Using StarLink Fire Max 2 with Power Supply models (suffix -PS) eliminates the need to do recalculations on the fire system being retrofitted as well.**

StarLink Fire is End-to-End UL 864 Listed to protect signal reliability, speed & performance for critical life and safety alarm reports for maximum life safety & liability protection. UL-Listed from the UL 864 StarLink Fire Max 2 communicator, to Napco's NY UL 864 Network Operations Center (shown below in map), to any Central Station's UL Listed Receiver. (It is also backed by Disaster Recovery NOC in PA for immediate, mirrored emergency switchover.)

**STARLINK: ALL SIGNALS,
 ALWAYS IN THE USA**



SLE-MAX2-CFBP

SLE-MAX2-CFBP

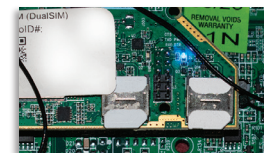
Miami Dade County Department of Regulatory Affairs and Economic Resources
 32260001 Dual SIM/Dual Path StarLink Fire MAX 2 also available in Metal enclosures with or without power supply
 FA Specs - Metal enclosures with or without power supply

verizon + AT&T



SLE-MAX2 SERIES Fire Dual SIM/Dual Path Commercial Fire Alarm Cell Communicators

- Dual SIM models auto-select optimal cell carrier - and Red or Blue LED Indicators inside signal Verizon or AT&T respectively, shown right.
- LED Status /Trouble Indicators 3 Radio Status LED Indicators (visible from outside standard model housing) - Green, Signal Strength; Amber - Busy/Activation; Red-Trouble. (Additional internal LEDs, not visible with cover closed, i.e., for troubleshooting and for AT&T or Verizon network selection, status). Power LED indicator viewable on outer metal enclosure models.
- Sole or Dual Path 5G LTE-M Cell Commercial Fire Alarm Communicator in One - Simply select Cell or Cell/IP Service Plan & check-in period: 5 minutes, 60 minutes, 6 hours or 24 hours.
- Signal Boost and Patented Switching Dual Diversity Antenna for maximum signal acquisition & null /signal-clash avoidance, receiving signals on both antennas (2 supplied, nothing extra to buy.)
- "Return Receipt" Fully-Supervised Communication Path between premise & central station, keeping channel open until *kiss-off* is received from Central Station receiver



SPECIFICATIONS: (Apply to all models unless otherwise stated)

SLE-MAX2-FIRE & SLE-MAX2-CFB:

Electrical Ratings for +12V / 24V (Models w/o Power Supply)

- Input Voltage: 10-24VDC regulated (power-limited output from UL Certified FACU/panel Aux/Remote Fire Power).
- Input Current: 24VDC standby: 85mA

SLE-MAX2-CFBPS:

Electrical Ratings for 120VAC, 60Hz (Models with Power Supply)

- Input Voltage: 120VAC nominal
- Input Current: 200mA maximum
- Maximum Charging Current: 200mA

Electrical Ratings Fire Input 1:

- Input Voltage: 9-25VDC
- Max Input Current: Up to 2mA from FACU NAC circuit

Electrical Ratings for Inputs 2 to 5 (Class B):

- Maximum Loop Voltage: 25VDC
- Maximum Loop Current: 1.2mA (metal models); 1.7mA (plastic)
- End of Line Resistor (EOLR) Value: 10K

Electrical Ratings for PGM3 Output:

- Open Collector Output: Max Voltage 3V when active; 25V max. when not.
- PGM Max Sink Current: 50mA (up to 15VDC), 25mA (15.1VDC -25VDC)

Physical & Environmental

- Plastic Housing: 8 x 5½ x 1½" (WHD) + antennas (2ea, supplied) 8¼" H
- Metal Housing: 11½ x 9½ x 3½" (WHD) + antennas (2ea, supplied) 8¼" H
- Housings: 2 Keyholes for wall mount
- Operating Temp. 32 to 120°F, 93% Humidity Max.

COMPLIANCES:

NFPA 72 Eds: 2022, 2019, 2016, 2013, 2010; UL 2610, UL 985, UL1023, UL864 10th Ed., CSFM, NYC FD, LAFD Napco US Network Operations Center (NOC) UL 864 10th Ed., UL 1610, UL 1635

ORDERING INFORMATION

Model	Description	Dual SIM/ Dual Path	Verizon ✓	AT&T	Sole Path Cell	Dual Path Cell/IP	Low Current Draw, Standby (@24V)	Current Draw, Peak (@24V)
SLE-MAX2-FIRE	Universal Fire Communicator, Dual SIM, Dual Path, Panel-Powered Technology, ABS Plastic Housing	✓	✓	✓	✓	✓	85mA	325mA
SLE-MAX2-CFB	Universal Fire Communicator, Dual SIM, Dual Path, Panel-Powered Technology	✓	✓	✓	✓	✓	85mA	325mA
SLE-MAX2-CFBPS	Universal Fire Communicator, Dual SIM, Dual Path, Direct AC Power 120VAC Metal Housing w/ Provision. For Plug-in TRF12 XFormer, 16VAC, 20VA (w/ provision for backup battery)	✓	✓	✓	✓	✓	200mA	200mA

OPTIONS/ACCESSORIES:

SLE-WIFI-MODULE: Optionally connects supported dual path models to Internet via WiFi, eliminating Ethernet cable connection. Requires 7AH battery. (see WI2191)

SLE-ANTEXT30: StarLink Omni-X Optional Extended Range Marine-Grade Complete Antenna Kit, w/ 30' of ultra low-noise LMR 300 cable, all hardware & ground fault isolator plate.

SLE-ANTEXT50: as above, 50' cable

SLE-ANTEXT75: as above, 75' cable

SLE-ANTEXT100: as above, 100' cable

SLE-ANTEXT04: as above, 4' cable

SLE-FIRE-VR: FACU Voltage Drop Kit, maintains safe input voltage < 27.5VDC

TRF12: Plug in AC Transformer, used w/ SLE-MAX2-CFBPS model, 16.5V / 20VA (use subject to local code).

GEM-TAMPERKIT: Tamper switches and screws to protect metal housing where required.

SLE-ULPS-R: Power Supply, for installations where FACU cannot provide Aux Power.

SLE-FMBB: Opt. Metal Cable Management Backbox for surface mounting plastic StarLink communicator models adjacent to FACUs on same plane. Radio easily snaps in on 4 stand-offs, no rewiring. Red metal enclosure w/ ¾" cable knockouts; 2 Connectors & 4" Conduit, supplied.

Also See FireLink FACUs with built-in StarLink Communicators & LCD Touchpads on Door, addressable & conventional, cloud-programmable.



Coming soon for Canada



www.StarLinkFire.com

Addressable, Conventional Fire Alarm Systems & Leading Commercial Fire Cellular Communications

Miami Dade County Department of Regulatory and Economic Resources - Job Copy
3226007430 1/8/2026 11:15:52 AM
FA Specs_V4.pdf
Preliminary data & promotions subject to change without notice. © NAPCO 2024.1 A852



FOR MORE



CRF-300(A)

Relay Module



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



Made in the U.S. A.

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

BG-12LX

Addressable Manual Pull Station



Addressable Devices

General

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

Features

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

Construction

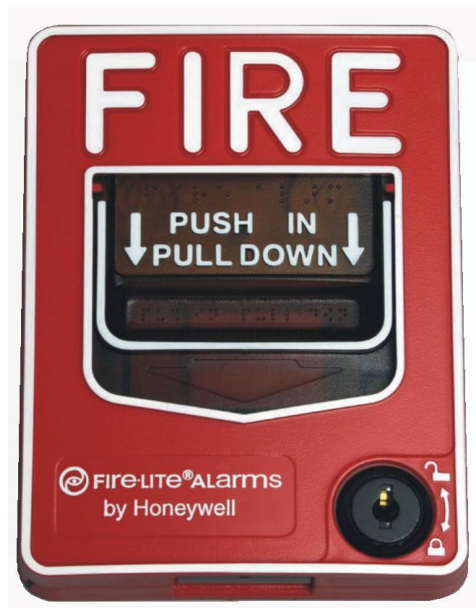
Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC standby current:** 375 μ A.
- **Maximum SLC alarm current:** 5 mA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**

Installation

The BG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the BG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is



FL PullStation.jpg

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

Operation

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

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

Architectural/Engineering Specifications

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

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

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

Product Line Information

BG-12LX: Dual-action addressable pull station. Includes key locking feature. (Listed for Canadian and non-Canadian applications.)

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/ULC Listed:** S711 (listed for Canadian and non-Canadian applications).
- **MEA:** 67-02-E.
- **CSFM:** 7150-0075:0184.
- **FM Approved.**

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

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Made in the U.S. A.

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

D365PL(A) and DNRW

Intelligent Non-relay Photoelectric Duct Smoke Detectors



Addressable Devices

The Fire•Lite D365PL(A) intelligent non-relay photoelectric duct smoke detector and DNRW watertight non-relay photoelectric duct smoke detector feature a pivoting housing that fits both square and rectangular footprints capable of mounting to a round or rectangular duct.

The DNRW duct smoke detector, with its NEMA-4 rating, is listed as a watertight, UV resistant enclosure providing protection against falling dirt, rain, and windblown dust, splashing and hose directed water, allowing operators to use the detector in the most extreme environments.

These units sense smoke in the most challenging conditions, operating in airflow speeds of 100 to 4,000 feet per minute (0.5 – 20.32 m/s), temperatures of -4°F – 158°F (-20°C – 70°C), and a humidity range of 0 – 93 percent (non-condensing).

An improved cover design isolates the sensor head, which allows for ease of maintenance. A cover tamper feature indicates a trouble signal for a removed or improperly installed sensor cover. The housing provides a 3/4-inch conduit knockout and ample space to facilitate easy wiring and mounting of a relay module.

The Fire•Lite D365PL(A) duct smoke detectors can be customized to meet local codes and specifications without additional wiring and are compatible with all previous models, including remote test accessories.

Features

- Photoelectric, integrated low-flow technology
- Air velocity rating from 100 ft/min – 4,000 ft/min (0.5 m/s – 20.32 m/s)
- Versatile mounting options: square or rectangular configuration
- Broad ranges for operating temperature (-4°F – 158°F, -20°C – 70°C) and humidity (0% – 93% non-condensing)
- Sampling tube installs from front or back of the detector with no tools required
- Cover tamper signal
- Increased wiring space with a newly added 3/4" conduit knockout
- Easily accessible code wheels on sensor head (Included with D365PL/D365PLA)
- Clear cover for convenient visual inspection (D365PL(A) only)
- Remote testing capability
- Requires com line power only
- Housing accommodates an addressable relay module, sold separately, (CRF-300) for applications requiring a Form-C relay

Specifications

Size: (Rectangle) 14.38 in (37 cm) Length; 5 in (12.7 cm) Width; 2.5 in (6.6 cm) Depth

Size: (Square) 7.75 in (19.7 cm) Length; 9 in (22.9 cm) Width; 2.5 in (6.35 cm) Depth

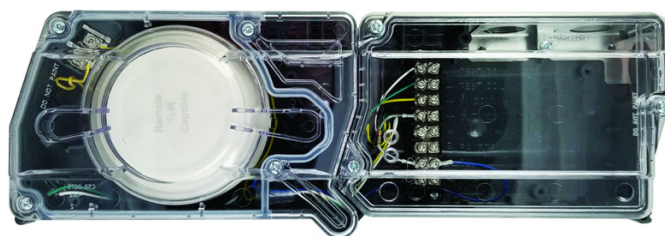
Weight: 1.6 lb (0.73 kg)

Operating Temperature Range: -4°F – 158°F (-20°C – 70°C)

Storage Temperature Range: -22°F – 158°F (-30°C – 70°C)

Operating Humidity Range: 0% – 93% relative humidity (non-condensing)

Air Duct Velocity: 100 – 4,000 ft/min (0.5 – 20.32 m/s)



Accessories

Fire•Lite provides system flexibility with a variety of accessories, including two remote test stations and different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detectors accessories are UL listed.

ACCESSORY CURRENT LOADS AT 24 VDC

Device	Standby	Alarm
RA100Z	0mA	12mA Max
RTS151/RTS151KEY	0mA	12mA Max

Agency Listings and Approvals

Consult product manual for lists of compatible UL-Listed devices. 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:** S1059
- **ULC:** S1059
- **CSFM:** 3242-0075:0508
- **FM approved**

Product Line Information

NOTE: "A" suffix indicates ULC listed model.

D365PL(A): Intelligent non-relay photoelectric low flow smoke detector housing. Includes SD365R(A)-IV detector.

DNRW: Watertight intelligent non-relay photoelectric low flow duct smoke detector housing. Requires photoelectric smoke detector (sold separately). NEMA-4 rated.

SD365R(A)-IV: Remote test capable addressable low-profile photoelectric smoke detector; ivory; supports CLIP and LiteSpeed™ protocols

SD365R(A): Remote test capable addressable low-profile photoelectric smoke detector; white; supports LiteSpeed protocol only

SD365(A)-IV: Addressable low-profile photoelectric smoke detector; ivory; supports CLIP and LiteSpeed protocols

SD365(A): Addressable low-profile photoelectric smoke detector; white; supports LiteSpeed protocol only

SD365T(A): Addressable low-profile photoelectric smoke detector with a built-in 135°F (57°C) fixed-temperature thermal device; white; supports LiteSpeed protocol only

SD365T(A)-IV: Addressable low-profile photoelectric smoke detector with a built-in 135°F (57°C) fixed-temperature thermal device; ivory; supports LiteSpeed protocol only

DUCTCOV: Retrofit D355PL(A) cover for detectors manufactured prior to April 2014

DUCTCOVW: Retrofit DNRW cover for detectors manufactured prior to April 2014

DST1: Metal sampling tube duct width up to 1 ft (0.3 m)

DST1.5: Metal sampling tube duct widths up to 1 ft – 2 ft (0.3 – 0.6 m)

DST3: Metal sampling tube duct widths up to 2 ft – 4 ft (0.6 – 1.2 m)

DST5: Metal sampling tube duct widths up to 4 ft – 8 ft (1.2 – 2.4 m)

DST10: Metal sampling tube duct widths up to 8 ft – 12 ft (2.4 – 3.7 m)

DH400OE-1: Weatherproof enclosure

ETX: Metal exhaust tube duct, width 1 ft (0.3 m)

M02-04-00: Test magnet

P48-21-00: End cap for metal sampling tubes

RA100Z(A): Remote annunciator alarm LED

RTS151: Remote test station

RTS151KEY(-A): Remote test station with key lock

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

Country of Origin: Mexico

SD365 Series

Addressable Photoelectric Smoke Detectors



Addressable Devices

The Fire•Lite® Alarms SD365(A), SD365R(A), and SD365HT(A) intelligent plug-in smoke detectors are designed for both performance and aesthetics, and are direct replacements for the SD355 Series. A new modern, sleek, contemporary design and enhanced optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources in accordance with more stringent code standards.

Exclusively for use with Fire•Lite's addressable fire alarm control panels, the SD365(A) Series point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for emergency personnel to 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.

The SD365(A) Series also offers 135°F (57°C) fixed temperature thermal sensing on the SD365T(A) and a remote test capable detector on the SD365R(A) for use with DNR(A)/DNRW duct smoke detector housings.

Features

SLC LOOP:

- Two-wire SLC loop connection
- Unit uses base for wiring
- Compatible with LiteSpeed™ and CLIP protocol systems
- Stable communication technique with noise immunity

ADDRESSING:

- Addressable by device
- Rotary, decimal addressing
(Refer to the *Fire•Lite panel manuals* for device capacity.)

ARCHITECTURE:

- Sleek, low-profile, stylish design
- Unique single-source design to respond quickly and dependably to a broad range of fires
- Integral communications and built-in device-type identification
- Built-in tamper resistant feature
- Remote test feature from the panel
- Walk test with address display (an address on 121 will blink the detector LED: 12-[pause]-1 (*LiteSpeed systems only*))
- Built-in functional test switch activated by external magnet
- Removable cover and insect-resistant screen for simple field cleaning
- Expanded color options

OPERATION:

- Designed to meet UL 268 7th Edition
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level
- LED "blinks" when the unit is polled (communicating with the fire panel) and latches in alarm.
- Low standby current

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

OPTIONS:

- Optional relay, isolator, and sounder bases

Installation

SD365 Series plug-in intelligent smoke detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount detector base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DF-60059*.

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 Class "B" wiring only.

When using relay or sounder bases, consult the *I300(A) installation sheet I56-3626* for device limitations between isolator modules and isolator bases.

Construction

These detectors are constructed of fire-resistant plastic. The SD365 Series plug-in intelligent smoke detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each SD365 Series detector uses one of the panel's addresses (total limit is panel dependent) on the Fire•Lite Signaling Line Circuit (SLC). 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 SD365 Series offers features and performance that represent the latest in smoke detector technology.

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 an Fire•Lite addressable fire alarm control panel. The results of the sensitivity test can be printed for record keeping.

Product Line Information

NOTE: “-IV” suffix indicates CLIP and LiteSpeed device.

NOTE: “A” suffix indicates Canadian version.

SD365: White, low-profile intelligent photoelectric sensor, LiteSpeed only

SD365A: Same as SD365 but with ULC listing

SD365-IV: Ivory, low-profile intelligent photoelectric sensor

SD365A-IV: Same as SD365-IV but with ULC listing

SD365T: White, same as **SD365** but includes a built-in 135°F (57°C) fixed-temperature thermal device, LiteSpeed only

SD365TA: Same as SD365T but with ULC listing

SD365T-IV: Ivory, same as SD365T but includes a built-in 135°F (57°C) fixed-temperature thermal device

SD365TA-IV: Same as SD365T-IV but with ULC listing

SD365R: White, low-profile intelligent photoelectric sensor, remote test capable, for use with DNR/DNRW, LiteSpeed only

SD365RA: Same as SD365R but with ULC listing, for use with DNRA

SD365R-IV: Ivory, low-profile intelligent photoelectric sensor, remote test capable, for use with DNR/DNRW

SD365RA-IV: Same as SD365R-IV but with ULC listing, for use with DNRA

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DF-60059.

B300-6: White, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300-6-IV: Ivory, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300A-6: Same as B300-6, ULC listed

B300A-6-IV: Ivory, 6” standard flanged low-profile mounting base, ULC listed

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-BL: Black, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-IV: Ivory color, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10

B224RB-WH: White, relay base (CSFM: 7300-1653:0216)

B224RB-IV: Ivory, relay base (CSFM: 7300-1653:0216)

B224RBA-WH: White, relay base, ULC listing

B224RBA-IV: Ivory, relay base, ULC listing

B224BI-WH: White, isolator detector base (CSFM: 7300-1653:0216)

B224BI-IV: Ivory isolator detector base (CSFM: 7300-1653:0216)

B224BIA-WH: White, isolator detector base, ULC listing

B224BIA-IV: Ivory isolator detector base, ULC listing

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses LiteSpeed protocol. (CSFM: 7300-1653:0213)

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses LiteSpeed protocol. (CSFM: 7300-1653:0213)

B200SA-WH: Same as B200S-WH, ULC listing

B200SA-IV: Same as B200S-IV, ULC listing

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications)

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications, ULC listing)

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SRA-WH: Same as B200SR-WH with, ULC listing

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base

TR300-IV: Ivory, replacement flange for B210LP(A) base

RA100Z(A): Remote LED annunciator. 3-32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300-6(A).

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: Color Kit (includes cover and trim ring), white, 10-pack

CK300-IV: Color Kit (includes cover and trim ring), ivory, 10-pack

CK300-BL: Color Kit (includes cover and trim ring), black, 10-pack

SYSTEM SPECIFICATIONS

Sensitivity:

- UL Applications: 0.5% to 4.0% per foot obscuration.
- ULC Applications: 0.5% to 3.5% per foot obscuration

Size: 2.0" (51mm) high; base determines diameter

- **B300-6:** 6.1" (15.6 cm) diameter
- **B501:** 4" (10.2 cm) diameter

For a complete list of detector bases see DF-60983

Shipping weight: 3.4 oz. (95 g)

Operating temperature range:

- SD365: 32°F to 122°F (0°C to 50°C)
- SD365T Series: 32°F to 100°F (0°C to 38°C)
- SD365R Series installed in a DNR/DNRW, -4°F to 158°F (-20°C to 70°C)

UL/ULC Listed Velocity Range: 0-4000 ft/min. (1219.2 m/min.), suitable for installation in ducts

Relative humidity: 10% – 93% non-condensing

Thermal ratings: fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak

Standby current (max. avg.): 200µA @ 24 VDC (one communication every 5 seconds with LED enabled)

Max current: 4.5 mA @ 24 VDC ("ON")

DETECTOR SPACING AND APPLICATIONS

Fire•Lite recommends spacing detectors in compliance with NFPA 72. In low airflow applications with smooth ceiling, space detectors 30 feet (9.1m). For specific information regarding detector spacing, placement, and special applications refer to NFPA 72. A *System Smoke Detector Application Guide*, document SPAG91, is available at www.systemsensor.com.

Listings and Approvals

Listings and approvals below apply to the SD365 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.

- UL/ULC Listing: S1059
- FM Approved
- CSFM: 7272-0075:0502

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

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

Country of Origin: Mexico

H365 Series

Addressable Heat Detectors



Addressable Devices

The Fire-Lite® Alarms H365(A), H365R(A), and H365HT(A) addressable plug-in thermal detectors are designed for both performance and aesthetics and are a direct replacement for the H355 Series. A new modern, sleek, contemporary design and advanced thermal technologies make the H365(A) Series ideal for both system operation and building design.

Exclusively for use with Fire-Lite's addressable fire alarm control panels, the H365(A) Series point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector location for emergency personnel to 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.

The H365(A) Series includes fixed temperature, rate-of-rise and high heat fixed temperature detectors that provide effective, intelligent property protection for a variety of applications. Detectors are available for both LiteSpeed™ and CLIP applications as designated.

Features

SLC LOOP:

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

ADDRESSING:

- Addressable by device
- Rotary, decimal addressing
(Refer to the *Fire-Lite panel manuals* for device capacity.)

ARCHITECTURE:

- Designed to meet UL 268 7th Edition
- 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:

- Fixed temperature model (H365(A)) factory preset to 135°F (57°C)
- Rate-of-rise model (H365R(A)), 15°F (8.3°C) per minute
- High-temperature model (H365HT(A)) factory preset to 190°F (88°C)
- 360°-field viewing angle of the two visual alarm indicators, LEDs blink red in Normal condition and turn on steady red in Alarm
- LEDs blink every time the unit is polled

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



OPTIONS:

- Remote LED output connection to optional RA100Z remote LED annunciator

Installation

H365 Series plug-in intelligent thermal detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount detector base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see DF-60059.

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. When using relay or sounder bases, consult the I300(A) installation sheet I56-3626 for device limitations between isolator modules and isolator bases.

Applications

Use thermal detectors for protection of property. For further information, refer to I56-6525, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

Construction

These detectors are constructed of fire-resistant plastic. The H365 Series plug-in intelligent thermal detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each H365 Series detector uses one of the panel's addresses (total limit is panel dependent) on the Fire-LiteJCI Signaling Line Circuit (SLC). 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 H365 Series offers features and performance that represent the latest in thermal detector technology.

Product Line Information

NOTE: “-IV” suffix indicates CLIP and LiteSpeed device.

NOTE: “A” suffix indicates Canadian version.

H365: White, low-profile intelligent 135°F fixed thermal sensor, LiteSpeed only

H365A: Same as H365 but with ULC listing

H365-IV: Ivory, low-profile intelligent 135°F fixed thermal sensor, LiteSpeed and CLIP

H365A-IV: Same as H365-IV but with ULC listing

H365R: White, low-profile intelligent rate-of-rise thermal sensor, LiteSpeed only

H365RA: Same as H365R but with ULC listing

H365R-IV: Ivory, low-profile intelligent rate-of-rise fixed thermal sensor, LiteSpeed and CLIP

H365RA-IV: Same as H365R-IV but with ULC listing

H365HT: White, low-profile intelligent 190°F fixed thermal sensor, LiteSpeed only

H365HTA: Same as H365H but with ULC listing

H365HT-IV: Ivory, low-profile intelligent 190°F thermal sensor, LiteSpeed and CLIP

H365HTA-IV: Same as H365H-IV but with ULC listing

INTELLIGENT BASES

NOTE: For details on intelligent bases, see DF-60059.

B300-6: White, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300-6-IV: Ivory, 6” base, standard flanged low-profile mounting base (CSFM: 7300-1653:0109)

B300A-6: Same as B300-6, ULC listed

B300A-6-IV: Ivory, 6” standard flanged low-profile mounting base, ULC listed

B300-6-BP: Bulk pack of B300-6, package contains 10

B501-WHITE: White, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-BL: Black, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-IV: Ivory color, 4” standard European flangeless mounting base. UL/ULC listed (CSFM: 7300-1653:0109)

B501-WHITE-BP: Bulk pack of B501-WHITE contains 10

B224RB-WH: White, relay base (CSFM: 7300-1653:0216)

B224RB-IV: Ivory, relay base (CSFM: 7300-1653:0216)

B224RBA-WH: White, relay base, ULC listing

B224RBA-IV: Ivory, relay base, ULC listing

B224BI-WH: White, isolator detector base (CSFM: 7300-1653:0216)

B224BI-IV: Ivory isolator detector base (CSFM: 7300-1653:0216)

B224BIA-WH: White, isolator detector base, ULC listing

B224BIA-IV: Ivory isolator detector base, ULC listing

B200S-WH: White, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. (CSFM: 7300-1653:0213)

B200S-IV: Ivory, Intelligent addressable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone. Uses FlashScan protocol. (CSFM: 7300-1653:0213)

B200SA-WH: Same as B200S-WH, ULC listing

B200SA-IV: Same as B200S-IV, ULC listing

B200SCOA-WH: White, Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications)

B200SCOA-IV: Ivory Intelligent, programmable sounder base in English/French (required in Canada for ULC applications with CO Series detector applications, ULC listing)

B200S-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200S-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. (CSFM: 7300-1653:0238)

B200SR-WH: White, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SR-IV: Ivory, Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Intended for retrofit applications. (CSFM: 7300-1653:0213)

B200SRA-WH: Same as B200SR-WH with, ULC listing

B200SRA-IV: Same as B200SR-IV in Ivory color, ULC listing

B200SR-LF-WH: White, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

B200SR-LF-IV: Ivory, Low Frequency Intelligent, programmable sounder base. Produces a fundamental frequency of 520 Hz +/- 10% with a square wave or its equivalent; designed to meet the NFPA 72 sleeping space requirement. Intended for retrofit applications. (CSFM: 7300-1653:0238)

MOUNTING KITS AND ACCESSORIES

TR300: White, replacement flange for B210LP(A) base

TR300-IV: Ivory, replacement flange for B210LP(A) base

RA100Z(A): Remote LED annunciator. 3-32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B300-6(A).

M02-04-00: Test magnet

M02-09-00: Test magnet with telescoping handle

CK300: Color Kit (includes cover and trim ring), white, 10-pack

CK300-IV: Color Kit (includes cover and trim ring), ivory, 10-pack

CK300-BL: Color Kit (includes cover and trim ring), black, 10-pack

SYSTEM SPECIFICATIONS

Size: 2.0" (5.3 cm) high; base determines diameter

- **B300-6:** 6.1" (15.6 cm) diameter
- **B501:** 4" (10.2 cm) diameter

For a complete list of detector bases see DF-60983

Shipping weight: 3.4 oz. (95 g)

Operating temperature range:

- H365, H365R Series: –4°F to 100°F (–20°C to 38°C)
- H365H Series: –4°F to 150°F (–20°C to 66°C)

Detector spacing: UL approved for 50 ft. (15.24 m) center-to-center, FM approved for 25 x 25 ft. (7.62 x 7.62 m) spacing

Relative humidity: 10% – 93% non-condensing

Thermal ratings: fixed-temperature set point 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C)

Mounting: B300-6(A) flanged base, included

See “**Product Line Information: Intelligent Bases,**” if using a different base.

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak

Standby current (max. avg.): 200µA @ 24 VDC (one communication every 5 seconds with LED enabled)

Max current: 4.5 mA @ 24 VDC (“ON”)

Listings and Approvals

Listings and approvals below apply to the H365 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.

- UL/ULC Listing: S2517
- FM Approved
- CSFM: 7272-0075:0501

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

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

Country of Origin: Mexico

RTS151 Remote Test Station

SPECIFICATIONS

Dimensions:	4.8" H × 2.90" W × 1.4" D
Weight:	.16 lbs.
Power Requirements	
Alarm LED:	2.8 – 32 VDC, 10 mA max.
Coil Current:	95 mA max.
Test Switch:	10 VA @ 32 VDC
Reset Switch:	10 VA @ 32 VDC
Alarm Response Time:	40 sec. max.
Temperature:	-10°C to 60°C (14°F to 140°F)
Humidity:	95% RH Non-condensing Max
Listing:	UL, FM, CE

NOTE: RTS151 replaces RTS451.

NOTICE: This manual shall be left with the owner/user of this equipment.

NOTE: A test coil is required only for use with D2/DNR/DH400/DH500 models. For D2 models order part #DCoil. For the DH400/500 models order part is #Coil.

GENERAL INFORMATION

System Sensor's RTS151 is an automatic fire detector accessory designed to test a remotely located detector. Consult detector installation instructions for additional information.

The National Fire Protection Association has published codes, standards, and recommended practices for the installation and use of the above product. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local authority having jurisdiction.

RTS151 CONTENTS

- 1 RTS151 remote test station
- 1 screw pack (2 mounting screws)
- 1 M02-04 test magnet

WIRING OF RTS151

Consult the appropriate detector installation instructions for the applicable wiring diagram. The RTS151 mounts to a single gang box (2 1/2" minimum depth), or directly to the wall or ceiling.

See Figure 8 for wiring diagram of RTS151 with Duct Smoke Detectors.

In Canadian applications, the RTS151 is intended to be located in the same room as the smoke detector and within 60 feet of the unit.

OPERATION

Test Function

Place and hold the painted side of the magnet to the test location RTS151.

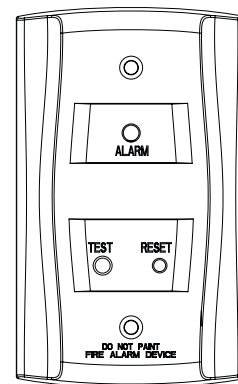
Alarm Indication

With the magnet in place some time will elapse (40 sec. maximum) depending on the detector type, before the alarm indicating LED will light.

Reset Function

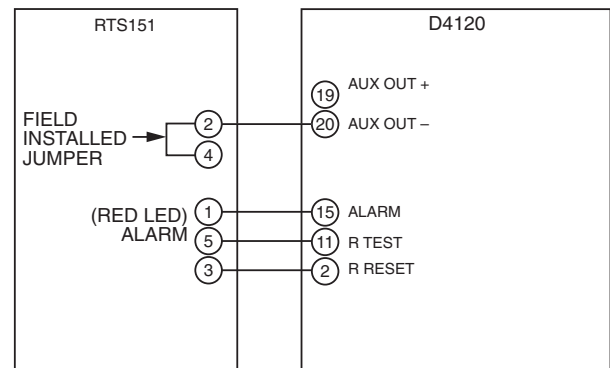
Gently insert a 1/8" maximum diameter tool into the hole until it stops and LED turns off. The RTS151 is capable of resetting only certain System Sensor models of detectors. Refer to detector installation instructions for additional information.

FIGURE 1. RTS151 REMOTE TEST STATION:



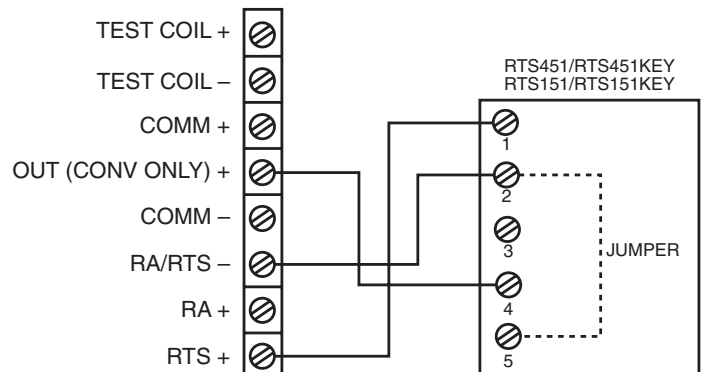
H0196-01

FIGURE 2. WIRING DIAGRAM FOR RTS151 TO D4120 4-WIRE DUCT SMOKE DETECTOR:



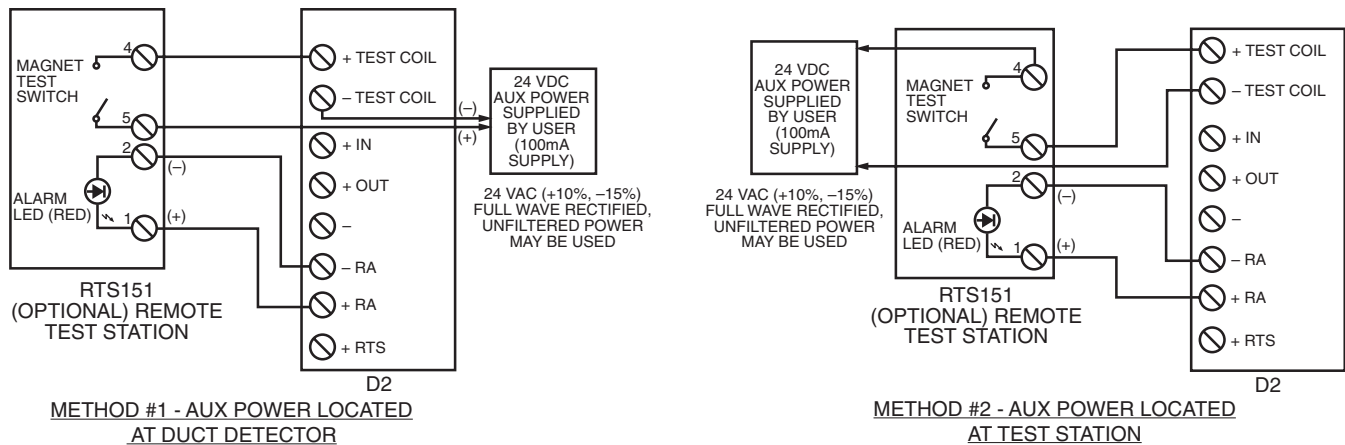
H0582-20

FIGURE 3. WIRING DIAGRAM FOR RTS151 TO DNR 2-WIRE DUCT SMOKE DETECTOR WITH REMOTE TEST CAPABLE HEAD:



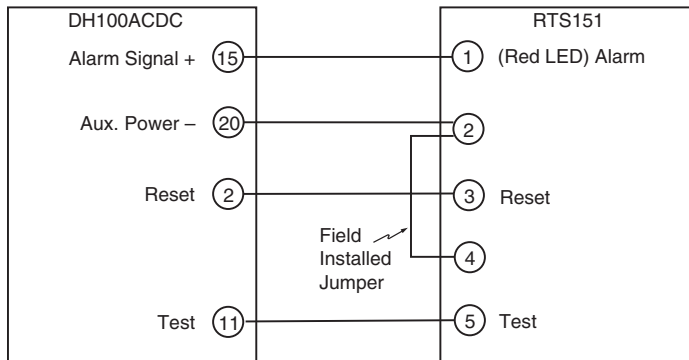
H0633-00

FIGURE 4. WIRING DIAGRAM FOR RTS151 TO D2-2WIRE DUCT SMOKE DETECTOR:



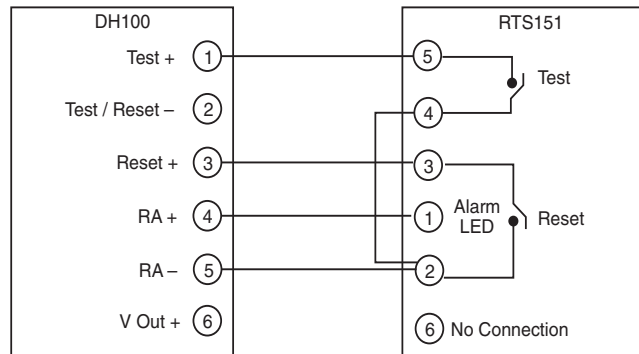
H0612-11

FIGURE 5. WIRING DIAGRAM FOR RTS151 TO DH100ACDC 4-WIRE DUCT SMOKE DETECTOR:



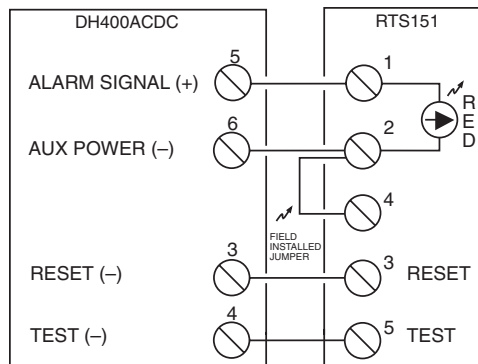
H0197-01

FIGURE 6. WIRING DIAGRAM FOR RTS151 TO DH100 2-WIRE DUCT SMOKE DETECTOR:



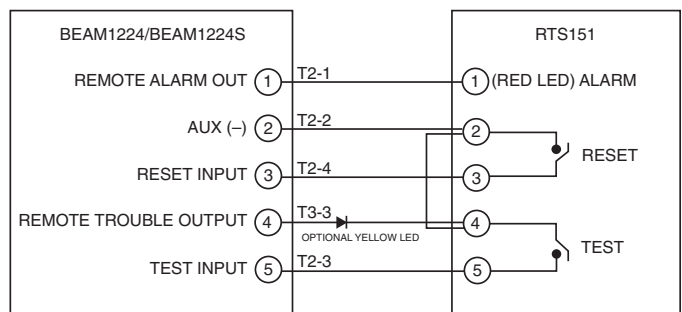
H0198-04

FIGURE 7. WIRING DIAGRAM FOR RTS151 TO DH400ACDC DUCT SMOKE DETECTOR:



H0149-02

FIGURE 8. WIRING DIAGRAM FOR RTS151 TO BEAM1224/BEAM1224S SMOKE DETECTOR:



H0586-03

THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed product to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for the enclosed product. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the replacement of any part of the product which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to Honeywell, 12220 Rojas Drive, Suite 700, El Paso, TX 79936, USA.

Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



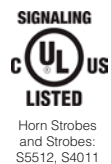
L-Series and L-Series with LED Indoor Selectable Horns, Strobes and Horn Strobes

System Sensor L-Series and L-Series with LED audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- LED technology provides lower current draw
- Digital Voltage Meter (DVM) diagnostic test points for Horn Strobes and Strobes
- Common aesthetics across the L-Series platform
- Standard and compact sizes
- Tamper-resistant construction
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Field-selectable candela settings on ceiling units: 15, 30, 75, 95, 115, 150, and 177
- Rotary switches for candela, tone and volume selections
- Mounting plate provides plug-in design for easier installation and shorting springs to check wiring continuity
- Electrically compatible with legacy SpectrAlert, SpectrAlert Advance and L-series devices
- Synchronization through use of UL approved power supplies that support System Sensor Sync protocol or System Sensor MDL3 Sync Module
- Horns, Strobes and Horn Strobes listed for wall or ceiling use

Agency Listings



The System Sensor L-Series and L-Series with LED

platform offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draw and modern aesthetics. LED lighting technology offers significantly lower current draw compared to older Xenon bulbs across a full candela range. This improves design flexibility for notification appliance circuits (NACs) while also reducing power supply requirements allowing for simpler and lower cost installations.

Flexible design options meet virtually any application requirement: wall or ceiling mount, standard or compact sizes, red or white color choices, bezel kits for alternate markings and languages, and LED color lenses for distinctive visual signaling. In addition, installers can easily adapt devices using field selectable candela, tone and volume settings using rotary switches.

The L-Series and L-Series with LED line is developed to simplify installation. All devices feature plug-in designs with minimal intrusion into the back box, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults. The universal mounting plate includes an onboard shorting spring, so installers can test wiring continuity before the device is installed.

In addition, the System Sensor L-Series with LED notification appliances offer a new diagnostic test point feature that allows you to measure device voltage with a digital voltage meter (DVM) without removing the appliance from the wall or ceiling. The DVM test points are discreetly located on the face of the notification appliance which enable faster troubleshooting and end of line (EOL) voltage checks while greatly reducing the risk of misplacing or damaging appliances during troubleshooting.

L-Series and L-Series with LED Specifications

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, LED Strobes and Horn Strobes	Regulated 24 VDC
Nominal Voltage, Horns	Regulated 12 VDC or regulated 24 DC/FWR
Operating Voltage Range, LED Strobes and Horn Strobes	16 to 33 V (24 V nominal)
Operating Voltage Range, Horns	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG

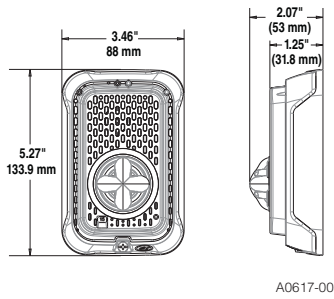
UL/ULC Current Draw Data, Horn Tones, and Sound Output Data

UL/ULC Maximum Strobe Current Draw (mA)			
	Candela Rating	16–33 Volts	
		Wall	Ceiling
Candela Range	15	18	18
	30	22	22
	75	70	70
	95	75	75
	110	85	—
	115	—	90
	135	105	—
	150	—	110
	177	—	115
	185	120	—

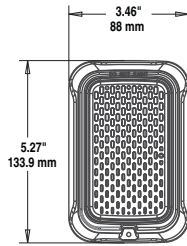
UL/ULC Maximum Horn Current Draw (mA RMS)				
Sound Pattern	dB	8–17.5 Volts	16–33 Volts	
		DC	DC	FWR
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

UL/ULC Maximum Horn Strobe Current Draw (mA) and Sound Output (dBA)													
Current Draw (mA RMS), Horn Strobe, Candela Range (15-185 cd)													Sound Output (dBA)
Switch Pos.	Sound Pattern	Volume Setting	16-33 Volts										16-33V
			15cd	30cd	75cd	95cd	110cd	115cd	135cd	150cd	177cd	185cd	DC
							WALL	CEILING	WALL	CEILING	CEILING	WALL	
1	Temporal 3	High	35	38	87	92	94	120	189	189	190	190	87
2	Temporal 3	Low	35	38	87	92	94	120	135	135	145	145	79
3	Non-Temporal	High	50	52	87	92	94	120	127	127	135	135	87
4	Non-Temporal	Low	35	38	87	92	94	120	125	125	130	130	79
5	3.1KHz Temporal 3	High	35	38	87	89	91	115	155	155	165	165	86
6	3.1KHz Temporal 3	Low	35	38	87	89	91	115	128	130	135	135	80
7	3.1KHz Non-Temporal	High	40	42	87	89	91	115	125	125	135	135	86
8	3.1KHz Non-Temporal	Low	35	38	87	89	91	115	120	120	130	130	80

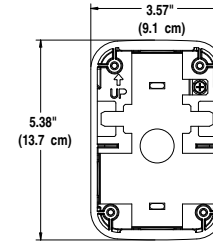
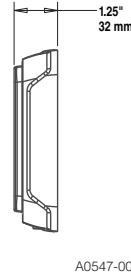
L-Series with LED Dimensions: Wall-Mounted Equipment



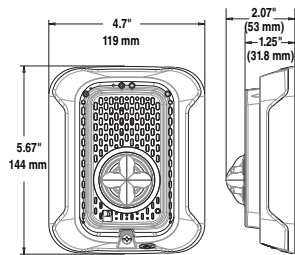
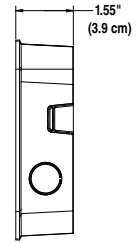
**Compact Strobe, Horn Strobe
for Wall**



Compact Horn

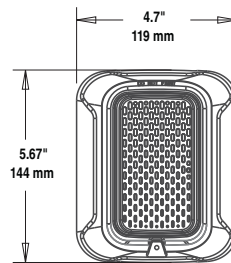


**Compact Surface Mount Back Box
for Walls (SBBGRL, SBBGWL)**

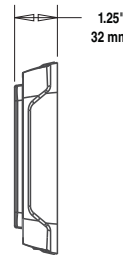


**Strobes, Horn Strobes
for Walls**

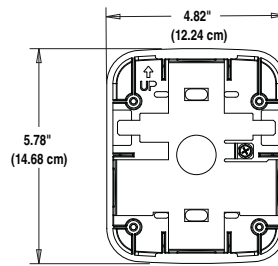
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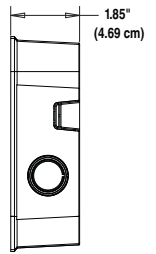
Horn



A0549-00

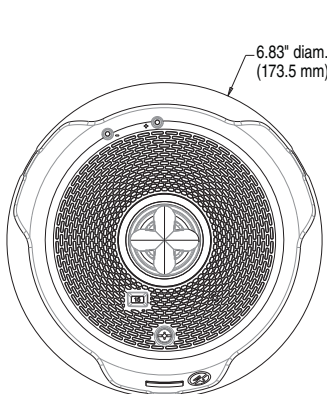


**Surface Mount Back Box
for Walls (SBBRL/SBBWL)**

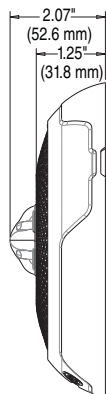


A0554-01

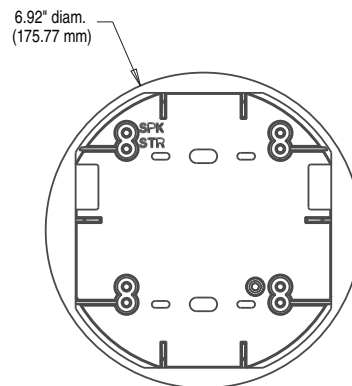
L-Series with LED Dimensions: Ceiling-Mounted Equipment



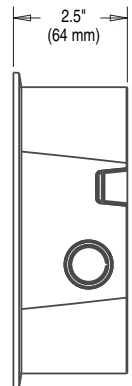
**Strobes and Horn Strobes
for Ceilings**



A0608-00



**Surface Mount Back Box
for Ceilings (SBBCRL, SBCWL)**



A0546-00

L-Series with LED: Ordering Information

Model	Description
L-Series with LED Horn Strobes	
P2RLED	2-Wire, Horn Strobe, Wall, Red
P2RLED-B	2-Wire, Horn Strobe, Wall, Red, Bilingual
P2WLED	2-Wire, Horn Strobe, Wall, White
P2WLED-B	2-Wire, Horn Strobe, Wall, White, Bilingual
P2GRLED	2-Wire, Compact Horn Strobe, Wall, Red
P2GRLED-B	2-Wire, Compact Horn Strobe, Wall, Red, Bilingual
P2GWLED	2-Wire, Compact Horn Strobe, Wall, White
P2GWLED-B	2-Wire, Compact Horn Strobe, Wall, White, Bilingual
P2RLED-P	2-Wire, Horn Strobe, Wall, Red, Plain
P2WLED-P	2-Wire, Horn Strobe, Wall, White, Plain
P2RLED-SP	2-Wire, Horn Strobe, Wall, Red, FUEGO
P2WLED-SP	2-Wire, Horn Strobe, Wall, White, FUEGO
PC2RLED	2-Wire, Horn Strobe, Ceiling, Red
PC2RLED-B	2-Wire, Horn Strobe, Ceiling, Red, Bilingual
PC2WLED	2-Wire, Horn Strobe, Ceiling, White
PC2WLED-B	2-Wire, Horn Strobe, Ceiling, White, Bilingual
L-Series with LED Strobes	
SRLED	Strobe, Wall, Red
SRLED-B	Strobe, Wall, Red, Bilingual
SWLED	Strobe, Wall, White
SWLED-B	Strobe, Wall, White, Bilingual
SGRLED	Strobe, Compact, Wall, Red
SGRLED-B	Strobe, Compact, Wall, Red, Bilingual
SGWLED	Strobe, Compact, Wall, White
SGWLED-B	Strobe, Compact, Wall, White, Bilingual
SRLED-P	Strobe, Wall, Red, Plain
SWLED-P	Strobe, Wall, White, Plain
SRLED-SP	Strobe, Wall, Red, FUEGO
SWLED-CLR-ALERT	Strobe, Wall, White, ALERT
SWLED-ALERT	Strobe, Wall, White, ALERT, Amber Lens
SCRLED	Strobe, Ceiling, Red
SCRLED-B	Strobe, Ceiling, Red, Bilingual
SCRLED-P	Strobe, Ceiling, White, Plain
SCWLED	Strobe, Ceiling, White
SCWLED-B	Strobe, Ceiling, White, Bilingual
SCWLED-P	Strobe, Ceiling, White, Plain
SCWLED-CLR-ALERT	Strobe, Ceiling, White, ALERT
L-Series Horns	
HRL*	Horn, Red
HRLA*	Horn, Red, Plain, ULC
HWL*	Horn, White
HWLA*	Horn, White, Plain, ULC
HGRL*	Compact Horn, Red
HGRLA*	Compact Horn, Red, Plain, ULC
HGWL*	Compact Horn, White
HGWLA*	Compact Horn, White, Plain, ULC

Model	Description
LED Lenses	
LENS-A3	Lens LED Amber Wall/Ceiling
LENS-B3	Lens LED Blue Wall/Ceiling
LENS-G3	Lens LED Green Wall/Ceiling
LENS-R3	Lens LED Red Wall/Ceiling
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White
TRC-2	Universal Ceiling Trim Ring, Red
TRC-2W	Universal Ceiling Trim Ring, White
SBBCRL	Ceiling Surface Mount Back Box, Red
SBBCWL	Ceiling Surface Mount Back Box, White
Bezels†	
BZR	Wall Red Bezel Kit
BZW	Wall White Bezel Kit
BZGR	Compact Wall Red Bezel Kit
BZGW	Compact Wall White Bezel Kit
BZRC	Horn Strobe Ceiling Red Bezel Kit
BZWC	Horn Strobe Ceiling White Bezel Kit

Notes for L-Series With LED Horn Strobes and Strobes:

All -P models have a plain housing (no "FIRE" marking on cover).
 All -SP models have "FUEGO" marking on cover.
 All -ALERT models have "ALERT" marking on cover.
 All -B models have "FIRE/FEU" marking on cover for use in Canadian applications.
 Amber lenses are not for use in Canadian applications

Notes for L-Series Horns:

*Horn-only models are listed for wall or ceiling use.

Notes for Bezels:

†Each bezel pack ships in a package of 5.
 Add one of the following extensions for print/language options: -F (FIRE), -AL (ALERT), -EV (EVAC), -AG (AGENT), -P (Plain), -FR (FEU), -PG (FOGO), -SP (FUEGO), -SPE (FUEGO/FIRE).

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 for current product information, including the latest version of this data sheet.
 AVDS916-01 • 10/03/2023



Outdoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

SpectrAlert® Advance outdoor audible visible products are rich with features that cut installation times and maximize profits.

Features

- Weatherproof per NEMA 4X, IP56
- Listed to UL 1638 (strobe) and UL 464 (horn)
- Compatible with System Sensor synchronization protocol and legacy SpectrAlert products
- Field-selectable candela settings: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, and 185
- Automatic selection of 12- or 24-volt operation at 15 and 15/75 candela
- Rotary switch for horn tone and three volume selections
- Horn rated at 88+ dBA at 16 volts
- Rated from -40°F to 151°F
- Universal mounting plate with an onboard shorting spring that tests wiring continuity before devices are installed
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Listed for ceiling or wall mounting



SPECTRAlert®
ADVANCE
from System Sensor

SpectrAlert Advance offers the broadest line of outdoor horns, strobes, and horn strobes in the industry. With white or red plastic housings, wall or ceiling mounting options, and plain or FIRE-printed devices, SpectrAlert Advance can meet virtually any application requirement, including indoor, outdoor, wet, and dry applications in temperatures from -40°F to 151°F.

Like the entire SpectrAlert Advance line, outdoor horns, strobes, and horn strobes for wall applications include a variety of features that increase application flexibility and simplify installation. First, field-selectable settings, including candela, automatic selection of 12- or 24-volt operation, horn tones, and three volume options enable installers to easily adapt devices to meet requirements.

Next, SpectrAlert Advance devices use a universal mounting plate for both wall and ceiling applications. This mounting plate includes an onboard shorting spring that ensures wiring continuity before devices are installed, so installers can verify proper wiring without mounting the devices and exposing them to potential construction damage. Once the plates are mounted, all SpectrAlert Advance devices utilize a plug-in design with a single captured screw to speed installation and virtually eliminate costly ground faults.

Outdoor devices ship with weatherproof plastic back boxes (metal back boxes are available separately) that accommodate in-and-out wiring for daisy chaining devices. Plastic back boxes feature removable side flanges and improved resistance to saltwater corrosion. Knock-outs located on the back eliminate the need to drill holes for screw-in mounting. Plastic and metal weatherproof back boxes come with 3/4-inch top and bottom conduit entries and 3/4-inch knock-outs at the back. A screw-in NPT plug with an O-ring gasket for a watertight seal is included with each back box.

Agency Listings



S4011 (chimes, horn strobes, horns)
S3593 (outdoor and alert strobes)



APPROVED
3023572



MEAA452-05-E



7300-1653:187 (outdoor strobes)
7125-1653:188 (horn strobes,
chime strobes)
7135-1653:189 (horns, chimes)

SpectrAlert Advance Outdoor Horn, Strobe, and Horn Strobe Specifications

Architect/Engineer Specifications

General

SpectrAlert Advance outdoor horns, strobes, and horn strobes shall mount to a weatherproof 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 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Outdoor SpectrAlert Advance products shall operate between –40 and 151 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. The strobe must be installed with its weatherproof back box in order to remain outdoor approved per UL. The strobe shall be suitable for use in wet environments.

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 shall be set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn or horn strobe models shall operate on a coded or non-coded power supply. The horn strobe must be installed with its weatherproof back box in order to remain outdoor approved per UL. The horn strobe shall be suitable for use in wet environments.

Physical/Electrical Specifications

Operating Temperature	–40°F to 151°F (–40°C to 66°C)
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)
Operating Voltage with MLD3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6" L x 4.7" W x 2.5" D (142 mm L x 119 mm W x 64 mm D)
Horn Dimensions	5.6" L x 4.7" W x 1.3" D (142 mm L x 119 mm W x 33 mm D)
Wall-Mount Weatherproof Back Box Dimensions (SA-WBB)	5.7" L x 5.1" W x 2.0" D (145 mm L x 130 mm W x 51 mm D)

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. 2. P, S, PC, and SC products will operate at 12 V nominal only for 15 and 15/75 cd.

UL Current Draw Data

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

UL Max. Current Draw (mA RMS), 2-Wire Horn Strobe, Standard Candela Range (15–115 cd)									
DC Input	8–17.5 Volts			16–33 Volts					
	15	15/75	15	15/75	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)									
DC Input	16–33 Volts				FWR Input	16–33 Volts			
	135	150	177	185		135	150	177	185
Temporal High	245	259	290	297	Temporal High	215	231	258	265
Temporal Medium	235	253	288	297	Temporal Medium	209	224	250	258
Temporal Low	232	251	282	292	Temporal Low	207	221	248	256
Non-Temporal High	255	270	303	309	Non-Temporal High	233	248	275	281
Non-Temporal Medium	242	259	293	299	Non-Temporal Medium	219	232	262	267
Non-Temporal Low	238	254	291	295	Non-Temporal Low	214	229	256	262

Candela Derating

For K series products used at low temperatures, listed candela ratings must be reduced in accordance with this table.

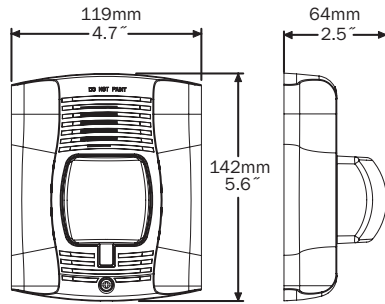
Strobe Output (cd)	
Listed Candela	Candela rating at –40°F
15	Do not use below 32°F
15/75	
30	
75	
95	44
110	70
115	110
135	115
150	150
177	177
185	185

Horn Tones and Sound Output Data

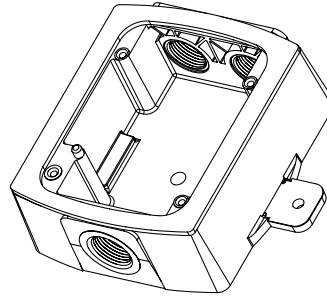
Horn and Horn Strobe Output (dBA)										
Switch Position	Sound Pattern	dB	8–17.5 Volts		16–33 Volts		24-Volt Nominal			
							Reverberant		Anechoic	
			DC	FWR	DC	FWR	DC	FWR	DC	FWR
1	Temporal	High	78	78	84	84	88	88	99	98
2	Temporal	Medium	74	74	80	80	86	86	96	96
3	Temporal	Low	71	73	76	76	83	80	94	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.

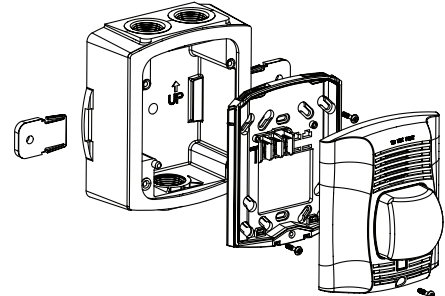
SpectrAlert Advance Diagrams



Wall-Mount Horn Strobes



Wall Plastic Weatherproof Back Box



Wall-Mount Horn Strobe with Plastic Weatherproof Back Box

SpectrAlert Advance Ordering Information

Model	Description	
Red	White	
Wall Horn Strobes		
P2RK	P2WK	2-Wire Horn Strobe, Standard cd, Outdoor (includes plastic weatherproof back box)
P2RK-P	P2WK-P	2-Wire Horn Strobe, Standard cd, Outdoor, Plain (includes plastic weatherproof back box)
P2RK-R	P2WK-R	2-Wire Horn Strobe, Standard cd, Outdoor (does not include plastic weatherproof back box)
P2RHK	P2WHK	2-Wire Horn Strobe, High cd, Outdoor (includes plastic weatherproof back box)
P2RHK-P	P2WHK-P	2-Wire Horn Strobe, High cd, Outdoor, Plain (includes plastic weatherproof back box)
P2RHK-R	P2WHK-R	2-Wire Horn Strobe, High cd, Outdoor (does not include plastic weatherproof back box)
P4RK	P4WK	4-Wire Horn Strobe, Standard cd, Outdoor (includes plastic weatherproof back box)
P4RK-R	—	4-Wire Horn Strobe, Standard cd, Outdoor (does not include plastic weatherproof back box)
P2RHK-120	—	2-Wire Horn Strobe, High cd, Outdoor, 120 V (includes plastic weatherproof back box)
Wall Strobes		
SRK	SWK	Strobe, Standard cd, Outdoor (includes plastic weatherproof back box)
SRK-P	SWK-P	Strobe, Standard cd, Outdoor, Plain (includes plastic weatherproof back box)
SRK-R	SWK-R	Strobe, Standard cd, Outdoor (does not include plastic weatherproof back box)
SRHK	SWHK	Strobe, High cd, Outdoor (includes plastic weatherproof back box)
SRHK-P	SWHK-P	Strobe, High cd, Outdoor, Plain (includes plastic weatherproof back box)
SRHK-R	SWHK-R	Strobe, High cd, Outdoor (does not include plastic weatherproof back box)
Horns		
HRK	—	Horn, Red, Outdoor (includes plastic weatherproof back box)
HRK-R	—	Horn, Red, Outdoor (does not include plastic weatherproof back box)
Accessories		
SA-WBB	SA-WBBW	Metal Weatherproof Back Box
WTP	WTPW	Metal Weatherproof Outdoor Flush-mounting Plate

Notes:

All -P models have a plain housing (no "FIRE" marking on cover). All -R models require metal weatherproof outdoor flush mounting plate or a metal weatherproof outdoor back box (order separately). "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. **When replacing standard outdoor units both the device and back box must be replaced.**



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for current product information, including the latest version of this data sheet.
AVDS115-02 • 12/3/2019



Indoor Selectable-Output Horns, Strobes, and Horn Strobes for Wall Applications

System Sensor L-Series audible visible notification products are rich with features guaranteed to cut installation times and maximize profits with lower current draw and modern aesthetics.

Features

- Updated Modern Aesthetics
- Small profile devices for Horns and Horn Strobes
- Plug-in design with minimal intrusion into the back box
- Tamper-resistant construction
- Automatic selection of 12- or 24-volt operation at 15 and 30 candela
- Field-selectable candela settings on wall units: 15, 30, 75, 95, 110, 135, and 185
- Horn rated at 88+ dBA at 16 volts
- Rotary switch for horn tone and two volume selections
- Mounting plate for all standard and all compact wall units
- Mounting plate shorting spring checks wiring continuity before device installation
- Electrically compatible with legacy SpectrAlert and SpectrAlert Advance devices
- Compatible with MDL3 sync module
- Strobes and Horn Strobes listed for wall mounting only
- Horns listed for wall or ceiling use

Agency Listings



The System Sensor L-Series offers the most versatile and easy-to-use line of horns, strobes, and horn strobes in the industry with lower current draws and modern aesthetics. With white and red plastic housings, standard and compact devices, and plain, FIRE, and FUEGO-printed devices, System Sensor L-Series can meet virtually any application requirement.

The L-Series line of wall-mount 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, making installations fast and foolproof while virtually eliminating costly and time-consuming ground faults.

To further simplify installation and protect devices from construction damage, the L-Series utilizes a universal mounting plate for all models with an onboard shorting spring, so installers can test wiring continuity before the device is installed.

Installers can also easily adapt devices to suit a wide range of application requirements using field-selectable candela settings, automatic selection of 12- or 24-volt operation, and a rotary switch for horn tones with two volume selections.

L-Series Specifications

Architect/Engineer Specifications

General

L-Series standard horns, strobes, and horn strobes shall mount to a standard 2 x 4 x 1⁷/₈-inch back box, 4 x 4 x 1¹/₂-inch back box, 4-inch octagon back box, or double-gang back box. L-Series compact products shall mount to a single-gang 2 x 4 x 1⁷/₈-inch back box. A universal mounting plate shall be used for mounting ceiling and wall products for all standard models and a separate universal mounting plate shall be used for mounting wall compact models. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, L-Series 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 8.5 and 17.5 volts; 24-volt-rated notification appliance circuit outputs shall operate between 16.5 and 33 volts. Indoor L-Series 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, 30, 75, 95, 110, 135, and 185.

Strobe

The strobe shall be a System Sensor L-Series 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 L-Series 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 two 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. 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 MDL3 listed to UL 464 and shall be approved for fire protective service. The module shall synchronize 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 4¹¹/₁₆ x 4¹¹/₁₆ x 2¹/₈-inch back box. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Physical/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 or regulated 24 DC/FWR ¹
Operating Voltage Range²	8 to 17.5 V (12 V nominal) or 16 to 33 V (24 V nominal)
Operating Voltage Range MDL3 Sync Module	8.5 to 17.5 V (12 V nominal) or 16.5 to 33 V (24 V nominal)
Input Terminal Wire Gauge	12 to 18 AWG
Wall-Mount Dimensions (including lens)	5.6" L x 4.7" W x 1.91" D (143 mm L x 119 mm W x 49 mm D)
Compact Wall-Mount Dimensions (including lens)	5.26" L x 3.46" W x 1.91" D (133 mm L x 88 mm W x 49 mm D)
Horn Dimensions	5.6" L x 4.7" W x 1.25" D (143 mm L x 119 mm W x 32 mm D)
Compact Horn Dimensions	5.25" L x 3.45" W x 1.25" D (133 mm L x 88 mm W x 32 mm D)

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. Strobe products will operate at 12 V nominal only for 15 cd and 30 cd.

UL Current Draw Data

UL Max. Strobe Current Draw (mA RMS)				
	Candela	8–17.5 Volts	16–33 Volts	FWR
		DC	DC	
Candela Range	15	88	43	60
	30	143	63	83
	75	N/A	107	136
	95	N/A	121	155
	110	N/A	148	179
	135	N/A	172	209
	185	N/A	222	257

UL Max. Horn Current Draw (mA RMS)				
	dB	8–17.5 Volts	16–33 Volts	FWR
		DC	DC	
Temporal	High	39	44	54
Temporal	Low	28	32	54
Non-Temporal	High	43	47	54
Non-Temporal	Low	29	32	54
3.1 KHz Temporal	High	39	41	54
3.1 KHz Temporal	Low	29	32	54
3.1 KHz Non-Temporal	High	42	43	54
3.1 KHz Non-Temporal	Low	28	29	54
Coded	High	43	47	54
3.1 KHz Coded	High	42	43	54

UL Max. Current Draw (mA RMS), Wall Horn Strobe, Candela Range (15–185 cd)									
DC Input	8–17.5 Volts		16–33 Volts						
	15cd	30cd	15cd	30cd	75cd	95cd	110cd	135cd	185cd
Temporal High	98	158	54	74	121	142	162	196	245
Temporal Low	93	154	44	65	111	133	157	184	235
Non-Temporal High	106	166	73	94	139	160	182	211	262
Non-Temporal Low	93	156	51	71	119	139	162	190	239
3.1K Temporal High	93	156	53	73	119	140	164	190	242
3.1K Temporal Low	91	154	45	66	112	133	160	185	235
3.1K Non-Temporal High	99	162	69	90	135	157	175	208	261
3.1K Non-Temporal Low	93	156	52	72	119	138	162	192	242

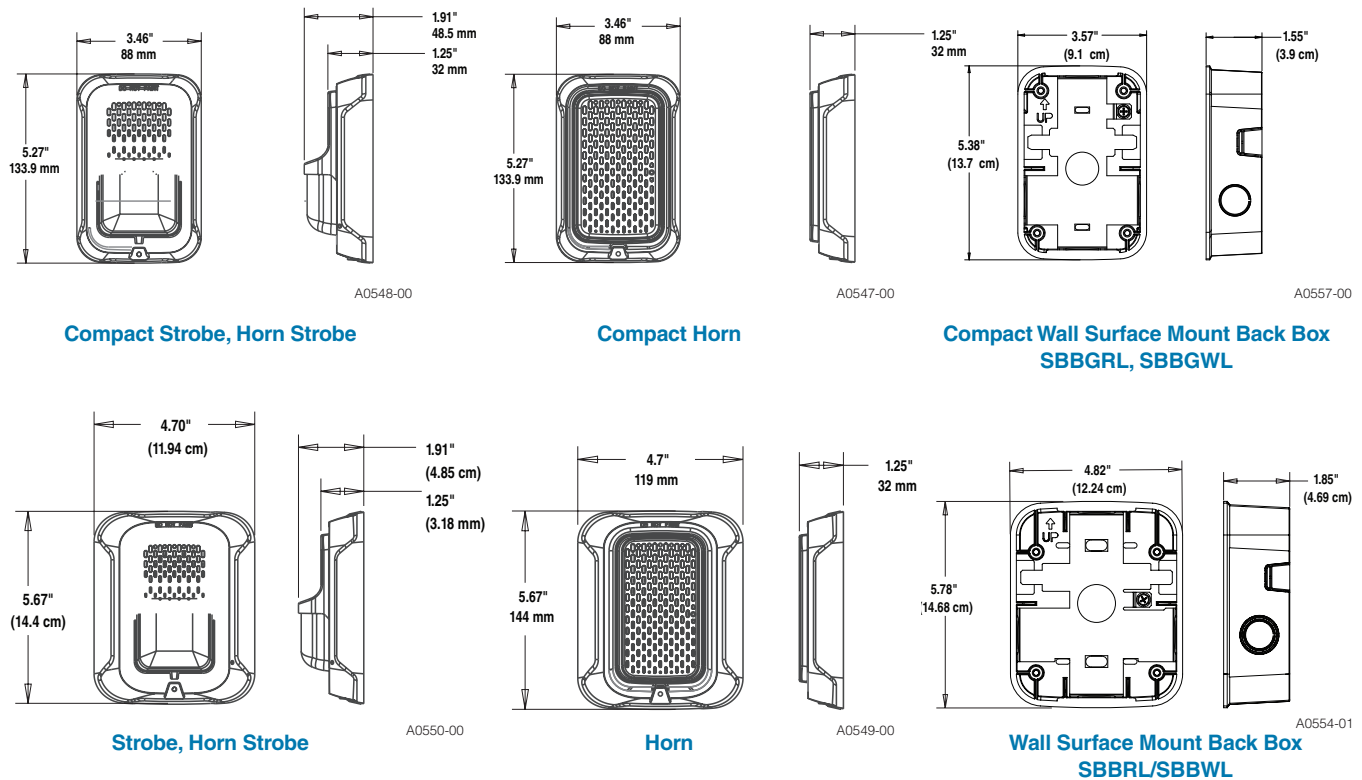
FWR Input	16–33 Volts						
	15cd	30cd	75cd	95cd	110cd	135cd	185cd
Temporal High	83	107	156	177	198	234	287
Temporal Low	68	91	145	165	185	223	271
Non-Temporal High	111	135	185	207	230	264	316
Non-Temporal Low	79	104	157	175	197	235	283
3.1K Temporal High	81	105	155	177	196	234	284
3.1K Temporal Low	68	90	145	166	186	222	276
3.1K Non-Temporal High	104	131	177	204	230	264	326
3.1K Non-Temporal Low	77	102	156	177	199	234	291

Horn Tones and Sound Output Data

Horn and Horn Strobe Output (dBA)					
Switch Position	Sound Pattern	dB	8–17.5 Volts	16–33 Volts	FWR
			DC	DC	
1	Temporal	High	84	89	89
2	Temporal	Low	75	83	83
3	Non-Temporal	High	85	90	90
4	Non-Temporal	Low	76	84	84
5	3.1 KHz Temporal	High	83	88	88
6	3.1 KHz Temporal	Low	76	82	82
7	3.1 KHz Non-Temporal	High	84	89	89
8	3.1 KHz Non-Temporal	Low	77	83	83
9*	Coded	High	85	90	90
10*	3.1 KHz Coded	High	84	89	89

* Settings 9 and 10 are not available on 2-wire horn strobes. Temporal coding must be provided by the NAC. If the NAC voltage is held constant, the horn output remains constantly on.

L-Series Dimensions



L-Series Ordering Information

Model	Description
Wall Horn Strobes	
P2RL	2-Wire, Horn Strobe, Red
P2WL	2-Wire, Horn Strobe, White
P2GRL	2-Wire, Compact Horn Strobe, Red
P2GWL	2-Wire, Comp 2 fils act Horn Strobe, White
P2RL-P	2-Wire, Horn Strobe, Red, Plain
P2WL-P	2-Wire, Horn Strobe, White, Plain
P2RL-SP	2-Wire, Horn Strobe, Red, FUEGO
P2WL-SP	2-Wire, Horn Strobe, White, FUEGO
P4RL	4-Wire, Horn Strobe, Red
P4WL	4-Wire, Horn Strobe, White
Wall Strobes	
SRL	Strobe, Red
SWL	Strobe, White
SGRL	Compact Strobe, Red
SGWL	Compact Strobe, White
SRL-P	Strobe, Red, Plain
SWL-P	Strobe, White, Plain
SRL-SP	Strobe, Red, FUEGO
SWL-CLR-ALERT	Strobe, White, ALERT

Model	Description
Horns*	
HRL*	Horn, Red
HWL*	Horn, White
HGRL*	Compact Horn, Red
HGWL*	Compact Horn, White
Accessories	
TR-2	Universal Wall Trim Ring Red
TR-2W	Universal Wall Trim Ring White
SBBRL	Wall Surface Mount Back Box, Red
SBBWL	Wall Surface Mount Back Box, White
SBBGRL	Compact Wall Surface Mount Back Box, Red
SBBGWL	Compact Wall Surface Mount Back Box, White

Notes:

All -P models have a plain housing (no "FIRE" marking on cover).
 All -SP models have "FUEGO" marking on cover.
 All -ALERT models have "ALERT" marking on cover.
 *Horn-only models are listed for wall or ceiling use.



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 for current product information, including the latest version of this data sheet.
 AVDS865-05 • 2/22/2018



DTK-HW Series

Parallel Connected Surge Protective Device

DITEK's DTK-HW Series of surge protective devices are designed and manufactured to meet the standards of the life safety industry. These compact, parallel-mount SPD's are available for 120V, 240V and 120/240V systems; and are widely used to protect fire alarm panels and other dedicated branch circuit loads. Their small footprint enables installation in a variety of locations.



Product Features

- Approved for 20A circuit breakers
- NEMA 4X weatherproof enclosure allows for use in harsh environments
- Diagnostic LED provides positive indication of system power and SPD function
- Complies with ANSI/IEEE C62.41 and C62.45 Category B standards

Applications

- Fire Alarm Control Panels
- Residential Electrical Panels
- Equipment Panels
- Pumps, Motors, Lift Pump Stations

Accessories

- Flush Mount Kit – DTK-FMK

Technical Specifications

Part Number:	DTK-120HW	DTK-240HW	DTK-120/240HW
Voltage Configuration:	Single Φ (2W +G) 120VAC	Single Φ (2W +G) 240VAC	Split Φ (3W +G) 120/240VAC
MCOV:	150V/300V	320V/640V	150V/300V
Voltage Protection Rating:	700V L-G, L-N 1500V N-G	1200V L-G, L-N 2000V N-G	700V L-G, L-N 1500V L-L, N-G
Surge Current Rating:	50,000A	50,000A	100,000A
SCCR:	100,000A		
Nominal Discharge Current Rating (I_n):	10kA		

Mechanical Specifications

Connection Method:	3/4" NPT Male, 18-inch 12 AWG Leads
Housing:	NEMA 4X Polycarbonate
Operating Temperature:	-31°F - 176°F (-35°C - 80°C)
Maximum Humidity:	95% non-condensing
Dimensions:	3.5" L x 1.89" W x 3.4" H (88.9 mm x 48.3 mm x 86.4 mm)
Weight:	0.55 lb (0.25 kg)

Quality Standards & Approvals

Certifications:	UL1449 4 th Edition, CSA C22.2 No. 269.1-17
SPD Type:	Type 1
Warranty:	10 Year Limited Warranty



I300(A)**Fault Isolator Module****Addressable Devices****General**

The Fire•Lite I300(A) Fault Isolator Module is used with Fire•Lite's addressable fire alarm control panels (FACPs) to protect the system against wire-to-wire short circuits on the SLC loop. The I300(A) should be placed between each device on the SLC loop to isolate a short-circuit problem between the modules. It is required for true Style 7 operation so that other devices can continue to operate normally in the event of a short-circuit on the SLC.

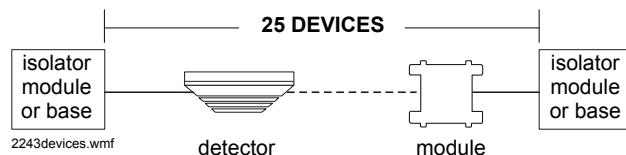
Features

- Powered by SLC loop directly, no external power required.
- Mounts in standard junction boxes (4.0"/10.16 cm square, 2.125"/5.398 cm deep).
- Integral LED blinks to indicate normal condition. Illuminates steady when short circuit condition is detected.
- High noise (EMF/RFI) immunity.

Applications

The Fault Isolator Modules should be spaced between groups of sensors in a loop to protect the rest of the loop. Use to isolate short circuit problems within a section of a loop so that other sections can continue to operate normally. The I300(A) supports a maximum of 25 devices in-between isolators, except when using relay bases.

NOTE: LOADS PER RELAY BASE AND ISOLATORS/ISOLATOR BASES: The maximum number of addressable devices between isolators (or B224BIA isolator bases) is 25 devices.



B224RB relay bases draw more current than other intelligent devices. When calculating the 25-device maximum, B224RB represents 2.5 DEVICES; see example on page 2.

NOTE: ON MAXIMUM NUMBER OF DEVICES: See the SLC Manual (51309) for information on loss of addresses due to current limitations. Each module or base added reduces the capacity of address positions in an SLC. All SLC field devices must have been purchased after February 1995 to meet the aforementioned requirements. If the SLC field devices were purchased prior to February 1995, each isolator used reduces the capacity of an SLC by two address positions. Requirements differ as applied to relay bases; see note above.

Specifications

- **Operating voltage:** 15 – 32 VDC (peak).
- **Maximum current upon activation due to short circuit:** refer to the manual for the main FACP.
- **Standby current:** 450 μ A maximum; I300(A) is not isolating – relay closed.
- **Temperature range:** 32°F to 120°F (0°C to 49°C).
- **Relative humidity:** 10% to 93%.
- **Weight:** 5 oz. (150 grams).

**I300(A)**

- **Dimensions:** 4.5"H x 4.5"W x 0.25" D (11.43 cm H x 11.43 cm W x 0.635 cm D).

Construction

The face plate is made of off-white plastic. Module includes yellow LED indicator that pulses when normal and illuminates steady when a short is detected.

Operation

Automatically opens circuit when the line voltage drops below four volts. Fault Isolator Modules should be spaced between groups of addressable devices (maximum 25, see notes on page 1) in a loop to protect the rest of the loop. If a short occurs between any two isolators, then both isolators immediately switch to an open circuit state and isolate the groups of sensors between them. The remaining units on the loop continue to fully operate.

In Style 4 loops, the I300(A) is generally used at each T-tap branch, to limit the effect of short circuits on a branch to the devices on that branch. The LED indicator is on continuously during a short circuit condition.

The I300(A) Fault Isolator Module automatically restores the shorted portion of the communications loop to normal.

Installation

- Mount on a standard junction box (4.0"/10.16 cm square) which is at least 2.125"/5.398 cm deep.
- Terminal screws are provided for "in and out" wiring.
- Installation instructions are provided with each module.
- Surface-mount box is available as an option.

Engineering Specifications

Fault Isolator Modules shall be provided to automatically isolate wire-to-wire short circuits on an SLC loop. The Fault Isolator Module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the SLC Loop. If a wire-to-wire short occurs, the Fault Isolator Module shall automatically open-circuit (disconnect) the SLC loop. When the short circuit condition is corrected, the Fault Isolator Module shall automatically reconnect the isolated section of the SLC loop. The Fault Isolator Module shall not require any address-setting, and its operations shall be totally automatic. It shall not be necessary to replace or reset an Fault Isolator Module after its normal operation. The Fault Isolator Module shall mount in a standard 4" (10.16 cm) deep electrical box, in a surface-mounted backbox, or in the Fire Alarm Control Panel. It shall provide a single LED which shall flash to indicate that the Isolator is operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.

Agency Approvals and Listings

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

- **UL Listed:** S2424 (*I300 only*).
- **ULC Listed:** S2424 (*I300A only*).
- **CSFM:** 7300-0075:0159.
- **MEA:** 3-94-E.
- **FM Approved.**

Product Line Information

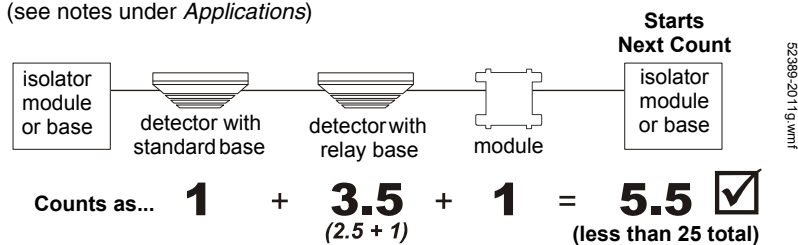
NOTE: "A" suffix indicates ULC Listed model.

I300I300A: Same as I300 with ULC Listing.

SMB500: Optional surface-mount backbox.

Examples of Device Counts

(see notes under *Applications*)



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



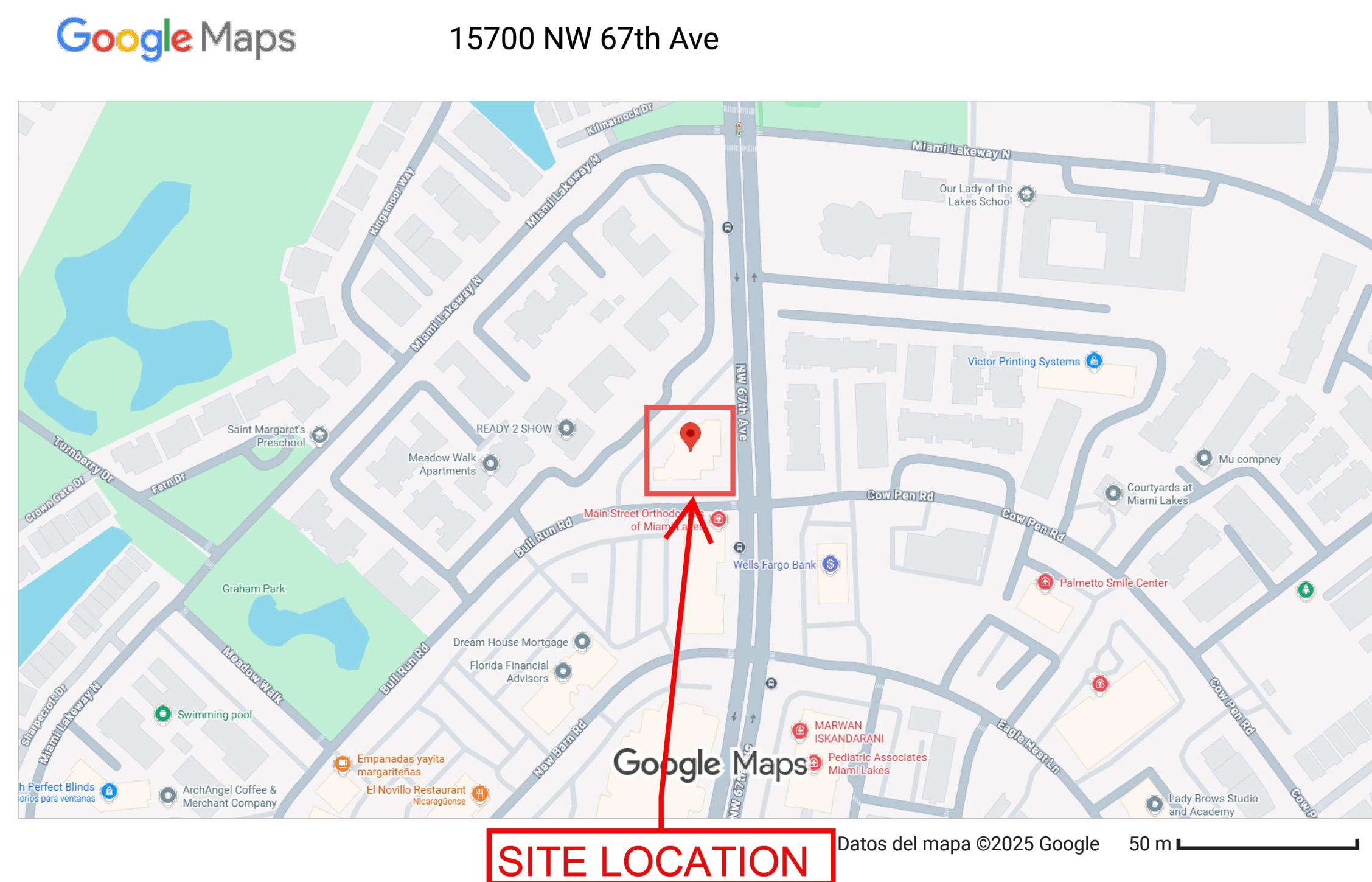
For more information, contact Fire-Lite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105.
www.firelite.com

SITE:

MEDICAL CONSULTANTS
15700 NW 67TH AVE, SUITE 100
MIAMI LAKES, FL 33014

SECURITY CONTRACTOR / VENDOR:

GENERAL SECURITY
5650 SHERIDAN STREET
HOLLYWOOD, FL 33021
PHONE: 305-406-1143



DRAWINGS PREPARED BY:

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CONTACT: MARLON SEBELEN, PE
Marlon@PermitEngineering.com

Sheet List Table	
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FA-101	SUITE 100 - FIRE ALARM FLOOR PLAN & RISE
CALCULATION TABLES (FA-200 Series)	
FA-201	CALCULATION TABLES



MEDICAL CONSULTANTS FIRE ALARM SYSTEM

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

[illegible]

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

COVER PAGE

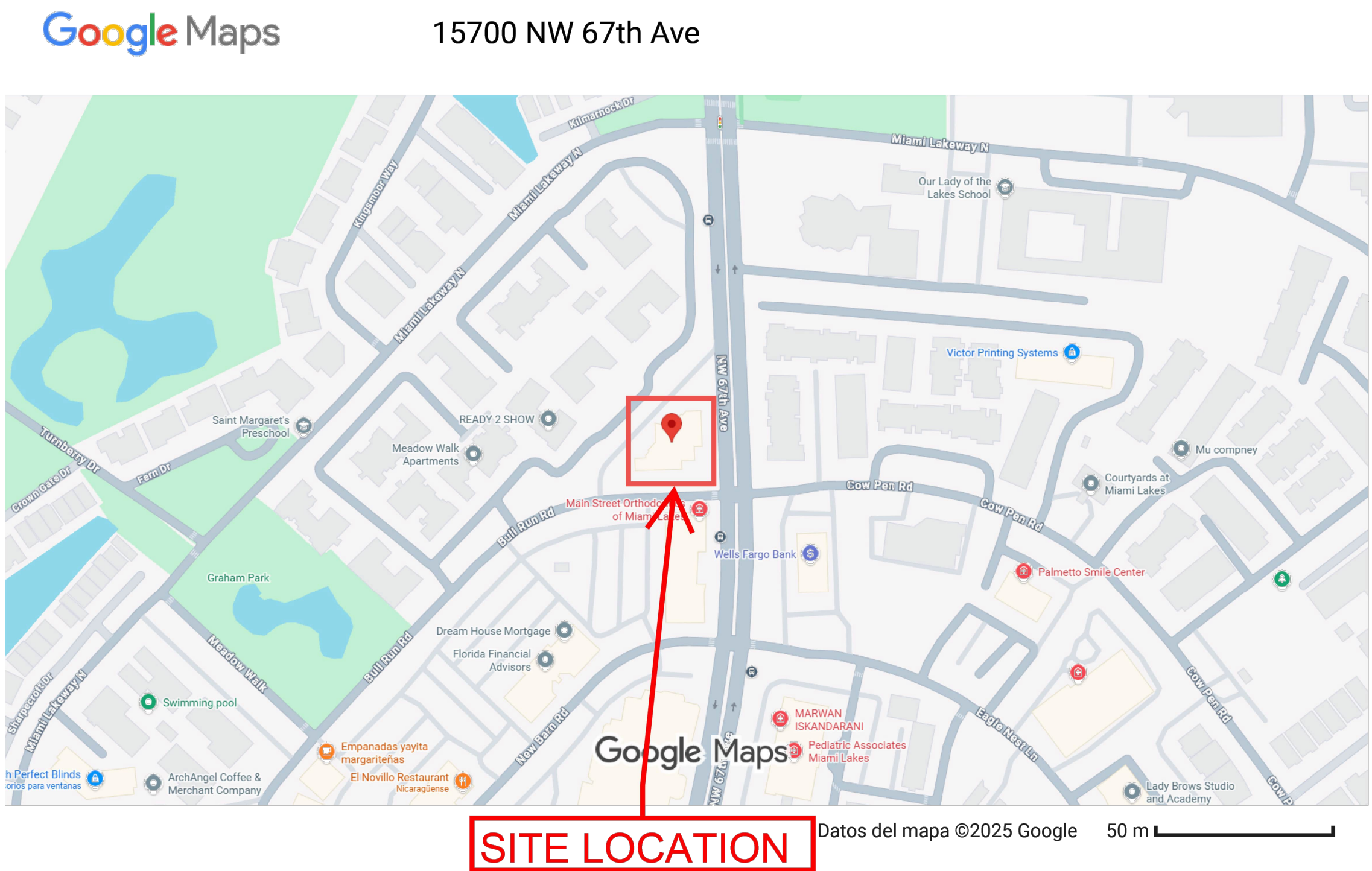
FA-000

MEDICAL CONSULTANTS FIRE ALARM SYSTEM

SITE:
MEDICAL CONSULTANTS
15700 NW 67TH AVE, SUITE 100
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FA-101	1ST FL - FIRE ALARM SYSTEM
FA-102	2ND FL - FIRE ALARM SYSTEM
FA-103	3RD FL - FIRE ALARM SYSTEM
RISER (FA-200 Series)	
FA-201	FIRE ALARM SYSTEM RISER
CALCULATION TABLES (FA-300 Series)	
FA-301	CALCULATION TABLES



5650 SHERIDAN STREET
HOLLYWOOD, FL 33021
(305) 406-1143
CONTRACTOR LICENSE EF#0001089



MEDICAL CONSULTANTS
FIRE ALARM SYSTEM
15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
1	12/18/2025	G.E.B.	M.O.S.	PERMIT SET

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

COVER PAGE

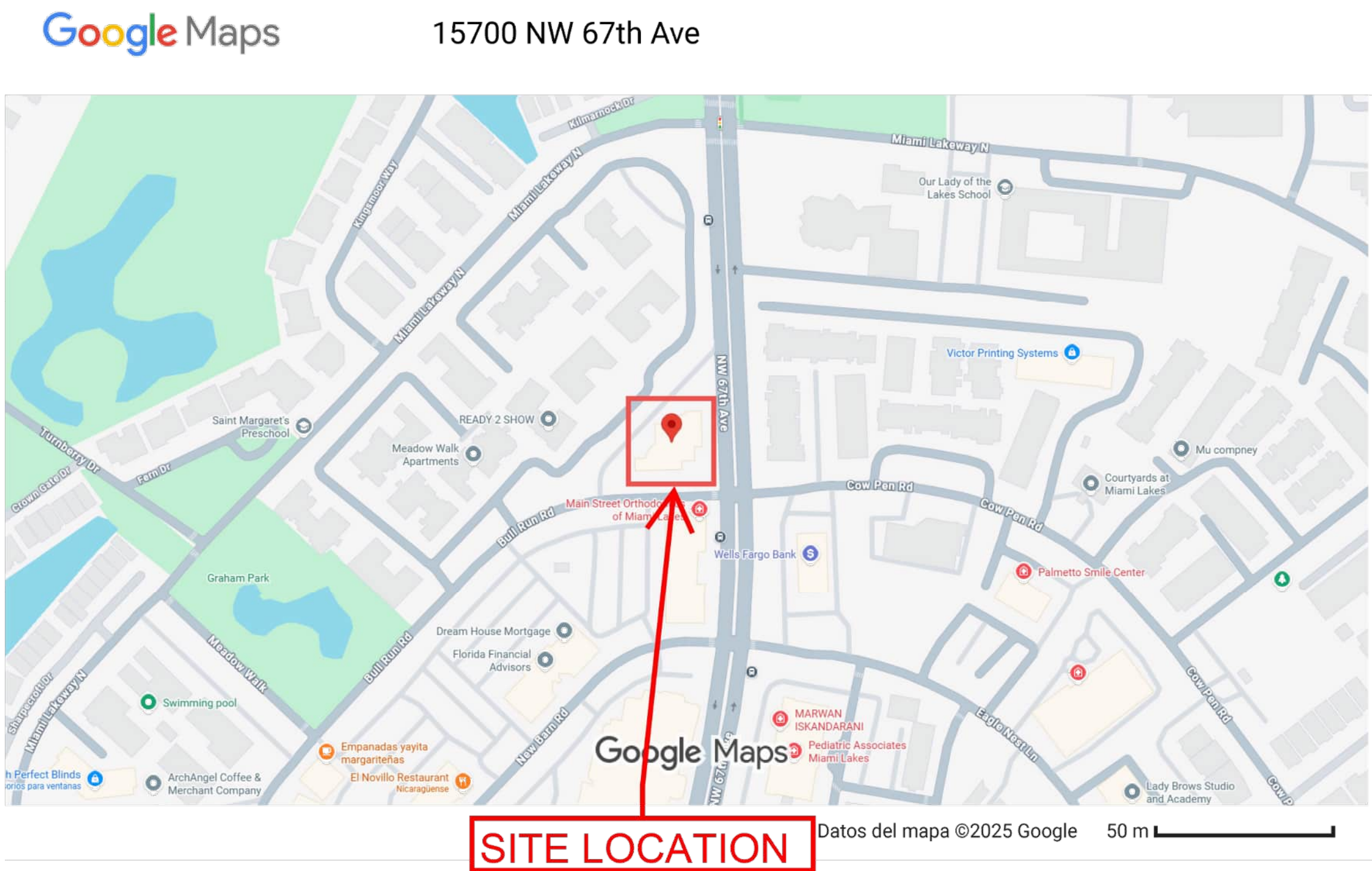
FA-000

MEDICAL CONSULTANTS FIRE ALARM SYSTEM

SITE:
MEDICAL CONSULTANTS
15700 NW 67TH AVE, SUITE 100
MIAMI LAKES, FL 33014

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FA-103	3RD FL - FIRE ALARM SYSTEM
RISER (FA-200 Series)	
FA-201	FIRE ALARM SYSTEM RISER
CALCULATION TABLES (FA-300 Series)	
FA-301	CALCULATION TABLES
FA-302	CALCULATION TABLES



MEDICAL CONSULTANTS
FIRE ALARM SYSTEM
15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
1	12/18/2025	G.E.B.	M.O.S.	PERMIT SET
2	05/21/2026	G.E.B.	M.O.S.	PERMIT SET

PERMIT SET	
DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
COVER PAGE

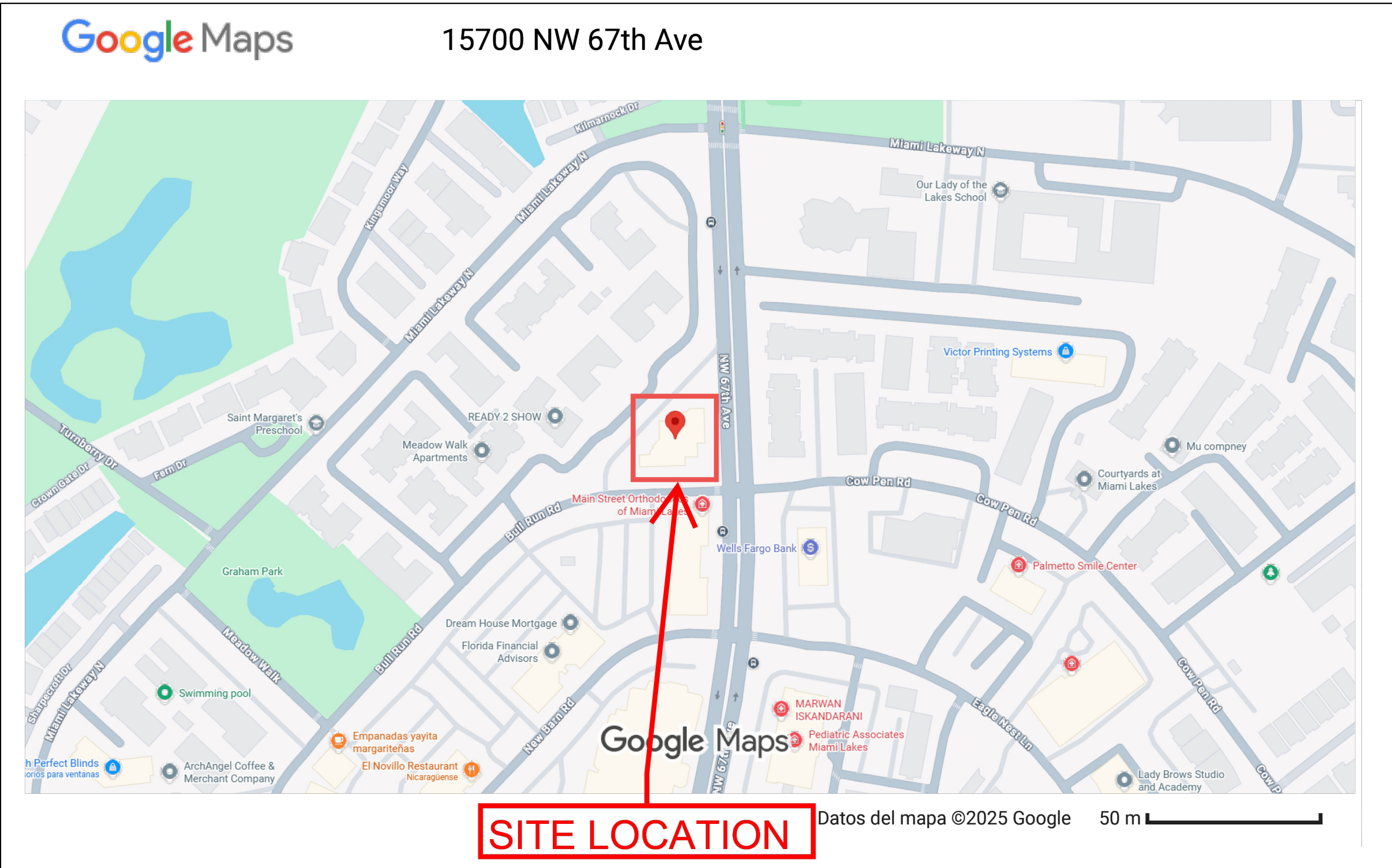
FA-000

MEDICAL CONSULTANTS FIRE ALARM SYSTEM

SITE:
MEDICAL CONSULTANTS
15700 NW 67TH AVE, SUITE 100
MIAMI LAKES, FL 33014

SECURITY CONTRACTOR / VENDOR:
GENERAL SECURITY
5650 SHERIDAN STREET
HOLLYWOOD, FL 33021
PHONE: 305-406-1143

DRAWINGS PREPARED BY:
ENG TECH NET, INC.
5220 S UNIVERSITY DRIVE #204
DAVIE, FL 33328
CONTACT: MARLON SEBELEN, PE
Marlon@PermitEngineering.com

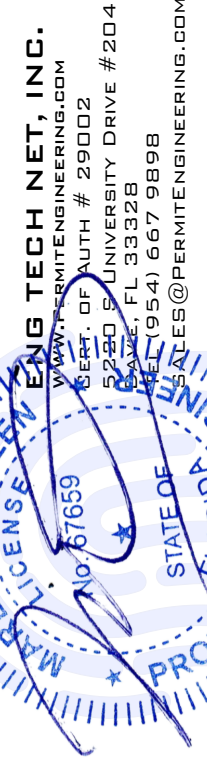


Approved as noted.
Revised drawings required prior to inspection. NFPA 72:7.5.5.3
Revise riser diagram to include the duct detector remote test switches and the horn-strobe not highlighted on FA-101. NFPA 72:7.4.6.
Locate and space the strobes per NFPA 72:18.5.5.5. See markups.
Add horn-strobe in breakroom on FA-103. NFPA 101:9.6.3.6.
The alarm sound pressure level shall be tested in accordance with NFPA 72 Table 14.4.3.2, item 22(1) with all doors closed and latched. The measured alarm SPL test results, in dBA for each room, including those without audible notification appliances, shall be recorded on the Notification Appliance Supplementary Record of Inspection and testing as required by NFPA 72:7.6.2.
Minimum alarm SPL is 69 dBA in offices and 45 dBA in storage areas.
MM MDFR

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CONTRACTOR LICENSE EF#0001089



MEDICAL CONSULTANTS
FIRE ALARM SYSTEM

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
MARK	12/18/2025	G.E.B.	M.O.S.	PERMIT SET
1	04/09/2026	G.E.B.	M.O.S.	PER AHJ COMMENTS
2	05/21/2026	G.E.B.	M.O.S.	PER AHJ COMMENTS
3	06/22/2026	G.E.B.	M.O.S.	PER AHJ COMMENTS (06/10/2026)

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

COVER PAGE

FA-000

GENERAL NOTES

1. THESE DRAWINGS PERFORM GENERAL LOCATIONS OF LIFE SAFETY EQUIPMENT & FIELD DEVICES, EXACT ROUTING OF CONDUITS TO BE DETERMINED IN THE FIELD BY THE INSTALLING CONTRACTOR TO SUIT CONDITIONS. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
2. SHOULD ANY CONDITIONS EXIST THAT DIFFER FROM WHAT IS INDICATED ON THESE DRAWINGS WHICH CAUSE MAJOR DEVIATIONS IN THE WORK SHOWN, THE CONTRACTOR SHALL CONTACT FIRE ALARM CONTRACTOR IN A TIMELY MANNER SO AS NOT TO IMPAIR THE CONSTRUCTION SCHEDULE.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND OBTAINING APPROVAL FOR ALL NECESSARY ADJUSTMENTS IN CIRCUITING AS REQUIRED TO ACCOMMODATE THE RELOCATION OF EQUIPMENT AND/OR DEVICES WHICH ARE AFFECTED BY ANY AUTHORIZED CHANGE. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
4. A STAMPED SET OF APPROVED FIRE ALARM DRAWINGS SHALL BE AT THE JOB SITE AND SHALL BE USED FOR INSTALLATION.
5. THE POWER CIRCUIT TO THE FACP AND TO THE FIRE ALARM POWER SUPPLIES SHALL BE ON A DEDICATED 120V, 20A BRANCH CIRCUIT BREAKER, AND SHALL HAVE A RED MARKING, LOCK-ON PROVISION AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT". THE LOCATION OF MARKING FOR THE CIRCUIT DISCONNECT MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
6. UPDATE THE AS-BUILT DRAWING SET DAILY WITH JOB PROGRESS. RETURN THE AS-BUILT DRAWING SET TO FIRE ALARM CONTRACTOR NO LATER THAN 7 DAYS AFTER FINAL TEST.
7. THE CONTRACTOR WILL MAINTAIN ALL AREAS OF THE BUILDING IN A NEAT AND WORKMAN LIKE MANNER.
8. DO NOT APPLY POWER EXCEPT IN THE PRESENCE OF A FACTORY TRAINED FIRE ALARM CONTRACTOR TECHNICAL REPRESENTATIVE.
9. ANY SMOKE DETECTOR HEAD INSTALLED BEFORE THE BUILDING IS CLEANED AND ACCEPTED SHALL BE COVERED TO PROTECT FROM DUST. ANY FALSE ALARMS DUE TO DIRT CONTAMINATED HEADS SHALL BE THE RESPONSIBILITY OF THE FIRE ALARM INSTALLER.
10. THE FIRE ALARM INSTALLER WILL MAINTAIN THE FIRE RESISTANCE INTEGRITY OF ALL WALL, CEILING, AND ROOF ASSEMBLIES ANY TIME THAT WORK IS NOT ACTIVELY BEING PERFORMED.
11. INSTALLATION OF DEVICES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. POWER LIMITED AND NON-POWER LIMITED FIELD WIRING MUST BE INSTALLED WITHIN THE FACP ENCLOSURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NEC.
12. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE TO NFPA 70 (NEC).
13. FIRE ALARM CIRCUITS SHALL BE IDENTIFIED IN ACCORDANCE WITH APPROPRIATE SECTION OF NEC 760. MARK ALL FIRE ALARM WIRES IN ACCORDANCE WITH NEC 760 SECTIONS FOR POWER LIMITED AND NON-POWER LIMITED WIRE.
14. FIRE ALARM CABLE INSTALLED IN DUCTS, PLENUM, AND OTHER SPACES USED FOR ENVIRONMENTAL AIR SHALL BE TYPE "FPLP".
15. FIRE ALARM CABLE INSTALLED IN THE VERTICAL RUNS AND PENETRATE MORE THAN ONE FLOOR OR CABLES INSTALLED IN VERTICAL RUNS IN SHAFTS SHALL BE TYPE FPLP.
16. FIRE ALARM CABLE INSTALLED IN UNDERGROUND CONDUIT OR OTHER WET LOCATIONS SHALL BE UL LISTED FOR WET LOCATIONS.
17. FIRE ALARM CIRCUITS EXTENDING BEYOND ONE BUILDING AND RUN OUTDOOR SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70 ARTICLES 760, 770, 725 AND 800 WHERE APPLICABLE.
18. ALL WIRING, INCLUDING SHIELDS MUST BE DRY AND FREE OF SHORTS AND GROUNDS.
19. ALL SHIELDED WIRE MUST HAVE SHIELD CONTINUITY AT FULL LENGTH OF THE WIRE.
20. ONLY SYSTEM WIRING CAN BE RUN IN THE SAME CONDUIT.
21. 120VAC IS NOT PERMITTED IN THE SAME CONDUIT WITH LOW VOLTAGE WIRING.
22. MAINTAIN 40 PERCENT CONDUIT FILL RATIO AS PER NEC REQUIREMENTS.
23. EXISTING CONDUITS MAY BE USED BY THE INSTALLATION CONTRACTOR AS DEEMED NECESSARY, HOWEVER, ANY EXISTING CONDUIT WILL BE USED ONLY IF CONDUITS MEET CURRENT STANDARDS AND CODES. FIRE ALARM CONTRACTOR MAKES NO STATEMENTS WRITTEN OR VERBAL AS TO THE CONDITION OF EXISTING CONDUITS.
24. ROOM CONTAINING FACP, BOOSTER POWER SUPPLY, VOICE EVACUATION AND AMPLIFIER PANEL(S), DIALER, OR RADIO IS MECHANICALLY VENTILATED.
25. ALL NOTIFICATION APPLIANCES, THE MINIMUM SOUND LEVEL AT THE PILLOW SHALL BE 75 DB, OR 15 DB ABOVE THE AVERAGE AMBIENT SOUND LEVEL, OR 5 DB ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER. [NFPA 72, 29.3.8.1(c)]
26. MAXIMUM MOUNTING HEIGHT FOR FACP AND POWER SUPPLIES IS 6' TO TOP OF ENCLOSURES.
27. SUBSCRIPT AT VISUAL & AUDIO-VISUAL DEVICES DENOTES CANDELA RATING PER NFPA72, 2013 & UL 1971, 9TH EDITION.
28. SUBSCRIPT SHOWN NEXT TO ADDRESSABLE DEVICES DENOTES THAT DEVICES ADDRESS ON THE SLC LOOP.
29. WIRING SHALL NOT BE LOOPED THROUGH THESE DEVICES. WIRE MUST BE CUT FOR IN/OUT.
30. THIS IS A NEW, BATTERY BACKUP SYSTEM. AFTER 24 HOURS OF STANDBY & 5 MINUTES OF ALARM BATTERY BACKUP, UPON LOSS OF 120VAC POWER, THE FIRE ALARM CONTROL PANEL(S) SHALL AUTOMATICALLY TRANSFER TO STANDBY BATTERY. SEE BATTERY CALC TABLES.
31. THIS IS A NEW, CERTIFICATED, CENTRAL STATION SERVICE FIRE ALARM SYSTEM.
32. ALL INTERCONNECTED FIRE ALARM PANELS ARE ARRANGED TO FUNCTION AS A SINGLE SYSTEM & ARE MONITORED FOR INTEGRITY PER NFPA 72.
33. ALL WIRING, ADDRESSABLE DEVICES, NOTIFICATION APPLIANCES & ANNUNCIATORS SHALL BE SUPERVISED BACK TO THE FIRE ALARM CONTROL PANEL.
34. SYSTEM SHALL BE GROUNDED PER MANUFACTURERS SPECIFICATIONS.
35. MINIMUM RACEWAY SIZE 1/2". 40% CONDUIT FILL MAXIMUM.
36. PROVIDE RIGID, GALVANIZED, STEEL, HEAVY WALL OR PVC CONDUITS FOR ALL CONDUITS EXPOSED TO WEATHER OR BURIED IN THE GROUND.
37. ALL SPACES SHALL MEET THE AUDIBILITY REQUIREMENTS OF NFPA 72 & NFPA 101.
38. AREAS HAVING MORE THAN ONE VISUAL NOTIFICATION APPLIANCE WITHIN 55' OF EACH OTHER & WITHIN THE SAME FIELD OF VIEW SHALL BE SYNCHRONIZED. THIS SHALL INCLUDE SYNCHRONIZATION OF VISUAL APPLIANCES OPERATED BY SEPARATE SYSTEMS.
39. SIGNALING LINE CIRCUITS (SLC) ARE CLASS B.
40. NOTIFICATION APPLIANCE CIRCUITS (NAC) AND SPEAKER CIRCUITS (SPK) ARE CLASS B.
41. MAXIMUM NUMBER OF DEVICES PER SLC IS 159 DETECTORS & 159 MODULES (ADDRESSABLE DEVICES).
42. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3' OF A/C DIFFUSERS, KITCHEN OR BATHROOM DOORS.
43. CEILING MOUNTED DEVICES SHALL BE LOCATED AT A HEIGHT OF 10' +/- ON A SMOOTH, FLAT CEILING UNLESS OTHERWISE NOTED.
44. RACKS, SHELVES & EQUIPMENT ARE ALL LOWER THAN 80" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
45. MOUNTING OF ALL FIRE ALARM CONTROL PANELS, POWER SUPPLIES & ANNUNCIATORS SHALL BE INSTALLED PER THE REQUIREMENTS ON NFPA, MANUFACTURER, FLORIDA BUILDING CODE, BCPS 2A-(7)(c) (20) & NEC 110.3(B).
46. ALL FIRE ALARM CONTROL PANELS, VOICE COMMUNICATION PANELS, POWER SUPPLIES SHALL DERIVE FROM THE BUILDING EMERGENCY GENERATOR POWER SOURCE AND BE LABELED IN ACCORDANCE WITH NEC 760.41 (B) AND BCPS 13845 2.3(3).
47. ALL SPEAKERS TAPPED AT 0.25 WATTS, UNLESS OTHERWISE NOTED.
48. FIRE ALARM FREE WIRING WITH FPLP CABLES AND 1/2" STUB UPS ARE PERMITTED ON THIS PROJECT.

SYSTEM DESCRIPTION / SCOPE OF WORK

OCCUPANCY TYPE: FBC - BUSINESS GROUP B / NFPA 101 - CHAPTER 39 EXISTING BUSINESS

SPRINKLER PROTECTION:	BUILDING IS NOT SPRINKLED
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TENANT IMPROVEMENT - MODIFICATION OF EXISTING FIRE ALARM SYSTEM.
PROVIDE NEW DEVICES AS SHOWN ON DRAWINGS AS PART OF THE OFFICE REMODEL/EXPANSION.

ALL NEW WIRING TO BE CLASS B.

THE EXISTING FIRE ALARM SYSTEM SHALL NOT BE DISCONNECTED OR TAKEN OUT OF SERVICE WITHOUT WRITTEN PERMISSION FROM THE OWNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER THE TIMING OF ANY EXISTING FIRE ALARM SYSTEM DEMOLITION WORK.

FIRE ALARM APPLICABLE CODES & STANDARDS

- FFPC 2023 (8TH EDITION) FLORIDA FIRE PREVENTION CODE
- NFPA 1—2021 NATIONAL FIRE CODE
 - NFPA 101—2021 LIFE SAFETY CODE

- FBC 2023 (8TH EDITION) FLORIDA BUILDING CODE
- IBC—2021 INTERNATIONAL BUILDING CODE
 - NFPA 70—2020 NATIONAL ELECTRICAL CODE
 - NFPA 72—2019 NATIONAL FIRE ALARM AND SIGNALING CODE

JURISDICTIONS WITHIN THE STATE MAY HAVE AMENDMENTS TO THE STATE ADOPTED CODE.
CHECK WITH THE LOCAL JURISDICTION AUTHORITY FOR MORE DETAILS.

WIRE SCHEDULE	
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CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/2 FPLP/R	RS-485	18	2 COND. COPPER FPLP/R ANALOG UNSHIELDED
A	16/2 FPLR	SLC	16	2 COND. COPPER FPLR ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. COPPER FPLP/R UNSHIELDED
V	14/2 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED

DEVICE LEGEND				
SYMBOL	QUANTITY	IS EXISTING	MANUFACTURER	DESCRIPTION
	1	X	FIRELITE	MS-9200UDLS INTELLIGENT ADDRESSABLE FACP WITH BUILT-IN COMMUNICATOR
	1	X	FIRELITE	FCPS-24FS6 6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
	1	X	FIRELITE	ANN-80 RED 80 CHARACTER LCD ANNUNCIATOR
 RM	2		FIRELITE	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.
	2		FIRELITE	BG-12LX ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
	2		FIRELITE	D365PL INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD365-IVR(A)-IV DETECTOR
	4		FIRELITE	SD365-IV W/B300-6 WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
	1	X	FIRELITE	SD365-IV W/B300-6 WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
 135°	1		FIRELITE	H365-IV W/B300-6 WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
	2		SYSTEM SENSOR	RTS151 REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEADS
 C	6		SYSTEM SENSOR	SCRLD STROBE, CEILING, RED
 C	5		SYSTEM SENSOR	PC2RLD 2-WIRE, HORN STROBE, CEILING, RED

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT



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SALES@BROWNCENTERS.COM

MARLON SEBELEN, P.E.

THIS ITEM HAS BEEN DIGITALLY SIGNED
AND SEALED BY MAPCONSERV ENR DE

DATE: 12/18/2025

ELECTRONIC COPIES.

MEDICAL CONSULTANTS FIRE ALARM SYSTEM

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

[illegible]

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

GENERAL NOTES

FA-001

GENERAL NOTES

1. THESE DRAWINGS DEPict GENERAL LOCATIONS OF LIFE SAFETY EQUIPMENT & FIELD DEVICES. EXACT ROUTING OF CONDUITS TO BE DETERMINED IN THE FIELD BY THE INSTALLING CONTRACTOR TO SUIT CONDITIONS. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
2. MAJOR DEVIATIONS IN THE WORK SHOWN, THE CONTRACTOR SHALL CONTACT FIRE ALARM CONTRACTOR IN A TIMELY MANNER SO AS NOT TO IMPAIR THE CONSTRUCTION SCHEDULE.
3. CONTRACTOR IS RESPONSIBLE FOR MAKING AND OBTAINING APPROVAL FOR ALL NECESSARY ADJUSTMENTS IN CIRCUITING AS REQUIRED TO ACCOMMODATE THE RELOCATION OF EQUIPMENT AND/OR DEVICES WHICH ARE AFFECTED BY ANY AUTHORIZED CHANGE. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
4. A STAMPED SET OF APPROVED FIRE ALARM DRAWINGS SHALL BE AT THE JOB SITE AND SHALL BE USED FOR INSTALLATION.
5. THE POWER CIRCUIT TO THE FACP AND TO THE FIRE ALARM POWER SUPPLIES SHALL BE ON A DEDICATED 120V, 20A BRANCH CIRCUIT BREAKER, AND SHALL HAVE A RED MARKING, LOCK-ON PROVISION AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT." THE LOCATION OF THE CIRCUIT DISCONNECT MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
6. UPON THE AS-BUILT DRAWING IDENTIFY THE JOB PROGRESS. RETURN THE AS-BUILT DRAWING SET TO FIRE ALARM CONTRACTOR NO LATER THAN 7 DAYS AFTER FINAL TEST.
7. THE CONTRACTOR WILL MAINTAIN ALL AREAS OF THE BUILDING IN A NEAT AND WORKMAN LIKE MANNER.
8. DO NOT APPLY POWER EXCEPT IN THE PRESENCE OF A FACTORY TRAINED FIRE ALARM CONTRACTOR TECHNICAL REPRESENTATIVE.
9. ANY SMOKE DETECTOR HEAD INSTALLED BEFORE THE BUILDING IS CLEANED AND ACCEPTED SHALL BE COVERED TO PROTECT FROM DUST. ANY FALSE ALARMS DUE TO DIRT CONTAMINATED HEADS SHALL BE THE RESPONSIBILITY OF THE FIRE ALARM INSTALLER.
10. THE FIRE ALARM INSTALLER WILL MAINTAIN THE FIRE RESISTANCE INTEGRITY OF ALL WALL, CEILING, AND ROOF ASSEMBLIES ANY TIME THAT WORK IS NOT ACTIVELY BEING PERFORMED.
11. INSTALLATION OF DEVICES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. POWER LIMITED AND NON-POWER LIMITED FIELD WIRING MUST BE INSTALLED WITHIN THE FACP ENCLOSURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NEC.
12. ALL WIRING SHALL BE INSTALLED ACCORDING TO NFPA 70 (NEC).
13. FIRE ALARM CIRCUITS SHALL BE IDENTIFIED IN ACCORDANCE WITH APPROPRIATE SECTION OF NEC 760. MARK ALL FIRE ALARM WIRES IN ACCORDANCE WITH NEC 760 SECTIONS FOR POWER LIMITED AND NON-POWER LIMITED WIRE.
14. FIRE ALARM CABLE INSTALLED IN DUCTS, PLENUM, AND OTHER SPACES USED FOR ENVIRONMENTAL AIR SHALL BE TYPE FPLP.
15. FIRE ALARM CABLE INSTALLED IN THE VERTICAL RUNS AND PENETRATE MORE THAN ONE FLOOR OR CABLES INSTALLED IN VERTICAL RUNS IN SHAFTS SHALL BE TYPE FPLP.
16. FIRE ALARM CABLE INSTALLED IN UNDERGROUND CONDUIT OR OTHER WET LOCATIONS SHALL BE UL LISTED FOR WET LOCATIONS.
17. FIRE ALARM CIRCUITS EXTENDING BEYOND ONE BUILDING AND RUN OUTDOOR SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70 ARTICLES 760, 770, 725 AND 800 WHERE APPLICABLE.
18. ALL WIRING, INCLUDING SHIELDS MUST BE DRY AND FREE OF SHORTS AND GROUNDS.
19. ALL SHIELDS WIRE MUST HAVE SHIELD CONTINUITY AT FULL LENGTH OF THE WIRE.
20. ONLY SYSTEM WIRING CAN BE RUN IN THE SAME CONDUIT.
21. 120VAC IS NOT PERMITTED IN THE SAME CONDUIT WITH LOW VOLTAGE WIRING.
22. MAINTAIN 40 PERCENT CONDUIT FILL RATIO AS PER NEC REQUIREMENTS.
23. EXISTING CONDUITS MAY BE USED BY THE INSTALLATION CONTRACTOR AS DEEMED NECESSARY, HOWEVER, ANY EXISTING CONDUIT WILL BE USED ONLY IF CONDUITS MEET CURRENT STANDARDS AND CODES. FIRE ALARM CONTRACTOR MAKES ALL DETERMINATIONS WRITTEN OR ORAL AS TO THE CONDITION OF EXISTING CONDUITS.
24. ROOM CONTAINING FACP, BOSTER POWER SUPPLY, VOICE EVACUATION AND AMPLIFIER PANEL(S), DIALER, OR RADIO IS MECHANICALLY VENTILATED.
25. FOR ALL NOTIFICATION APPLIANCES, THE MINIMUM SOUND LEVEL AT THE PILLOW SHALL BE 75 DBA, OR 15 DB ABOVE THE AVERAGE AMBIENT SOUND LEVEL, OR 5 DB ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER. [NFPA 72, 29.3.8.1(c)]
26. MAXIMUM MOUNTING HEIGHT FOR FACP AND POWER SUPPLIES IS 6' TO TOP OF ENCLOSURES.
27. SUBSCRIPT AT VISUAL & AUDIO-VISUAL DEVICES DENOTES CANDELA RATING PER NFPA72, 2013 & UL 1971, 9TH EDITION.
28. SUBSCRIPT SHOWN NEXT TO ADDRESSABLE DEVICES DENOTES THAT DEVICES ADDRESS ON THE SLC LOOP.
29. WIRING SHALL NOT BE LOOPED THROUGH DEVICES. WIRE MUST BE CUT FOR IN/OUT.
30. THIS IS A NEW, BATTERY BACKUP SYSTEM, WITH 24 HOURS OF STANDBY & 5 MINUTES OF ALARM BATTERY BACKUP. UPON LOSS OF 120VAC POWER, THE FIRE ALARM CONTROL PANEL(S) SHALL AUTOMATICALLY TRANSFER TO STANDBY BATTERY. SEE BATTERY CALC TABLES.
31. THIS IS A NEW, CERTIFICATED CENTRAL STATION SERVICE FIRE ALARM SYSTEM.
32. ALL INTERCONNECTED FIRE ALARM PANELS ARE ARRANGED TO FUNCTION AS A SINGLE SYSTEM & ARE MONITORED FOR INTEGRITY PER NFPA 72.
33. ALL WIRING, ADDRESSABLE DEVICES, NOTIFICATION APPLIANCES & ANNUNCIATORS SHALL BE SUPERVISED BACK TO THE FIRE ALARM CONTROL PANEL.
34. SYSTEM SHALL BE GROUNDED PER MANUFACTURERS SPECIFICATIONS.
35. MINIMUM RACEWAY SIZE 1 1/2" 40R CONDUIT FILL MAXIMUM.
36. PROVIDE RIGID, GALVANIZED, STEEL, HEAVY WALL OR PVC CONDUITS FOR ALL CONDUITS EXPOSED TO WEATHER OR BURIED IN THE GROUND.
37. ALL SPACES SHALL MEET THE AUDIBILITY REQUIREMENTS OF NFPA 72 & NFPA 101.
38. AREAS HAVING MORE THAN ONE VISUAL NOTIFICATION APPLIANCE WITHIN 55' OF EACH OTHER & WITHIN THE SAME FIELD OF VIEW SHALL BE SYNCHRONIZED. THIS SHALL INCLUDE SYNCHRONIZATION OF VISUAL APPLIANCES OPERATED BY SEPARATE SYSTEMS.
39. SIGNALING LINE CIRCUITS (SLC) ARE CLASS B.
40. NOTIFICATION APPLIANCE CIRCUITS (NAC) AND SPEAKER CIRCUITS (SPK) ARE CLASS B.
41. MAXIMUM NUMBER OF DEVICES PER SLC IS 159 DETECTORS & 159 MODULES (ADDRESSABLE DEVICES).
42. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3' OF A/C DIFFUSERS, KITCHEN OR BATHROOM DOORS.
43. CEILING MOUNTED DEVICES SHALL BE LOCATED AT A HEIGHT OF 10' +/- ON A SMOOTH, FLAT CEILING UNLESS OTHERWISE NOTED.
44. RACKS, SHELVES & EQUIPMENT ARE ALL LOWER THAN 80" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
45. MOUNTING OF ALL FIRE ALARM CONTROL PANELS, POWER SUPPLIES & ANNUNCIATORS SHALL BE INSTALLED PER THE REQUIREMENTS ON NFPA, MANUFACTURER, FLORIDA BUILDING CODE, BCPS 2A-7(G) (20) & NEC 110.3(B).
46. THE FIRE ALARM CONTROL PANEL(S), VOICE COMMUNICATION PANEL(S), POWER SUPPLIES SHALL DERIVE FROM THE BUILDING EMERGENCY GENERATOR POWER SOURCE AND BE LABELED IN ACCORDANCE WITH NEC 760.41 (B) AND BCPS 13845 2.3(0).
47. ALL SPEAKERS TAPPED AT 0.25 WATTS, UNLESS OTHERWISE NOTED.
48. FIRE ALARM FIELD WIRING WITH FPLP CABLES AND 1/2" STUB UPS ARE PERMITTED ON THIS PROJECT.

SYSTEM DESCRIPTION / SCOPE OF WORK

OCCUPANCY TYPE: FBC - BUSINESS GROUP B / NFPA 101 - CHAPTER 39 EXISTING BUSINESS

SPRINKLER PROTECTION: BUILDING IS NOT SPRINKLED

TENANT IMPROVEMENT - MODIFICATION OF EXISTING FIRE ALARM SYSTEM.
PROVIDE NEW DEVICES AS SHOWN ON DRAWINGS AS PART OF THE OFFICE REMODEL/EXPANSION.

ALL NEW WIRING TO BE CLASS B.

THE EXISTING FIRE ALARM SYSTEM SHALL NOT BE DISCONNECTED OR TAKEN OUT OF SERVICE WITHOUT WRITTEN PERMISSION FROM THE OWNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER THE TIMING OF ANY EXISTING FIRE ALARM SYSTEM DEMOLITION WORK.

FIRE ALARM APPLICABLE CODES & STANDARDS	
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- FFPC 2023 (8TH EDITION) FLORIDA FIRE PREVENTION CODE

- FBC 2023 (8TH EDITION) FLORIDA BUILDING CODE
- IBC—2021 INTERNATIONAL BUILDING CODE
 - NFPA 70—2020 NATIONAL ELECTRICAL CODE
 - NFPA 72—2019 NATIONAL FIRE ALARM AND SIGNALING CODE

JURISDICTIONS WITHIN THE STATE MAY HAVE AMENDMENTS TO THE STATE ADOPTED CODE.
CHECK WITH THE LOCAL JURISDICTION AUTHORITY FOR MORE DETAILS.

WIRE SCHEDULE

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/2 FPLP/R	RS-485	18	2 COND. COPPER FPLP/R ANALOG UNSHIELDED
P	16/2 FPLP/R	SLC	16	2 COND. COPPER FPLP ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. COPPER FPLP/R UNSHIELDED
V	14/2 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED

DEVICE LEGEND					
SYMBOL	QUANTITY	IS EXISTING	MANUFACTURER	PART NO	DESCRIPTION
	1	X	FIRELITE	MS-9200UDLS	INTELLIGENT ADDRESSABLE FACP W/ BUILT-IN COMMUNICATOR
	1	X	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
	1	X	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
 RM	2		FIRELITE	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 SIB500.
	2		FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
	2		FIRELITE	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD365-IVR(A)-IV DETECTOR
	4		FIRELITE	SD365-IV W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
	1	X	FIRELITE	SD365-IV W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
 135°	1		FIRELITE	H365-IV W/B300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
	2		SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEADS
 C	6		SYSTEM SENSOR	SCRLD	STROBE, CEILING, RED
 C	5		SYSTEM SENSOR	PC2RLD	2-WIRE, HORN STROBE, CEILING, RED

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT



**MEDICAL CONSULTANTS
FIRE ALARM SYSTEM**
15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

[illegible]

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

GENERAL NOTES

FA-001

SYSTEM DESCRIPTION / SCOPE OF WORK

- OCCUPANCY TYPE: FBC - BUSINESS GROUP B / NFPA 101 - CHAPTER 39 EXISTING BUSINESS
- SPRINKLER PROTECTION: BUILDING IS NOT SPRINKLED

TENANT IMPROVEMENT SUITE 100 - MODIFICATION OF EXISTING FIRE ALARM SYSTEM.
PROVIDE NEW DEVICES AS SHOWN ON DRAWINGS AS PART OF THE OFFICE REMODEL/EXPANSION.

FACU UPGRADE AND ADDITIONAL DEVICES - INSTALLATION OF NEW FACU AND NEW DEVICES THRUOUT THE BUILDING IN COMPLIANCE WITH MIAMI-DADE ORDINANCE SECTION 14-61(J).

ALL NEW WIRING TO BE CLASS B.

THIS IS AN EXISTING CERTIFICATED CENTRAL STATION SERVICE FIRE ALARM SYSTEM.

THE EXISTING FIRE ALARM SYSTEM SHALL NOT BE DISCONNECTED OR TAKEN OUT OF SERVICE WITHOUT WRITTEN PERMISSION FROM THE OWNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER THE TIMING OF ANY EXISTING FIRE ALARM SYSTEM DEMOLITION WORK

FIRE ALARM APPLICABLE CODES & STANDARDS

- FFPC 2023 (8TH EDITION) FLORIDA FIRE PREVENTION CODE
- NFPA 1—2021 NATIONAL FIRE CODE
 - NFPA 101—2021 LIFE SAFETY CODE

- IBC 2023 (8TH EDITION) FLORIDA BUILDING CODE
- IBC—2021 INTERNATIONAL BUILDING CODE
 - NFPA 70—2020 NATIONAL ELECTRICAL CODE
 - NFPA 72—2019 NATIONAL FIRE ALARM AND SIGNALING CODE

MIAMI-DADE COUNTY CODE SECTION 14-61

JURISDICTIONS WITHIN THE STATE MAY HAVE AMENDMENTS TO THE STATE ADOPTED CODE.
CHECK WITH THE LOCAL JURISDICTION AUTHORITY FOR MORE DETAILS.

WIRE SCHEDULE

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLP/R	RS-485/PWR	18	4 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED
A	18/2 FPLP/R	S/LC	18	2 COND. SOLID COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. SOLID COPPER FPLP/R UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLP/R	NAC	14	2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED

DEVICE LEGEND

SYMBOL	QUANTITY	MANUFACTURER	PART NO	DESCRIPTION
 FACP	1	FIRELITE	ES-200X WITHOUT PWRMOD24	INTELLIGENT ADDRESSABLE FACP WITHOUT PWRMOD24
 FCPS	2	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
 FAC	1	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
 CELL	1	NAPCO	SLE-MAX2-CFBPS	UNIVERSAL FIRE COMMUNICATOR, DUAL SIM, DUAL PATH; 120VAC; METAL W/ TRF12 16VAC/20VA XFMR PROVISION
 ACRM	12	FIRELITE	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.
 F	9	FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
 S	9	FIRELITE	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD365R(A)-IV DETECTOR
 S	2	FIRELITE	SD365 W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
 H	3	FIRELITE	H365 W/B300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
 RTS	9	SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEADS
 SCRLD	48	SYSTEM SENSOR	SCRLD	STROBE, CEILING, RED
 WP	6	SYSTEM SENSOR	P2RK	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR (HIGH VOLUME SETTING)
 P2RL	10	SYSTEM SENSOR	P2RL	2-WIRE, HORN STROBE, WALL, RED (HIGH VOLUME SETTING)
 PC2RLD	34	SYSTEM SENSOR	PC2RLD	2-WIRE, HORN STROBE, CEILING, RED (HIGH VOLUME SETTING)
 SS	1	DITEK	DTK-120HW	OVERVOLTAGE PROTECTOR CIRCUIT PROTECTION-120V

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

SYSTEM INPUTS

[illegible]

SYSTEM OUTPUTS

ACTIVATE COMMON ALARM SIGNAL INDICATOR
ACTIVATE AUDIBLE ALARM SIGNAL
ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR
ACTIVATE AUDIBLE SUPERVISORY SIGNAL
ACTIVATE COMMON TROUBLE SIGNAL INDICATOR
ACTIVATE AUDIBLE TROUBLE SIGNAL
ACTIVATE APPROPRIATE LOCATION INDICATOR
ACTIVATE ALL AUDIBLE EVACUATION SIGNALS
ACTIVATE ALL VISIBLE EVACUATION SIGNALS
DISPLAY CHANGE OF STATUS
TRANSMIT ALARM SIGNAL TO LISTED CENTRAL STATION
TRANSMIT SUPERVISORY SIGNAL TO LISTED CENTRAL STATION
TRANSMIT TROUBLE SIGNAL TO LISTED CENTRAL STATION
MAIN FLOOR ELEVATOR RECALL
ALTERNATE FLOOR ELEVATOR RECALL
ELEVATOR HAT FLASH
RELEASE ALL ELECTRIC DOOR LOCKS & DOOR HOLDERS
AHJ SHUTDOWN (ASSOCIATED UNIT ONLY)
AHJ SHUTDOWN (ALL UNITS)
REMEDIATELY DISPLAY ACTIVE STATUS

[illegible]

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:

FIRE ALARM SYSTEM

SHEET:

GENERAL NOTES

FA-001

SYSTEM DESCRIPTION / SCOPE OF WORK

OCCUPANCY TYPE: FBC – BUSINESS GROUP B / NFPA 101 – CHAPTER 39 EXISTING BUSINESS

SPRINKLER PROTECTION: BUILDING IS NOT SPRINKLED

TENANT IMPROVEMENT SUITE 100 – MODIFICATION OF EXISTING FIRE ALARM SYSTEM.
PROVIDE NEW DEVICES AS SHOWN ON DRAWINGS AS PART OF THE OFFICE REMODEL/EXPANSION.

FACU UPGRADE AND ADDITIONAL DEVICES – INSTALLATION OF NEW FACU AND NEW DEVICES THRUOUT THE BUILDING IN COMPLIANCE WITH MIAMI-DADE ORDINANCE SECTION 14-61(J).

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SOUND PRESSURE LEVEL DESIGN CRITERIA:
AVERAGE SOUND LEVEL FOR BUSINESS OCCUPANCY IS 54dba PER NFPA 72, TABLE A18.4.3.
MINIMUM SOUND PRESSURE LEVEL FOR THIS DESIGN SHALL BE 69dba.
AN EVACUATION SIGNAL TEST REPORT, AS REQUIRED BY CODE, SHALL BE PROVIDED FOR FINAL INSPECTION.

FIRE ALARM APPLICABLE CODES & STANDARDS

FFPC 2023 (8TH EDITION) FLORIDA FIRE PREVENTION CODE

- NFPA 1—2021 NATIONAL FIRE CODE
- NFPA 101—2021 LIFE SAFETY CODE

FBC 2023 (8TH EDITION) FLORIDA BUILDING CODE

- IBC—2021 INTERNATIONAL BUILDING CODE
- NFPA 70—2020 NATIONAL ELECTRICAL CODE
- NFPA 72—2019 NATIONAL FIRE ALARM AND SIGNALING CODE

MIAMI—DADE COUNTY CODE SECTION 14—61

JURISDICTIONS WITHIN THE STATE MAY HAVE AMENDMENTS TO THE STATE ADOPTED CODE.
CHECK WITH THE LOCAL JURISDICTION AUTHORITY FOR MORE DETAILS.

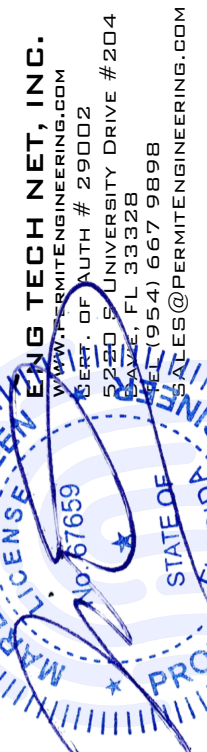
- ## WIRE SCHEDULE

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLP/R	RS-485PWR	18	4 COND. COPPER FPLP/R ANALOG UNSHIELDED
A	18/2 FPLP/R	SLC	18	2 COND. COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	ALUX	14	2 COND. COPPER FPLP/R UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED

shall not be highlighted on FA-101. NFPA 72:7.4.6.

3.2, item 22(1) with all doors closed and without audible notification appliances, shall be as required by NFPA 72:7.6.2.

DEVICE LEGEND				
SYMBOL	QUANTITY	MANUFACTURER	PART NO	DESCRIPTION
	1	FIRELITE	ES-200X WITHOUT PWRMOD24	INTELLIGENT ADDRESSABLE FACP WITHOUT PWRMOD24
	2	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
	1	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
	1	NAPCO	SLE-MAX2-CFBPS	UNIVERSAL FIRE COMMUNICATOR, DUAL SIM, DUAL PATH; 120VAC; METAL W/ TRF12 16VAC/20VA XFMR PROVISION
	3	FIRELITE	I300	SLC LOOP ISOLATOR MODULE; ISOLATES AGAINST SHORT CIRCUITS ON THE SLC.
M	3	FIRELITE	MMF-301	MINIATURE MMF-300 (NO LED, NO STYLE D); PIGTAIL WIRES; MOUNTS IN DEVICE BACKBOX
RM	15	FIRELITE	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.
	9	FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
	9	FIRELITE	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD365R(A)-IV DETECTOR
	2	FIRELITE	SD365 WB300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
135°	3	FIRELITE	H365 WB300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
	9	SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEDS
C	59	SYSTEM SENSOR	SCRLED	STROBE, CEILING, RED
WP	6	SYSTEM SENSOR	P2RK	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR (HIGH VOLUME SETTING)
	10	SYSTEM SENSOR	P2RL	2-WIRE, HORN STROBE, WALL, RED (HIGH VOLUME SETTING)
C	37	SYSTEM SENSOR	PC2RLD	2-WIRE, HORN STROBE, CEILING, RED (HIGH VOLUME SETTING)
120v	1	DITEK	DTK-120HW	OVERVOLTAGE PROTECTOR CIRCUIT PROTECTION-120V

[illegible]

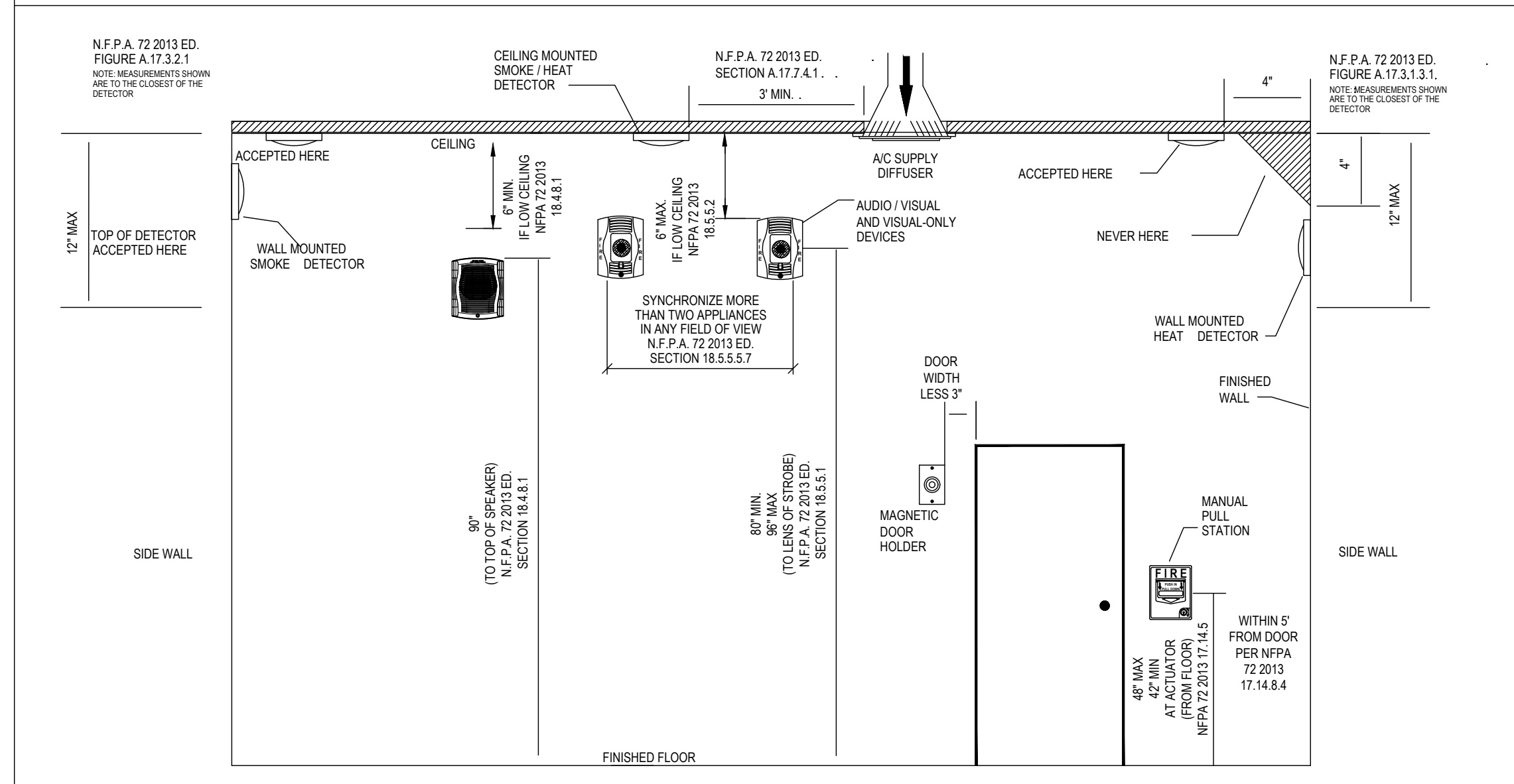
MIAMI LAKES, FL 33014

[illegible]

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

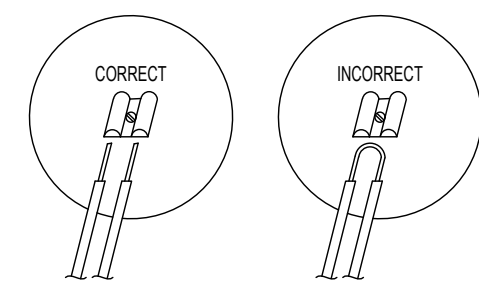
SHEET

MOUNTING REQUIREMENTS

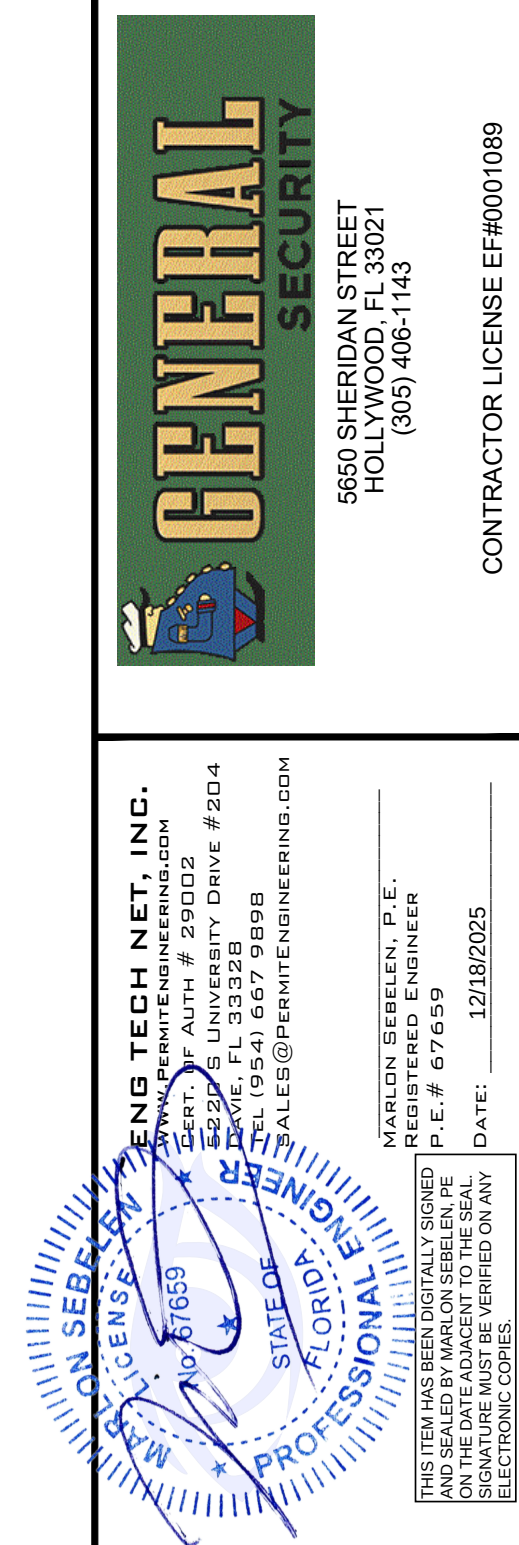
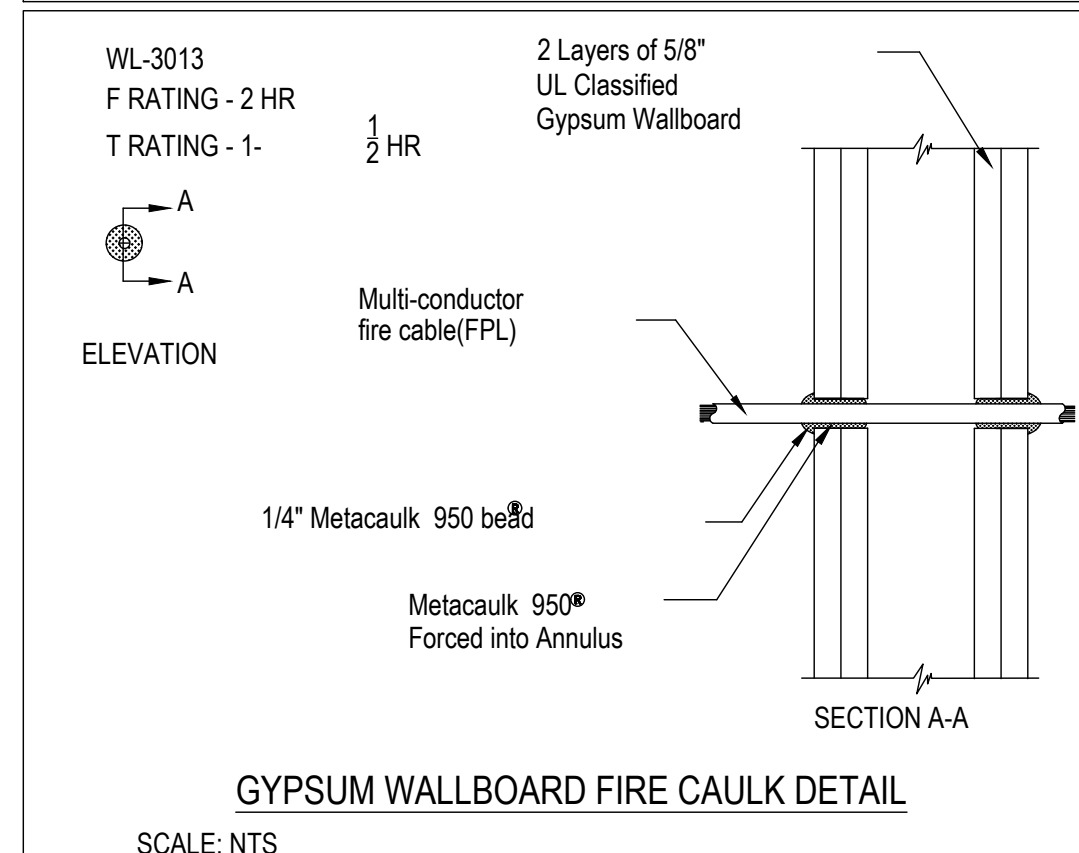
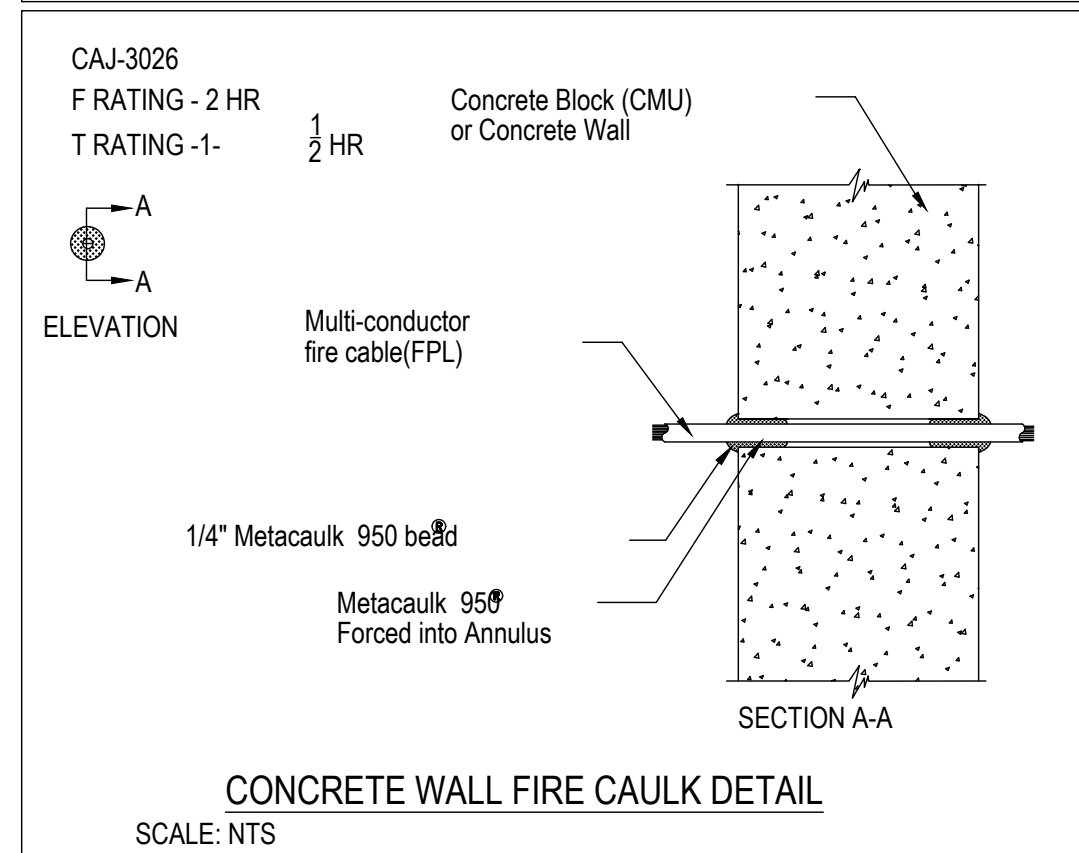
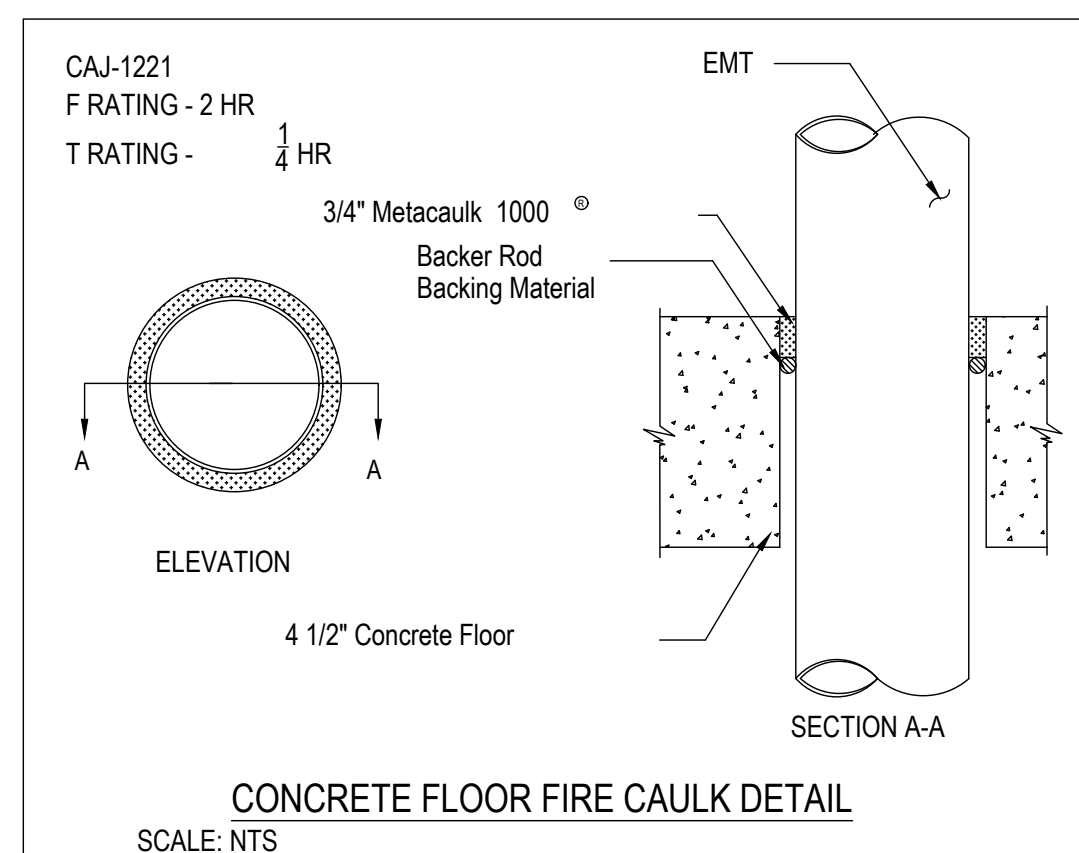
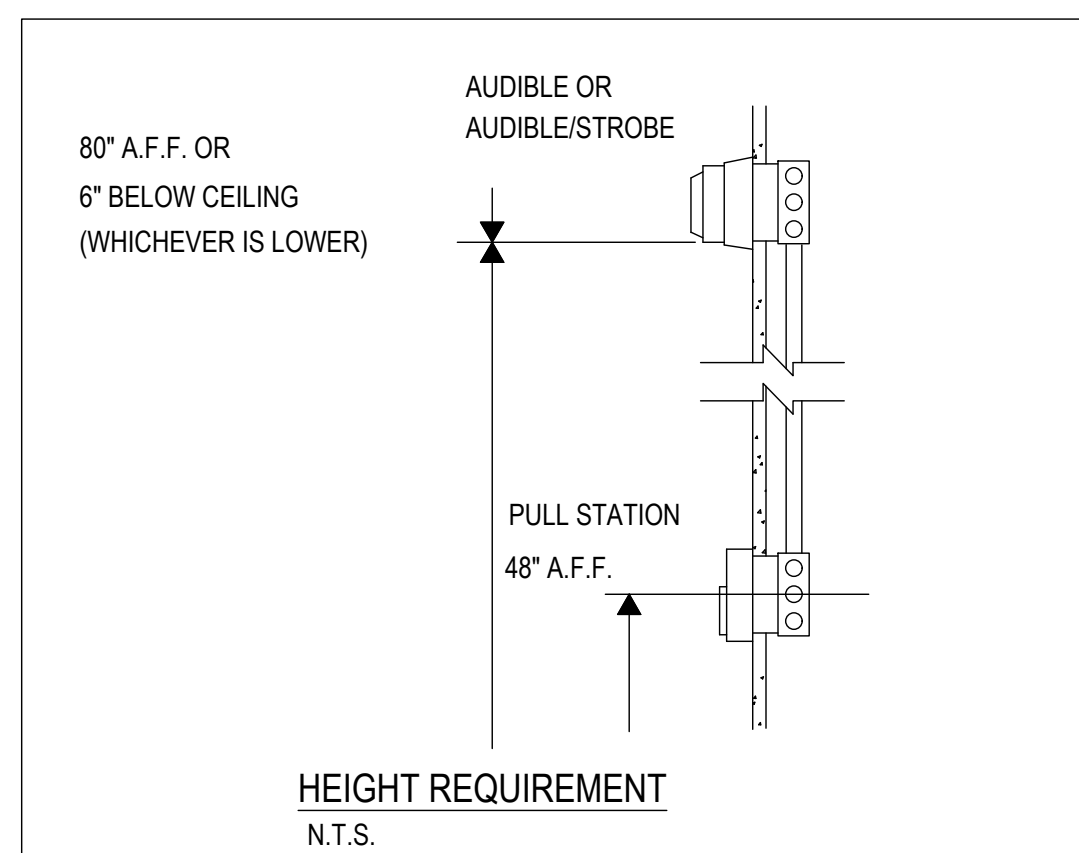
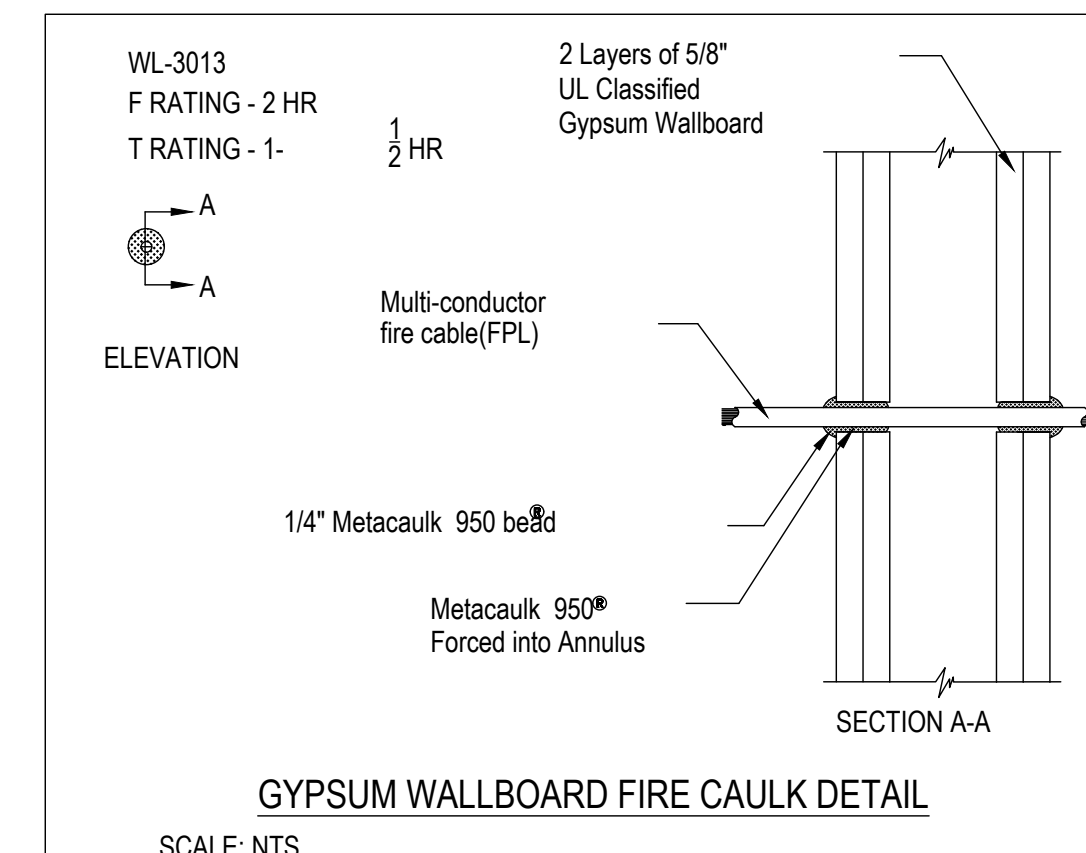
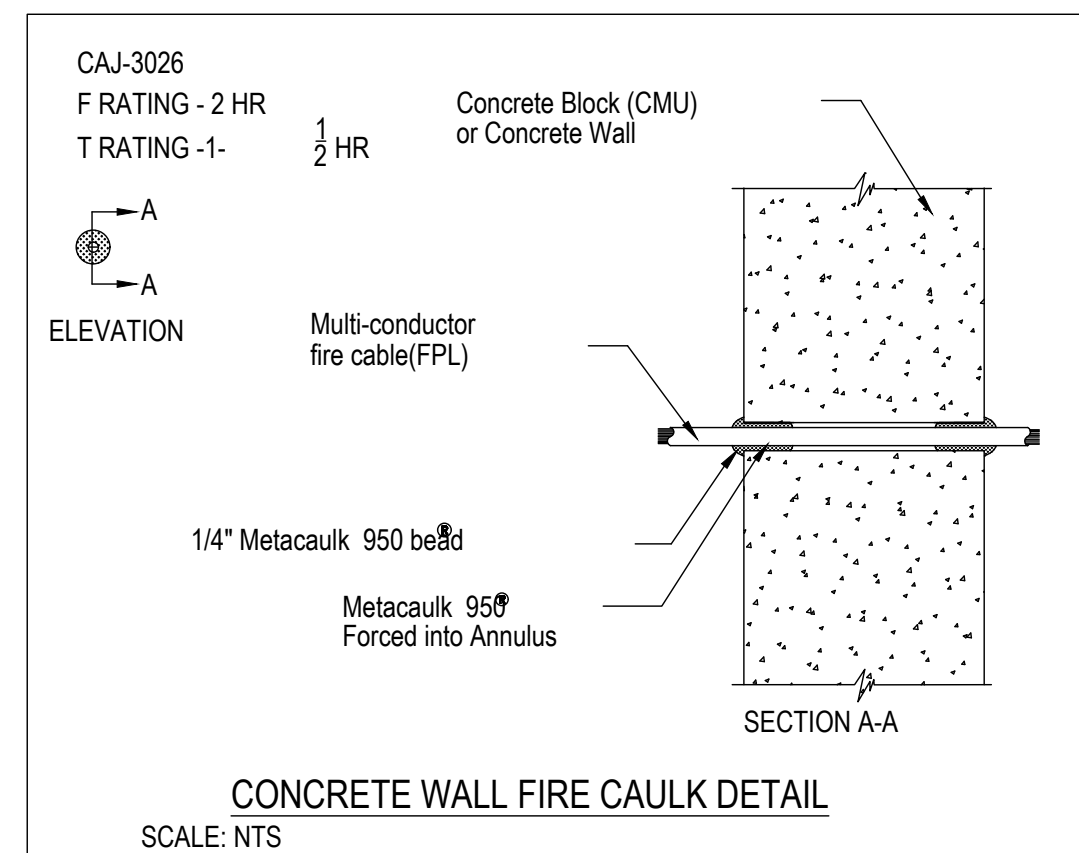
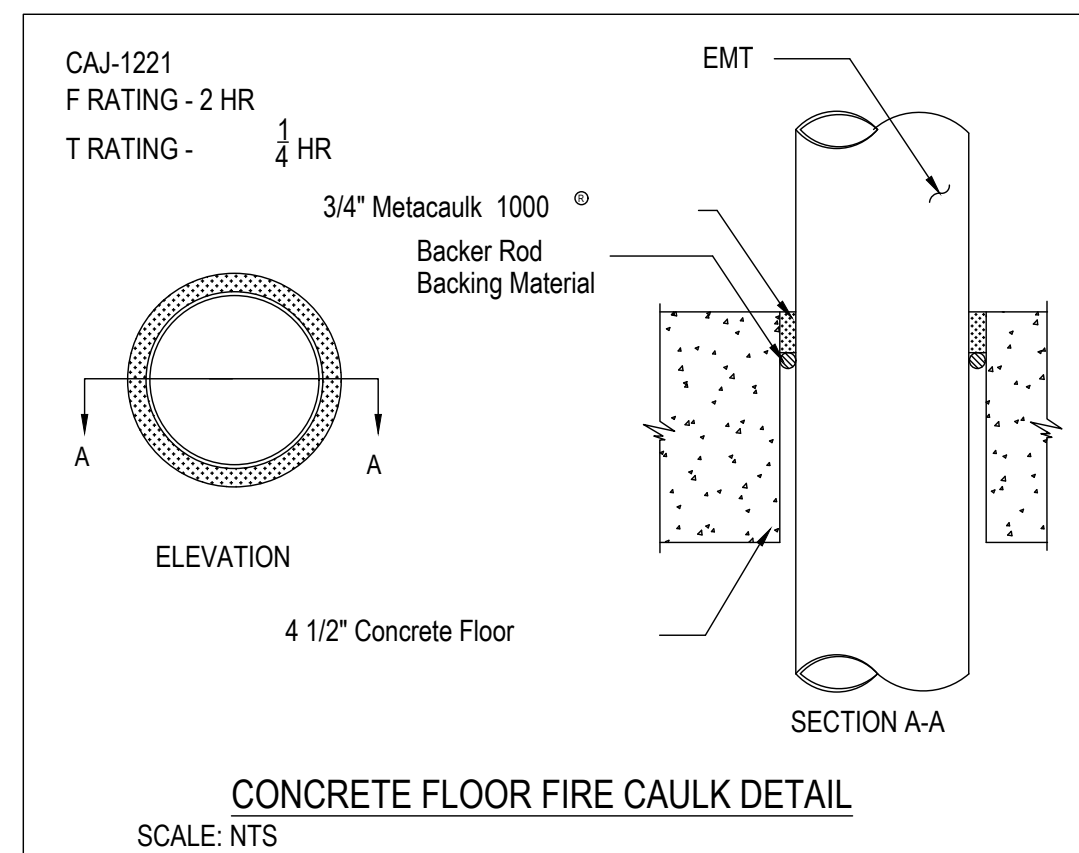
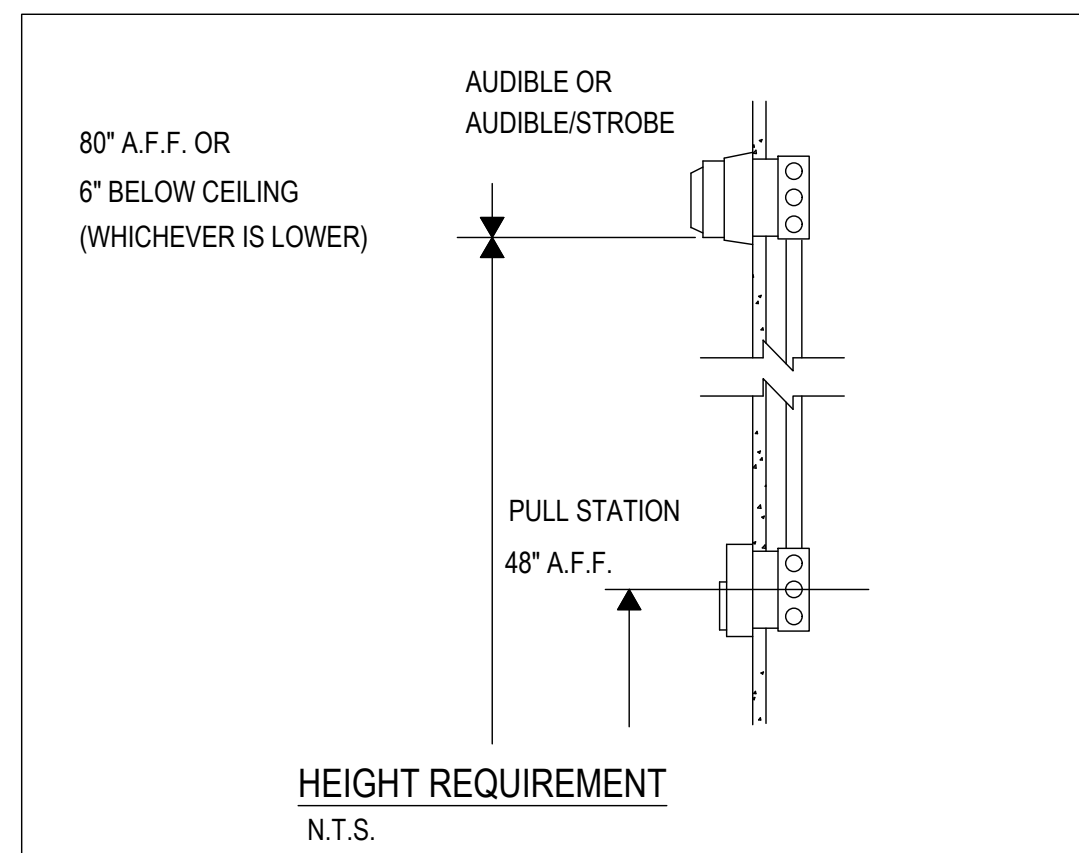
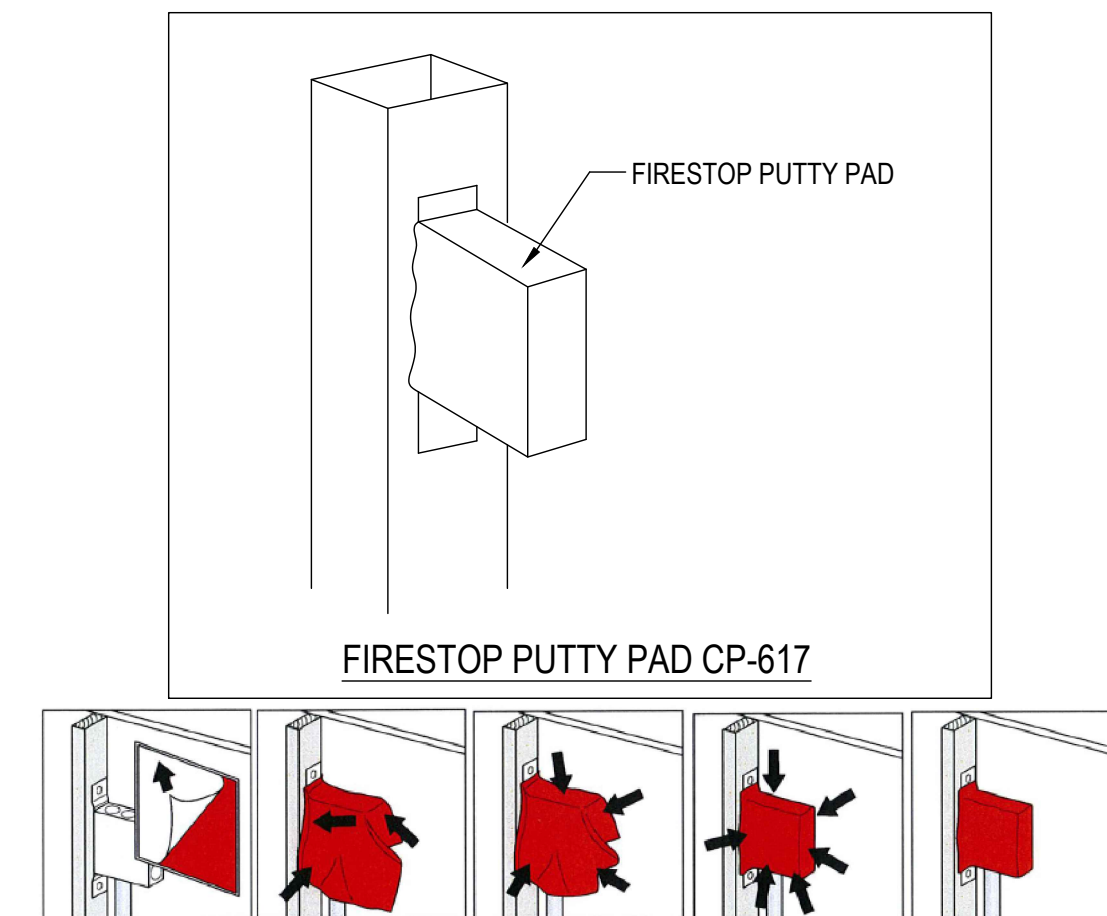
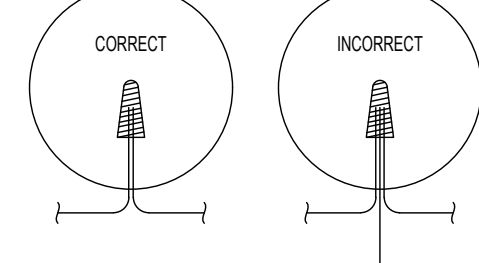
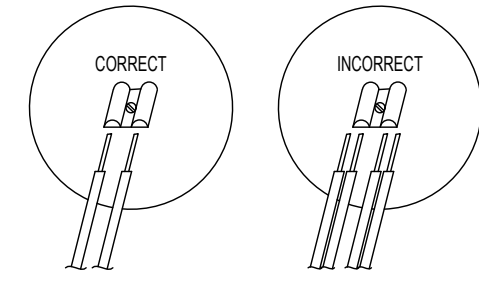


WIRING METHODS

ALWAYS BREAK A WIRE BEFORE CONNECTING IT TO
A FIRE ALARM DEVICE, NEVER LOOP AN UNBROKEN
WIRE UNDER ANY TERMINAL.



CONNECT ONLY TWO WIRES UNDER EACH WIRE
NUT OR TERMINAL.



MEDICAL CONSULTANTS FIRE ALARM SYSTEM

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

[illegible]

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

PENETRATION & MOUNTING DETAILS

FA-002

STAGING REQUIREMENTS

N.F.P.A. 72 2013 ED.
FIGURE A.17.3.2.1
NOTE: REQUIREMENTS SHOWN
ARE TO THE CLOSEST OF THE
DETECTOR

12" MAX
TOP OF DETECTOR
ACCEPTED HERE

WALL MOUNTED
SMOKE DETECTOR

CEILING MOUNTED
SMOKE/HEAT
DETECTOR

CEILING

4" MIN.
F.L. LOW CEILING
N.F.P.A. 72 2013
18.4.5.1

4" MIN.
F.L. LOW CEILING
N.F.P.A. 72 2013
18.5.5.2

SYNCHRONIZE MORE
THAN TWO APPLIANCES
IN ANY FIELD OF VIEW
N.F.P.A. 72 2013 ED.
SECTION 18.5.5.7

8" MIN.
(TO TOP OF SPEAKER)
N.F.P.A. 72 2013 ED.
SECTION 18.4.3.1

8" MIN.
(TO END OF STROBE)
N.F.P.A. 72 2013 ED.
SECTION 18.5.5.1

DOOR
WIDTH
LESS 3"

MAGNETIC
DOOR
HOLDER

ACCEPTED HERE

3" MIN.

N.F.P.A. 72 2013 ED.
SECTION A.17.7.4.1

A/C SUPPLY
DIFFUSER

NEVER HERE

WALL MOUNTED
HEAT DETECTOR

4"

12" MAX

FINISHED WALL

SIDE WALL

MANUAL
PULL
STATION

45" MAX
F.L. DETECTOR
AT
(FROM FLOOR)
N.F.P.A. 72 2013 17.14.5
17.14.8.4

WITHIN 5'
FROM DOOR
PER NFPA
72 2013
17.14.8.4

FINISHED FLOOR

WIRING METHODS

ALWAYS BREAK A WIRE BEFORE CONNECTING IT TO
A FIRE ALARM DEVICE. NEVER LOOP AN UNBROKEN
WIRE UNDER ANY TERMINAL.

CORRECT

INCORRECT

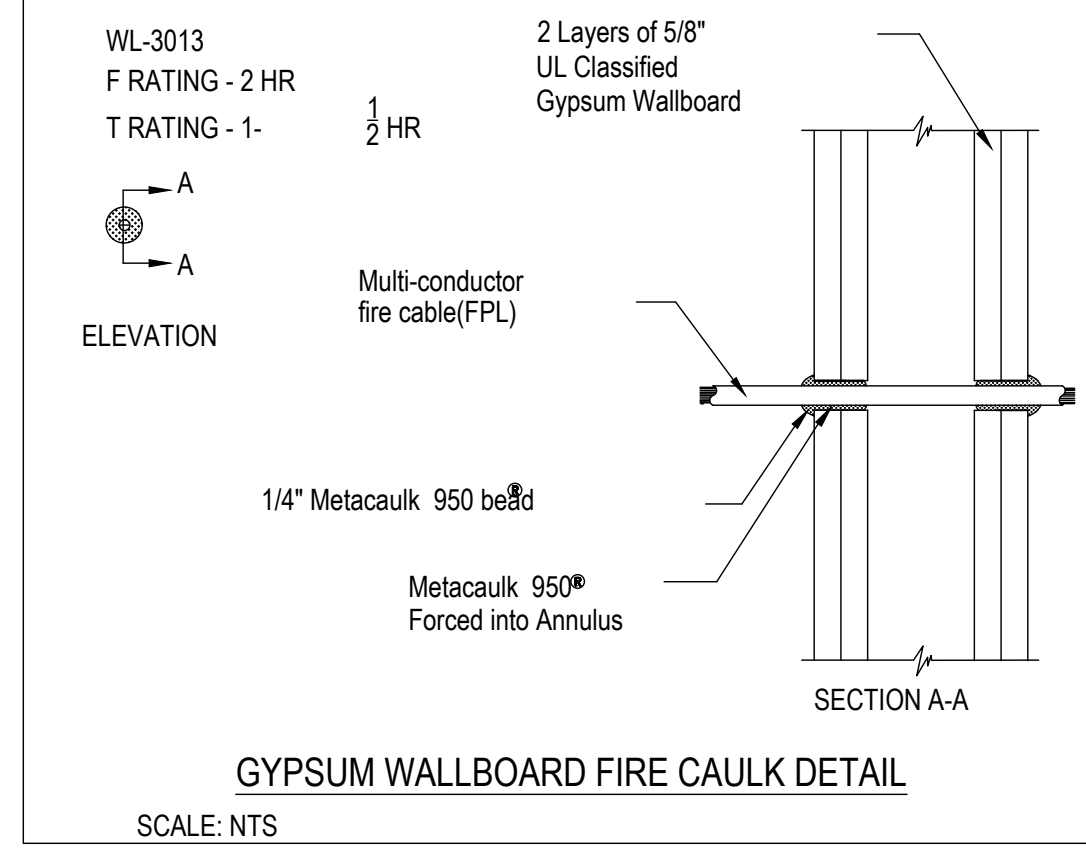
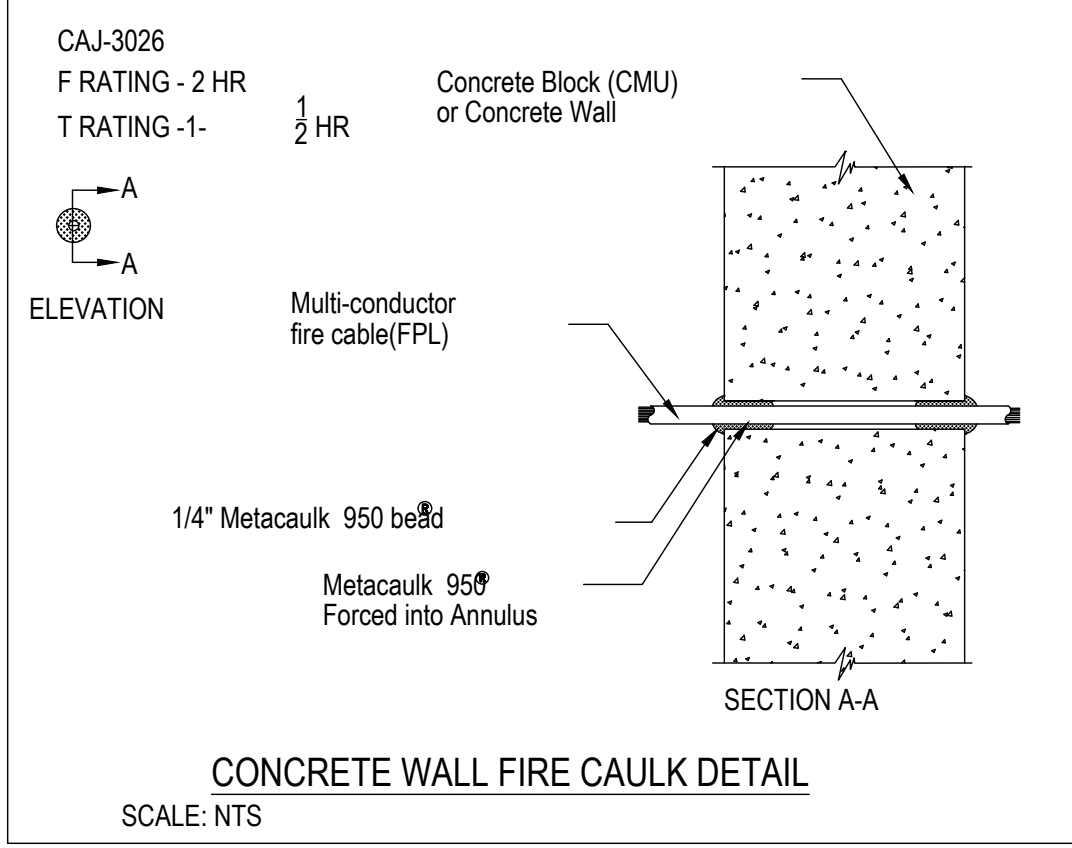
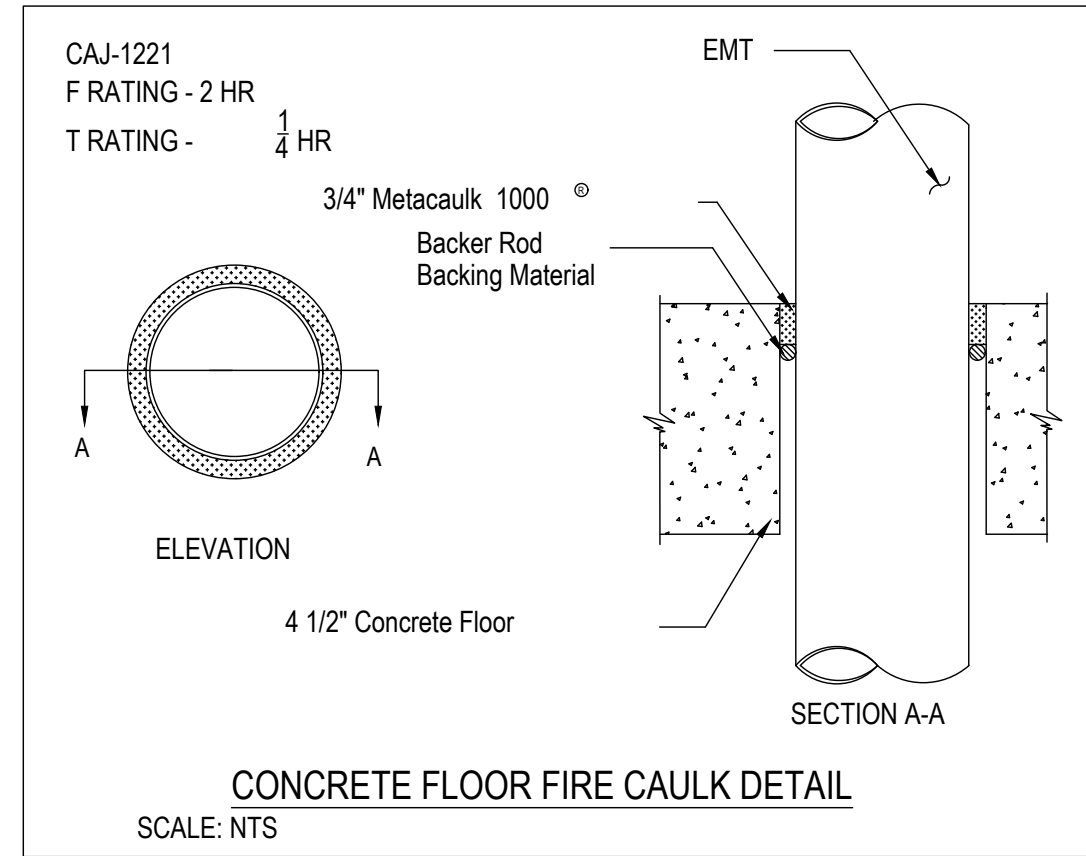
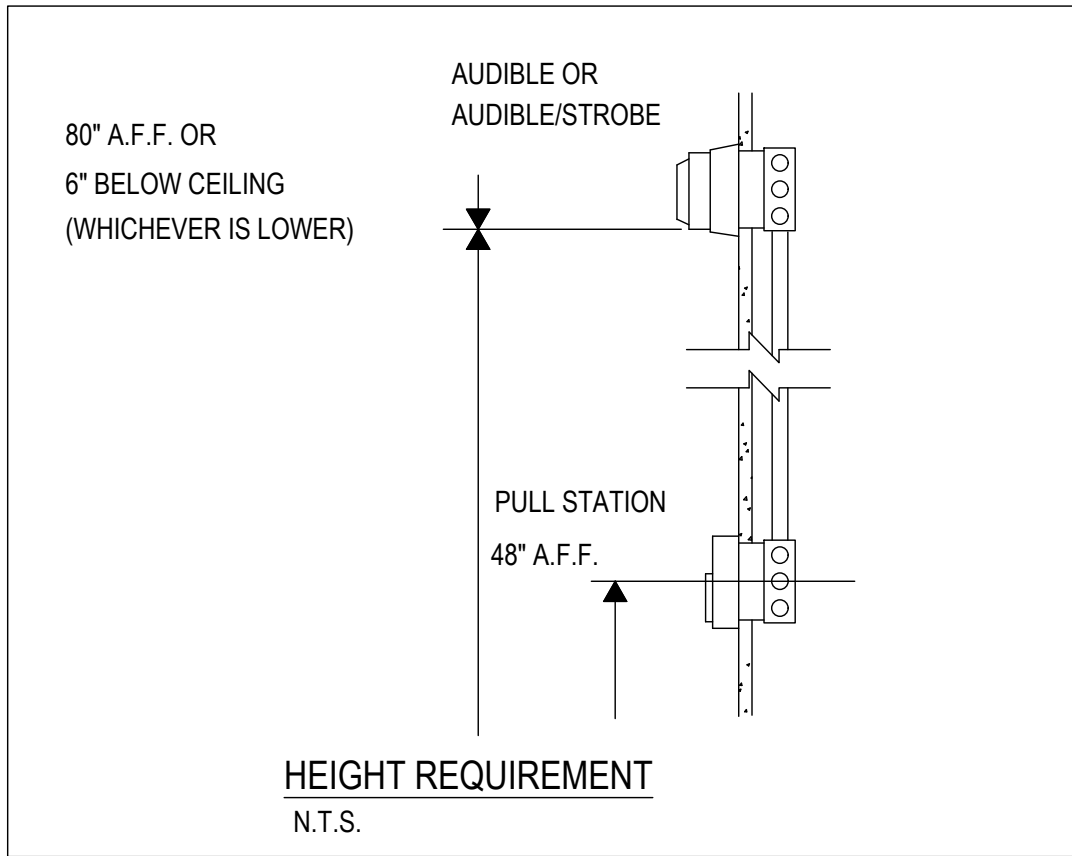
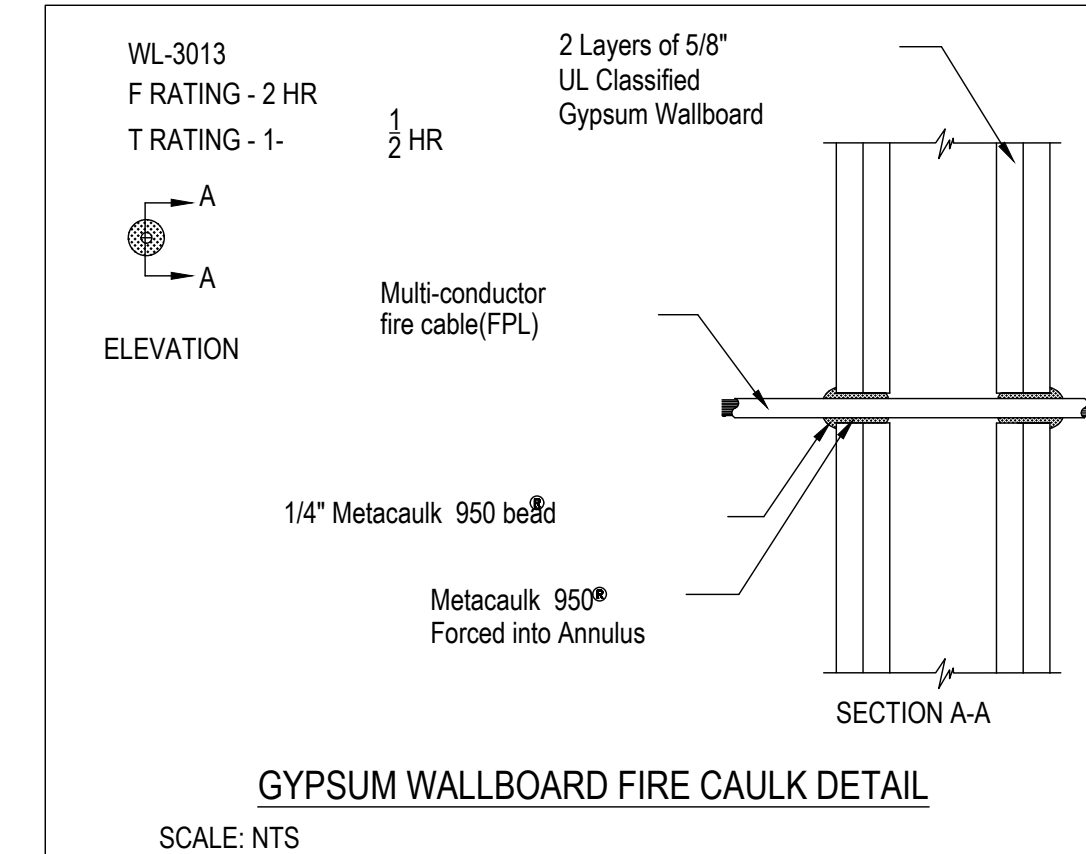
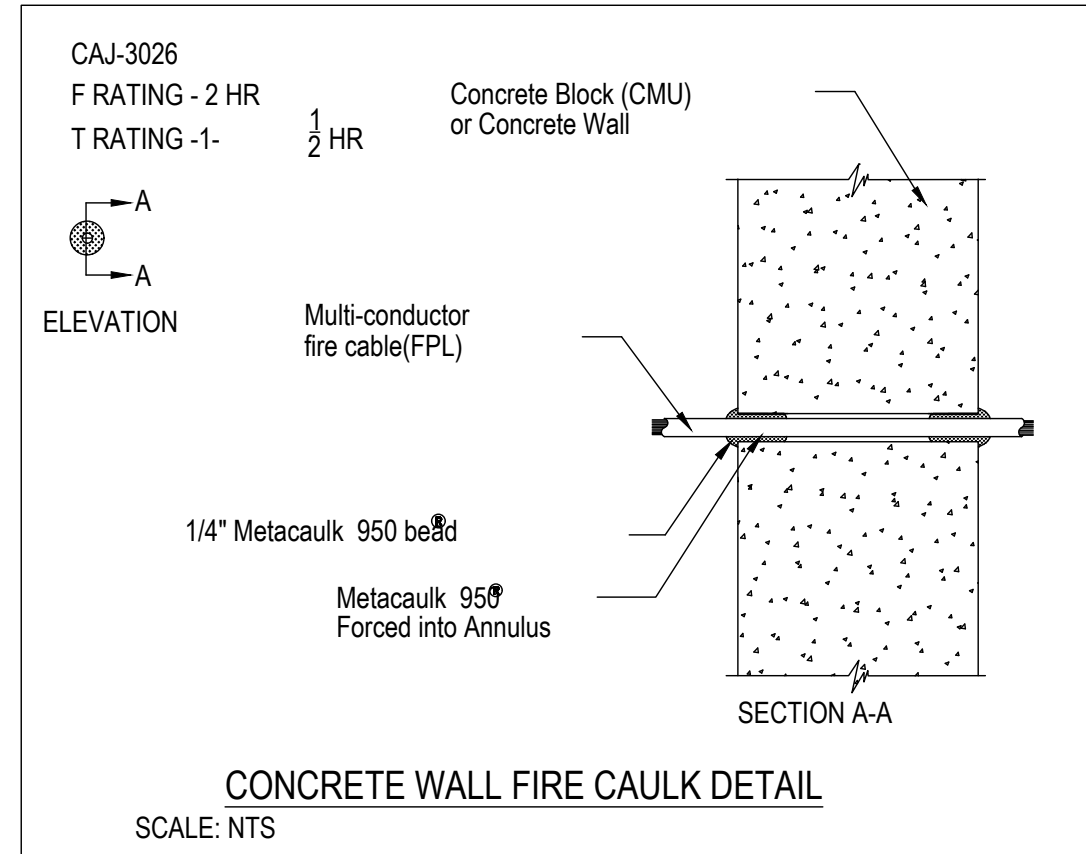
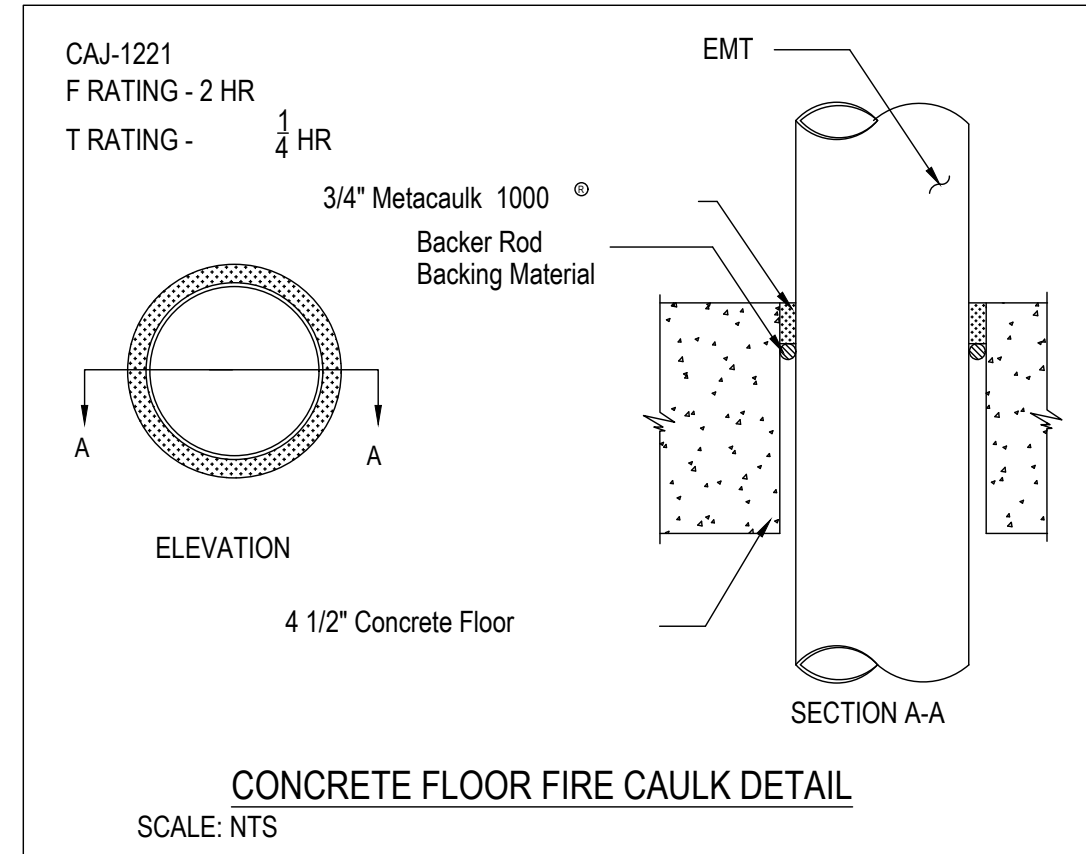
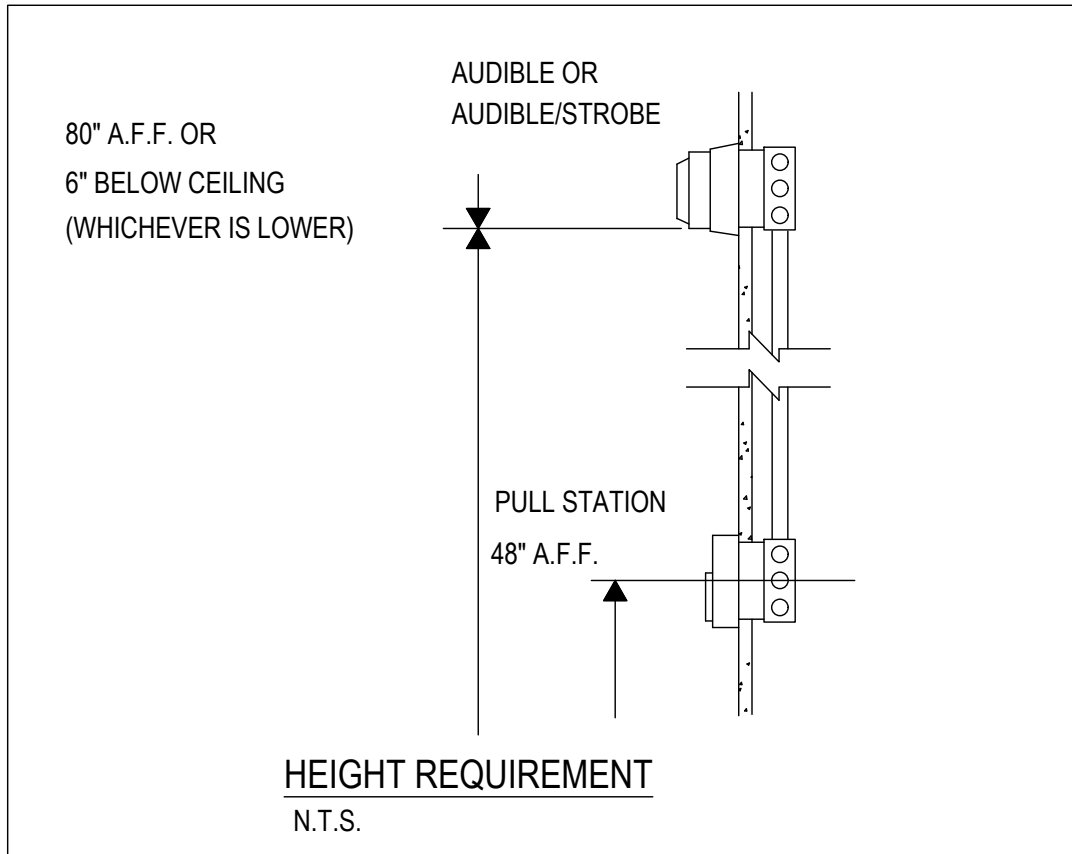
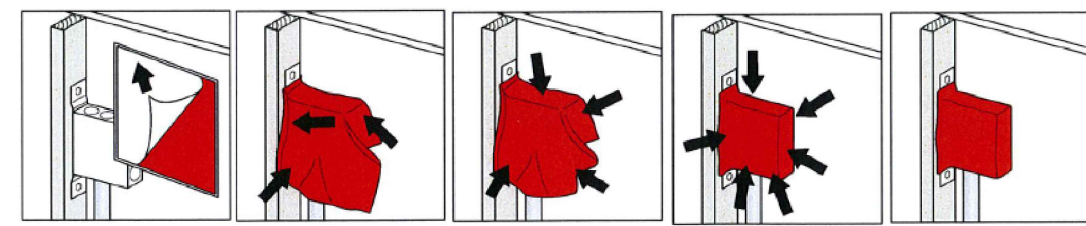
CONNECT ONLY TWO WIRES UNDER EACH WIRE
NUT OR TERMINAL.

CORRECT

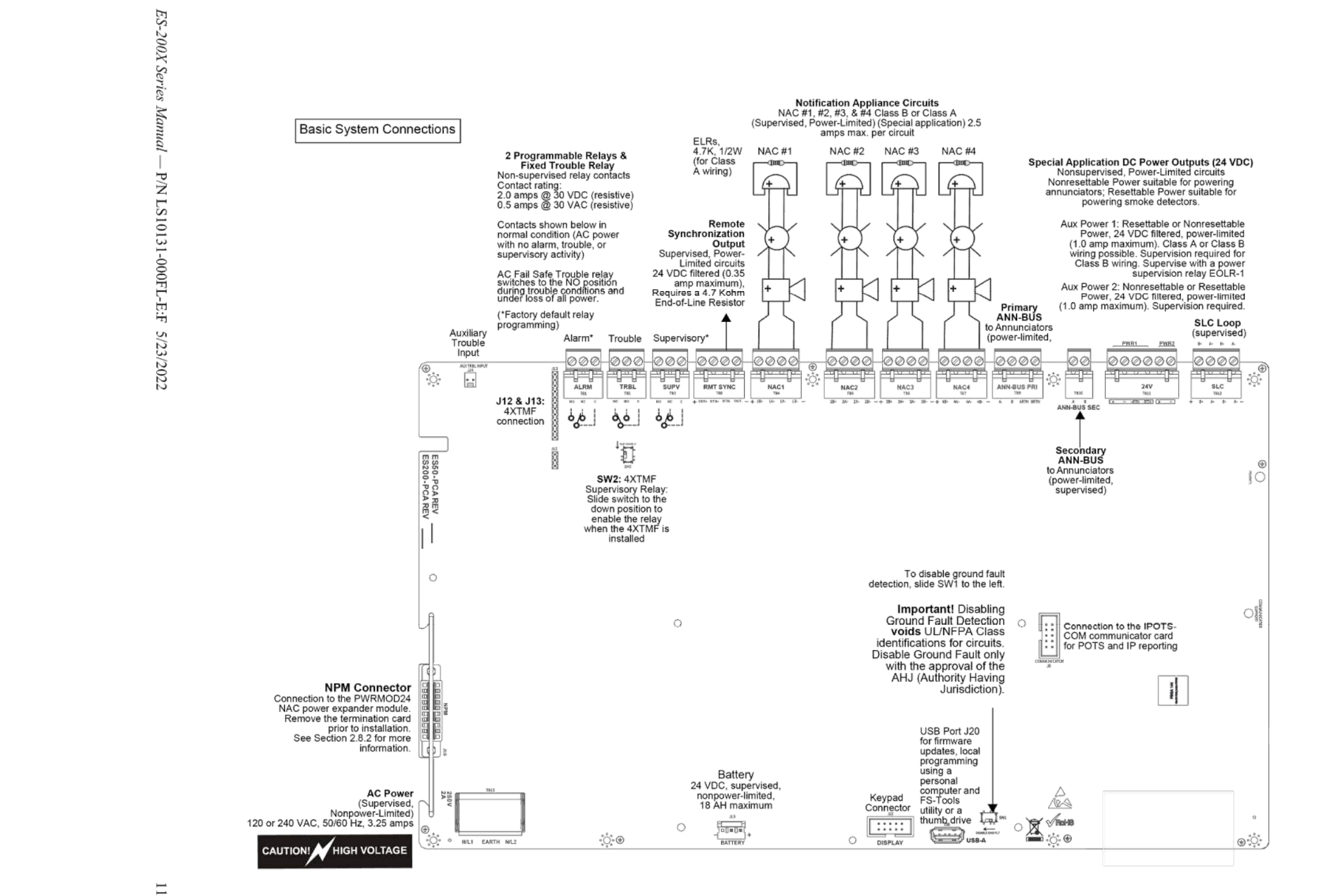
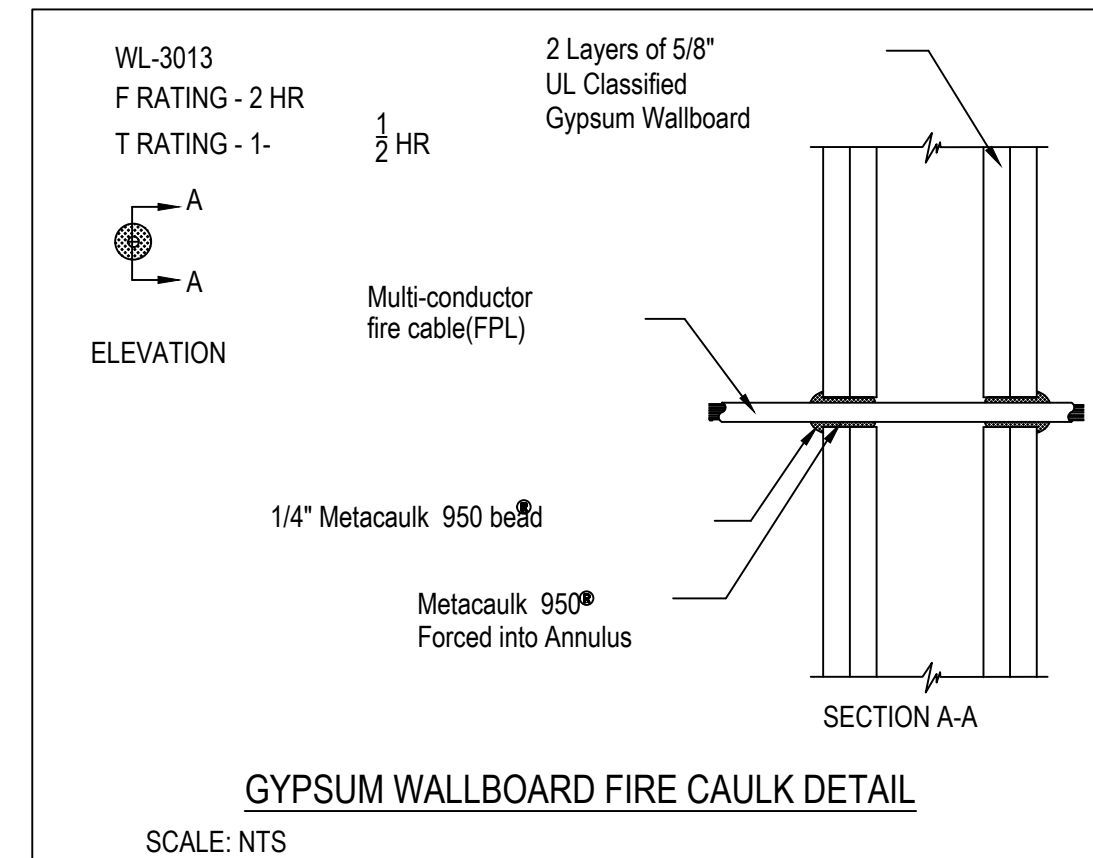
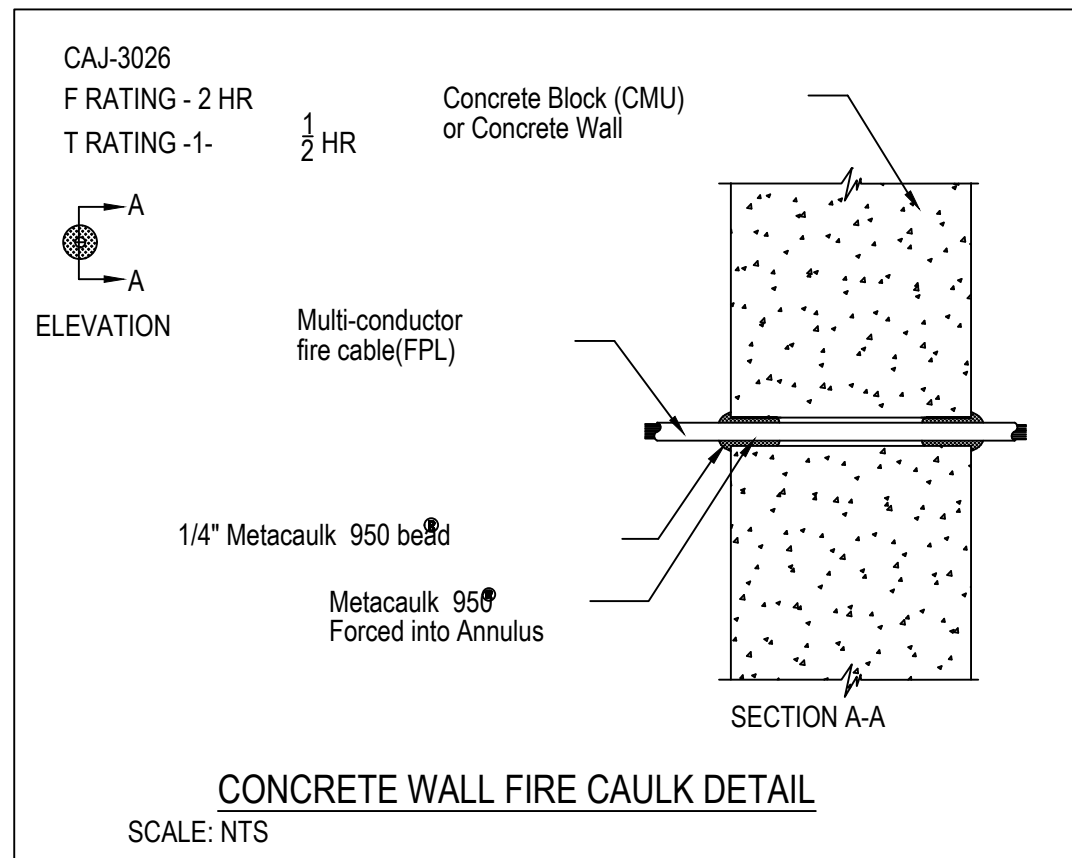
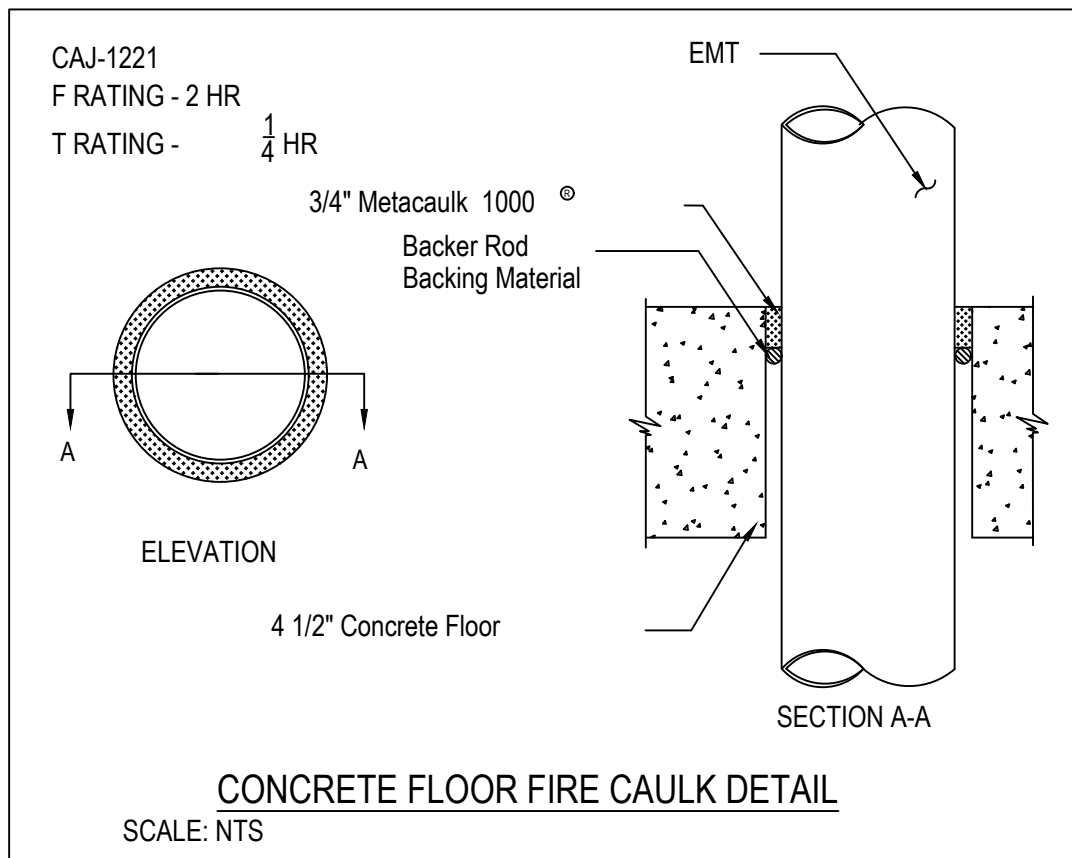
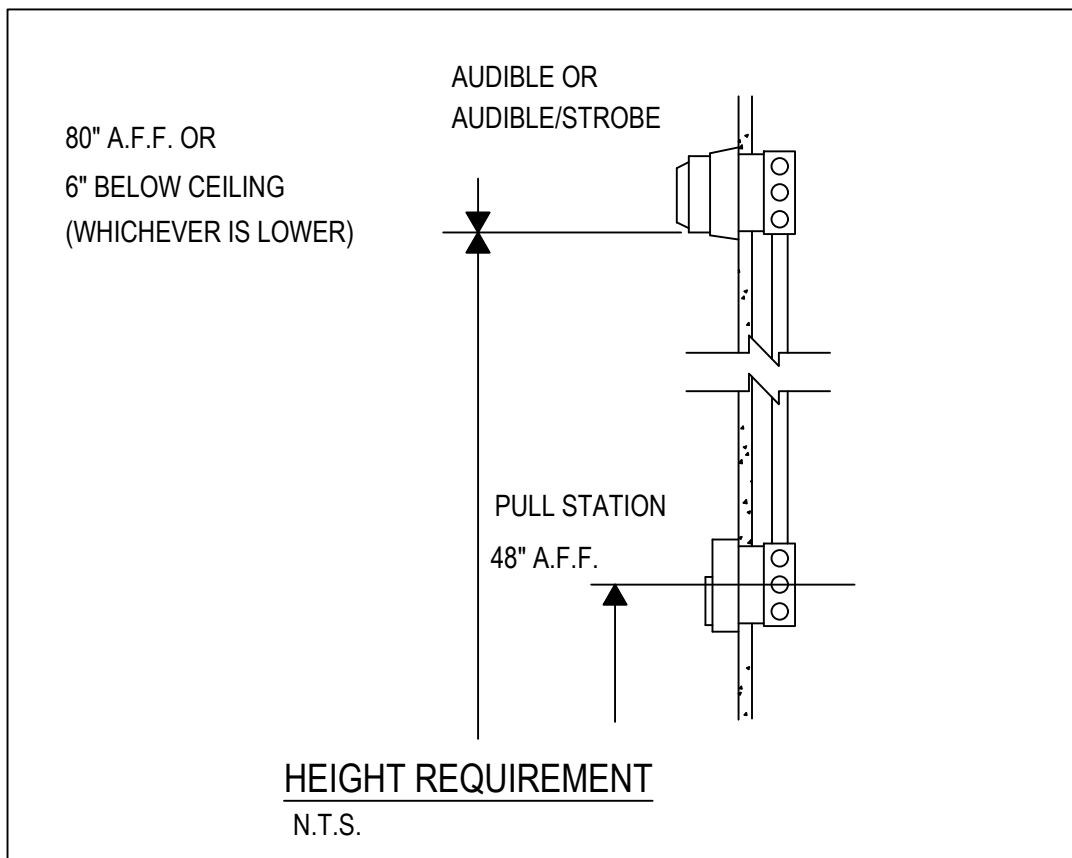
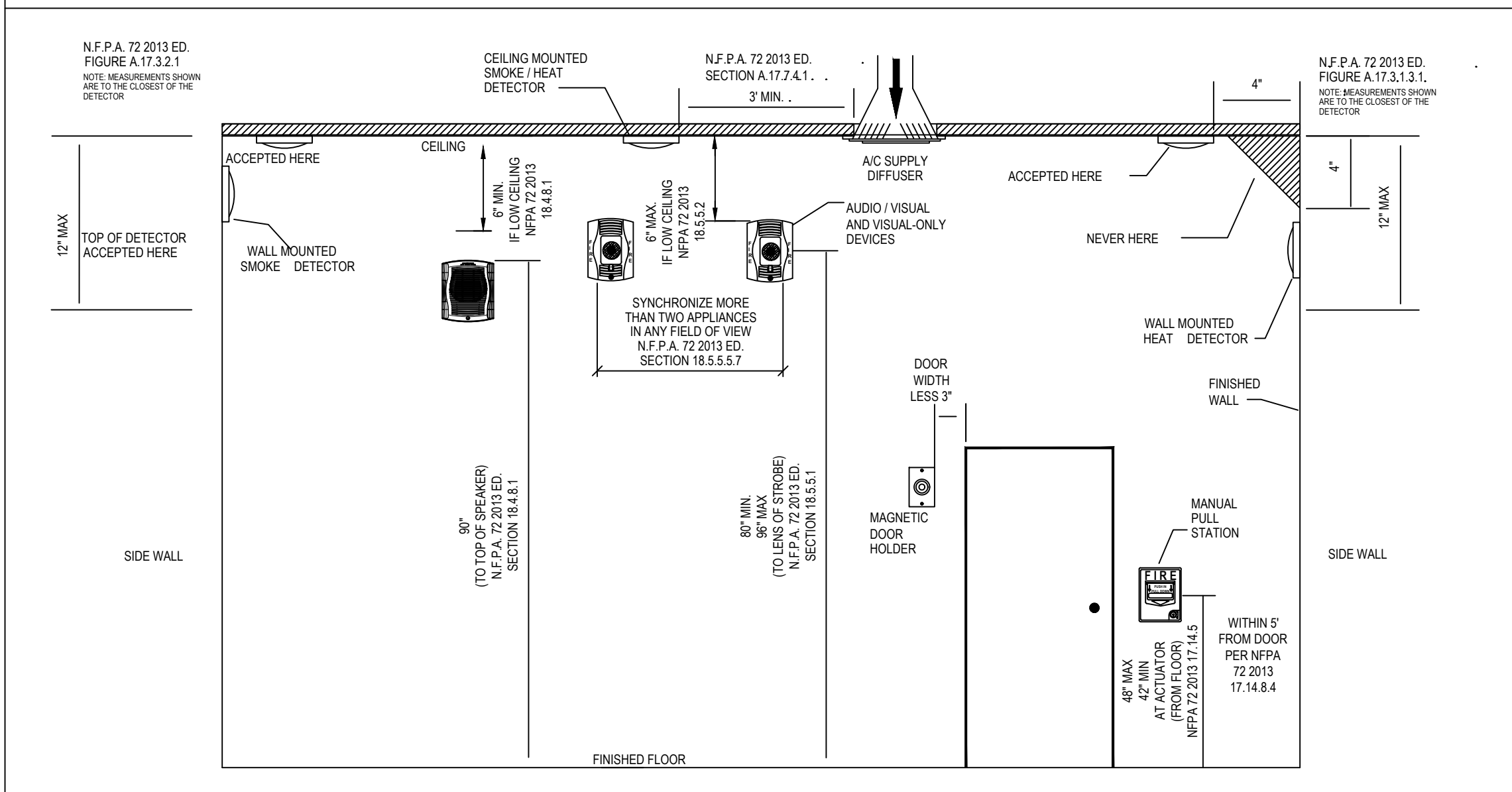
INCORRECT

CORRECT

INCORRECT

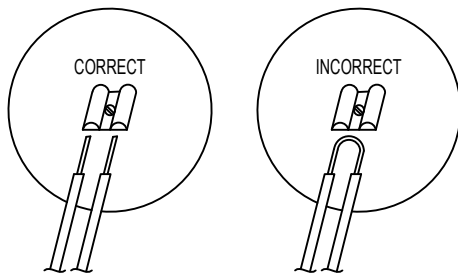


MOUNTING REQUIREMENTS

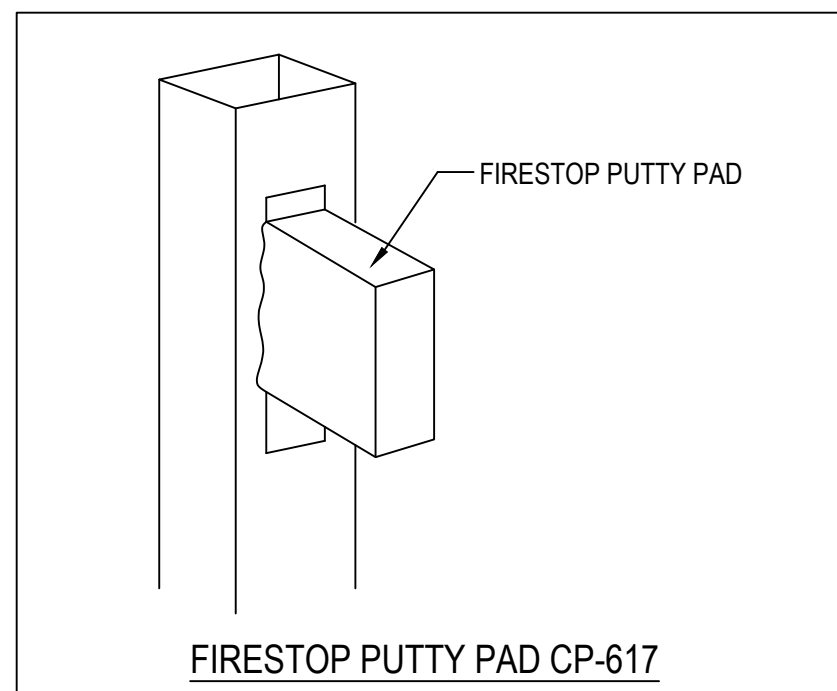
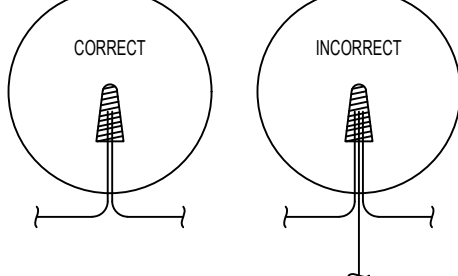
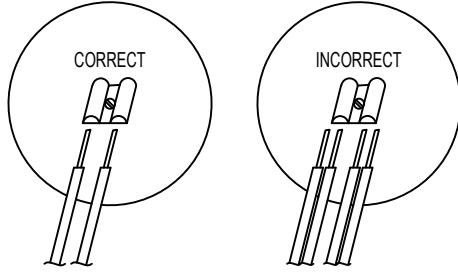


WIRING METHODS

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CONNECT ONLY TWO WIRES UNDER EACH WIRE NUT OR TERMINAL.



5850 SHERIDAN STREET
HOLLYWOOD, FL 33021
(305) 406-1140

CONTRACTOR LICENSE EF#0001089

ON SITE ENGINEERING, INC.
FLORIDA PROFESSIONAL ENGINEERING BOARD
LICENSE # 13532B
DATE: 05/21/2026
SALE: 05/21/2026

STATE OF FLORIDA
PROFESSIONAL ENGINEERING BOARD

THIS ITEM HAS BEEN DIGITALLY SIGNED BY MARION SEERLEN, P.E., AND SEALED BY MARION SEERLEN, P.E. IN THE PRESENCE OF TWO WITNESSES. SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

DATE: 05/21/2026

MEDICAL CONSULTANTS
FIRE ALARM SYSTEM

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CHK.	DESCRIPTION
MARK	12/18/2025	G.E.B.	M.O.S. PERMIT SET
1	04/09/2026	G.E.B.	M.O.S. PER AH COMMENTS
2	05/21/2026	G.E.B.	M.O.S. PER AH COMMENTS

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

PENETRATION &
MOUNTING DETAILS

FA-002

MOUNTING REQUIREMENTS

N.F.P.A. 72 2013 ED. FIGURE A.17.3.1.1
NOTE: MEASUREMENT SHOWN ARE TO THE CLOSEST OF THE DETECTOR

CEILING MOUNTED SMOKE/HEAT DETECTOR
9" MIN.

WALL MOUNTED SMOKE DETECTOR
12" MAX
TOP OF DETECTOR ACCEPTED HERE
4" MIN.

WALL MOUNTED HEAT DETECTOR
4" MIN.
12" MAX

AUDIO/VISUAL AND VISUAL-ONLY DEVICES
5' MAX
FLOW CEILING
N.F.P.A. 72 2013 18.5.2
18.5.2
SYNCHRONIZE MORE THAN TWO APPLIANCES IN ANY FIELD OF VIEW
N.F.P.A. 72 2013 ED. SECTION 18.5.5.7

MANUAL PULL STATION
48" MIN.
42" MIN.
FROM FLOOR
N.F.P.A. 72 2013 17.14.5
17.14.5
WITHIN 5' FROM DOOR PER NFPA 72 2013 17.14.8.4

DOOR WIDTH LESS 3'
MAGNETIC DOOR HOLDER
80" MIN.
80" MAX
STROBE
(TO TOP OF SPEAKER)
N.F.P.A. 72 2013 ED. SECTION 18.5.1

FINISHED FLOOR
FINISHED WALL
SIDE WALL
CEILING
ACCEPTED HERE
NEVER HERE

WIRING METHODS

ALWAYS BREAK A WIRE BEFORE CONNECTING IT TO
A FIRE ALARM DEVICE. NEVER LOOP AN UNBROKEN
WIRE UNDER ANY TERMINAL.

CORRECT

INCORRECT

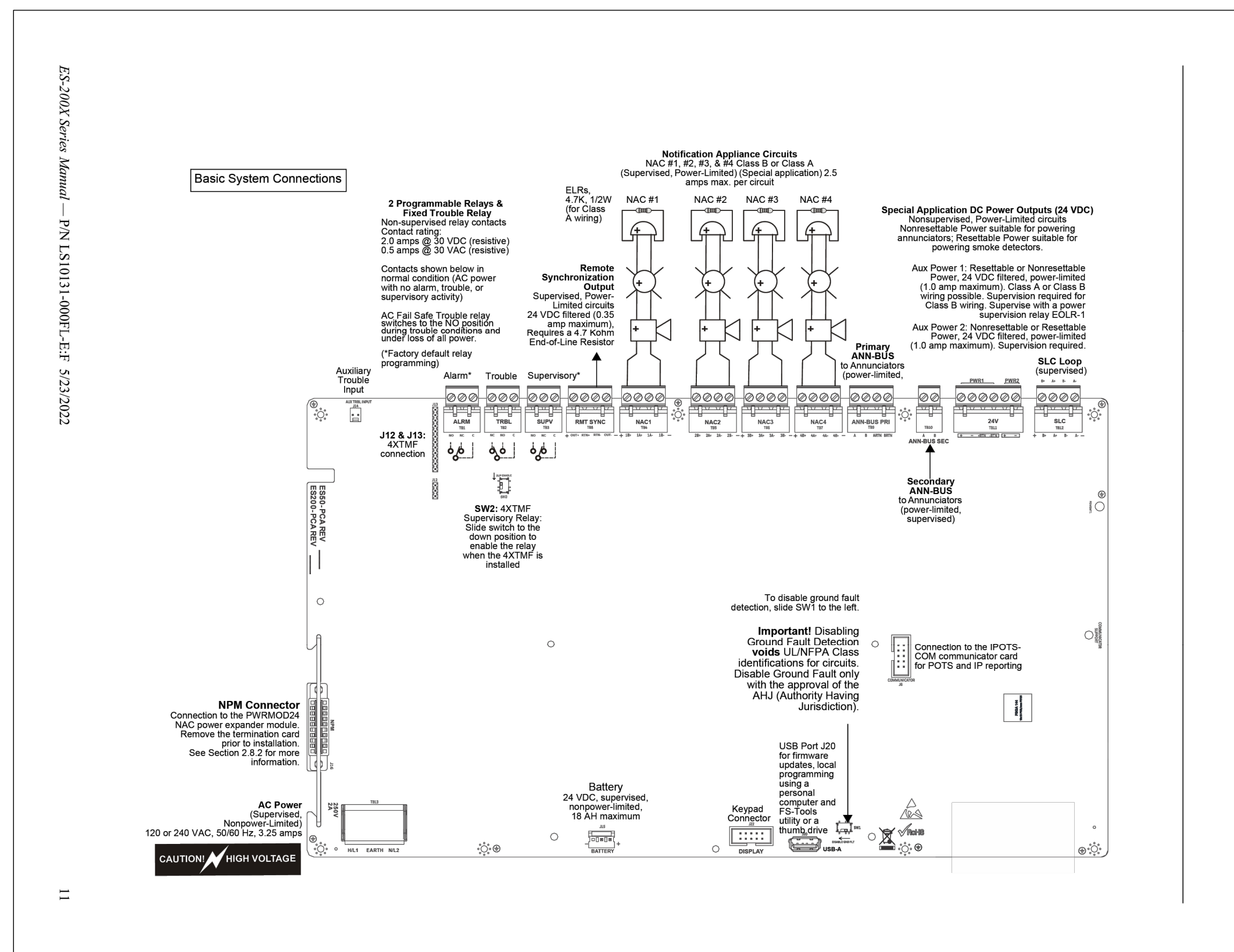
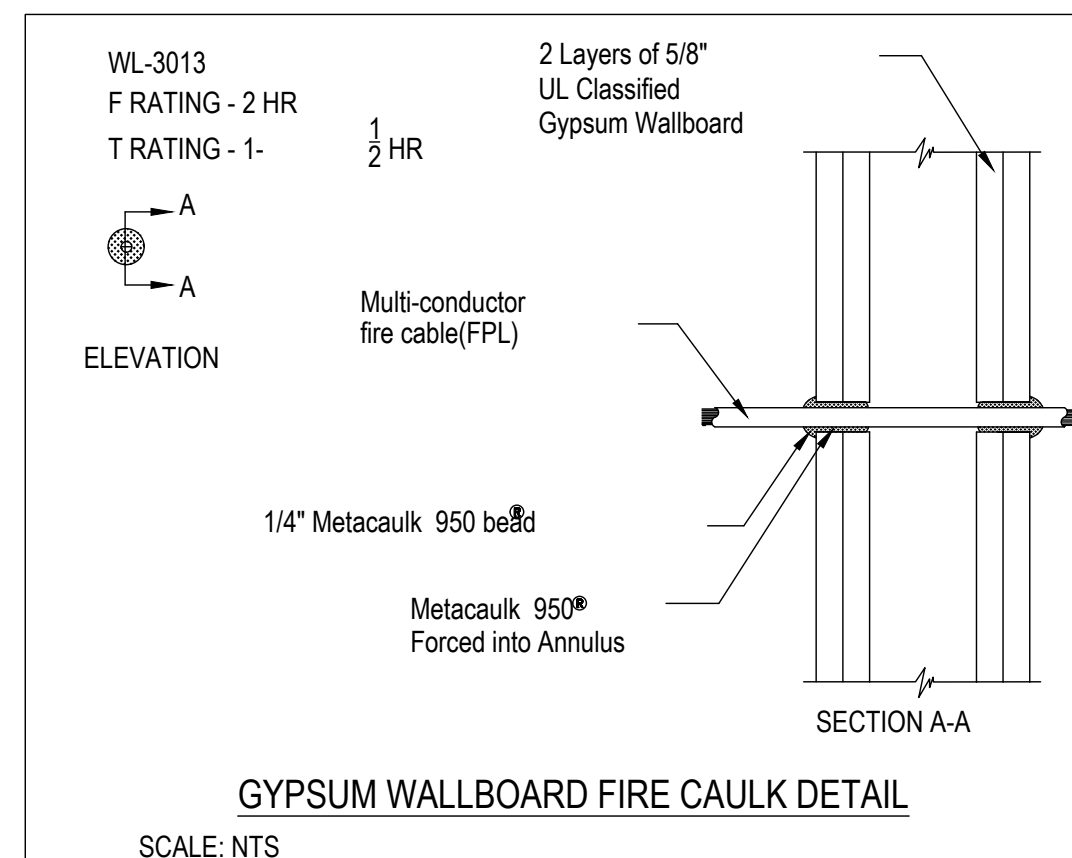
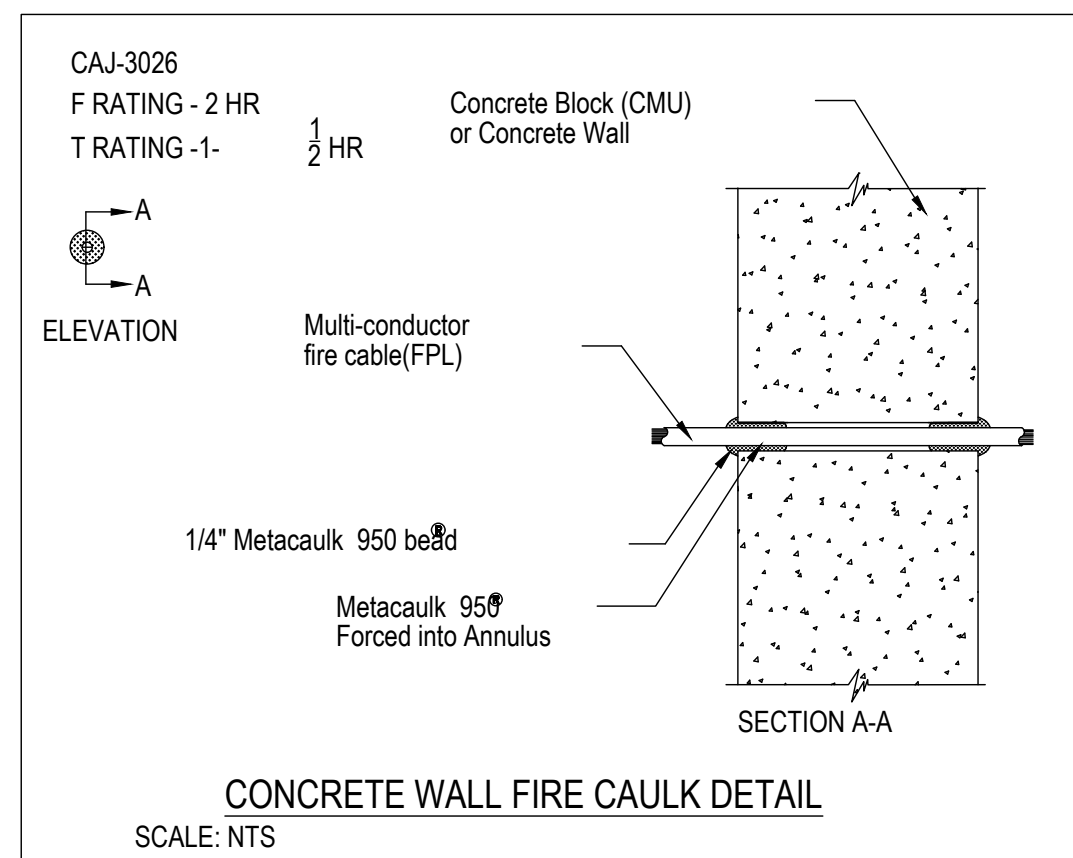
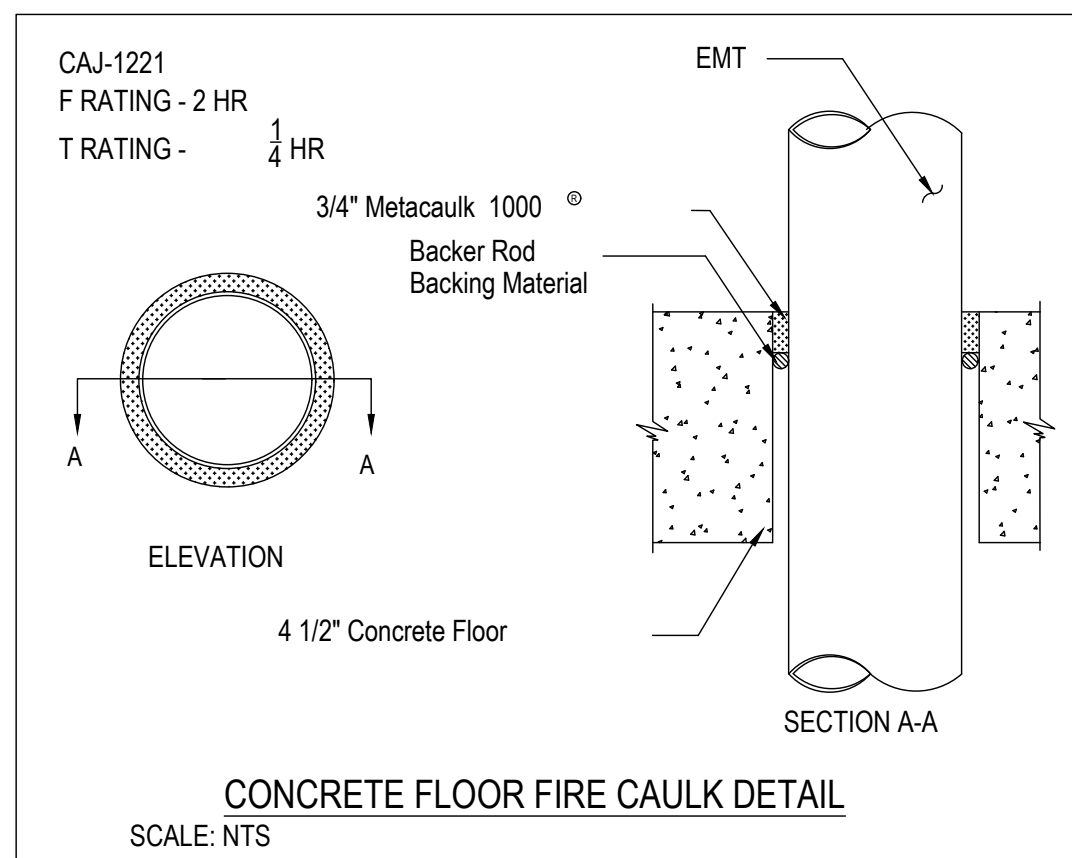
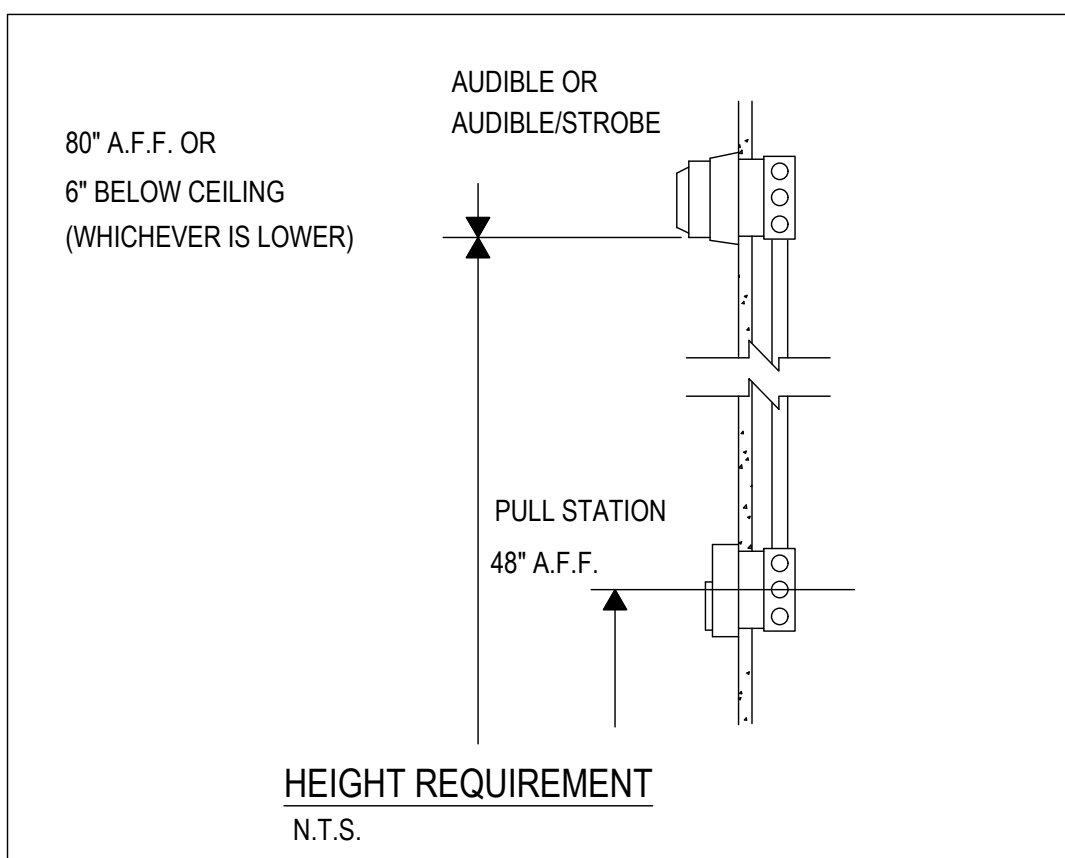
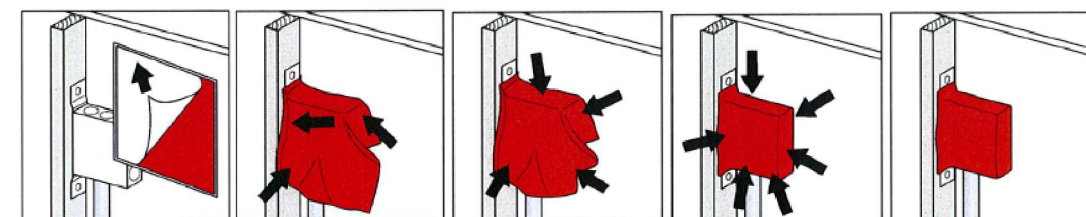
CONNECT ONLY TWO WIRES UNDER EACH WIRE
NUT OR TERMINAL.

CORRECT

INCORRECT

CORRECT

INCORRECT



15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

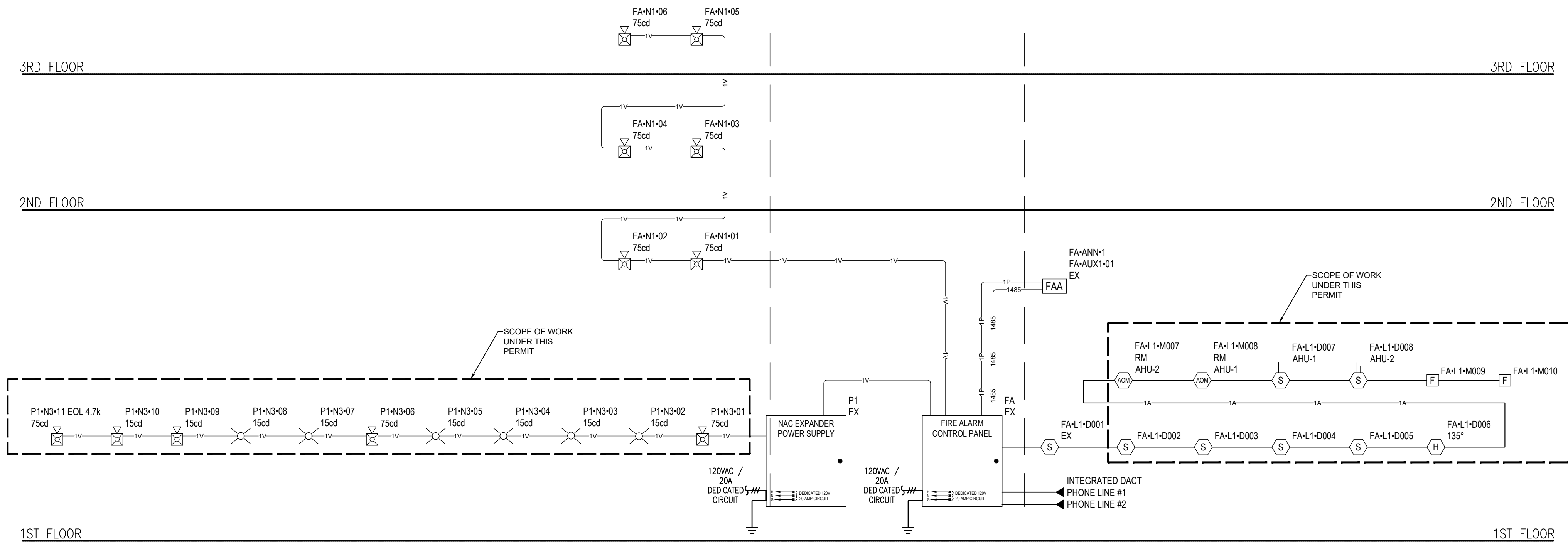
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MARK	DATE	CAD	CHK	DESCRIPTION	
-	12/19/2025	G.E.B.	M.O.S.	PERMIT SET	
1	04/06/2026	G.E.B.	M.O.S.	PERAHH COMMENTS	
2	05/21/2026	G.E.B.	M.O.S.	PERAHH COMMENTS	
3	06/22/2026	G.E.B.	M.O.S.	PERAHH COMMENTS (08/10/2026)	

PERMIT SET	
DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

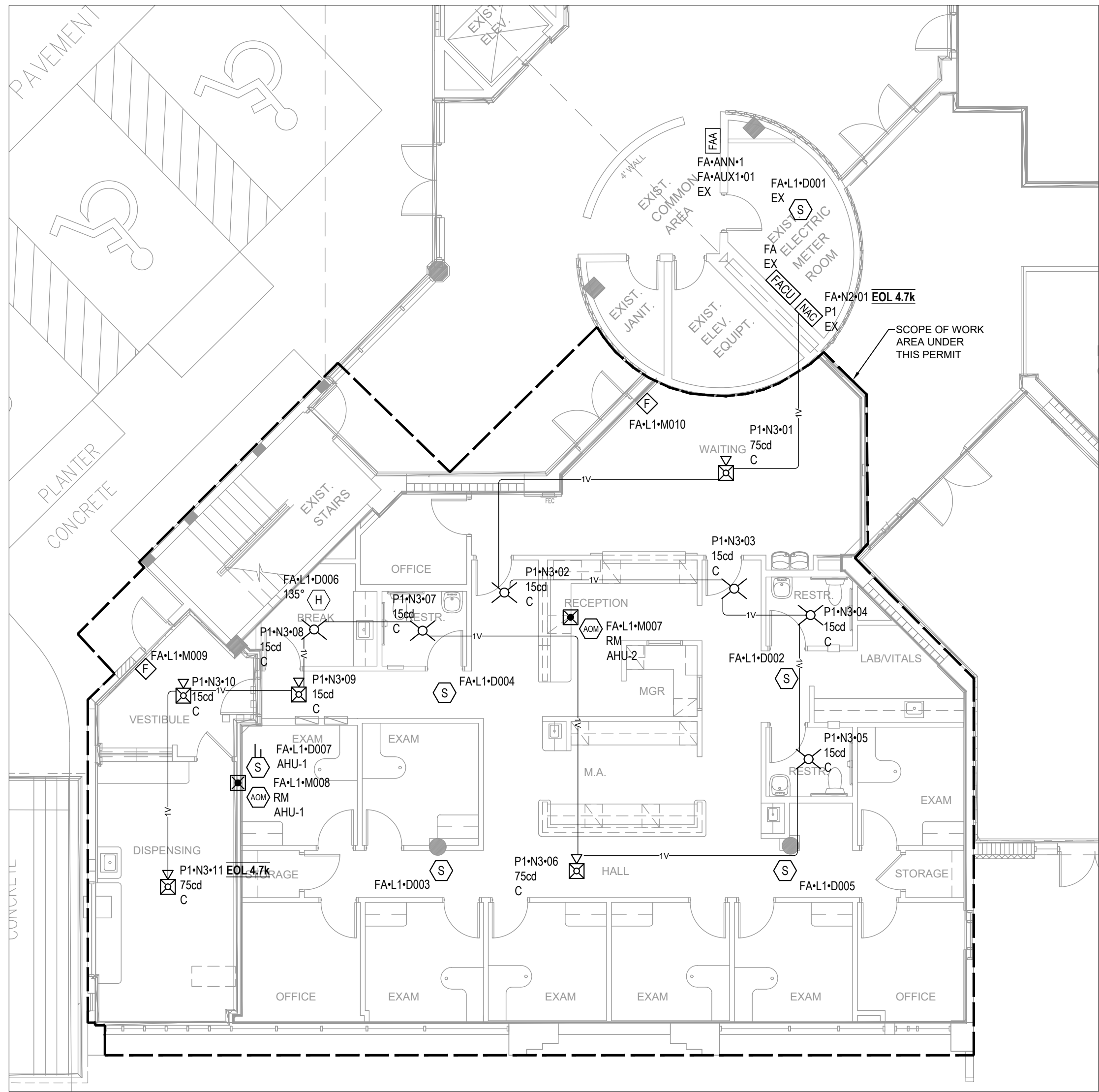
SHEET:

PENETRATION & MOUNTING DETAILS

FA-002



RISER DIAGRAM
SCALE: NTS

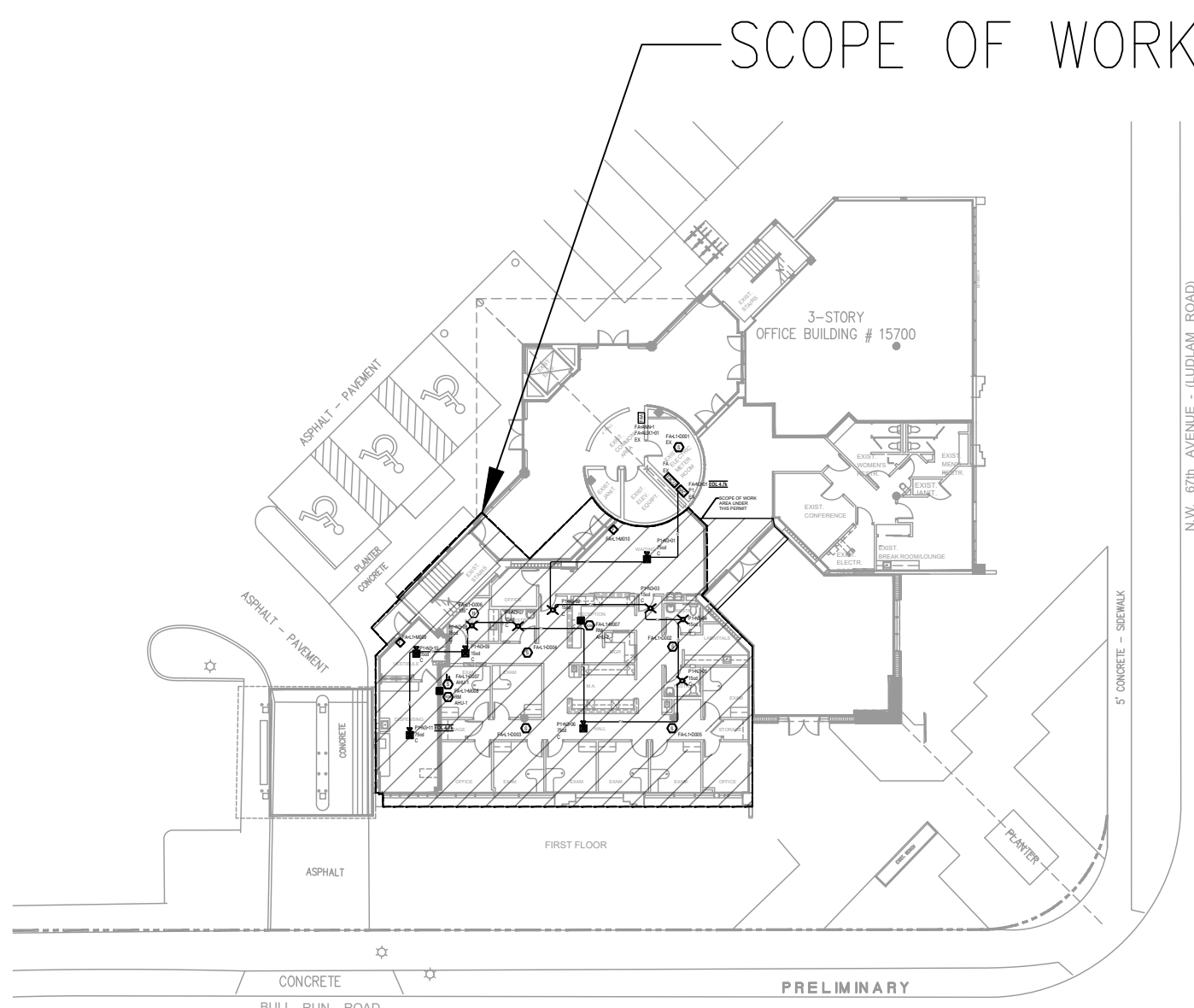


SUITE 100 - FIRE ALARM FLOOR PLAN & RISER

DEVICE LEGEND					
SYMBOL	QUANTITY	IS EXISTING	MANUFACTURER	PART NO	DESCRIPTION
[FACU]	1	X	FIRELITE	MS-9200UDLS	INTELLIGENT ADDRESSABLE FACP WITH BUILT-IN COMMUNICATOR
[NAC]	1	X	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
[FAA]	1	X	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
[RM]	2		FIRELITE	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.
[F]	2		FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
[S]	2		FIRELITE	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD365-IVR(A)-IV DETECTOR
[S]	4		FIRELITE	SD365-IV W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
[S]	1	X	FIRELITE	SD365-IV W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
[H] 135°	1		FIRELITE	H365-IV W/B300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
[RTS]	2		SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEADS
[C]	6		SYSTEM SENSOR	SCRLED	STROBE, CEILING, RED
[C]	5		SYSTEM SENSOR	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/2 FPLP/R	RS-485	18	2 COND. COPPER FPLP/R ANALOG UNSHIELDED
A	16/2 FPLP/R	SLC	16	2 COND. COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. COPPER FPLP/R UNSHIELDED
V	14/2 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED



KEYPLAN

SCALE: NTS



5650 SHERIDAN STREET
HOLLYWOOD, FL 33021
(305) 408-1140

CONTRACTOR LICENSE EF#0001089



MARK J. SERLE, P.E.
MEMBER ENGINEER
ON THE DATE ADJACENT TO THE SEAL
ELECTRONIC COPIES
DATE: 12/18/2025

MEDICAL CONSULTANTS
FIRE ALARM SYSTEM

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
1	12/18/2025	G.E.B.	M.O.S.	PERMIT SET

PERMIT SET

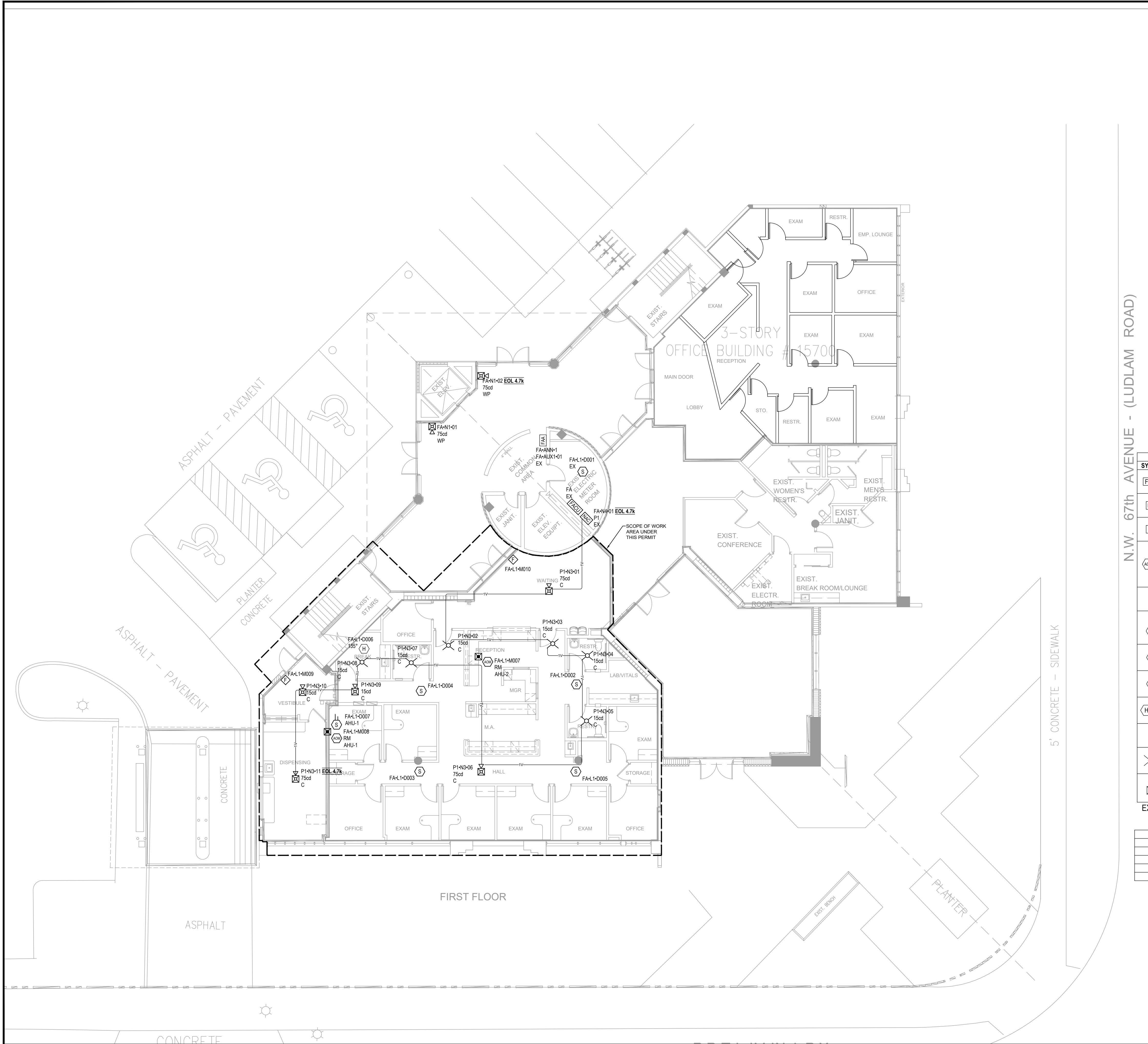
DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

SUITE 100 - FIRE
ALARM FLOOR
PLAN & RISER

FA-101



DEVICE LEGEND					
SYMBOL	QUANTITY	IS EXISTING	MANUFACTURER	PART NO	DESCRIPTION
[FACU]	1	X	FIRELITE	MS-9200UDLS	INTELLIGENT ADDRESSABLE FACP WITH BUILT-IN COMMUNICATOR
[NAC]	1	X	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
[FAA]	1	X	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
[RM]	2		FIRELITE	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.
[F]	2		FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
[S]	2		FIRELITE	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD365-IVR(A)-IV DETECTOR
[S]	4		FIRELITE	SD365-IV W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
[S]	1	X	FIRELITE	SD365-IV W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
[H] 135°	1		FIRELITE	H365-IV W/B300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
[RTS]	2		SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEADS
[C]	6		SYSTEM SENSOR	SCRLED	STROBE, CEILING, RED
[C]	5		SYSTEM SENSOR	PC2RLD	2-WIRE, HORN STROBE, CEILING, RED

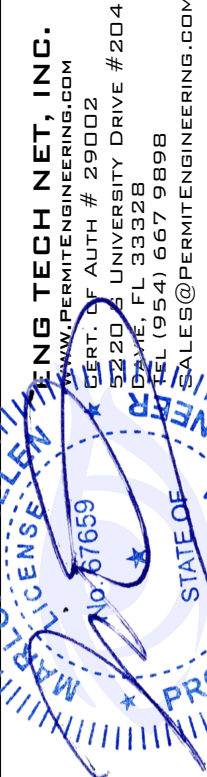
EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/2 FPLP/R	RS-485	18	2 COND. COPPER FPLP/R ANALOG UNSHIELDED
A	16/2 FPLR	SLC	16	2 COND. COPPER FPLR ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. COPPER FPLP/R UNSHIELDED
V	14/2 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED



5650 SHERIDAN STREET
HOLLYWOOD, FL 33021
(305) 408-1145

CONTRACTOR LICENSE EF#0001089



PERMIT SET
DATE: 12/18/2025
G.E.B. M.O.S.
PROJECT #:
SYSTEM:
FIRE ALARM SYSTEM
SHEET:
1ST FL - FIRE ALARM SYSTEM
FA-101

MEDICAL CONSULTANTS
FIRE ALARM SYSTEM
15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
1	12/18/2025	G.E.B.	M.O.S.	PERMIT SET

PERMIT SET

DRAWN BY: G.E.B.
CHECKED BY: M.O.S.
ISSUE DATE: 12/18/2025
JOB #: -
PROJECT #: -

SYSTEM:
FIRE ALARM SYSTEM

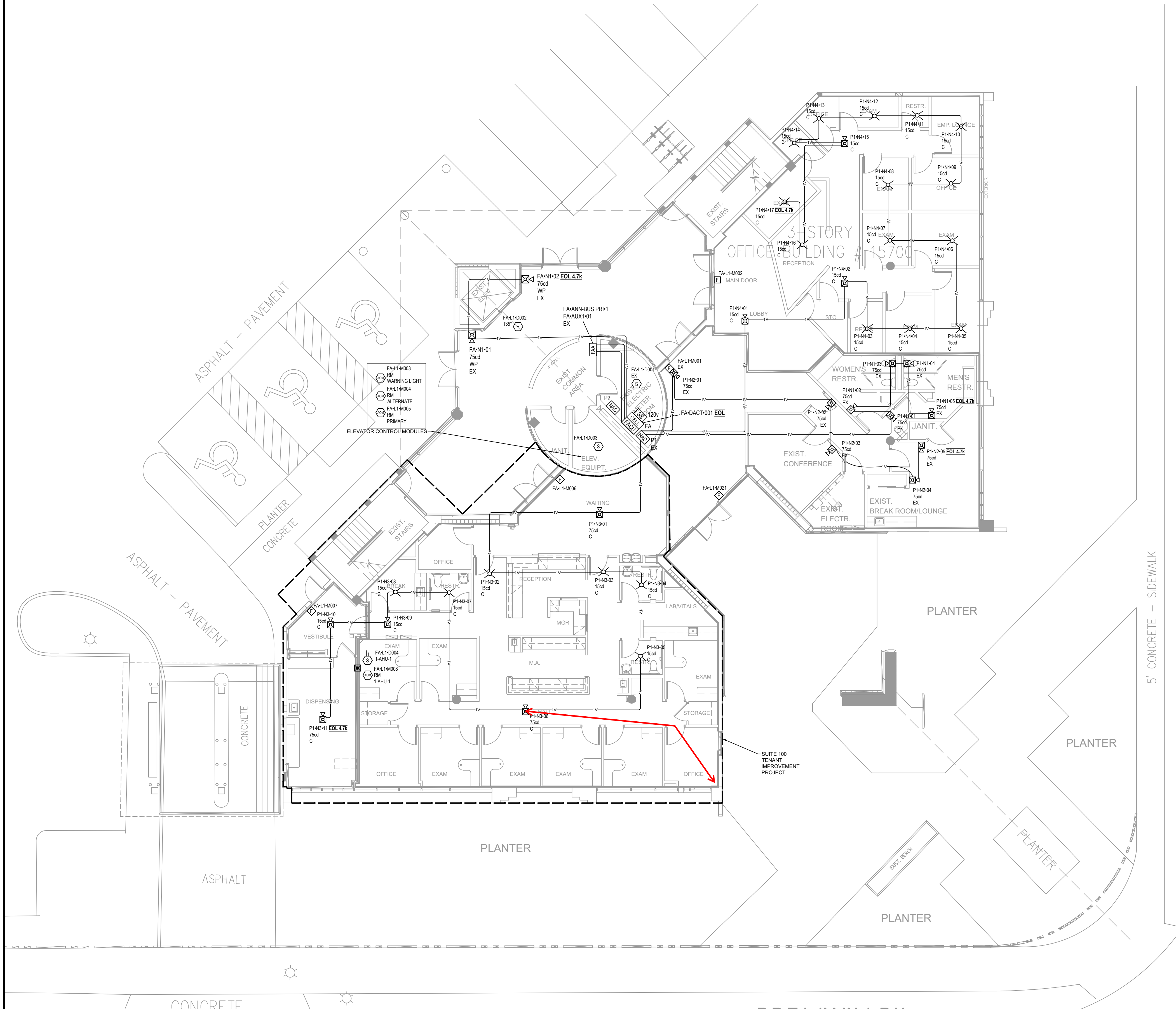
SHEET:

1ST FL - FIRE ALARM SYSTEM

FA-101



1ST FL - FIRE ALARM SYSTEM



DEVICE LEGEND				
SYMBOL	QUANTITY	MANUFACTURER	PART NO	DESCRIPTION
[FACU]	1	FIRELITE	ES-200X WITHOUT PWRMOD24	INTELLIGENT ADDRESSABLE FACP WITHOUT PWRMOD24
[NAC]	2	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
[FAA]	1	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
[CELL]	1	NAPCO	SLE-MAX2-CFBPS	UNIVERSAL FIRE COMMUNICATOR, DUAL SIM, DUAL PATH; 120VAC; METAL W/ TRF12 16VAC/20VA XFMR PROVISION
[RM]	12	FIRELITE	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.
[F]	9	FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
[S]	9	FIRELITE	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD365R(A)-IV DETECTOR
[S]	2	FIRELITE	SD365 W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
[H] 135°	3	FIRELITE	H365 W/B300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
[X]	9	SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEDS
[C]	48	SYSTEM SENSOR	SCRLD	STROBE, CEILING, RED
[WP]	6	SYSTEM SENSOR	P2RK	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR (HIGH VOLUME SETTING)
[C]	10	SYSTEM SENSOR	P2RL	2-WIRE, HORN STROBE, WALL, RED (HIGH VOLUME SETTING)
[C]	34	SYSTEM SENSOR	PC2RLD	2-WIRE, HORN STROBE, CEILING, RED (HIGH VOLUME SETTING)
[SS] 120v	1	DITEK	DTK-120HW	OVERVOLTAGE PROTECTOR CIRCUIT PROTECTION-120V

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLP/R	RS-485/PWR	18	4 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED
A	18/2 FPLP/R	SLC	18	2 COND. SOLID COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. SOLID COPPER FPLP/R UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLP/R	NAC	14	2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED

MEDICAL CONSULTANTS FIRE ALARM SYSTEM

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
MARK	12/18/2025	G.E.B.	M.O.S.	PERMIT SET
1	04/09/2026	G.E.B.	M.O.S.	PER AH COMMENTS
2	05/21/2026	G.E.B.	M.O.S.	PER AH COMMENTS

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

1ST FL - FIRE
ALARM SYSTEM

FA-101

ON SITE ENGINEERING TECH NET, INC.
ENGINEERING
5324 S UNIVERSITY DRIVE # 204
DADE COUNTY, FL 33138
DATE: 07/10/25
ELECTRONIC COPIES

STATE OF FLORIDA
PROFESSIONAL ENGINEER
MICHAEL MARCHI, P.E.
AND SEALED BY MARION SHERIDAN, P.E.
SIGNATURE MUST BE VERIFIED ON ANY
ELECTRONIC COPIES

DATE: 05/21/2026

GENERAL SECURITY

5650 SHERIDAN STREET
HOLLYWOOD, FL 33021
(305) 406-1145

CONTRACTOR LICENSE EF#0001089

Approved as noted.

Revised drawings required prior to inspection. NFPA 72:7.5.5.3

Revise riser diagram to include the duct detector remote test switches and the horn-strobe not highlighted on FA-101. NFPA 72:7.4.6.

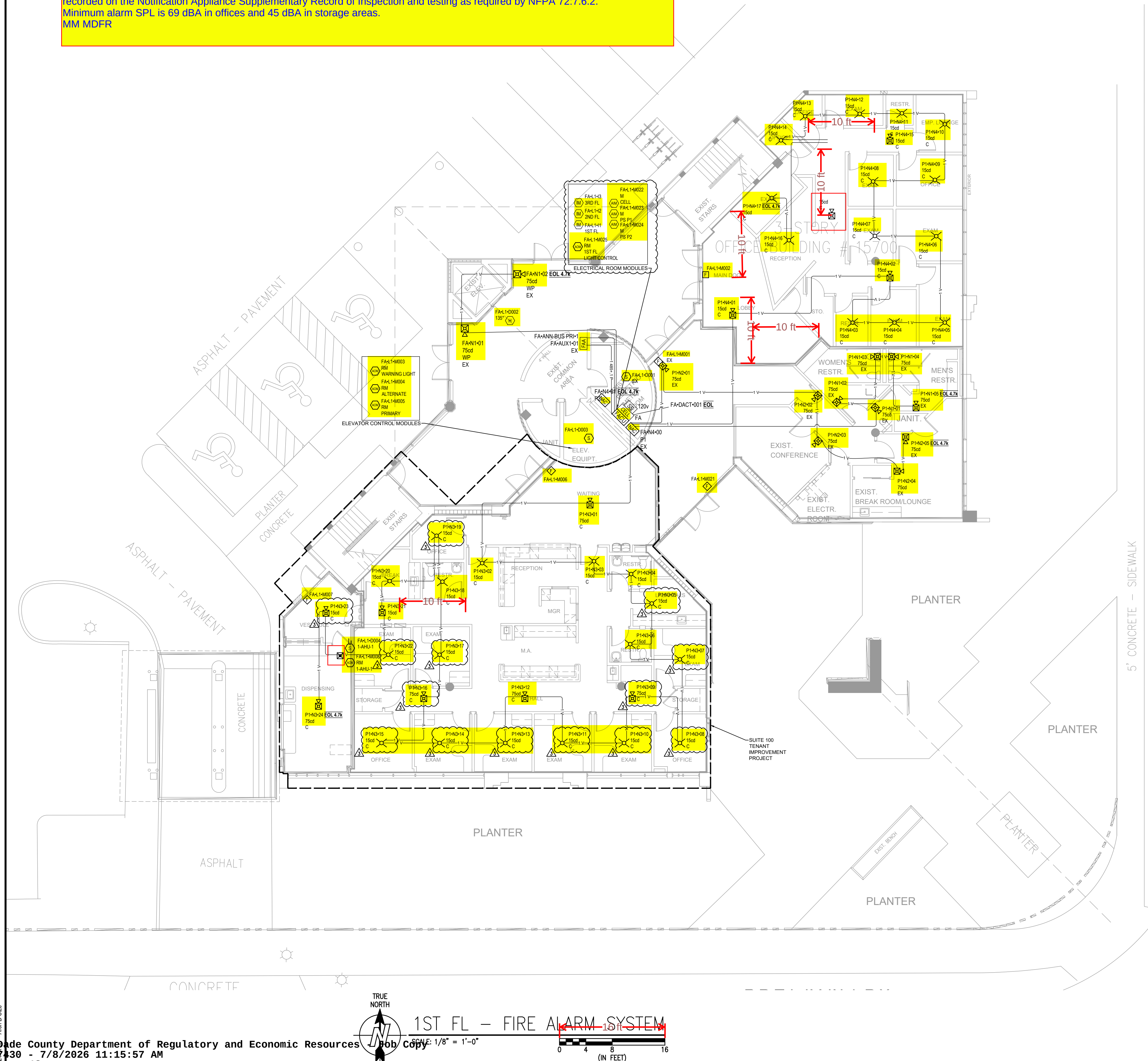
Locate and space the strobes per NFPA 72:18.5.5.5. See markups.

Add horn-strobe in breakroom on FA-103. NFPA 101:9.6.3.6.

The alarm sound pressure level shall be tested in accordance with NFPA 72 Table 14.4.3.2, item 22(1) with all doors closed and latched. The measured alarm SPL test results, in dBA for each room, including those without audible notification appliances, shall be recorded on the Notification Appliance Supplementary Record of Inspection and testing as required by NFPA 72:7.6.2.

Minimum alarm SPL is 69 dBA in offices and 45 dBA in storage areas.

MM MDFR



DEVICE LEGEND			
SYMBOL	QUANTITY	MANUFACTURER	DESCRIPTION
	1	FIRELITE	ES-200X WITHOUT PWRMOD24
	2	FIRELITE	FOPS-24FS6
	1	FIRELITE	ANN-80
	1	NAPCO	SLE-MAX2-CFBPS
	3	FIRELITE	I300
	3	FIRELITE	MMF-301
	15	FIRELITE	CRF-300
	9	FIRELITE	BG-12LX
	9	FIRELITE	D365PL
	2	FIRELITE	SD365 WB300-6
	3	FIRELITE	H365 WB300-6
	9	SYSTEM SENSOR	RTS151
	59	SYSTEM SENSOR	SCRLED
	6	SYSTEM SENSOR	P2RK
	10	SYSTEM SENSOR	P2RL
	37	SYSTEM SENSOR	PC2RLED
	1	DITEK	DTK-120HW

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLP/R	RS-485/PWR	18	4 COND. COPPER FPLP/R ANALOG UNSHIELDED
A	18/2 FPLP/R	SLC	18	2 COND. COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. COPPER FPLP/R UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

[illegible]

**MEDICAL CONSULTANTS
FIRE ALARM SYSTEM**

5700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

1ST FL - FIRE
ALARM SYSTEM

FA-101



SCALE: 1/8" = 1'-0"



EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	182 FPLP/R	RS-485	18	2 COND. COPPER FPLP/R ANALOG UNSHIELDED
A	182 FPLP/R	SLC	16	2 COND. COPPER FPLP/R ADDRESSABLE
P	142 FPLP/R	AUX	14	2 COND. COPPER FPLP/R UNSHIELDED
V	142 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

[illegible]

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

2ND FL - FIRE ALARM SYSTEM

FA-102

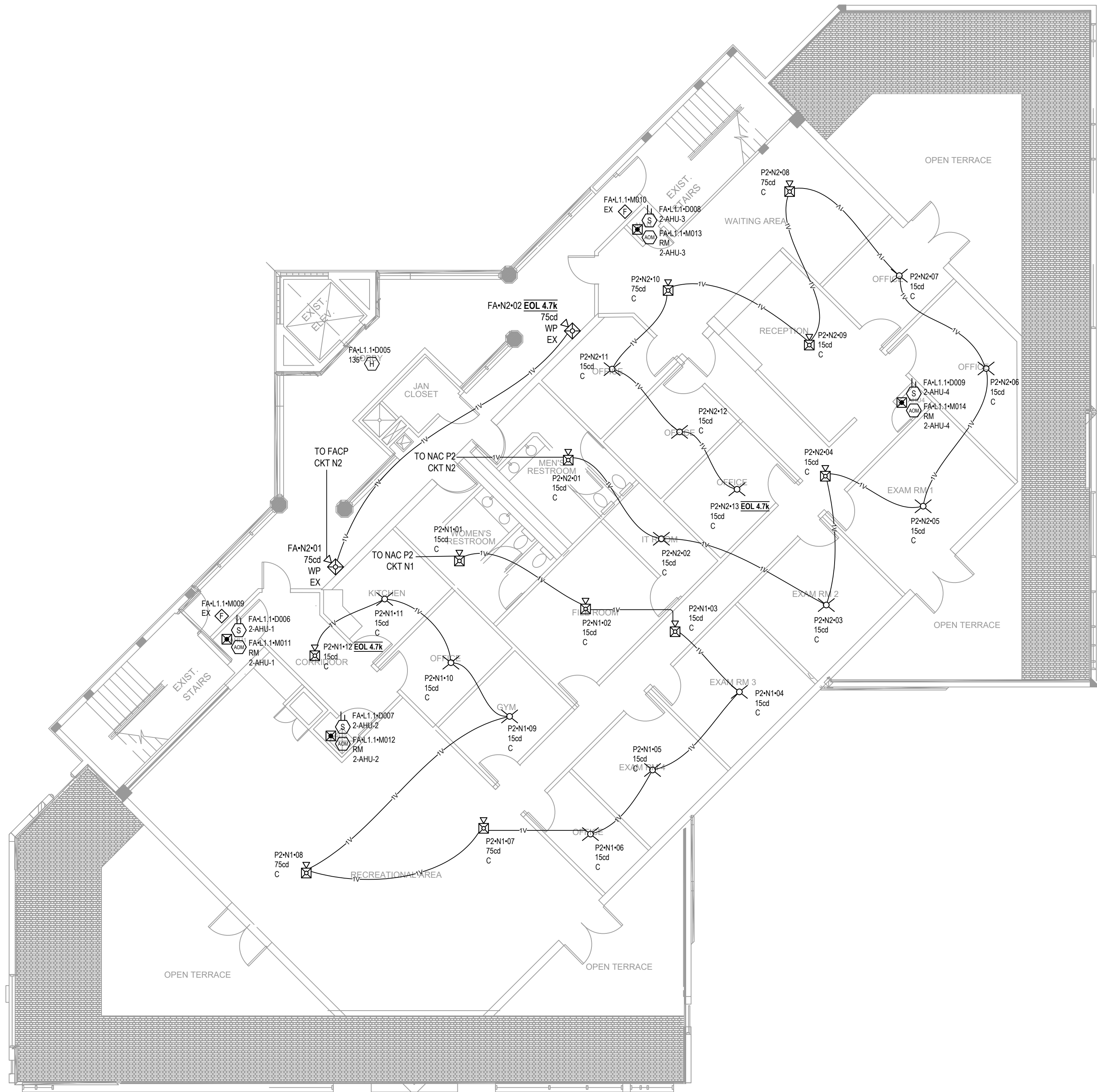
5650 SHERIDAN STREET
HOLLYWOOD, FL 33021
(305) 406-1143

CONTRACTOR LICENSE EF#0001089

ENGINEERING TECH NET, INC.
WWW.PERMITENGINEERING.COM
CERT. # AUTH # 29002
2320 UNIVERSITY DRIVE #201
DADE, FL 33328
TEL (954) 667 9898
SALES@PERMITENGINEERING.COM

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED
AND SEALED BY MARLON SEBELEN, P.E.
ON THE DATE ADJACENT TO THE SEAL.
SIGNATURE MUST BE VERIFIED ON ANY

MARLON SEBELEN, P.E.
REGISTERED ENGINEER
P.E.# 67659
DATE: 04/06/2026



DEVICE LEGEND				
SYMBOL	QUANTITY	MANUFACTURER	PART NO	DESCRIPTION
[FACU]	1	FIRELITE	ES-200X WITHOUT PWRMOD24	INTELLIGENT ADDRESSABLE FACP WITHOUT PWRMOD24
[NAC]	2	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
[FAA]	1	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
[CELL]	1	NAPCO	SLE-MAX2-CFBPS	UNIVERSAL FIRE COMMUNICATOR, DUAL SIM, DUAL PATH; 120VAC; METAL W/ TRF12 16VAC/20VA XFMR PROVISION
[RM]	12	FIRELITE	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.
[F]	9	FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
[S]	9	FIRELITE	D36SPL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD36SR(A)-IV DETECTOR
[S]	2	FIRELITE	SD36S WB300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
[H] 135°	3	FIRELITE	H36S WB300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
[X]	9	SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEDS
[X] C	48	SYSTEM SENSOR	SCRLED	STROBE, CEILING, RED
[X] WP	6	SYSTEM SENSOR	P2RK	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR (HIGH VOLUME SETTING)
[X]	10	SYSTEM SENSOR	P2RL	2-WIRE, HORN STROBE, WALL, RED (HIGH VOLUME SETTING)
[X] C	34	SYSTEM SENSOR	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED (HIGH VOLUME SETTING)
[SS] 120v	1	DITEK	DTK-120HW	OVERVOLTAGE PROTECTOR CIRCUIT PROTECTION-120V

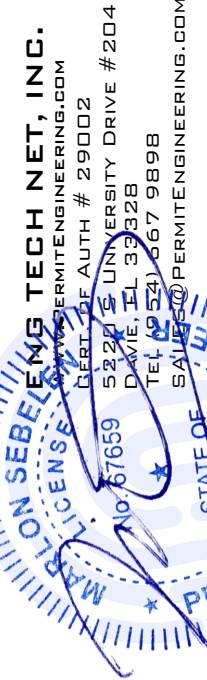
EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLP/R	RS-485/PWR	18	4 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED
A	18/2 FPLP/R	SLC	18	2 COND. SOLID COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. SOLID COPPER FPLP/R UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLP/R	NAC	14	2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED



5850 SHERIDAN STREET
HOLLYWOOD, FL 33021
(305) 408-1145

CONTRACTOR LICENSE EF#0001089



THIS ITEM HAS BEEN DIGITALLY SIGNED BY MARION SEERLEN, P.E.
AND SEALED BY MARION SEERLEN, P.E.
SIGNATURE MUST BE VERIFIED ON ANY
ELECTRONIC COPIES.
DATE: 05/21/2026

MEDICAL CONSULTANTS
FIRE ALARM SYSTEM

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
MARK	12/18/2025	G.E.B.	M.O.S.	PERMIT SET
1	04/09/2026	G.E.B.	M.O.S.	PER AH COMMENTS
2	05/21/2026	G.E.B.	M.O.S.	PER AH COMMENTS

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

2ND FL - FIRE
ALARM SYSTEM

FA-102



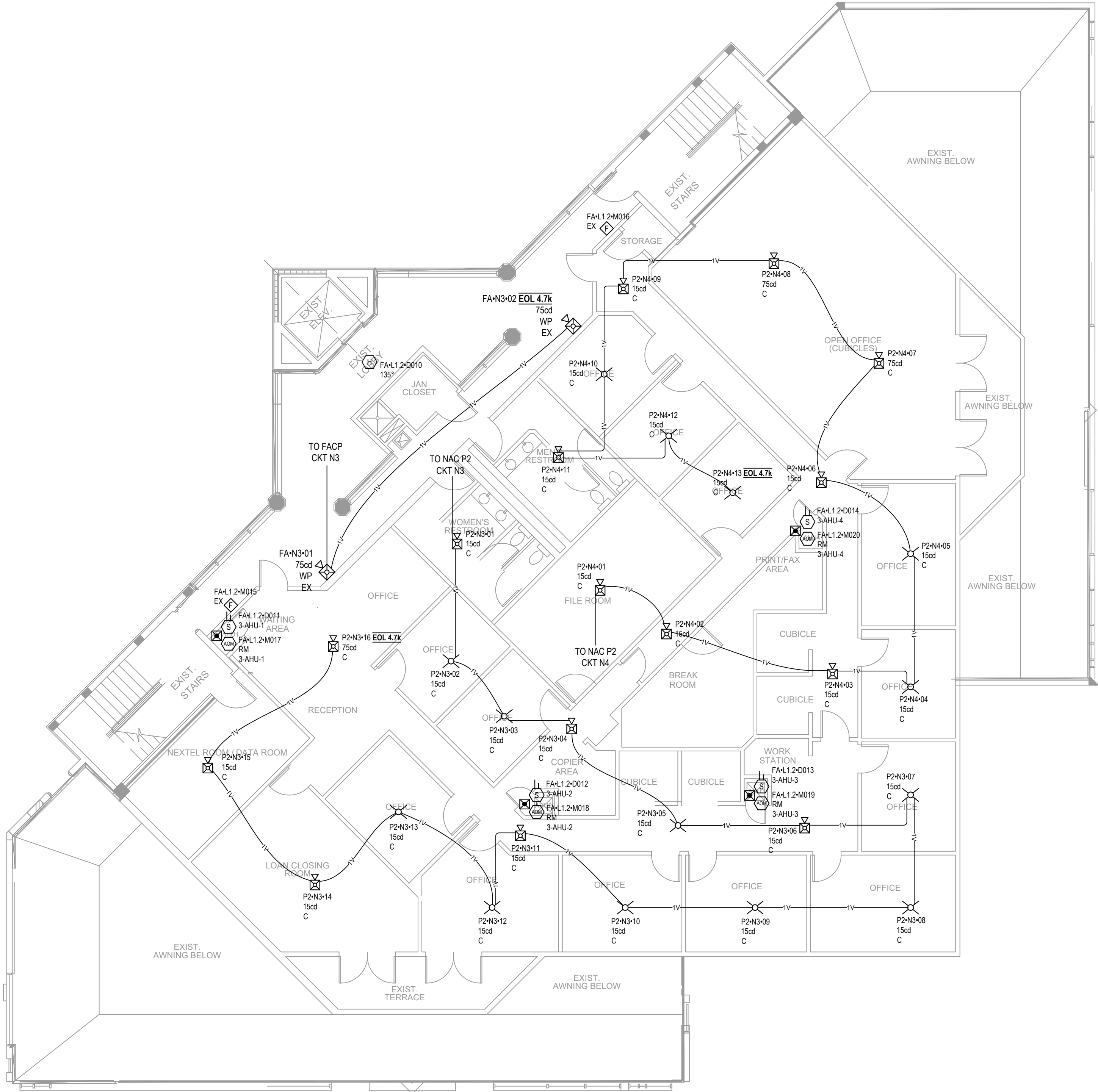
2ND FL - FIRE ALARM SYSTEM
SCALE: 1/8" = 1'-0"
0 4 8 16
(IN FEET)

MM MDFR



EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLP/R	RS-485/PWR	18	4 COND. COPPER FPLP/R ANALOG UNSHIELDED
A	18/2 FPLP/R	SLC	18	2 COND. COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. COPPER FPLP/R UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED



DEVICE LEGEND				
SYMBOL	QUANTITY	MANUFACTURER	PART NO	DESCRIPTION
[FACU]	1	FIRELITE	ES-200X WITHOUT PWRMOD24	INTELLIGENT ADDRESSABLE FACP WITHOUT PWRMOD24
[NAC]	2	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
[FAA]	1	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
[CELL]	1	NAPCO	SLE-MAX2-CFBPS	UNIVERSAL FIRE COMMUNICATOR, DUAL SIM, DUAL PATH; 120VAC; METAL W/ TRF12 16VAC/20VA XFMR PROVISION
[RM]	12	FIRELITE	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.
[F]	9	FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
[S]	9	FIRELITE	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD365R(A)-IV DETECTOR
[S]	2	FIRELITE	SD365 WB300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
[H] 135°	3	FIRELITE	H365 WB300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
[X]	9	SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEDS
[X] C	48	SYSTEM SENSOR	SCRLED	STROBE, CEILING, RED
[X] WP	6	SYSTEM SENSOR	P2RK	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR (HIGH VOLUME SETTING)
[X]	10	SYSTEM SENSOR	P2RL	2-WIRE, HORN STROBE, WALL, RED (HIGH VOLUME SETTING)
[X] C	34	SYSTEM SENSOR	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED (HIGH VOLUME SETTING)
[SS] 120v	1	DITEK	DTK-120HW	OVERVOLTAGE PROTECTOR CIRCUIT PROTECTION-120V

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLP/R	RS-485/PWR	18	4 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED
A	18/2 FPLP/R	SLC	18	2 COND. SOLID COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. SOLID COPPER FPLP/R UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLP/R	NAC	14	2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED



**MEDICAL CONSULTANTS
FIRE ALARM SYSTEM**

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
MARK	12/18/2025	G.E.B.	M.O.S.	PERMIT SET
1	04/09/2026	G.E.B.	M.O.S.	PER AH COMMENTS
2	05/21/2026	G.E.B.	M.O.S.	PER AH COMMENTS

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

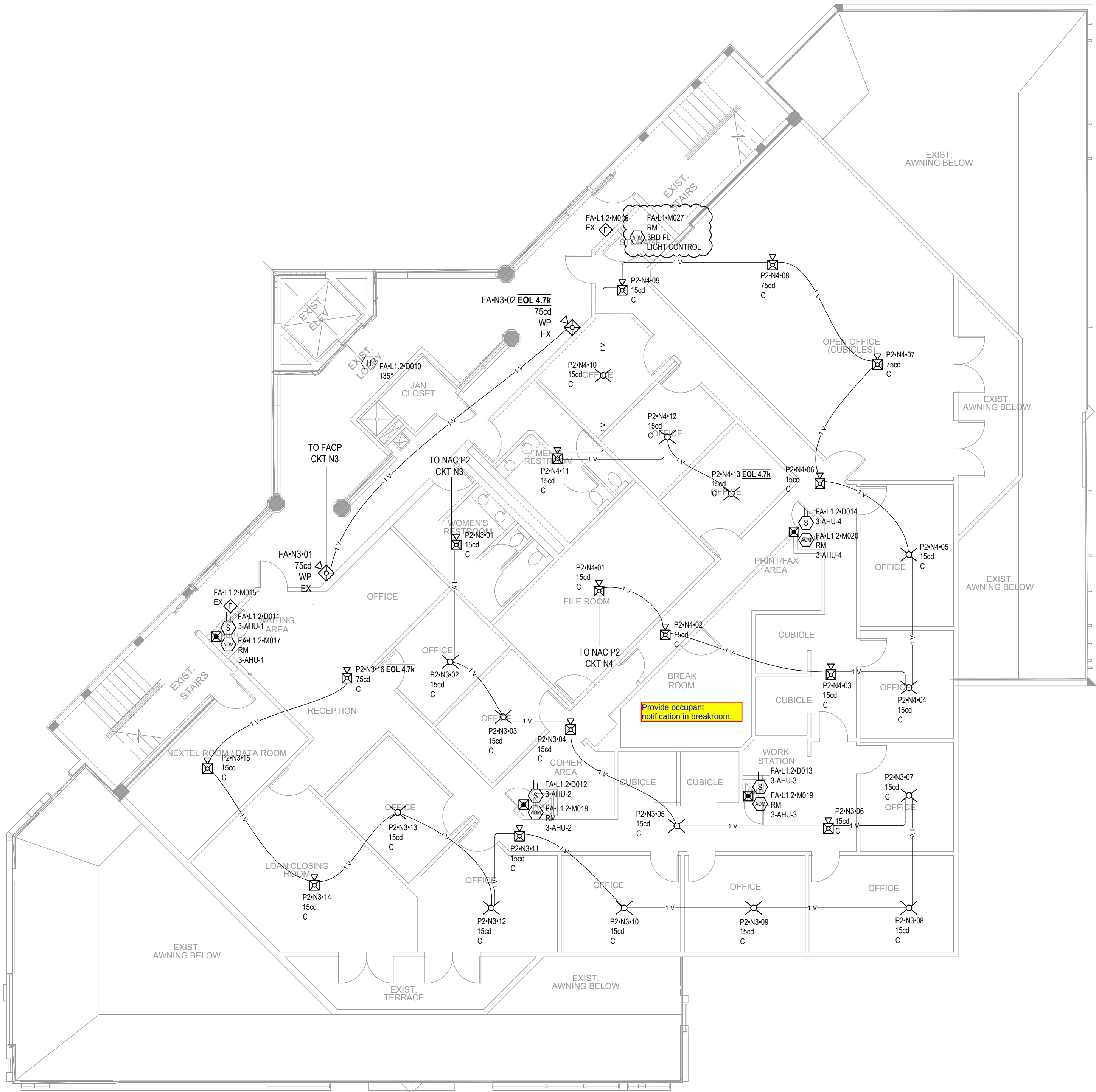
SYSTEM:
FIRE ALARM SYSTEM

SHEET:

3RD FL - FIRE
ALARM SYSTEM

FA-103

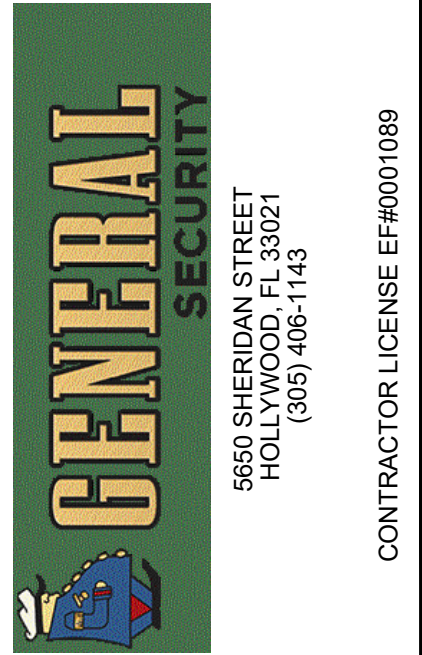
Approved as noted.
Revised drawings required prior to inspection. NFPA 72:7.5.5.3
Add horn-strobe in breakroom on FA-103. NFPA 101:9.6.3.6.
The alarm sound pressure level shall be tested in accordance with NFPA 72 Table 14.4.3.2, item 22(1) with all doors closed and latched. The measured alarm SPL test results, in dBA for each room, including those without audible notification appliances, shall be recorded on the Notification Appliance Supplementary Record of Inspection and testing as required by NFPA 72:7.6.2.
Minimum alarm SPL is 69 dBA in offices and 45 dBA in storage areas.
MM MDRF



DEVICE LEGEND				
SYMBOL	QUANTITY	MANUFACTURER	PART NO	DESCRIPTION
[FACU]	1	FIRELITE	ES-200X WITHOUT PWRMOD24	INTELLIGENT ADDRESSABLE FACP WITHOUT PWRMOD24
[NAC]	2	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
[FAA]	1	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
[CELL]	1	NAPCO	SLE-MAX2-CFBPS	UNIVERSAL FIRE COMMUNICATOR, DUAL SIM, DUAL PATH; 120VAC; METAL W/ TRF12 16VAC/20VA XFMR PROVISION
[IM]	3	FIRELITE	I300	SLC LOOP ISOLATOR MODULE; ISOLATES AGAINST SHORT CIRCUITS ON THE SLC.
[MM]	3	FIRELITE	MMF-301	MINIATURE MMF-300 (NO LED, NO STYLE D); PIGTAIL WIRES; MOUNTS IN DEVICE BACKBOX
[RM]	15	FIRELITE	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.
[F]	9	FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
[S]	9	FIRELITE	D36SPL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD36SR(A)-IV DETECTOR
[S]	2	FIRELITE	SD36S W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
[H] 135°	3	FIRELITE	H36S W/B300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
[RTS]	9	SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEADS
[C]	59	SYSTEM SENSOR	SCRLED	STROBE, CEILING, RED
[WP]	6	SYSTEM SENSOR	P2RK	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR (HIGH VOLUME SETTING)
[W]	10	SYSTEM SENSOR	P2RL	2-WIRE, HORN STROBE, WALL, RED (HIGH VOLUME SETTING)
[C]	37	SYSTEM SENSOR	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED (HIGH VOLUME SETTING)
[SS] 120v	1	DITEK	DTK-120HW	OVERVOLTAGE PROTECTOR CIRCUIT PROTECTION-120V

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLP/R	RS-485/PWR	18	4 COND. COPPER FPLP/R ANALOG UNSHIELDED
A	18/2 FPLP/R	SLC	18	2 COND. COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. COPPER FPLP/R UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED



MEDICAL CONSULTANTS
FIRE ALARM SYSTEM
15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
1	12/18/2025	G.E.B.	M.O.S.	PERMIT SET
2	05/21/2026	G.E.B.	M.O.S.	PER AH COMMENTS
3	06/22/2026	G.E.B.	M.O.S.	PER AH COMMENTS (06/10/2026)

PERMIT SET

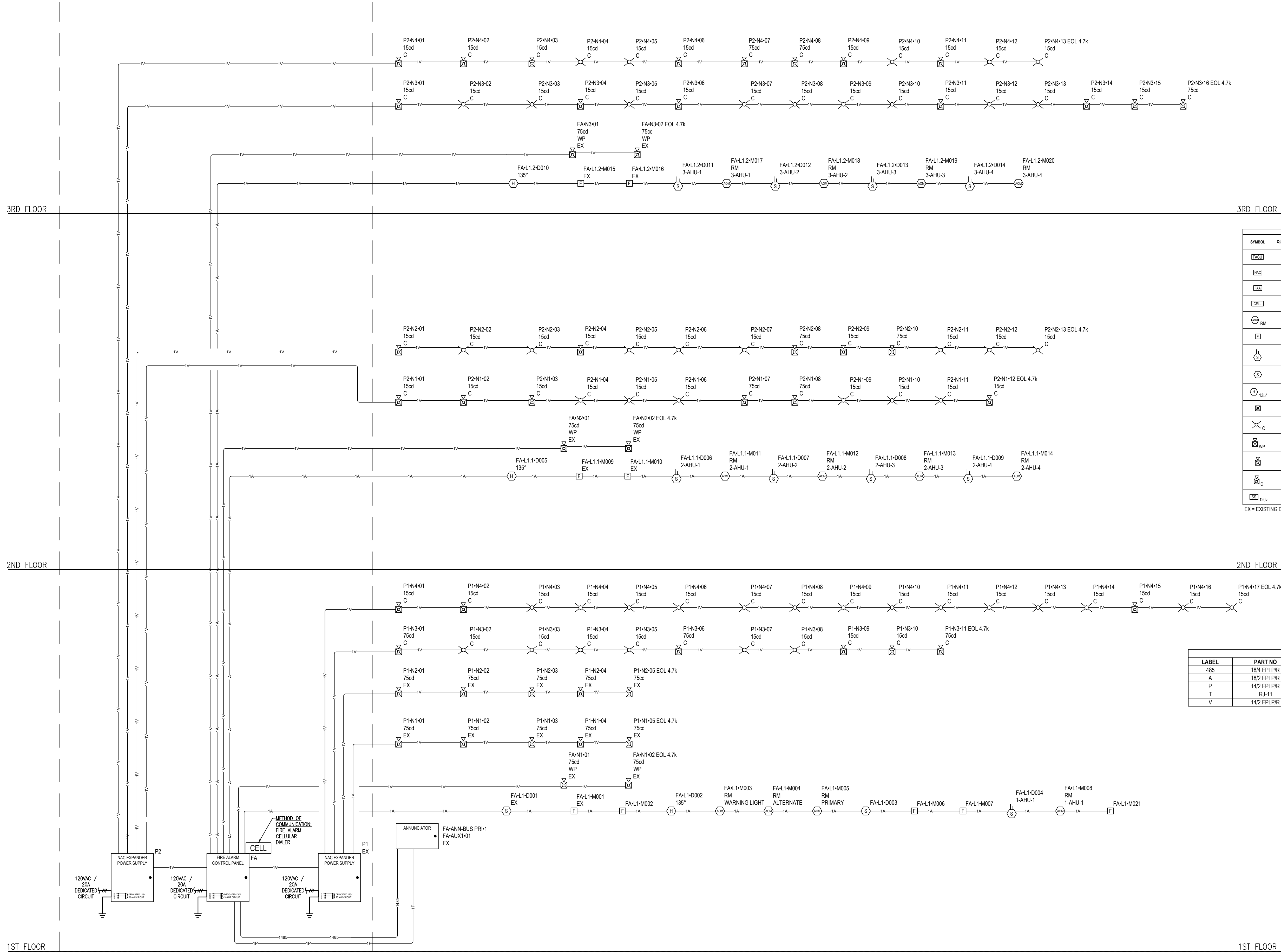
DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
3RD FL - FIRE
ALARM SYSTEM

FA-103

Arch D Size



DEVICE LEGEND				
SYMBOL	QUANTITY	MANUFACTURER	PART NO	DESCRIPTION
	1	FIRELITE	ES-200X WITHOUT PWRMCC04	INTELLIGENT ADDRESSABLE FACP WITHOUT PWRMCC04
	2	FIRELITE	FCPS-24F58	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
	1	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
	1	NAPCO	SLE-MAK2-C7BPS	UNIVERSAL FIRE COMMUNICATOR, DUAL SIM, DUAL PATH, 120VAC, METAL, W/ TRF12 16VAC/20VA XFMR PROVISION
	12	FIRELITE	CRF-300	ADDRESSABLE RELAY MODULE CONTAINING TWO ISOLATED SETS OF FORMAC CONTACTS, WHICH OPERATE AS A DPST SWITCH, MOUNTS DIRECTLY TO A 4.7\"/>
	9	FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
	9	FIRELITE	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING, INCLUDES 80369RAH/V DETECTOR
	2	FIRELITE	SD85 WB300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
	3	FIRELITE	H065 WB300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
	9	SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEDS
	48	SYSTEM SENSOR	SCRLED3	STROBE, CEILING, RED
	6	SYSTEM SENSOR	P29K	2-WIRE HORN STROBE, STANDARD CO. RED, OUTDOOR (HIGH VOLUME SETTING)
	10	SYSTEM SENSOR	P29L	2-WIRE HORN STROBE, WALL, RED (HIGH VOLUME SETTING)
	34	SYSTEM SENSOR	P23RLED	2-WIRE HORN STROBE, CEILING, RED (HIGH VOLUME SETTING)
	1	DITEK	DTK-120HV	OVERVOLTAGE PROTECTOR CIRCUIT PROTECTION <120V

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLPR	RS-485/PWR	18	4 COND. SOLID COPPER FPLPR ANALOG UNSHIELDED
A	18/2 FPLPR	S/C	18	2 COND. SOLID COPPER FPLPR ADDRESSABLE
P	14/2 FPLPR	AUX	14	2 COND. SOLID COPPER FPLPR UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLPR	NAC	14	2 COND. SOLID COPPER FPLPR ANALOG UNSHIELDED



5650 SHERIDAN STREET
HOLLYWOOD, FL 33021
(305) 408-1140

CONTRACTOR LICENSE EF#0001089



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DATE: 05/21/2026

MEDICAL CONSULTANTS FIRE ALARM SYSTEM

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CHK	DESCRIPTION
MARK	12/18/2025	G.E.B.	M.O.S. PERMIT SET
1	04/09/2026	G.E.B.	M.O.S. PER AH COMMENTS
2	05/21/2026	G.E.B.	M.O.S. PER AH COMMENTS

PERMIT SET

DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

FIRE ALARM
SYSTEM RISER

FA-201

Arch D Size

RISER DIAGRAM

SCALE: NTS



Approved as noted.
Revised drawings required prior to inspection. NFPA 72:7.5.5.3
Revise riser diagram to include the duct detector remote test switches and the horn-strobe not highlighted on FA-101. NFPA 72:7.4.6.
Add horn-strobe in breakroom on FA-103. NFPA 101:9.6.3.6.
The alarm sound pressure level shall be tested in accordance with NFPA 72 Table 14.4.3.2, item 22(1) with all doors closed and latched. The measured alarm SPL test results, in dBA for each room, including those without audible notification appliances, shall be recorded on the Notification Appliance Supplementary Record of Inspection and testing as required by NFPA 72:7.6.2.
Minimum alarm SPL is 69 dBA in offices and 45 dBA in storage areas.
MM MDR

DEVICE LEGEND				
SYMBOL	QUANTITY	MANUFACTURER	PART NO	DESCRIPTION
[FACU]	1	FIRELITE	ES-200X WITHOUT PWRMOD24	INTELLIGENT ADDRESSABLE FACP WITHOUT PWRMOD24
[NAC]	2	FIRELITE	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY
[FAU]	1	FIRELITE	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR
[CELL]	1	NAPCO	SLE-MA2-CFBPS	UNIVERSAL FIRE COMMUNICATOR, DUAL SIM, DUAL PATH, 120VAC; METAL W/ TRF12 16VAC/20VA XFMR PROVISION
[M]	3	FIRELITE	I300	SLC LOOP ISOLATOR MODULE; ISOLATES AGAINST SHORT CIRCUITS ON THE SLC
[MM]	3	FIRELITE	MMF-301	MINIATURE MMF-300 (NO LED, NO STYLE D); PIGTAIL WIRES, MOUNTS IN DEVICE BACKBOX
[RM]	15	FIRELITE	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 SM8550.
[F]	9	FIRELITE	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE
[S]	9	FIRELITE	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING, INCLUDES SD365RIA-V DETECTOR
[S]	2	FIRELITE	SD365 WB300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE
[H] 135°	3	FIRELITE	H365 WB300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE
[RTS]	9	SYSTEM SENSOR	RTS151	REMOTE TEST STATION W/ SWITCH, ALARM & POWER LEDS
[SCRLD]	59	SYSTEM SENSOR	SCRLD	STROBE, CEILING, RED
[P2RK]	6	SYSTEM SENSOR	P2RK	2-WIRE HORN STROBE, STANDARD OD, RED, OUTDOOR (HIGH VOLUME SETTING)
[P2RL]	10	SYSTEM SENSOR	P2RL	2-WIRE, HORN STROBE, WALL, RED (HIGH VOLUME SETTING)
[PC2RLD]	37	SYSTEM SENSOR	PC2RLD	2-WIRE, HORN STROBE, CEILING, RED (HIGH VOLUME SETTING)
[DTK]	1	OITEK	DTK-120HW	OVERVOLTAGE PROTECTOR CIRCUIT PROTECTION 120V

EX = EXISTING DEVICES, NOT BEING MODIFIED UNDER THIS PERMIT

CABLE AND WIRE LEGEND				
LABEL	PART NO	APPLICATION	AWG	DESCRIPTION
485	18/4 FPLP/R	RS-485/PWR	18	4 COND. COPPER FPLP/R ANALOG UNSHIELDED
A	18/2 FPLP/R	SLC	18	2 COND. COPPER FPLP/R ADDRESSABLE
P	14/2 FPLP/R	AUX	14	2 COND. COPPER FPLP/R UNSHIELDED
T	RJ-11	RJ-11	22	4 COND. UNSHIELDED COMMUNICATIONS CABLE
V	14/2 FPLP/R	NAC	14	2 COND. COPPER FPLP/R ANALOG UNSHIELDED

15700 NW 67TH AVE
SUITE 100
MIAMI LAKES, FL 33014

ISSUE NO: 1
DATE: 12/18/2025
DRAWN BY: G.E.B.
CHECKED BY: M.O.S.
ISSUE DATE: 12/18/2025
JOB #: -
PROJECT #: -

PERMIT SET

SYSTEM: FIRE ALARM SYSTEM

SHEET: FIRE ALARM SYSTEM RISER

FA-201

12/18/2025 G.E.B. M.O.S. PERMIT SET
12/18/2025 G.E.B. M.O.S. PER AH COMMENTS
12/21/2025 G.E.B. M.O.S. PER AH COMMENTS
06/22/2026 G.E.B. M.O.S. PER AH COMMENTS (06/10/2026)

MARK: 12/18/2025 G.E.B. M.O.S. PERMIT SET
12/18/2025 G.E.B. M.O.S. PER AH COMMENTS
12/21/2025 G.E.B. M.O.S. PER AH COMMENTS
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PANEL FA EX (MS-9200UDLS) BATTERY CALCULATION (SECONDARY POWER SOURCE REQUIREMENTS)								
PANEL COMPONENTS		QTY	PART NO.	DESCRIPTION	STANDBY CURRENT		SECONDARY ALARM CURRENT	
					CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
CIRCUIT	SYMBOL	QTY	PART NO	DESCRIPTION	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
FA-AUX1		1	ANN-80 (EX)	RED 80 CHARACTER LCD ANNUNCIATOR	0.015	0.015	0.04	0.04
FA-L1		8	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE	0.000375	0.003	0.005	0.04
		2	CRF-300	ADDRESSABLE RELAY MODULE CONTAINING TWO ISOLATED SETS OF FORM-C CONTACTS, WHICH OPERATE AS A DPST SWITCH. MOUNTS DIRECTLY TO A 4.0" (10.16 CM.) BOX. SURFACE MOUNT USING THE SMB500.	0.000255	0.00051	0.0065	0.013
		2	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR/HOUSING. INCLUDES SD365-IVR(A)-I/5 DETECTOR	0.0002	0.0004	0.045	0.09
		1	H365-IV W/B300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE	0.0002	0.0002	0.0045	0.0045
		5	SD365-IV W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE	0.0002	0.001	0.0045	0.0225
FA-N1		6	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 75CD	0	0	0.087	0.5220
FA-N2		1	FCPS-24FS6 (EX)	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY	0.002	0.002	0.0217	0.0217
					TOTAL STANDBY (A)	0.16711	TOTAL ALARM (A)	1.03
					REQUIRED STANDBY TIME (HOURS)		24	
					REQUIRED ALARM TIME (MINUTES)		5	
SECONDARY STANDBY LOAD (A)				0.16711	24		4.01	
SECONDARY ALARM LOAD (A)				1.03	0.083		0.085725	
STANDBY AND ALARM SUBTOTAL (AMP HOURS)					4.10			
DERATING FACTOR					1.20			
SECONDARY LOAD REQUIREMENTS (AMP HOURS)					4.92			
PROVIDE (2) 12V 7AH BATTERIES								

PANEL FA-N2-01 EOL 4.7K								
P1								
EX (FCPS-24FS6) BATTERY CALCULATION								
(SECONDARY POWER SOURCE REQUIREMENTS)								
PANEL COMPONENTS		QTY	PART NO.	DESCRIPTION	STANDBY CURRENT		SECONDARY ALARM CURRENT	
		1	FCPS-24FS6 MAIN BOARD	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY MAIN BOARD	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
CIRCUIT	SYMBOL	QTY	PART NO	DESCRIPTION	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
P1-N1	 C	4	SCRLED	STROBE, CEILING, RED 15CD	0	0	0.018	0.072
P1-N2	 C	3	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 75CD	0	0	0.087	0.261
	 C	2	SCRLED	STROBE, CEILING, RED 15CD	0	0	0.018	0.036
P1-N3	 C	2	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 15CD	0	0	0.035	0.07
	 C	3	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 75CD	0	0	0.087	0.261
	 C	6	SCRLED	STROBE, CEILING, RED 15CD	0	0	0.018	0.108
					TOTAL STANDBY (A)	0.091	TOTAL ALARM (A)	0.9530
					REQUIRED STANDBY TIME (HOURS)		24	
					REQUIRED ALARM TIME (MINUTES)		5	
SECONDARY STANDBY LOAD (A)				0.091	24	2.18		
SECONDARY ALARM LOAD (A)				0.9530	0.083	0.079		
STANDBY AND ALARM SUBTOTAL (AMP HOURS)						2.26		
DERATING FACTOR						1.20		
SECONDARY LOAD REQUIREMENTS (AMP HOURS)						2.72		
PROVIDE (2) 12V 7AH BATTERIES								
*BATTERY BOX SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.								

FA AUX1 LUMP SUM REPORT			CURRENT SUMMARY		POWER SUMMARY	
			MAX. CIRCUIT CURRENT (A):	1	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.04	MAX. VOLTAGE DROP:	0
			SPARE CIRCUIT CURRENT (A):	0.960	VOLTAGE DROP %:	0.02 %
			SPARE CIRCUIT CURRENT %:	96.00 %	MIN. OPERATIONAL VOLTAGE:	16
				END OF LINE VOLTAGE:	20.40	
				WIRE RESISTANCE (Ω/FT):	3.07	
				TOTAL CIRCUIT LENGTH (FT):	17	
				TOTAL CIRCUIT RESISTANCE (Ω):	0.101625	
CIRCUIT WIRING PROPERTIES: 'P' 14/2 FPLP/R AUX 14 AWG, 2 COND. SOLID COPPER FPLP/R UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
FAA	1	ANN-80	RED 80 CHARACTER LCD ANNUNCIATOR		0.04	0.04
CALCULATION METHODS:						
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)						
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)						

FA N1 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY	
		MAX. CIRCUIT CURRENT (A):	2.50	STARTING CALC. VOLTAGE:	20.40	
		TOTAL CIRCUIT CURRENT (A):	0.5220	MAX. VOLTAGE DROP:	0.36	
		SPARE CIRCUIT CURRENT (A):	1.98	VOLTAGE DROP %:	1.78 %	
		SPARE CIRCUIT CURRENT %:	79.12 %	MIN. OPERATIONAL VOLTAGE:	16	
				END OF LINE VOLTAGE:	20.04	
				WIRE RESISTANCE (Ω/KFT):	3.07	
				TOTAL CIRCUIT LENGTH (FT):	113	
				TOTAL CIRCUIT RESISTANCE (Ω):	0.694	
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
	6	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.5220
CALCULATION METHODS:						
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/KFT) X 2 X TOTAL CIRCUIT LENGTH (FT)						
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)						

FA N2 LUMP SUM REPORT			CURRENT SUMMARY		POWER SUMMARY	
			MAX. CIRCUIT CURRENT (A):	2.50	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.0217	MAX. VOLTAGE DROP:	0
			SPARE CIRCUIT CURRENT (A):	2.48	VOLTAGE DROP %:	0.00 %
			SPARE CIRCUIT CURRENT %:	99.13 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	20.40
					WIRE RESISTANCE (Ω/KFT):	3.07
		TOTAL CIRCUIT LENGTH (FT):	5			
		TOTAL CIRCUIT RESISTANCE (Ω):	0.029201			
CIRCUIT WIRING PROPERTIES: "Y" 142 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
NAC	1	FOPS-24FS6	6.0 A. 120 VAC REMOTE CHARGER POWER SUPPLY		0.0217	0.0217
CALCULATION METHODS:						
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)						
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)						

P1 N1 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY	
		MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40	
		TOTAL CIRCUIT CURRENT (A):	0.072	MAX. VOLTAGE DROP:	0.04	
		SPARE CIRCUIT CURRENT (A):	2.93	VOLTAGE DROP %:	0.19 %	
		SPARE CIRCUIT CURRENT %:	97.60 %	MIN. OPERATIONAL VOLTAGE:	16	
				END OF LINE VOLTAGE:	20.36	
				WIRE RESISTANCE (Ω/KFT):	3.07	
		TOTAL CIRCUIT LENGTH (FT):	86			
		TOTAL CIRCUIT RESISTANCE (Ω):	0.529			
CIRCUIT WIRING PROPERTIES: "Y" 14/2 FLPLP NAC 14 AWG, 2 COND. SOLID COPPER FLPLP ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
	4	SCRLD	STROBE, CEILING, RED	15CD	0.018	0.072
CALCULATION METHODS:						
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)						
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)						

P1 N2 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY	
		MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40	
		TOTAL CIRCUIT CURRENT (A):	0.297	MAX. VOLTAGE DROP:	0.17	
		SPARE CIRCUIT CURRENT (A):	2.70	VOLTAGE DROP %:	0.82 %	
		SPARE CIRCUIT CURRENT %:	90.10 %	MIN. OPERATIONAL VOLTAGE:	16	
				END OF LINE VOLTAGE:	20.23	
				WIRE RESISTANCE (Ω/KFT):	3.07	
				TOTAL CIRCUIT LENGTH (FT):	91	
				TOTAL CIRCUIT RESISTANCE (Ω):	0.561	
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 C	3	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.261
 C	2	SCRLED	STROBE, CEILING, RED	15CD	0.018	0.036
CALCULATION METHODS:						
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/KFT) X 2 X TOTAL CIRCUIT LENGTH (FT)						
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)						

P1 N3 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY		
		MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40		
		TOTAL CIRCUIT CURRENT (A):	0.439	MAX. VOLTAGE DROP:	0.530		
		SPARE CIRCUIT CURRENT (A):	2.56	VOLTAGE DROP %:	2.59 %		
		SPARE CIRCUIT CURRENT %:	85.37 %	MIN. OPERATIONAL VOLTAGE:	16		
				END OF LINE VOLTAGE:	19.87		
				WIRE RESISTANCE (Ω/KFT):	3.07		
				TOTAL CIRCUIT LENGTH (FT):	196		
				TOTAL CIRCUIT RESISTANCE (Ω):	1.20		
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED							
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00% ADDITIONAL LENGTH CALCULATED							
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)	
 C	2	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.07	
 C	3	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.261	
 C	6	SCRLLED	STROBE, CEILING, RED	15CD	0.018	0.108	
CALCULATION METHODS:							
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/KFT) X 2 X TOTAL CIRCUIT LENGTH (FT)							
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)							



MEDICAL CONSULTANTS FIRE ALARM SYSTEM

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[illegible]

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DRAWN BY:	G.E.B.
CHECKED BY:	M.O.S.
ISSUE DATE:	12/18/2025
JOB #:	-
PROJECT #:	-

SYSTEM:
FIRE ALARM SYSTEM

SHEET:

CALCULATION TABLES

FA-301

PANEL FA (ES-200X WITHOUT PWRMOD24) BATTERY CALCULATION								
(SECONDARY POWER SOURCE REQUIREMENTS)								
PANEL COMPONENTS		QTY	PART NO.	DESCRIPTION	STANDBY CURRENT		SECONDARY ALARM CURRENT	
					CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
		1	ES-200X MAIN BOARD WITHOUT PWRMOD24	MAIN BOARD FOR ES-200X FIRE ALARM CONTROL PANEL WITHOUT PWRMOD24	0.141	0.141	0.257	0.257
CIRCUIT	SYMBOL	QTY	PART NO	DESCRIPTION	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
FA-AUX1	 FAA	1	ANN-80 (EX)	RED 80 CHARACTER LCD ANNUNCIATOR	0.015	0.015	0.04	0.04
	 F	4	BG-12LX	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE	0.000375	0.0015	0.005	0.02
	 F	5	BG-12LX (EX)	ADDRESSABLE MANUAL PULL STATION WITH INTERFACE MODULE MOUNTED INSIDE	0.000375	0.001875	0.005	0.025
	 RM	12	CRF-300	ADDRESSABLE RELAY MODULE: 2 ISOLATED FORM-C CONTACTS (DPDT); MOUNTS ON 4" BOX OR SMB500	0.000255	0.00306	0.0065	0.078
FA-I1	 S	9	D365PL	INTELLIGENT NON-RELAY PHOTOELECTRIC LOW FLOW SMOKE DETECTOR HOUSING. INCLUDES SD365(A)-IV DETECTOR	0.0002	0.0018	0.045	0.405
	 H 135°	3	H365 W/B300-6	WHITE, LOW-PROFILE 135°F FIXED THERMAL SENSOR, STANDARD BASE	0.0002	0.0006	0.0045	0.0135
	 S	1	SD365 W/B300-6	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE	0.0002	0.0002	0.0045	0.0045
	 S	1	SD365 W/B300-6 (EX)	WHITE, ADDRESSABLE PHOTOELECTRIC DETECTOR, STANDARD BASE	0.0002	0.0002	0.0045	0.0045
FA-N1	 WP	2	P2RK (EX)	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR 75CD	0	0	0.176	0.352
FA-N2	 WP	2	P2RK (EX)	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR 75CD	0	0	0.176	0.352
FA-N3	 WP	2	P2RK (EX)	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR 75CD	0	0	0.176	0.352
					TOTAL STANDBY (A)	0.165235	TOTAL ALARM (A)	1.90
					REQUIRED STANDBY TIME (HOURS)		24	
					REQUIRED ALARM TIME (MINUTES)		5	
SECONDARY STANDBY LOAD (A)				0.165235	24		3.97	
SECONDARY ALARM LOAD (A)				1.90	0.083		0.158625	
STANDBY AND ALARM SUBTOTAL (AMP HOURS)							4.12	
DERATING FACTOR							1.25	
SECONDARY LOAD REQUIREMENTS (AMP HOURS)							5.16	
PROVIDE (2) 12V 7AH BATTERIES								
*BATTERY BOX SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.								

PANEL P1 EX (FCPS-24FS6) BATTERY CALCULATION (SECONDARY POWER SOURCE REQUIREMENTS)								
PANEL COMPONENTS		QTY	PART NO.	DESCRIPTION	STANDBY CURRENT		SECONDARY ALARM CURRENT	
		1	FCPS-24FS6 MAIN BOARD	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY MAIN BOARD	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
					0.091	0.091	0.145	0.145
CIRCUIT	SYMBOL	QTY	PART NO	DESCRIPTION	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
P1-I1		5	P2RL (EX)	2-WIRE, HORN STROBE, RED 75CD	0	0	0.121	0.6050
P1-I2		5	P2RL (EX)	2-WIRE, HORN STROBE, RED 75CD	0	0	0.121	0.6050
P1-I3		2	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 15CD	0	0	0.035	0.07
		3	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 75CD	0	0	0.087	0.261
		6	SCRLED	STROBE, CEILING, RED 15CD	0	0	0.018	0.108
P1-I4		3	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 15CD	0	0	0.035	0.105
		14	SCRLED	STROBE, CEILING, RED 15CD	0	0	0.018	0.252
					TOTAL STANDBY (A)	0.091	TOTAL ALARM (A)	2.15
					REQUIRED STANDBY TIME (HOURS)		24	
					REQUIRED ALARM TIME (MINUTES)		5	
SECONDARY STANDBY LOAD (A)				0.091	24		2.18	
SECONDARY ALARM LOAD (A)				2.15	0.083		0.17925	
STANDBY AND ALARM SUBTOTAL (AMP HOURS)							2.36	
DERATING FACTOR							1.25	
SECONDARY LOAD REQUIREMENTS (AMP HOURS)							2.95	
PROVIDE (2) 12V 7AH BATTERIES								
*BATTERY BOX SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.								



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StarLink SLE-MAX2-CFBPS
Fire Alarm Communicator Standby Battery Calculations

WI2743LF 4/24

Standby Battery Calculations for the model **SLE-MAX2-CFBPS** Fire Alarm Communicator:

• Standby Time Required: 24_Hours

• Standby Current Draw of Communicator: 0.115A

• Safety Factor:..... 1.25

Required Standby Battery Capacity (AH) =
(Standby Hours) x (Communicator Standby Current Draw) x (Safety Factor)

Example:
(24 Hours) x (0.115 Amps) x (1.25 Safety Factor) = **3.45 AH**

• Please note that a 1.25 Safety Factor = 0.75 (25%) Derating Factor. For 20% Derating Factor, use Safety Factor = 1.20

PANEL P2 (FCPS-24FS6) BATTERY CALCULATION								
(SECONDARY POWER SOURCE REQUIREMENTS)								
PANEL COMPONENTS		QTY	PART NO.	DESCRIPTION	STANDBY CURRENT		SECONDARY ALARM CURRENT	
		1	FCPS-24FS6 MAIN BOARD	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY MAIN BOARD	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
CIRCUIT	SYMBOL	QTY	PART NO	DESCRIPTION	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
P2-I1	WP C	4	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 15CD	0	0	0.035	0.14
	WP C	2	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 75CD	0	0	0.087	0.174
	WP C	6	SCRLED	STROBE, CEILING, RED 15CD	0	0	0.018	0.108
P2-I2	WP C	3	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 15CD	0	0	0.035	0.105
	WP C	2	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 75CD	0	0	0.087	0.174
P2-I3	WP C	8	SCRLED	STROBE, CEILING, RED 15CD	0	0	0.018	0.144
	WP C	6	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 15CD	0	0	0.035	0.21
P2-I3	WP C	1	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 75CD	0	0	0.087	0.087
	WP C	9	SCRLED	STROBE, CEILING, RED 15CD	0	0	0.018	0.162
P2-I4	WP C	6	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 15CD	0	0	0.035	0.21
	WP C	2	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED 75CD	0	0	0.087	0.174
	WP C	5	SCRLED	STROBE, CEILING, RED 15CD	0	0	0.018	0.09
					TOTAL STANDBY (A)	0.091	TOTAL ALARM (A)	1.92
					REQUIRED STANDBY TIME (HOURS)			24
					REQUIRED ALARM TIME (MINUTES)	5		
SECONDARY STANDBY LOAD (A)			0.091		24		2.18	
SECONDARY ALARM LOAD (A)			1.92		0.083		0.16025	
STANDBY AND ALARM SUBTOTAL (AMP HOURS)						2.34		
DERATING FACTOR						1.25		
SECONDARY LOAD REQUIREMENTS (AMP HOURS)						2.93		
PROVIDE (2) 12V 7AH BATTERIES								
*BATTERY BOX SIZE CAPACITY NOT SPECIFIED. REFER TO MANUFACTURER DOCUMENTATION.								

FA AUX1 LUMP SUM REPORT				CURRENT SUMMARY		POWER SUMMARY	
				MAX. CIRCUIT CURRENT (A):	1	STARTING CALC. VOLTAGE:	20.40
				TOTAL CIRCUIT CURRENT (A):	0.04	MAX. VOLTAGE DROP:	0
				SPARE CIRCUIT CURRENT (A):	0.960	VOLTAGE DROP %:	0.02 %
				SPARE CIRCUIT CURRENT %:	96.00 %	MIN. OPERATIONAL VOLTAGE:	16

Miami 3226007 FA-301 24x36" - Arch D Size



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StarLink SLE-MAX2-CFBPS
Fire Alarm Communicator Standby Battery Calculations

WI2743LE 4/24

Standby Battery Calculations for the model **SLE-MAX2-CFBPS Fire Alarm Communicator:**

- **Standby Time Required:** 24_Hours
- **Standby Current Draw of Communicator:** 0.115A
- **Safety Factor:**..... 1.25

Required Standby Battery Capacity (AH) =
(Standby Hours) x (Communicator Standby Current Draw) x (Safety Factor)

Example:

(24 Hours) x (0.115 Amps) x (1.25 Safety Factor) = 3.45 AH

- Please note that a 1.25 Safety Factor = 0.75 (25%) Derating Factor. For 20% Derating Factor, use Safety Factor = 1.20

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MARCHI, MICHAEL	7/7/2026	12:44:29 PM	FIRE	Approved

MEDICAL CONSULTANTS
FIRE ALARM SYSTEM

P1 N1 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY		
		MAX. CIRCUIT CURRENT (A):		3	STARTING CALC. VOLTAGE:		20.40
		TOTAL CIRCUIT CURRENT (A):		0.6050	MAX. VOLTAGE DROP:		0.31
		SPARE CIRCUIT CURRENT (A):		2.40	VOLTAGE DROP %:		1.52 %
		SPARE CIRCUIT CURRENT %:		79.83 %	MIN. OPERATIONAL VOLTAGE:		16
						END OF LINE VOLTAGE:	
				WIRE RESISTANCE (Ω/KFT):		3.07	
				TOTAL CIRCUIT LENGTH (FT):		83	
				TOTAL CIRCUIT RESISTANCE (Ω):		0.512	
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED							
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED							
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)		TOTAL CURRENT (A)
	5	P2RL	2-WIRE, HORN STROBE, RED	75CD	0.121		0.6050
CALCULATION METHODS:							
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)							
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)							

P1 N2 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY			
		MAX. CIRCUIT CURRENT (A):		3	STARTING CALC. VOLTAGE:		20.40	
		TOTAL CIRCUIT CURRENT (A):		0.6050	MAX. VOLTAGE DROP:		0.31	
		SPARE CIRCUIT CURRENT (A):		2.40	VOLTAGE DROP %:		1.50 %	
		SPARE CIRCUIT CURRENT %:		79.83 %	MIN. OPERATIONAL VOLTAGE:		16	
						END OF LINE VOLTAGE:		20.09
						WIRE RESISTANCE (Ω/KFT):		3.07
				TOTAL CIRCUIT LENGTH (FT):		82		
				TOTAL CIRCUIT RESISTANCE (Ω):		0.506		
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED								
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED								
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANELAS	ALARM CURRENT (A)		TOTAL CURRENT (A)	
	5	P2RL	2-WIRE, HORN STROBE, RED	75CD	0.121		0.6050	
CALCULATION METHODS:								
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)								
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)								

P1 N3 LUMP SUM REPORT			CURRENT SUMMARY			POWER SUMMARY		
			MAX. CIRCUIT CURRENT (A):		3	STARTING CALC. VOLTAGE:		20.40
			TOTAL CIRCUIT CURRENT (A):		0.439	MAX. VOLTAGE DROP:		0.540
			SPARE CIRCUIT CURRENT (A):		2.56	VOLTAGE DROP %:		2.67 %
			SPARE CIRCUIT CURRENT %:		85.37 %	MIN. OPERATIONAL VOLTAGE:		16
						END OF LINE VOLTAGE:		19.86
						WIRE RESISTANCE (Ω/KFT):		3.07
						TOTAL CIRCUIT LENGTH (FT):		202
						TOTAL CIRCUIT RESISTANCE (Ω):		1.24
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED								
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED								
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)		TOTAL CURRENT (A)	
	2	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035		0.07	
	3	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087		0.261	
	6	SCRLED	STROBE, CEILING, RED	15CD	0.018		0.108	

P1 N4 LUMP SUM REPORT			CURRENT SUMMARY		POWER SUMMARY	
			MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.357	MAX. VOLTAGE DROP:	0.5
			SPARE CIRCUIT CURRENT (A):	2.64	VOLTAGE DROP %:	2.46 %
			SPARE CIRCUIT CURRENT %:	88.10 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	19.90
		WIRE RESISTANCE (Ω/KFT):	3.07			
		TOTAL CIRCUIT LENGTH (FT):	229			
		TOTAL CIRCUIT RESISTANCE (Ω):	1.40			
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
	3	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.105
	14	SCRLED	STROBE, CEILING, RED	15CD	0.018	0.252
CALCULATION METHODS:						
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)						
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)						

P2 N1 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY		
		MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40		
		TOTAL CIRCUIT CURRENT (A):	0.422	MAX. VOLTAGE DROP:	1.41		
		SPARE CIRCUIT CURRENT (A):	2.58	VOLTAGE DROP %:	6.92 %		
		SPARE CIRCUIT CURRENT %:	85.93 %	MIN. OPERATIONAL VOLTAGE:	16		
				END OF LINE VOLTAGE:	18.99		
				WIRE RESISTANCE (Ω/KFT):	3.07		
		TOTAL CIRCUIT LENGTH (FT):	545				
		TOTAL CIRCUIT RESISTANCE (Ω):	3.34				
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED							
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED							
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)	
	4	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.14	
	2	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.174	
	6	SCRLED	STROBE, CEILING, RED	15CD	0.018	0.108	
CALCULATION METHODS:							
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)							
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)							

P2 N2 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY		
		MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40		
		TOTAL CIRCUIT CURRENT (A):	0.423	MAX. VOLTAGE DROP:	1.52		
		SPARE CIRCUIT CURRENT (A):	2.58	VOLTAGE DROP %:	7.44 %		
		SPARE CIRCUIT CURRENT %:	85.90 %	MIN. OPERATIONAL VOLTAGE:	16		
				END OF LINE VOLTAGE:	18.88		
				WIRE RESISTANCE (Ω/KFT):	3.07		
				TOTAL CIRCUIT LENGTH (FT):	584		
				TOTAL CIRCUIT RESISTANCE (Ω):	3.59		
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED							
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED							
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)	
 C	3	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.105	
 C	2	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.174	
 C	8	SCRLED	STROBE, CEILING, RED	15CD	0.018	0.144	
CALCULATION METHODS:							
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)							
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)							

P2 N3 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY		
		MAX. CIRCUIT CURRENT (A):		3	STARTING CALC. VOLTAGE:		20.40
		TOTAL CIRCUIT CURRENT (A):		0.459	MAX. VOLTAGE DROP:		2.98
		SPARE CIRCUIT CURRENT (A):		2.54	VOLTAGE DROP %:		14.61 %
		SPARE CIRCUIT CURRENT %:		84.70 %	MIN. OPERATIONAL VOLTAGE:		16
				END OF LINE VOLTAGE:		17.42	
				WIRE RESISTANCE (Ω/KFT):		3.07	
				TOTAL CIRCUIT LENGTH (FT):		1057	
TOTAL CIRCUIT RESISTANCE (Ω):				6.49			
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED							
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED							
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)	
	6	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.21	
	1	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.087	
	9	SCRLED	STROBE, CEILING, RED	15CD	0.018	0.162	
CALCULATION METHODS:							
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)							
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)							

P2 N4 LUMP SUM REPORT		CURRENT SUMMARY			POWER SUMMARY	
		MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40	
		TOTAL CIRCUIT CURRENT (A):	0.474	MAX. VOLTAGE DROP:	2.93	
		SPARE CIRCUIT CURRENT (A):	2.53	VOLTAGE DROP %:	14.36 %	
		SPARE CIRCUIT CURRENT %:	84.20 %	MIN. OPERATIONAL VOLTAGE:	15	
				END OF LINE VOLTAGE:	17.47	
				WIRE RESISTANCE (Ω/KFT):	3.07	
				TOTAL CIRCUIT LENGTH (FT):	1007	
				TOTAL CIRCUIT RESISTANCE (Ω):	6.18	
CIRCUIT WIRING PROPERTIES: "V" 14/2 FPLP/R NAC 14 AWG, 2 COND. SOLID COPPER FPLP/R ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAES	ALARM CURRENT (A)	TOTAL CURRENT (A)
 C	6	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.21
 C	2	PC2RLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.174
 C	5	SCRLED	STROBE, CEILING, RED	15CD	0.018	0.09
CALCULATION METHODS:						
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)						
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)						

Approved as noted.
Revised voltage drop calculations required prior to inspection.
Use 19.2 VDC as the starting voltage as indicated in the manufacturer's manual, section 1.3
Output Circuits- TB8-TB14 on page 2 of PowerStrike Series LS10227-005GE-E-F dated
December 5, 2024. This supersedes the FCPS-24FS Series manual. NFPA 72:10.3.2.
MM MDRF

			CURRENT SUMMARY		POWER SUMMARY	
FA N1 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	2.50	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.352	MAX. VOLTAGE DROP:	0.14
			SPARE CIRCUIT CURRENT (A):	2.15	VOLTAGE DROP %:	0.71 %
			SPARE CIRCUIT CURRENT %:	85.92 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	20.26
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	67
					TOTAL CIRCUIT RESISTANCE (Ω):	0.411339

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 WP	2	P2RK	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR	75CD	0.176	0.352

CALCULATION METHODS:
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)

			CURRENT SUMMARY		POWER SUMMARY	
FA N2 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	2.50	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.352	MAX. VOLTAGE DROP:	0.880
			SPARE CIRCUIT CURRENT (A):	2.15	VOLTAGE DROP %:	4.33 %
			SPARE CIRCUIT CURRENT %:	85.92 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	19.52
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	408
					TOTAL CIRCUIT RESISTANCE (Ω):	2.51

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 WP	2	P2RK	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR	75CD	0.176	0.352

CALCULATION METHODS:
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)

			CURRENT SUMMARY		POWER SUMMARY	
FA N3 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	2.50	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.352	MAX. VOLTAGE DROP:	1.73
			SPARE CIRCUIT CURRENT (A):	2.15	VOLTAGE DROP %:	8.47 %
			SPARE CIRCUIT CURRENT %:	85.92 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	18.67
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	799
					TOTAL CIRCUIT RESISTANCE (Ω):	4.91

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 WP	2	P2RK	2-WIRE HORN STROBE, STANDARD CD, RED, OUTDOOR	75CD	0.176	0.352

CALCULATION METHODS:
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)

			CURRENT SUMMARY		POWER SUMMARY	
FA N4 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	2.50	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.0434	MAX. VOLTAGE DROP:	0
			SPARE CIRCUIT CURRENT (A):	2.46	VOLTAGE DROP %:	0.02 %
			SPARE CIRCUIT CURRENT %:	98.26 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	20.40
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	16
					TOTAL CIRCUIT RESISTANCE (Ω):	0.096695

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 NAC	2	FCPS-24FS6	6.0 A, 120 VAC REMOTE CHARGER POWER SUPPLY		0.0217	0.0434

CALCULATION METHODS:
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)

			CURRENT SUMMARY		POWER SUMMARY	
P1 N1 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.6050	MAX. VOLTAGE DROP:	0.32
			SPARE CIRCUIT CURRENT (A):	2.40	VOLTAGE DROP %:	1.57 %
			SPARE CIRCUIT CURRENT %:	79.83 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	20.08
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	86
					TOTAL CIRCUIT RESISTANCE (Ω):	0.528

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 WP	5	P2RL	2-WIRE, HORN STROBE, RED	75CD	0.121	0.6050

CALCULATION METHODS:
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)

			CURRENT SUMMARY		POWER SUMMARY	
P1 N2 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.6050	MAX. VOLTAGE DROP:	0.29
			SPARE CIRCUIT CURRENT (A):	2.40	VOLTAGE DROP %:	1.44 %
			SPARE CIRCUIT CURRENT %:	79.83 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	20.11
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	79
					TOTAL CIRCUIT RESISTANCE (Ω):	0.486672

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 WP	5	P2RL	2-WIRE, HORN STROBE, RED	75CD	0.121	0.6050

CALCULATION METHODS:
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)

			CURRENT SUMMARY		POWER SUMMARY	
P1 N3 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.8110	MAX. VOLTAGE DROP:	1.61
			SPARE CIRCUIT CURRENT (A):	2.19	VOLTAGE DROP %:	7.91 %
			SPARE CIRCUIT CURRENT %:	72.97 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	18.79
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	324
					TOTAL CIRCUIT RESISTANCE (Ω):	1.99

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 WP	2	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.07

 WP	5	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.435
 C	17	SCRLED	STROBE, CEILING, RED	15CD	0.018	0.306

CALCULATION METHODS:
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)

			CURRENT SUMMARY		POWER SUMMARY	
P1 N4 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.357	MAX. VOLTAGE DROP:	0.590
			SPARE CIRCUIT CURRENT (A):	2.64	VOLTAGE DROP %:	2.88 %
			SPARE CIRCUIT CURRENT %:	88.18 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	19.81
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	268
					TOTAL CIRCUIT RESISTANCE (Ω):	1.65

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 WP	3	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.105

 C	14	SCRLED	STROBE, CEILING, RED	15CD	0.018	0.252
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CALCULATION METHODS:
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)

			CURRENT SUMMARY		POWER SUMMARY	
P2 N1 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.422	MAX. VOLTAGE DROP:	1.32
			SPARE CIRCUIT CURRENT (A):	2.58	VOLTAGE DROP %:	6.45 %
			SPARE CIRCUIT CURRENT %:	85.93 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	19.08
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	508
					TOTAL CIRCUIT RESISTANCE (Ω):	3.12

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 WP	4	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.14

 WP	2	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.174
 C	6	SCRLED	STROBE, CEILING, RED	15CD	0.018	0.108

CALCULATION METHODS:
TOTAL RESISTANCE (Ω) = WIRE RESISTANCE (Ω/FT) X 2 X TOTAL CIRCUIT LENGTH (FT)
TOTAL VOLTAGE DROP = TOTAL RESISTANCE (Ω) X TOTAL CIRCUIT CURRENT (A)

			CURRENT SUMMARY		POWER SUMMARY	
P2 N2 LUMP SUM REPORT			MAX. CIRCUIT CURRENT (A):	3	STARTING CALC. VOLTAGE:	20.40
			TOTAL CIRCUIT CURRENT (A):	0.423	MAX. VOLTAGE DROP:	1.40
			SPARE CIRCUIT CURRENT (A):	2.58	VOLTAGE DROP %:	6.88 %
			SPARE CIRCUIT CURRENT %:	85.90 %	MIN. OPERATIONAL VOLTAGE:	16
					END OF LINE VOLTAGE:	19
					WIRE RESISTANCE (Ω/KFT):	3.07
					TOTAL CIRCUIT LENGTH (FT):	541
					TOTAL CIRCUIT RESISTANCE (Ω):	3.32

CIRCUIT WIRING PROPERTIES: "V" 14/2 FPL/PR NAC 14 AWG, 2 COND. SOLID COPPER FPL/PR ANALOG UNSHIELDED						
DISTANCE MEASURED USING DRAWN SEGMENT LENGTHS WITH 10.00 % ADDITIONAL LENGTH CALCULATED						
SYMBOL	QUANTITY	PART NO	DESCRIPTION	CANDELAS	ALARM CURRENT (A)	TOTAL CURRENT (A)
 WP	3	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED	15CD	0.035	0.105

 C	2	PC2RLLED	2-WIRE, HORN STROBE, CEILING, RED	75CD	0.087	0.174
 C	8	SCRLLED	STROBE, CEILING, RED	15CD	0.018	0.144

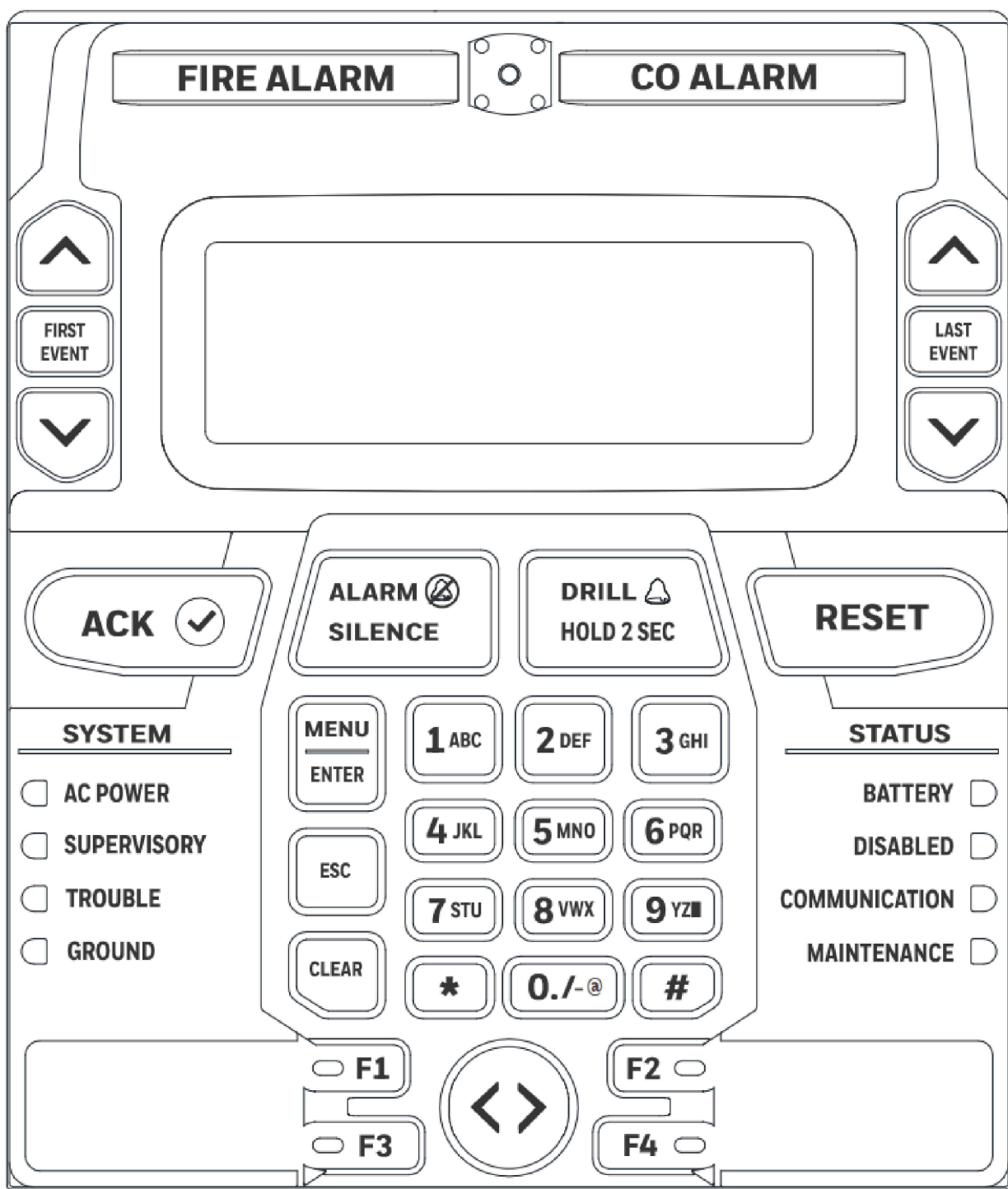
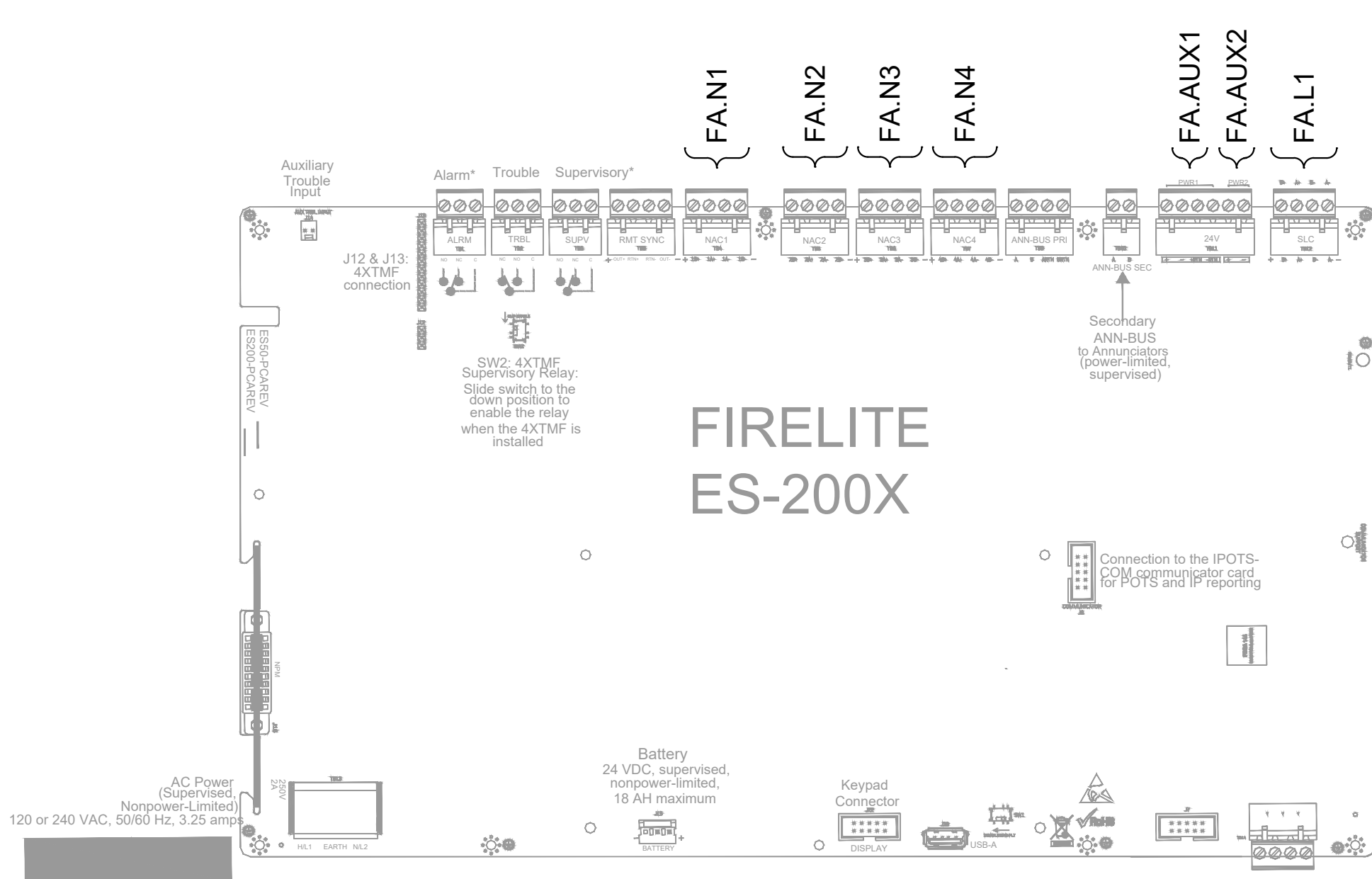
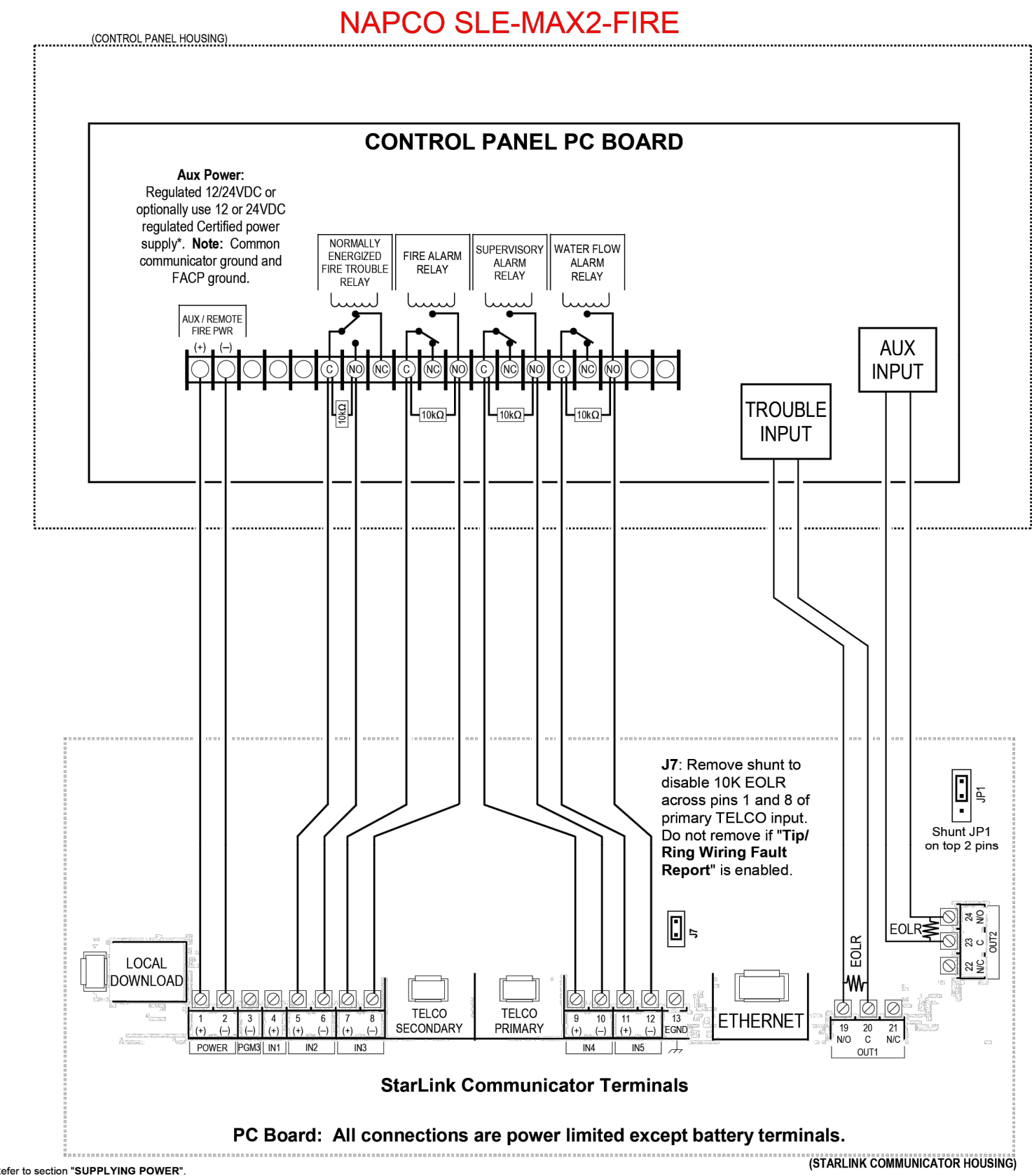


Figure 1.2 Membrane/Display Panel

Wiring Diagram for FACP Relay Trigger Input Reporting



StarLink™ SLE-MAX2-FIRE Commercial Series Solo/Dual-Path Alarm Communicator -- Installation Instructions

INSTALLATION AND MAINTENANCE INSTRUCTIONS



CRF-300 Relay Control Module

SPECIFICATIONS
Normal Operating Voltage: 15 to 32 VDC
Maximum Current Draw: 6.5mA (LED on)
Average Operating Current: 230 µA direct poll; 255 µA group poll
EOL Resistance: Not used
Temperature Range: 32°F to 120°F (0°C to 49°C)
Humidity: 10% to 80% Non-condensing
Dimensions: 4.675" H x 4.275" W x 1.4" D (Mounts to a 4" square by 2 1/4" deep box.)
Accessories: SMB500 Electrical Box, CB500 Barrier

RELAY CONTACT RATINGS:

CURRENT RATINGS	MAXIMUM VOLTAGE	LOAD DESCRIPTION	APPLICATION
2 A	25 VAC	PF = 0.35	Non-coded
3 A	30 VDC	Resistive	Non-coded
2 A	30 VDC	Resistive	Coded
0.46 A	30 VDC	(LR = 20ms)	Non-coded
0.7 A	70 V VAC	PF = 0.35	Non-coded
0.9 A	125 VDC	Resistive	Non-coded
0.6 A	125 VDC	PF = 0.75	Non-coded
0.3 A	125 VAC	PF = 0.35	Non-coded

BEFORE INSTALLING

This information is included as a quick reference installation guide. Refer to the control panel installation manual for detailed system information. If the modules will be installed in an existing operational system, inform the operator and local authority that the system will be temporarily out of service. Disconnect power to the control panel before installing the modules.

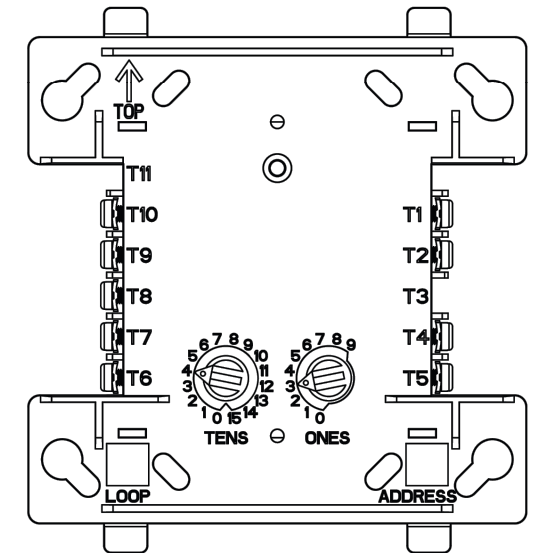
GENERAL DESCRIPTION

The CRF-300 Relay Control Module is intended for use in addressable, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It allows a compatible control panel to switch discrete contacts by code command. The relay contains two isolated sets of Form-C contacts, which operate as a DPDT switch and are rated in accordance with the table in the manual. Circuit connections to the relay contacts are not supervised by the module. The module also has a panel controlled LED indicator. This module can be used to replace an CS34 module that has been configured for Form-C operation.

COMPATIBILITY REQUIREMENTS

To ensure proper operation, these modules shall be connected to listed compatible system control panels only.

FIGURE 1. CONTROLS AND INDICATORS:



MOUNTING

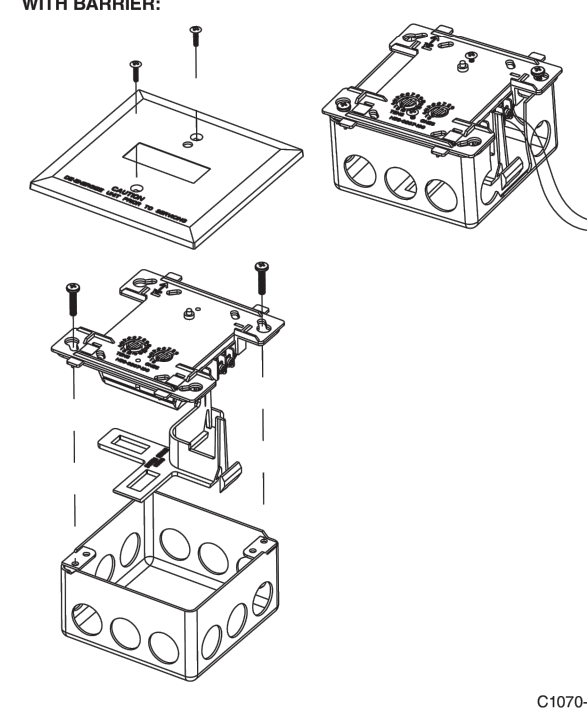
The CRF-300 mounts directly to 4-inch square electrical boxes (see Figure 2A). The box must have a minimum depth of 2 1/4 inches. Surface mounted electrical boxes (SMB500) are available. The module can also mount to the DB55PL or DNR(W) dust housing.

FL-460-001

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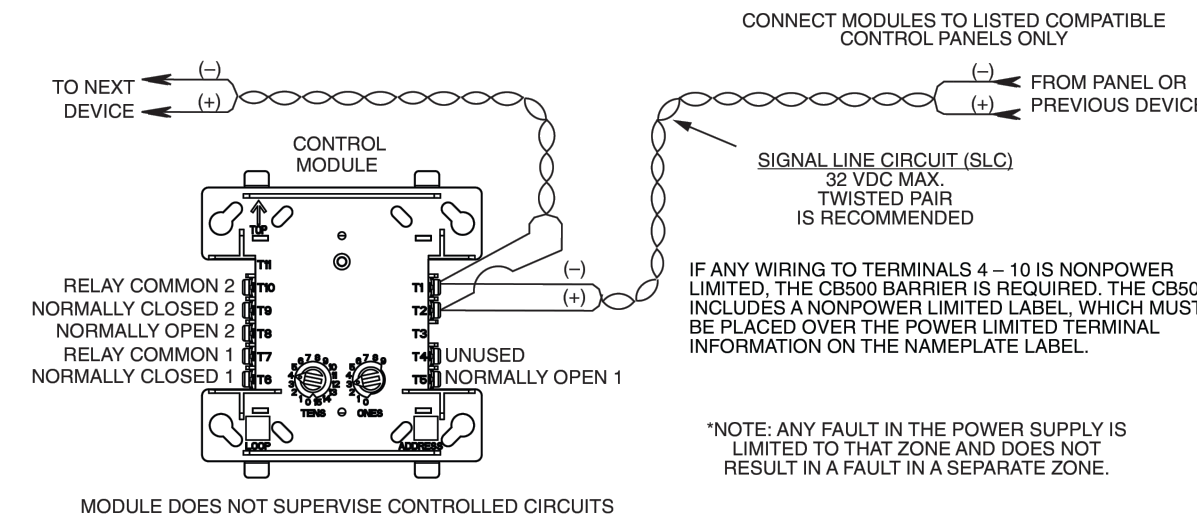
156-3651-006

FIGURE 2A. MODULE MOUNTING WITH BARRIER:



All relay switch contacts are shipped in the standby state (open) state, but may have transferred to the activated (closed) state during shipping. To ensure that the switch contacts are in their correct state, modules must be made to communicate with the panel before connecting circuits controlled by the module.

FIGURE 3. RELAY MODULE WIRING DIAGRAM:



MODULE DOES NOT SUPERVISE CONTROLLED CIRCUITS

FL-460-001

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156-3651-006

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(305) 468-1145

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ING TECH NET, INC.

PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 15659
EXPIRATION DATE: 07/01/27

MARLOW SEERLEN, P.E.
REGISTERED PROFESSIONAL ENGINEER
FL #15659

DATE: 06/22/2026
ELECTRONIC SIGNATURE

MEDICAL CONSULTANTS FIRE ALARM SYSTEM

15700 NW 67TH AVE
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MIAMI LAKES, FL 33014

ISSUE NO.	DATE	CD	CHK	DESCRIPTION
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PERMIT SET

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SYSTEM:
FIRE ALARM SYSTEM

SHEET:

PANEL & WIRING
DETAILS

FA-401



Field Charger/Power Supply

FCPS-24FS6

FCPS-24FS8

Document	#51883	B
12/04/02	Revision:	

Fire Alarm System Limitations

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control with remote notification capability—can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premise following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, or chimneys may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

While a fire alarm system may lower insurance rates, it is not a substitute for fire insurance!

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. *Heat detectors are designed to protect property, not life.*

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol or medication. Please note that:

- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercise to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of fire alarm malfunction is inadequate maintenance. To keep the entire fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of Chapter 7 of NFPA 72 shall be followed. Environments with large amounts of dust, dirt or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional fire alarm installers only. Adequate written records of all inspections should be kept.

Installation Precautions

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until this manual is read and understood.

CAUTION - *System Reacceptance Test after Software Changes.* To ensure proper system operation, this product must be tested in accordance with NFPA 72 Chapter 7 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49° C/32-120° F and at a relative humidity of 85% RH (non-condensing) at 30° C/86° 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 all peripherals be installed in an environment with a nominal room temperature of 15-27° C/60-80° F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Adherence to the following will aid in problem-free installation with long-term reliability:

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning-induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. *Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes.* Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

Though designed to last many years, system components can fail at any time. This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static-suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation by authorized personnel.

FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing device pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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Notes

It is imperative that the installer understand the requirements of the Authority Having Jurisdiction (AHJ) and be familiar with the standards set forth by the following regulatory agencies:

- Underwriters Laboratories Standards
- NFPA 72 National Fire Alarm Code

Before proceeding, the installer should be familiar with the following documents.



NFPA Standards

NFPA 72 National Fire Alarm Code
NFPA 70 National Electrical Code



Underwriters Laboratories Documents:

UL 464 Audible Signaling Appliances
UL 864 Standard for Control Units for Fire Protective Signaling Systems
UL 1638 Visual Signaling Appliances
UL 1971 Signaling Devices for Hearing Impaired

Other:

NEC Article 250 Grounding
NEC Article 300 Wiring Methods
NEC Article 760 Fire Protective Signaling Systems
Applicable Local and State Building Codes
Requirements of the Local Authority Having Jurisdiction (LAHJ)

Other Fire•Lite Documents:

Device Compatibility Document Document #15384

SECTION 1

System Overview

The FCPS-24FS6 is a 6 amp power supply and the FCPS-24FS8 is an 8 amp power supply. Each FCPS-24FS power supply is a compact, cost-effective, remote power supply and battery charger which provides ADA compatible strobe synchronization. The remote power supplies consist of a filtered 24 VDC output that can be configured to drive four Style Y (Class B) NACs (Notification Appliance Circuits). The four circuits can be configured for Style Z (Class A) with the optional ZNAC-4 Class A converter module. Alternatively, the four output circuits may be configured as 24 VDC resettable or nonresettable power outputs. The input circuits, which control the power supply operation, are triggered by the reverse polarity of an NAC or by a 12 VDC or 24 VDC power source. The power supplies are compatible with 12 VDC and 24 VDC control panels.

1.1 General

The FCPS-24FS power supplies can be used as remotely mounted power supplies and battery chargers to power four noncoded or coded NACs. The Main FACP (Fire Alarm Control Panel) NAC(s) is connected to the remote power supply input circuit(s). When the control input circuit activates due to reverse polarity of the NAC from the FACP, the power supply will activate its Notification Appliance Circuits.

During the inactive or nonalarm state, the power supply supervises its NAC field wiring for short and open conditions. AC fail, battery, charger and ground fault troubles will also be monitored by the power supply. If an NAC or power supply fault is detected, the power supply Normally-Closed Trouble contact will open.

If an alarm condition occurs and the NAC is activated, the supervision is disabled and the Notification Appliance Circuit is no longer supervised. Supervision of other power supply faults such as low battery, AC loss, ground fault and battery charger trouble will continue and may be monitored via the Trouble relay contacts.

1.2 Features

- Self-contained in a lockable cabinet
- 24 VDC remote power supply
- Outputs are completely power-limited
- Two optically-isolated input/control circuits, compatible with 12 VDC and 24 VDC control panel NACs
- Four output circuits:
 - ✓ Fully filtered power
 - ✓ Four 24 VDC Style Y (Class B) NACs
 - ✓ Optional ZNAC-4 Class A converter module for conversion to Style Z NACs
 - ✓ Alternatively, all four circuits may be configured as 24 VDC power outputs
 - ✓ Output circuits may be configured as resettable or nonresettable
- NAC Trouble LED - blinks to indicate the number of the circuit in trouble
- Maximum current available for any one output circuit: 3.0 amps
- Maximum total continuous current available:
 - ✓ 4.0 amps for FCPS-24FS6
 - ✓ 6.0 amps for FCPS-24FS8

- Maximum total short term current (one hour maximum):
 - ✓ 6.0 amps for FCPS-24FS6
 - ✓ 8.0 amps for FCPS-24FS8
- Integral supervised battery charger for lead acid batteries only
- Capable of charging 7.0 AH to 18.0 AH (Amp Hour) batteries
- Fully supervised power supply, battery and NACs
- Selectable Strobe Synchronization for NACs (System Sensor, Gentex and Wheelock)
- Coded signal synchronization
- Fixed terminal blocks for field wiring capable of accepting 12 - 22 AWG wire
- Selectable Ground Fault detection by jumper JP1
- Power supply trouble Form-C relay contacts (fail-safe)
- Optional delay of AC loss reporting for 8 hours
- Auxiliary Power Output for SLC modules (500 mA maximum) with optional reset for 4-wire smoke detectors
- Mounting location for optional addressable control module

1.3 Start-up Procedure

1. Configure the power supply jumpers as described in "Jumpers" on page 10
2. Install the power supply as described in "Installation" on page 14
3. Program the power supply as described in "Programming Options" on page 19
4. Wire the power supply circuits, referring to the options described in "Trouble Supervision" on page 24 and the application examples in "Applications" on page 26
5. Connect primary power source wiring while observing the following:



- ✓ Make certain that the AC mains circuit breaker is **off** before making any wiring connections between the mains and the power supply
 - ✓ Make certain primary power source is 120 VAC, 60 Hz, 3.2 amps
 - ✓ Run a pair of wires (with ground conductor) from the protected premises main breaker box to TB1 of the power supply main circuit board
 - ✓ Use 14 AWG (1.6 mm O.D.) or heavier gauge wire with 600V insulation
6. Apply power to the power supply using the following procedure:
 - ✓ connect a properly charged battery to connector JP4 on the power supply main circuit board
 - ✓ apply AC power by turning on the AC mains circuit breaker connected to the power supply

1.4 Jumpers

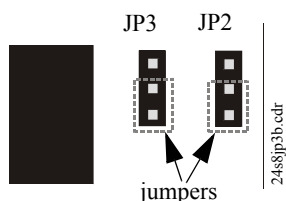


CAUTION! Remove all power (AC & DC) before cutting or moving any jumpers.

1.4.1 Jumper JP1 - Ground Fault Detection

Jumper JP1 is located in the top right section of the power supply circuit board. Cutting JP1 will disable ground fault detection by the power supply. This should only be done if ground faults are being monitored by a panel connected to the FCPS power supply.

1.4.2 Jumpers JP2 and JP3: Coded/Noncoded Input Selection



Jumper positions shown
for noncoded (steady)
source voltage

Jumpers JP2 and JP3 are located in the top right section of the power supply circuit board. JP2 is used for Control Input Circuit #1 and JP3 is used for Control Input Circuit #2. The position of these jumpers will depend on the type of signal being fed to the input circuits:

- If the source voltage to the input circuit is a noncoded (steady voltage) input signal, the jumper for the corresponding input circuit should be in the default position which jumpers the bottom two pins (as illustrated in drawing at left).
- If the source voltage to the input circuit is coded (variable voltage), the jumper for the corresponding input circuit should be moved to jumper the top two pins.

1.5 LED Indicators

- AC Power on (green) LED - indicates AC power is present
- Ground Fault (yellow) LED - indicates a ground fault condition
- Battery Trouble (yellow) LED - indicates low or no battery
- NAC Trouble (yellow) LED - indicates a Notification Appliance Circuit trouble (blinks once for Circuit 1 trouble, twice for Circuit 2 trouble, three times for Circuit 3 trouble and four times for Circuit 4 trouble. Note that multiple circuits in trouble will cause the LED to blink the number of the circuit with the highest number)
- Charger Trouble/AC Loss (yellow) LED - indicates a charger fault or loss of AC power

1.6 Specifications

Refer to Figure 1.1 on page 12 for terminal locations.

Primary AC Power - TB1

- 120 VAC, 60 Hz, 3.2 amps maximum
- Wire size: minimum #14 AWG with 600V insulation

Control Input Circuits - TB4, Terminals 3 (+) & 4 (-) and 7 (+) & 8 (-)

- Trigger Input Voltage: 9 to 32 VDC
- Input Current Draw in Alarm Polarity:
 - ✓ 16 to 32 volts, 2.0 mA maximum per input
 - ✓ 9 to 16 volts, 1.0 mA maximum per input

NAC/Output Circuits - TB2, Terminals 1 (+) & 2 (-), 3 (+) & 4 (-), 5 (+) & 6 (-) and 7 (+) & 8 (-) alarm polarity

- Voltage Rating: 24 VDC filtered
- Current:
 - ✓ Maximum for any one circuit - 3.0 amps
 - ✓ Maximum total continuous current for all output:
 - FCPS-24FS6 - 4.0 amps
 - FCPS-24FS8 - 6.0 amps
 - ✓ Maximum total short term current (one hour maximum) for all outputs:
 - FCPS-24FS6 - 6.0 amps
 - FCPS-24FS8 - 8.0 amps
- Output Circuit Types:
 - ✓ Four Style Y NACs (require 4.7 K Ω End-of-Line Resistors) or Style Z NACs using the optional ZNAC-4 Class A converter module
- OR**
- ✓ Four resettable or nonresettable 24 VDC power outputs
- Refer to Fire•Lite Device Compatibility Document for listed compatible devices

Trouble Relay Contact Rating - TB5

- Fail-safe Form-C relay (normally energized, transfers with loss of power)
- 5.0 amps @ 24 VDC or 5.0 amps @ 30 VAC

Secondary Power (battery) Charging Circuit - JP4

- Supports lead acid type batteries only
- Float Charge Voltage: 27.6 VDC
- Maximum Charge Current: 1.5 A
- Battery fuse (F1) 15A, 30V
- Maximum Battery Capacity: 18.0 AH
- Power supply draws maximum standby current of 65 mA from batteries

Auxiliary Power Output - TB4 Terminals 9 (+) & 10 (-)

- Specific application power
- Voltage Rating: 24 VDC
- Current:
 - ✓ 170 mA maximum with internal 7.0 Amp Hour batteries
 - ✓ 500 mA maximum with external 18.0 Amp Hour batteries

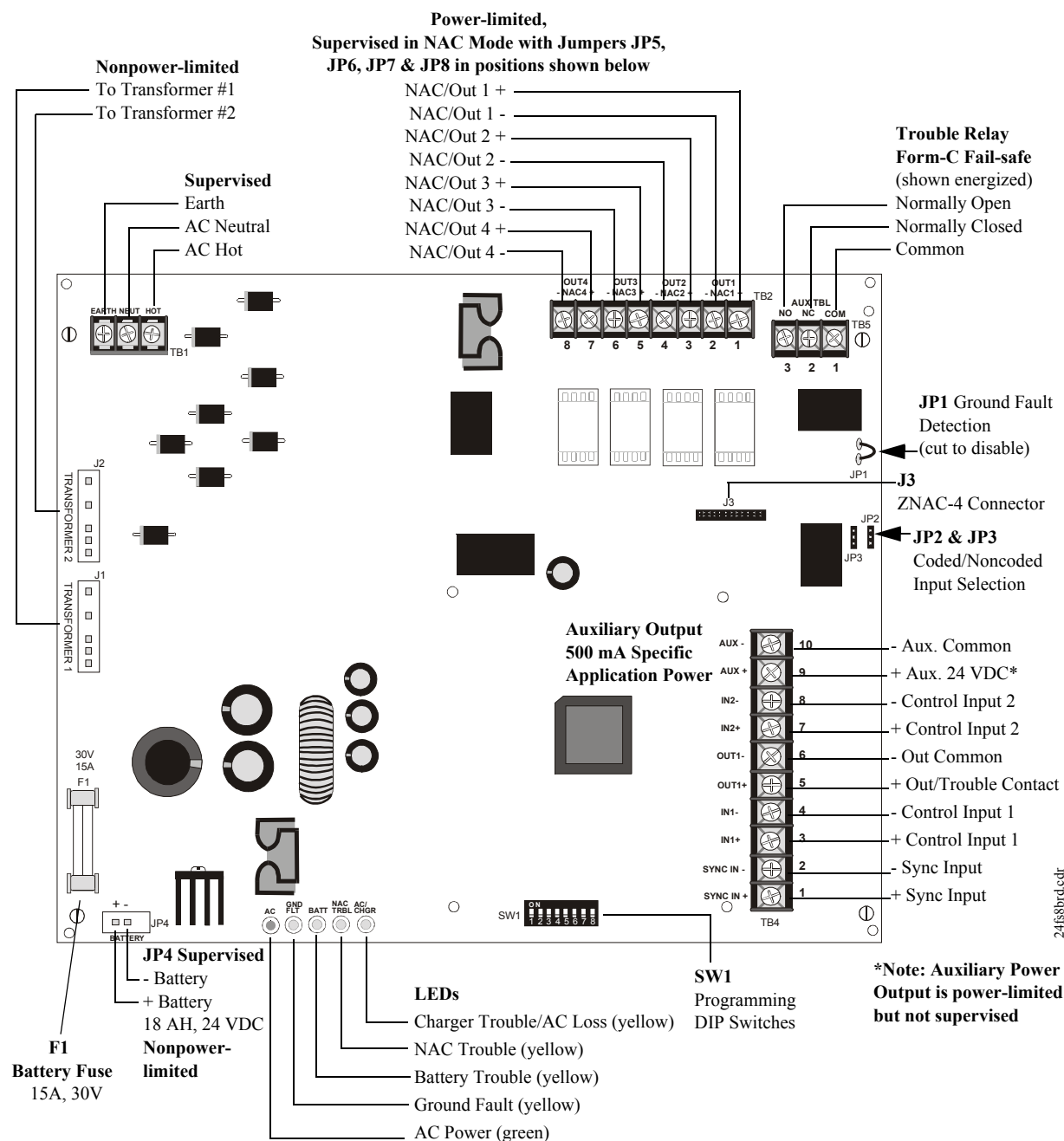


Figure 1.1 FCPS-24FS Board Layout

1.7 General

The FCPS may be used in a number of different applications. It may be used as a remotely-mounted power supply and battery charger where it can provide up to four coded or noncoded, synchronized or nonsynchronized NACs (Notification Appliance Circuits). Alternatively, output #4 can be used as a door holder circuit which will provide a steady 24 VDC output until an alarm condition or AC fail condition causes it to drop to 0 VDC following a 60 second delay. All four outputs can also provide power.

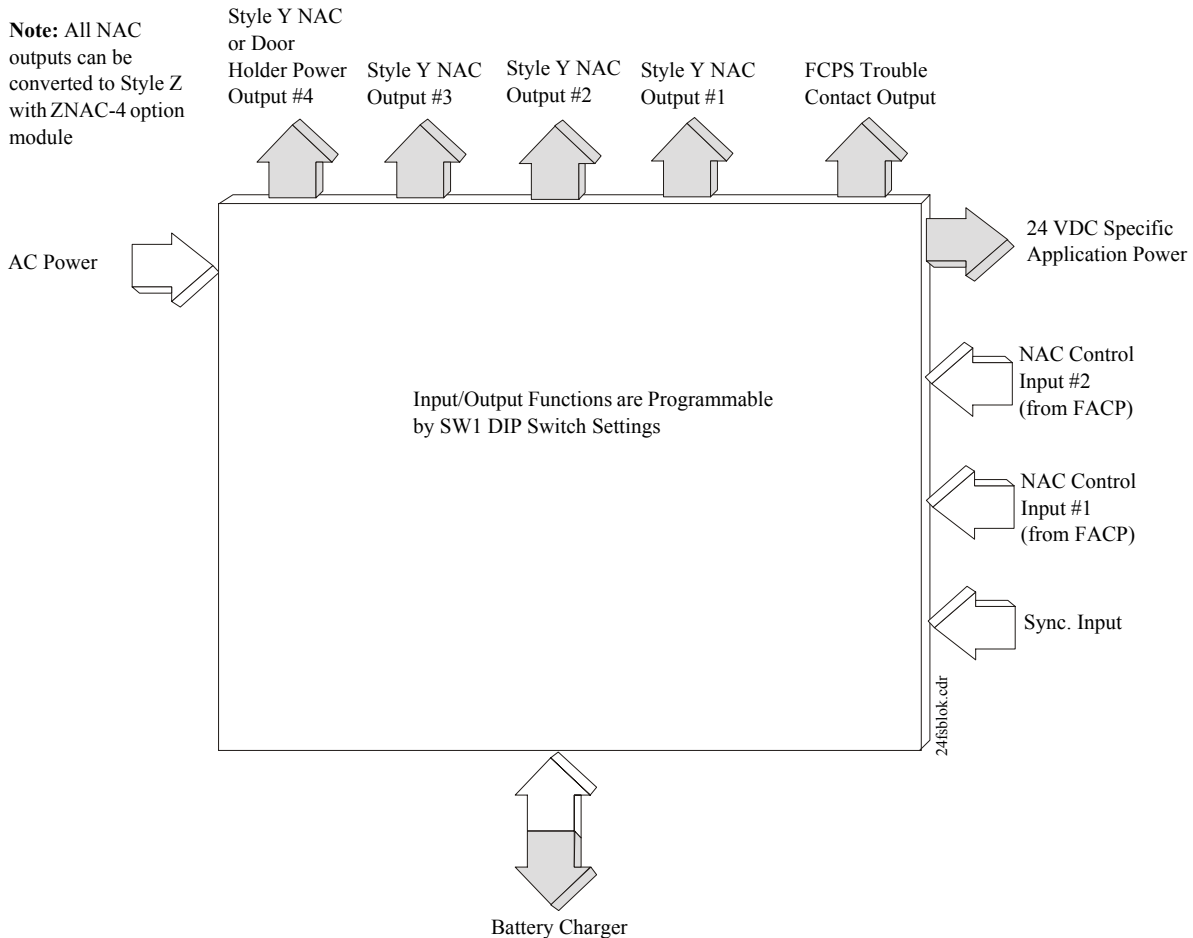


Figure 1.2 Simplified FCPS Block Diagram

One possible application for the FCPS remote power supply utilizes the NAC repeater feature. In this application, one or two NACs are connected from the main FACP to the remote power supply control input circuits. When the control input circuits are activated by the reverse polarity of the NACs, the power supply will activate its corresponding output circuits as programmed by SW1 DIP switch configuration (refer to Table 3.1 on page 20).

During the inactive state, the remote power supply supervises its NAC field wiring for short and open conditions. If a fault is detected, the power supply will enter a trouble condition and illuminate the NAC Trouble LED. When the NACs are activated, the supervision is disabled and the circuits are no longer supervised. Supervision of other power supply faults such as low battery, battery charger trouble, ground fault and AC loss will continue and may be monitored via the power supply trouble relay.

If an application requires that all four outputs activate at the same time, only one NAC is required from the FACP. For this application, the NAC is connected to control input circuit #1 and SW1 DIP switch is set for this operation.

SECTION 2

Installation

Carefully unpack the system and check for shipping damage. Select a location for the cabinet that is in a clean, dry, vibration-free area where extreme temperatures are not encountered. The area should be readily accessible with sufficient room to easily install and maintain the power supply. Locate the top of the cabinet approximately five feet above the floor with the hinge mounting on the left. Determine the number of conductors required for the devices to be installed and determine the appropriate knockouts. All wiring must be in accordance with the National and/or Local codes for fire alarm systems and power supplies.

2.1 Backbox Mounting



The circuit board contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any boards so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies.

1. Remove the PC board and transformers from the backbox before installing backbox. Set the board and transformers aside in a safe, clean place. *Avoid static discharge which may damage static sensitive components on the board*
2. Mark and predrill holes for the top two keyhole mounting bolts
3. Install two upper fasteners in the wall with the screw heads protruding approximately 1/4"
4. Using the upper keyholes, mount the backbox over the two screws
5. Mark the lower two holes, remove the backbox from the wall and drill the mounting holes
6. Mount the backbox, install the remaining fasteners and tighten all screws
7. When the location is dry and free of construction dust, reinstall the PC board and transformers and continue with the installation
8. **IMPORTANT!** Make certain to connect the supplied *grounding strap* between the *Earth* terminal on TB1 (AC Terminal Block) of the main circuit board and the chassis *ground stud* as illustrated in Figure 2.1:

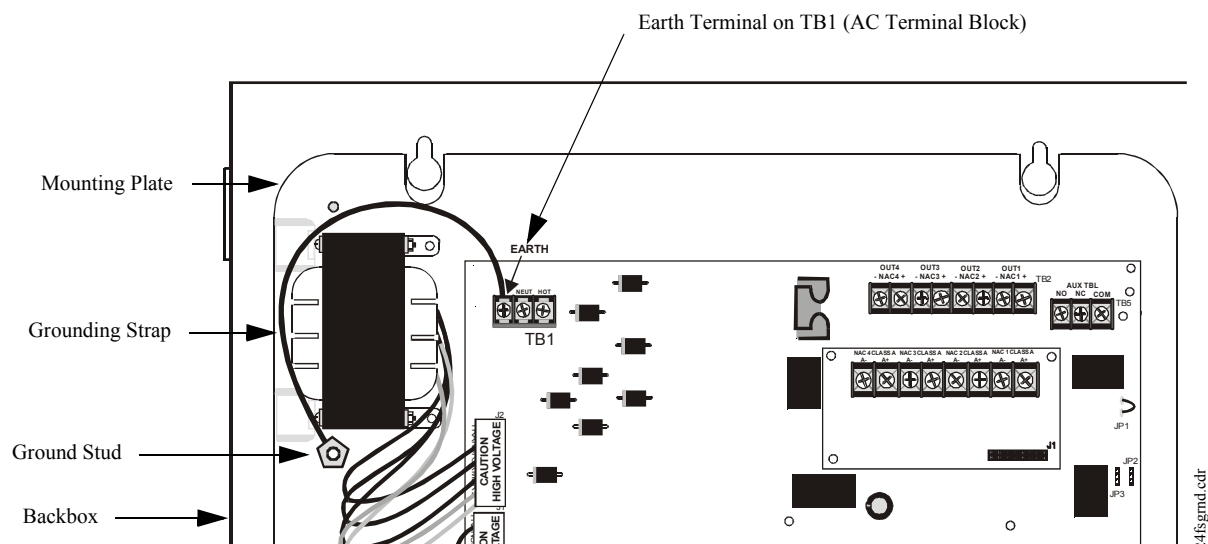


Figure 2.1 Grounding Strap

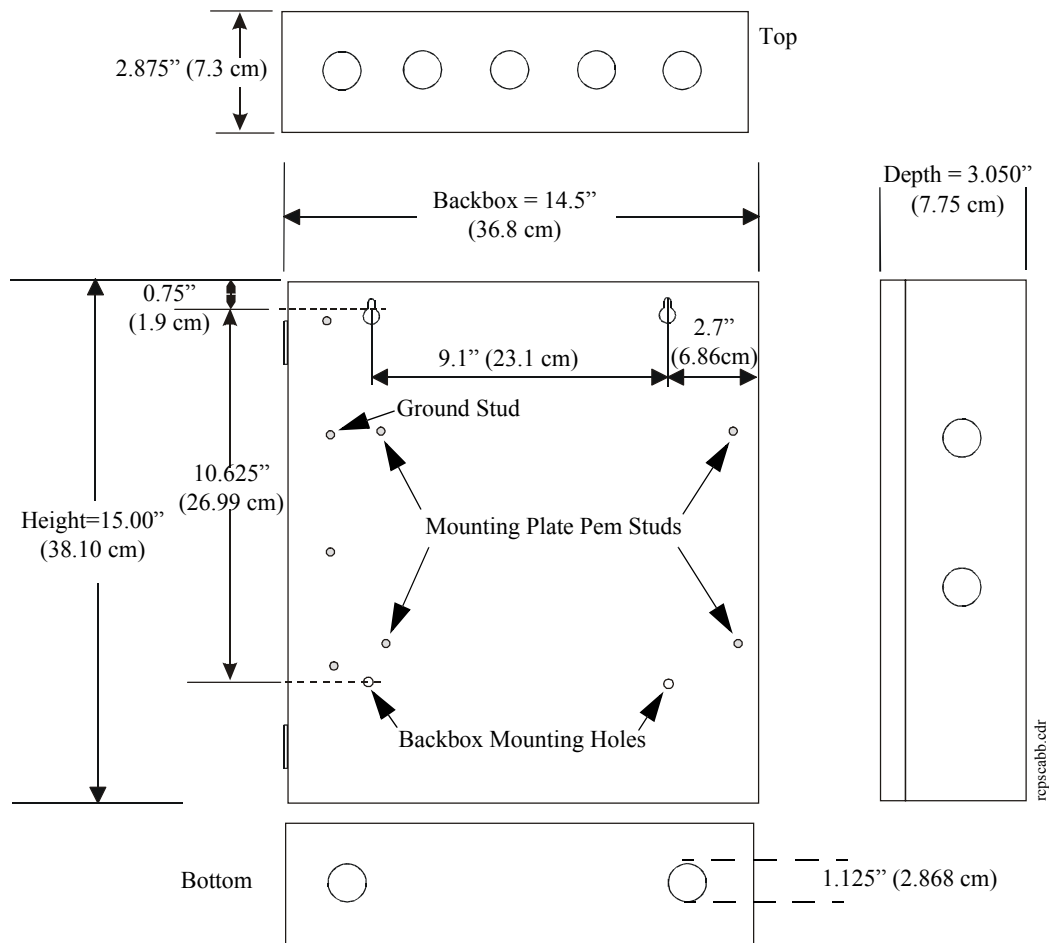


Figure 2.2 Backbox Mounting Dimensions

2.2 NAC Circuit Wiring

2.2.1 Style Y (Class B)

The standard configuration for NACs is Style Y (Class B) as shown in Figure 2.3.

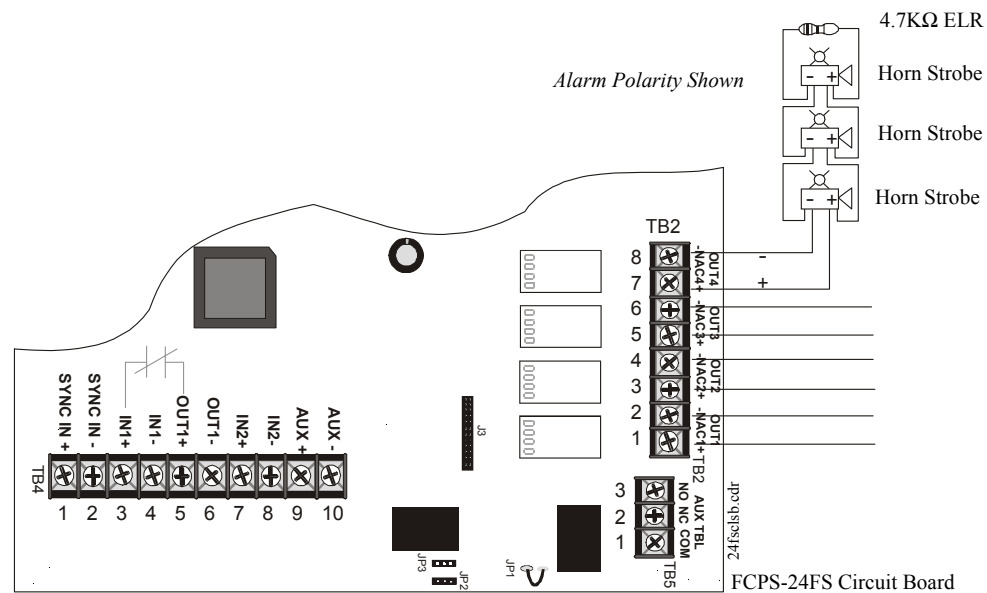


Figure 2.3 NAC Style Y (Class B)

2.2.2 ZNAC-4 Class A Option Module

The ZNAC-4 is an optional Class A conversion module which mounts to connector J3 on the upper right side of the FCPS-24FS circuit board. This module allows the FCPS-24FS6 or FCPS-24FS8 to support Style Z (Class A) Notification Appliance Circuits.

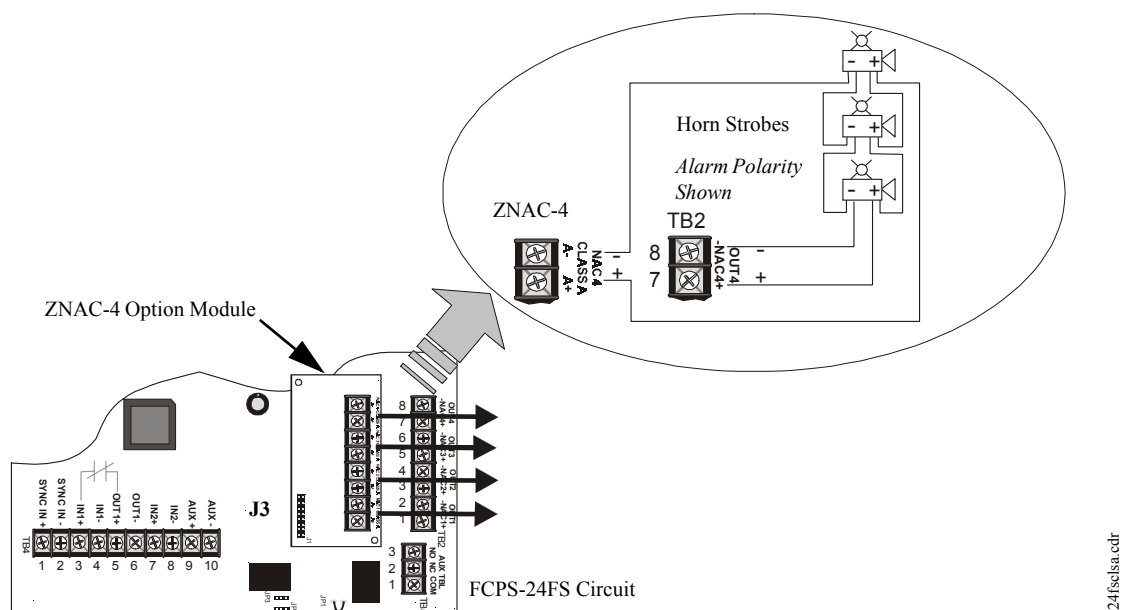


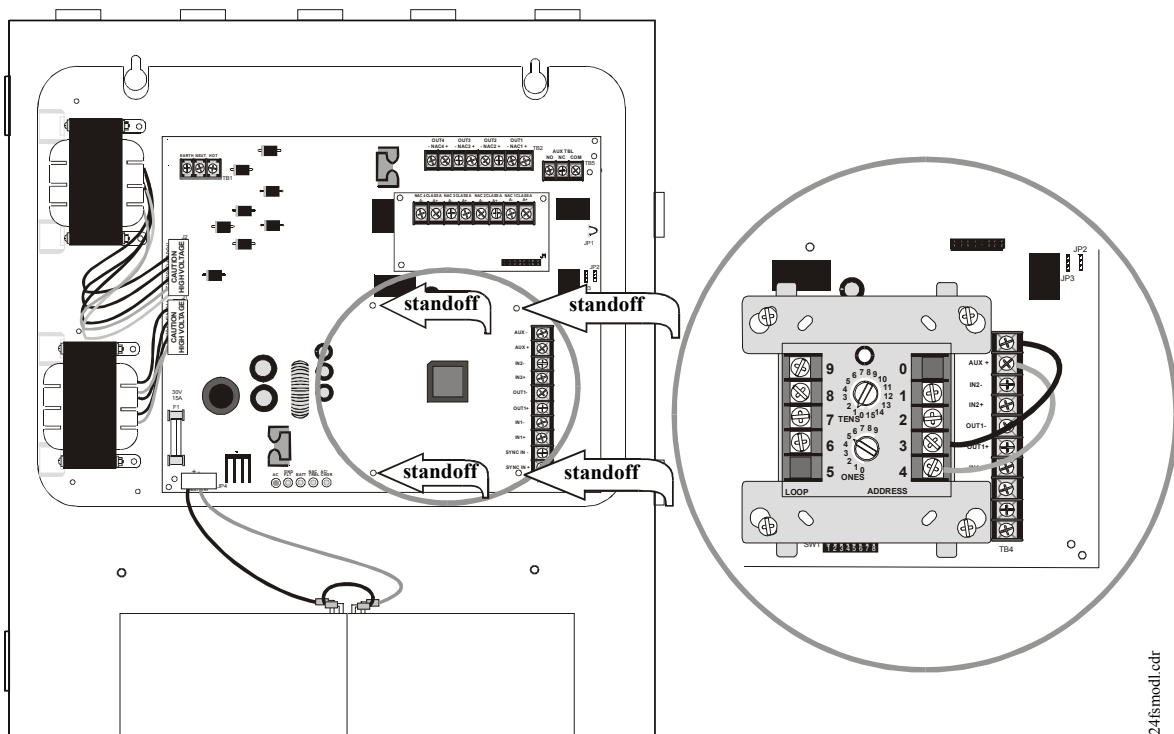
Figure 2.4 Style Z (Class A) NACs using ZNAC-4 Option Module

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2.3 Addressable Module Mounting

The FCPS-24FS has been designed to allow the mounting of an addressable control, relay or monitor module on the main circuit board inside the power supply cabinet with the module status LED visible through the closed door. This allows power to be fed from the FCPS-24FS Auxiliary Power output directly to the module, if needed, without running the power wires outside the cabinet. As an example, Figure 2.5 illustrates wiring from the Auxiliary power output terminals to a CMF-300 control module's terminals 3 (-) and 4 (+).

Note that the optional module mounting kit (P/N 90286) is required to install an addressable module on the power supply main circuit board. The kit includes four female/female and four male/female standoffs as well as four mounting screws.



Module Installation

1. Remove FCPS-24FS main circuit board from mounting plate by removing four corner screws.
2. Install four male/female standoffs through bottom of board in holes indicated in illustration above.
3. Screw four female/female standoffs to male ends of standoffs installed in Step 2 to secure in place.
4. Place addressable module over standoffs installed in Step 3 and secure with supplied screws.
5. Reinstall main circuit board on mounting plate and wire module as show in illustration above.

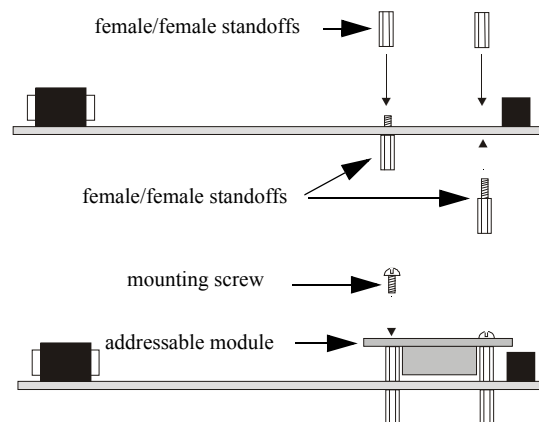


Figure 2.5 Mounting Module In FCPS-24FS Cabinet

2.4 NEC Power-limited Wiring Requirements

Power-limited and nonpower-limited circuit wiring must remain separated in the cabinet. All power-limited circuit wiring must remain at least 0.25" away from any nonpower-limited circuit wiring. Furthermore, all power-limited circuit wiring and nonpower-limited circuit wiring must enter and exit the cabinet through different conduits. One such example of this is shown below. Your specific application may require different conduit knockouts to be used. Any conduit knockouts may be used. For power-limited applications, use of conduit is optional.

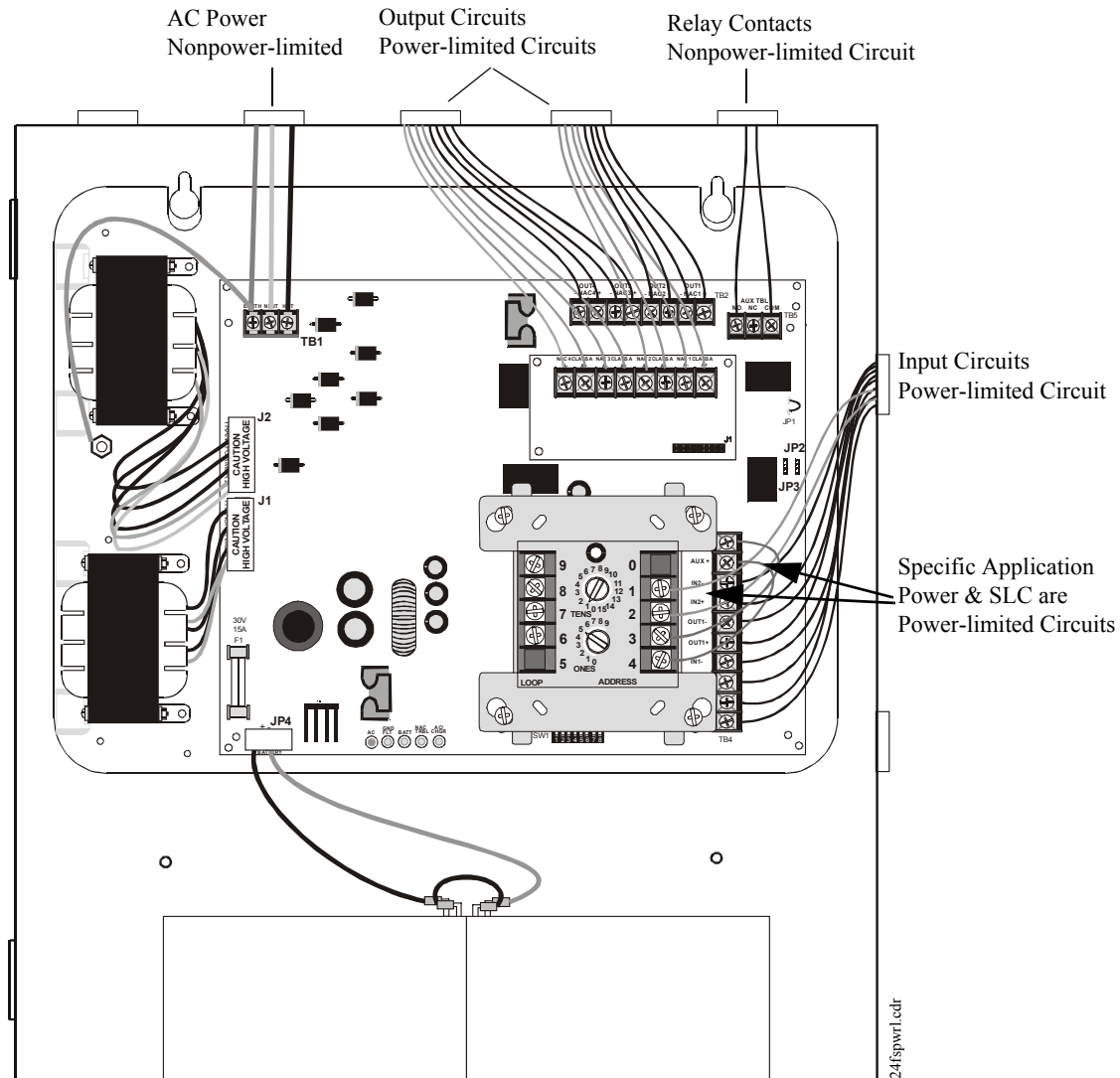


Figure 2.6 Power-limited Wiring Example

SECTION 3

Programming Options

This section describes the programming options available via DIP switch settings. The FCPS can be field programmed using option DIP switch SW1 which is located in the lower center of the circuit board. Refer to the following illustration for switch location and DIP switch placement in the ON and OFF positions.

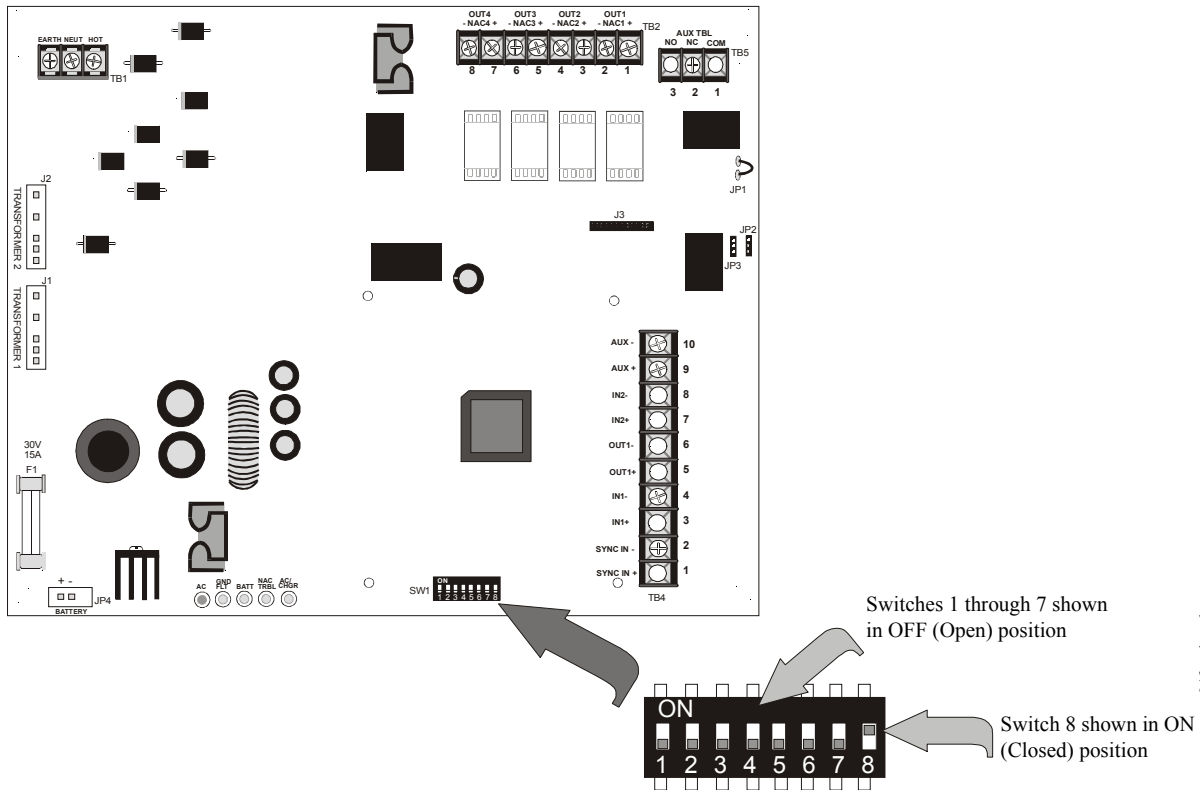


Figure 3.1 Field Programming DIP Switches

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3.1 DIP Switch Settings

The following table lists the FCPS programmable features and the switch settings required to select a particular feature. A detailed description of each feature is presented in the following pages.

Table 3.1 DIP Switch Settings

SW1 DIP Switch	ON	OFF
1	This switch works in conjunction with switch 2 to determine the Strobe Synchronization Type ¹ .	
2	1 OFF, 2 OFF = no sync (steady +24V) 1 OFF, 2 ON = System Sensor 1 ON, 2 OFF = Gentex 1 ON, 2 ON = Wheelock	
3	FCPS configured for Slave Synchronization	FCPS configured for Master Synchronization
4	Delay AC Fail Reporting for 8 Hours	No Delay in AC Fail Reporting
5	This switch works in conjunction with switch 6 to determine Input to Output functions	
6	5 OFF, 6 OFF = General Alarm - FCPS configured as Master (switch 3 OFF), NAC Outputs 1 through 4² are controlled by Control Input #1; Sync Input is ignored. - FCPS configured as Slave (switch 3 ON), NAC Outputs 1 through 4² are controlled by Control Input #1; Sync Input is monitored³. - Resettable or nonresettable Auxiliary Power Output is available from TB4 Terminals 9 & 10. Control Input #2 determines if reset will occur (must go from On to Off for a 6 second reset to occur). - Output #4 function follows DIP switch 8 setting. 5 OFF, 6 ON = Split Alarm - FCPS configured as Master (switch 3 OFF), NAC Outputs 1 & 2 are controlled by Control Input #1 and Outputs 3 & 4² are controlled by Control Input #2; Sync Input is ignored. - FCPS configured as Slave (switch 3 ON), NAC Outputs 1 & 2 are controlled by Control Input #1 and Outputs 3 & 4² are controlled by Control Input #2; Sync Input is monitored³. - Only nonresettable Auxiliary Power is available from TB4 Terminals 9 & 10. - Output #4 function follows DIP switch 8 setting. 5 ON, 6 OFF = Split Temporal - FCPS configured as Master (switch 3 OFF), Control Input #1 controls NAC Outputs 1 & 2 and Control Input #2 controls Outputs 3 & 4² which will generate a Temporal code signal without sync; Sync Input is ignored. - FCPS configured as Slave (switch 3 ON), Control Input #1 controls NAC Outputs 1 & 2 and Control Input #2 controls Outputs 3 & 4² which will generate a Temporal code signal without sync; Sync Input is monitored for Outputs 1 & 2³. - Only nonresettable Auxiliary Power is available from TB4 Terminals 9 & 10. - Output #4 function follows DIP switch 8 setting. 5 ON, 6 ON = Selective Silence - FCPS configured as Master (switch 3 OFF), NAC Outputs 1 through 4² are controlled by Control Input #1; Sync Input is ignored. - FCPS configured as Slave (switch 3 ON), NAC Outputs 1 through 4² are controlled by Control Input #1; Sync Input is monitored³. - Control Input #2 determines when Selective Silence for all outputs will occur⁴ - Only nonresettable Auxiliary Power is available from TB4 Terminals 9 & 10. - Output #4 function follows DIP switch 8 setting.	
7	Disable Charger	Enable Charger
8	Output Circuit #4 = Door Holder	Output Circuit #4 = NAC
¹ Strobe Synchronization only works with non-coded NACs. ² If Door Closer function is selected (switch 8 ON), Output 4 does not function as an NAC, therefore sync input is ignored for it. ³ If <i>no synchronization</i> is selected by switches 1 & 2, the Sync Input is ignored. ⁴ Selective Silence allows the silencing of the sounder portion of a horn/strobe combination device without turning off the strobe.		

3.2 Programmable Features Description

3.2.1 Synchronization Type Selection

Synchronization is a feature that controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time. This is particularly critical when activating strobes which must be synchronized to avoid random activation and a potential hazard or confusion. The FCPS can be programmed to operate with a variety of manufacturer's devices. Note that strobe synchronization works only with non-coded NACs.

DIP switches 1 and 2 are used to select the type of synchronization as listed below:

Table 3.2 Sync Type Settings

DIP Switch 1	DIP Switch 2	Synchronization Type
OFF	OFF	no synchronization (steady 24V)
OFF	ON	System Sensor
ON	OFF	Gentex
ON	ON	Wheelock

3.2.2 Synchronization Mode - Master/Slave

The FCPS power supply can be configured for Master or Slave Synchronization by setting DIP switch 3 ON for Slave or OFF for Master mode

In some installations, it is necessary to synchronize the flash timing of all strobes in the system for ADA compliance. Strobes accomplish this by monitoring very short timing pulses on the NAC power which are created by an FACP such as the MS-9600. When installed at the end of an MS-9600 NAC wire run, this power supply can track (that is follow) the strobe synchronization timing pulses on the existing NAC wire run. This maintains the overall system flash timing of the additional strobes attached to this power supply.

When this power supply is configured as a *sync generator* (Master Synchronization mode), the Sync Input terminals are not used. The power supply is the originator of the strobe synchronization pulses on its NAC outputs. In *sync generator* mode, the sync type (System Sensor, Wheelock, or Gentex) is selectable via DIP switches 1 and 2.

When this power supply is configured as a *sync follower* (Slave Synchronization mode), the power supply's NAC outputs track the strobe synchronization pulses present at the supply's Sync Input terminals. The pulses originate from an upstream FACP or other power supply. *Note that the Synchronization Type configured by DIP switches 1 and 2 must be set to the same type as the signal being fed to the Sync Input circuit in the event that Selective Silence is employed.*

Important! In Slave Mode, if the Input is active, but no signal is present on the Sync Input circuit, the power supply will turn the NACs on steady until a sync signal appears. The NACs will turn off when the Input becomes inactive.

Also in Slave Mode, if the Input is active and the Sync Input is suddenly lost (FCPS or wiring failure), there will be a three second period in which the NAC outputs are indeterminate. After this three second period, the power supply will turn the NACs on steady until the Input becomes inactive.

3.2.3 AC Fail Delay

The AC Fail Delay feature provides the option to delay generation of a trouble signal upon the loss of AC power. DIP switch 4 set to the OFF position will allow the FCPS to generate a trouble signal immediately on the loss of AC power. DIP switch 4 set to the ON position will delay the generation of a trouble signal for 8 hours.

3.2.4 Input/Output Function

DIP switches 5 and 6 are used to determine the Input Control circuits that will activate the four output circuits and the function of the output circuits. For example, to configure a **General Alarm** operation in which Input Control Circuit #1 activates all four output NACs, DIP switches 5 and 6 are both set to the OFF position. In this configuration, the Sync Input circuit is ignored if the power supply is set as a Master but will be monitored if the supply is set as a Slave. In addition, if the Auxiliary Power output is set as a resettable output, the circuit connected to Control Input Circuit #2 will control the auxiliary power reset function.

The following table details the four possible input/output configurations:

Table 3.3 Input/Output Configurations

DIP Switch 5	DIP Switch 6	Input/Output Function
OFF	OFF	General Alarm - FCPS configured as Master (switch 3 OFF), NAC Outputs 1 through 4¹ are controlled by Control Input #1; Sync Input is ignored. - FCPS configured as Slave (switch 3 ON), NAC Outputs 1 through 4² are controlled by Control Input #1; Sync Input is monitored². - Resettable or nonresettable Auxiliary Power Output is available from TB4 Terminals 9 & 10. Control Input #2 determines if reset will occur (must go from On to Off for a 6 second reset to occur).
OFF	ON	Split Alarm - FCPS configured as Master (switch 3 OFF), NAC Outputs 1 & 2 are controlled by Control Input #1 and Outputs 3 & 4¹ are controlled by Control Input #2; Sync Input is ignored. - FCPS configured as Slave (switch 3 ON), NAC Outputs 1 & 2 are controlled by Control Input #1 and Outputs 3 & 4¹ are controlled by Control Input #2; Sync Input is monitored². - Only nonresettable Auxiliary Power is available from TB4 Terminals 9 & 10
ON	OFF	Split Temporal - FCPS configured as Master (switch 3 OFF), Control Input #1 controls NAC Outputs 1 & 2 and Control Input #2 controls Outputs 3 & 4¹ which will generate a Temporal code signal without sync; Sync Input is ignored. - FCPS configured as Slave (switch 3 ON), Control Input #1 controls NAC Outputs 1 & 2 and Control Input #2 controls Outputs 3 & 4¹ which will generate a Temporal code signal without sync; Sync Input is monitored for Outputs 1 & 2². - Only nonresettable Auxiliary Power is available from TB4 Terminals 9 & 10
ON	ON	Selective Silence³ - FCPS configured as Master (switch 3 OFF), NAC Outputs 1 through 4¹ are controlled by Control Input #1; Sync Input is ignored. - Control Input #2 determines when Selective Silence for all outputs will occur - Only nonresettable Auxiliary Power is available from TB4 Terminals 9 & 10
¹ If Door Closer function is selected (switch 8 ON), Output 4 does not function as an NAC, therefore sync input is ignored for Output 4. ² If <i>no synchronization</i> is selected by switches 1 & 2, the Sync Input is ignored. ³ Selective Silence allows the silencing of the sounder portion of a horn/strobe combination device without turning off the strobe.		

3.2.4.1 Auxiliary Power Control

The 24 VDC Auxiliary power from TB4 Terminals 9(+) & 10(-) can be resettable or nonresettable power only when the power supply is configured for General Alarm operation. For all other configurations, the auxiliary power output is only nonresettable.

In the General Alarm configuration, the Auxiliary power output can be made resettable by applying a steady signal to Control Input 2 (positive 12 to 24 VDC on TB4 Terminal 7 and common on Terminal 8). Temporarily removing the voltage or reversing the polarity will cause the Auxiliary power output to reset for 6 seconds.

3.2.5 Charger Enable/Disable

The FCPS-24FS battery charger can be disabled to accommodate an external battery charger. Setting DIP switch 7 to the default setting of OFF will enable the battery charger. Setting DIP switch 7 to the ON position will disable the charger. It should only be disabled if an external battery charger is being used for the FCPS-24FS.

3.2.6 Door Closers

Output Circuit #4 can be configured as an NAC or door closer circuit. Setting DIP switch 8 to the OFF position will configure Output Circuit #4 as an NAC. Setting DIP switch 8 to the ON position will configure only Output Circuit #4 as a door closer circuit which will provide a steady 24 VDC to door holders until an alarm or AC fail condition removes the power following a 60 second delay.

SECTION 4 Trouble Supervision

4.1 Supervision via FACP Notification Appliance Circuit

4.1.1 Supervision of FACP to FCPS wiring

The FACP (Fire Alarm Control Panel) supervises the connection between itself and the FCPS-24FS via the control panels NAC End-of-Line Resistor (ELR). The ELR must be installed at the FCPS end of the circuit, after the last notification appliance on the circuit. If no additional devices are connected from the FCPS Control Input terminals, the ELR must be connected across terminals 5 & 6 for Control Input Circuit #1 and across terminals 7 & 8 for Control Input Circuit #2. An open or short anywhere on the control panel's NAC or power supply NAC will be detected at the FACP as an NAC trouble.

IMPORTANT: *If additional notification appliances are connected to the Out terminals 5 & 6 of Control Input Circuit #1 or extended from Control Input Circuit #2 Terminals 7 & 8, the ELR must be installed after the last device on the circuit.*

4.1.2 Supervision of FCPS-24FS Faults

The FACP will detect FCPS power supply faults as an open circuit condition on its NAC. An internal trouble contact is located between TB4 Terminal 3 (In+) and TB4 Terminal 5 (Out+). Any of the following conditions will cause the trouble contact to open, provided the FACP Notification Appliance Circuit is not in alarm. The following trouble conditions will cause a general NAC trouble:

- A field wiring fault on the NAC output of the power supply
- An AC fail condition at the power supply
- A battery fail condition at the power supply
- A battery charger fail on the power supply
- A ground fault condition on the power supply

Any power supply trouble will break the connection between the FACP and the ELR connected to Control Input #1 provided the FACP's NAC is not in alarm. The FACP's ELR must be placed after the last notification appliance connected to FCPS terminals 5 & 6 on TB4 or, if no devices are connected to these terminals, the ELR must be connected directly across terminals 5 & 6.

If trouble monitoring is required when the power supply is in alarm, the Trouble Relay at TB5 can be used for this purpose. An addressable monitor module may be used to monitor these contacts. Refer to Trouble Relay in the following section.

Note: Control Input #2 (terminals 7 & 8) cannot be used to supervise the power supply for internal troubles, but an ELR is still required for FACP wiring supervision.

4.1.3 Trouble Relay

The FCPS-24FS power supply has one fail-safe Form-C trouble relay located at TB5. The contacts can be monitored by an FACP input circuit or an addressable monitor module. The following trouble conditions will cause the normally energized trouble relay to change states regardless of whether the panel is in alarm or standby:

- An AC fail condition at the power supply
- A battery fail condition at the power supply
- A battery charger fail on the power supply
- A ground fault condition on the power supply
- A field wiring fault on the NAC output of the power supply

Note: the NAC Trouble LED will indicate which NAC circuit is in trouble by blinking once for Circuit 1, twice for Circuit 2, three times for Circuit 3 and four times for Circuit 4. If more than one circuit is in trouble, the LED will blink the highest circuit number in trouble.

4.2 AC Loss Reporting Delay

The reporting of AC loss to a central station is usually delayed in order to prevent multiple transmissions of AC loss and restoral, thus allowing AC power to stabilize. When a host FACP is programmed to delay AC loss reporting, the FCPS-24FS must be configured to delay the reporting of AC fail. This is accomplished by setting SW1 DIP switch 4 to the ON position. This will prevent AC loss from being reported as a trouble condition for eight hours.

In the event that an immediate indication of AC loss is required at a control panel programmed for AC loss reporting delay, the FCPS-24FS can be monitored by connecting the primary AC power from a single AC mains circuit breaker to both the host FACP and FCPS-24FS power supply. In this way, AC loss for both the control panel and power supply is monitored by the control panel, which will give an immediate indication when AC power fails.

Note that the FCPS-24FS power supply will immediately indicate loss of AC power by turning off the AC Power LED and turning on the Charger Trouble/AC Loss LED, regardless of the setting of SW1 DIP switch 4.

SECTION 5 Applications

5.1 Controlling Four NACs With One Input and Selective Silence

In this application, the power supply has been set as a master with synchronized outputs and selective silence (see SW1 switch settings in following illustration). All four FCPS-24FS output circuits, which are shown as NACs (Notification Appliance Circuits), can be controlled from one input such as an addressable control module as illustrated in Figure 5.1. The control module can be powered from the FCPS-24FS auxiliary 24 VDC power output (TB4, Terminals 9 & 10) and supervised by an EOL relay. An addressable relay module, *programmed as an alarm output and a silenceable point*, can be used as a selective silence input.

The control module is shown to demonstrate the use of a remotely mounted device associated with an addressable fire alarm control panel. The module could be replaced with any circuit capable of polarity reversal, such as an FACP NAC.

Note: All NACs are supervised and power-limited

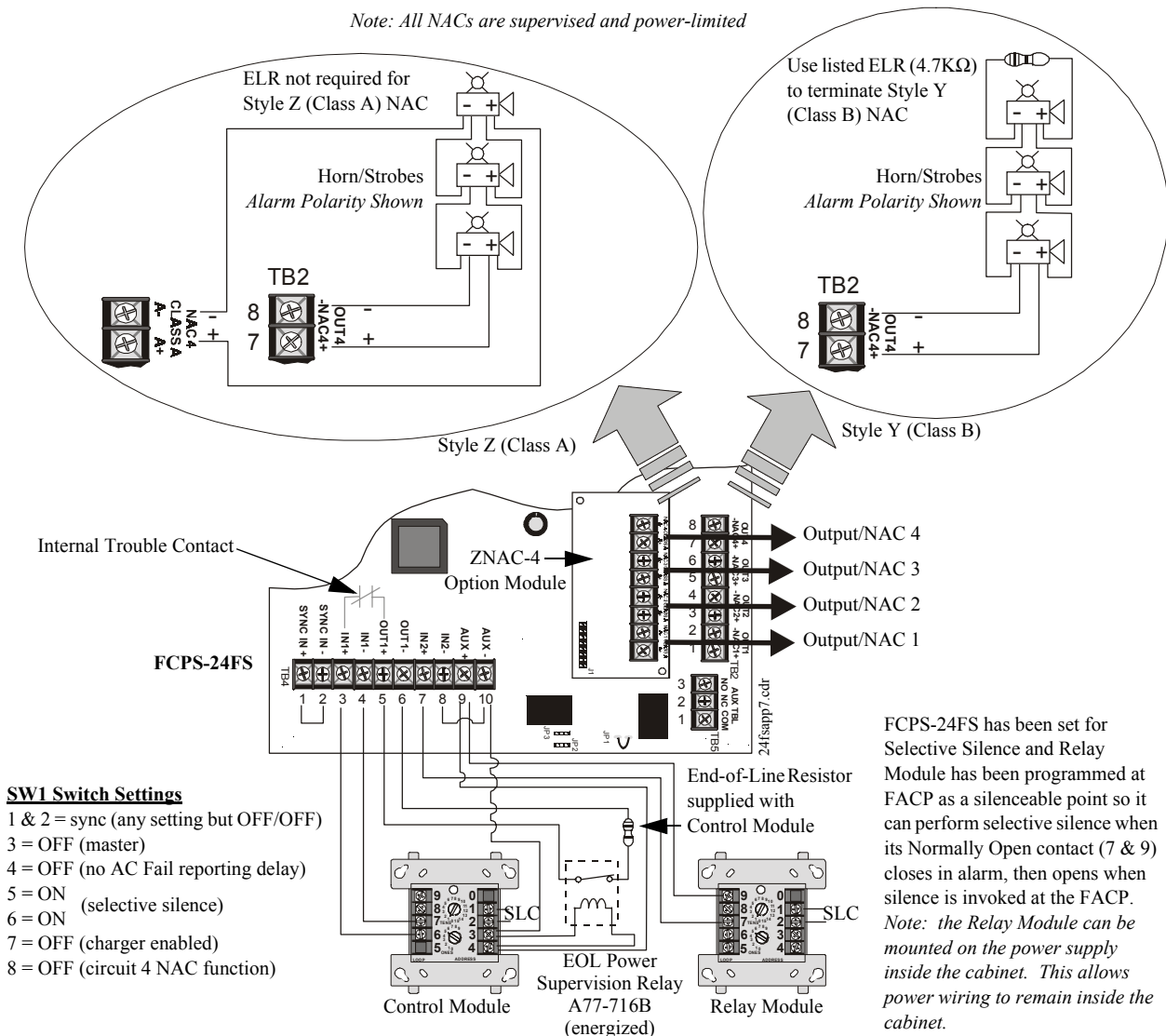
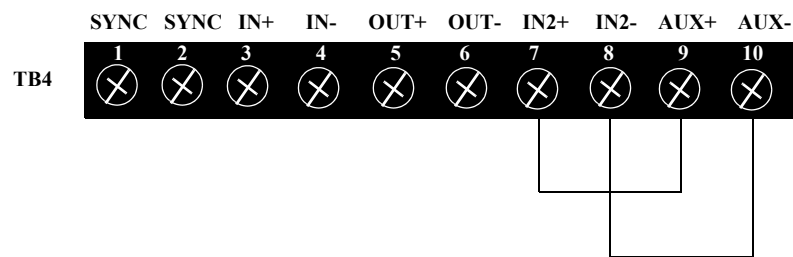


Figure 5.1 Controlling Four Outputs With One Input

Notes: The following notes apply to Figure 5.1 on page 26.

1. When the FCPS-24FS power supply is in an inactive state (control module not active), a trouble on the power supply will result in an open circuit condition on the control module output circuit (monitored by End-of-Line Resistor across TB4, Terminals 5 & 6). As an alternative, the trouble contacts at TB5 of the power supply can also be used for independent trouble monitoring.
2. The addressable relay module must be programmed as a silenceable point at the FACP to allow selective silence of horn/strobe devices. The Normally Open contact of the relay module is connected between TB4 Terminal 7 (IN2 +) and Terminal 9 (Aux. Power +).
3. Do not loop wires under screw terminals. Break wires to maintain proper supervision.
4. An End-of-Line Resistor must be installed between TB4, Terminals 5 & 6 for control module wiring supervision (the ELR value is dependent on the module employed).
5. Supervise the power wiring between the FPCS-24FS auxiliary 24 VDC output on TB4, Terminals 9 & 10 with an EOL relay (P/N: A77-716B)
6. For a list of compatible devices, refer to the Device Compatibility Document.
7. **IMPORTANT!** When the power supply is programmed for both *Selective Silence* and *Slave Mode*, TB4 Terminal 7 (IN+) must be jumpered to Terminal 9 (AUX+) and Terminal 8 (IN-) must be jumpered to Terminal 10 (AUX-). The FACP will control the Selective Silence feature with this configuration. If the terminals are not jumpered as indicated, the horn portion of the horn/strobes will be silenced at all times.



5.2 Controlling Three NACs and One Door Holder With One Input

In this application, the power supply has been set as a master with synchronized outputs. All four FCPS-24FS output circuits, three NACs and one door holder, can be controlled from one input such as an addressable control module as illustrated in Figure 5.2. The control module can be powered from the FCPS-24FS auxiliary 24 VDC power output (TB4, Terminals 9 & 10).

The control module is shown to demonstrate the use of a remotely mounted device associated with an addressable fire alarm control panel. The module could be replaced with any circuit capable of polarity reversal, such as an FACP Notification Appliance Circuit.

Note: All NACs are supervised and power-limited

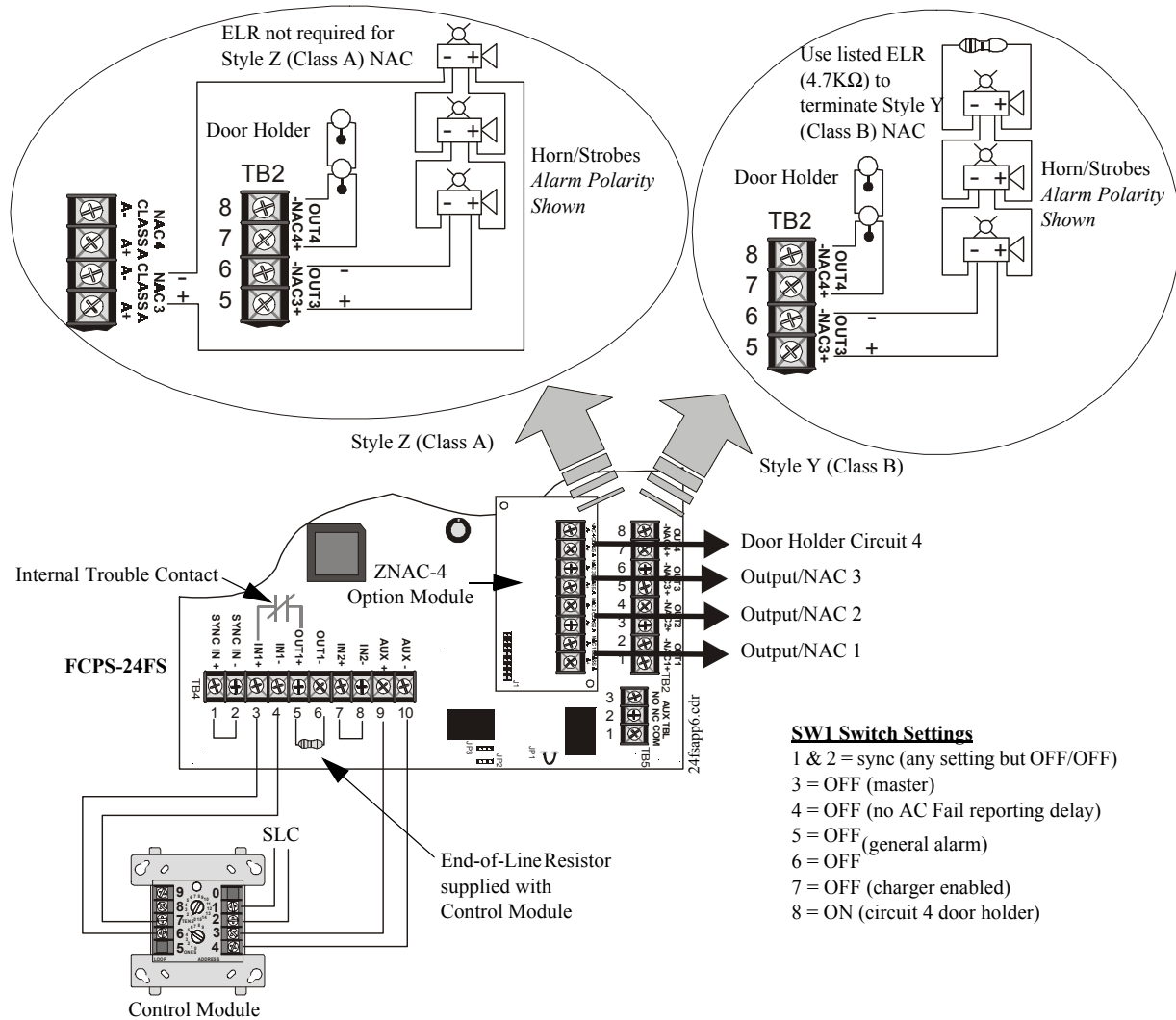


Figure 5.2 Controlling Three NACs and One Door Holder With One Input

Notes: The following notes apply to Figure 5.2 on page 28.

1. The Output 4 door holder circuit will deactivate 60 seconds after Control Input #1 is activated or AC power is lost.
2. When the FCPS-24FS power supply is in an inactive state (control module not active), a trouble on the power supply will result in an open circuit condition on the control module output circuit (monitored by End-of-Line Resistor across Terminals 5 & 6). As an alternative, the trouble contacts at TB5 of the power supply can also be used for independent trouble monitoring.
3. Do not loop wires under screw terminals. Break wires to maintain proper supervision.
4. An End-of-Line Resistor must be installed between terminals 5 & 6 for control module wiring supervision (the ELR value is dependent on the module employed).
5. For a list of compatible devices, refer to the Device Compatibility Document.

5.3 Split Temporal Mode of Operation

In this application, the power supply has been set as a master with two synchronized and two nonsynchronized outputs as determined by the Split Temporal mode feature. Control Input #1 (TB4, Terminals 3 & 4) is connected to an addressable control module which will cause the synchronized power supply output circuits 1 & 2 to turn on. Control Input #2 (TB4, Terminals 7 & 8) is connected to an FACP Notification Appliance Circuit which is used to activate the power supply's temporal output circuits 3 & 4.

Note: All NACs are supervised and power-limited

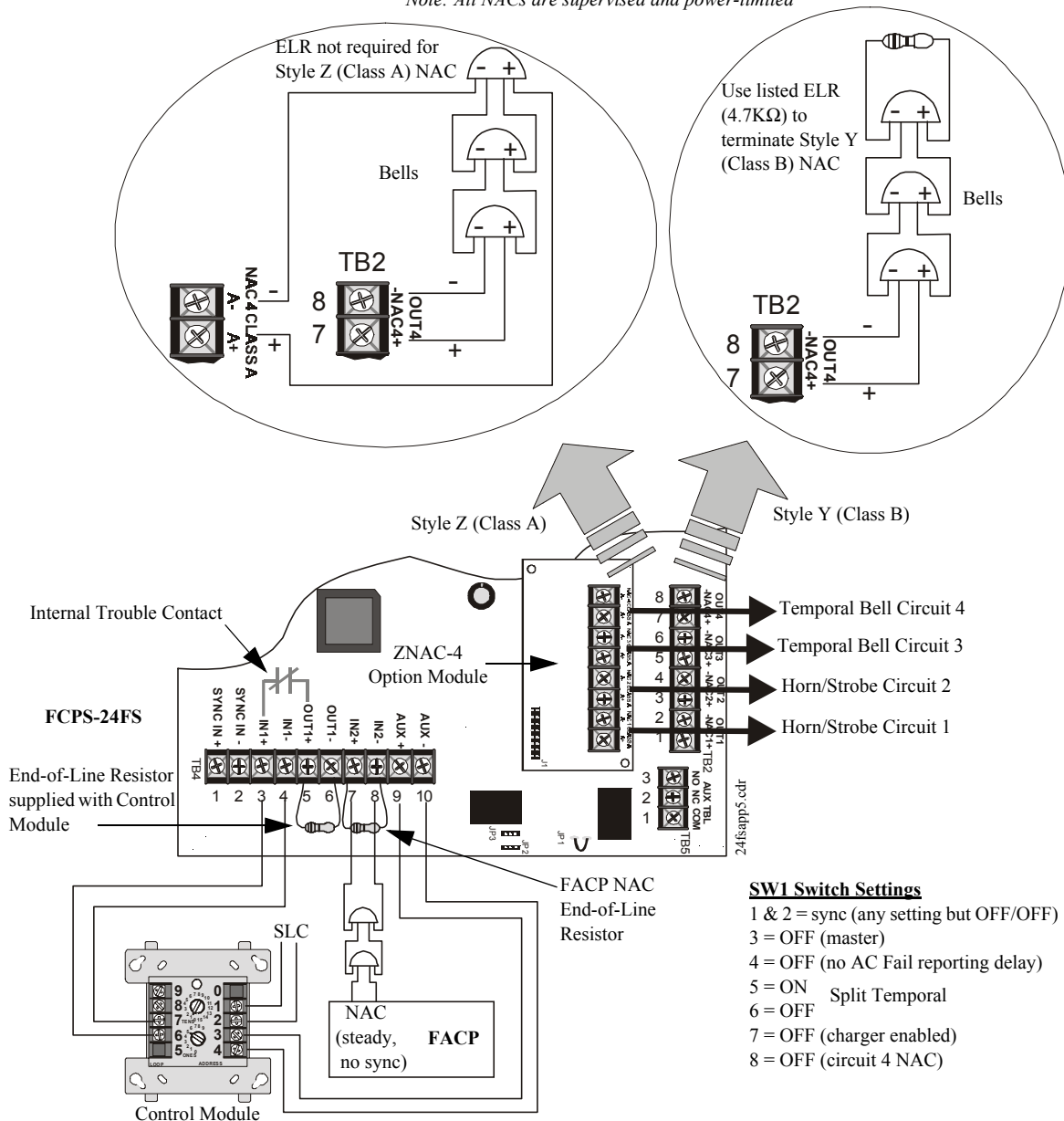


Figure 5.3 Split Temporal Mode Application

Notes: The following notes apply to Figure 5.3 on page 30.

1. When the FCPS-24FS power supply is in an inactive state (control module not active), a trouble on the power supply will result in an open circuit condition on the control module output circuit (monitored by End-of-Line Resistor across Terminals 5 & 6). As an alternative, the trouble contacts at TB5 of the power supply can also be used for independent trouble monitoring.
2. Do not loop wires under screw terminals. Break wires to maintain proper supervision.
3. An End-of-Line Resistor must be installed between terminals 5 & 6 for control module wiring supervision (the ELR value is dependent on the module employed) and across terminals 7 & 8 for FACP NAC wiring supervision (the ELR value is dependent on the NAC).
4. For a list of compatible devices, refer to the Device Compatibility Document.

5.4 Remote Supply With Resettable and Nonresettable Power

The FCPS-24FS can be used as a remote stand-alone power supply to provide power to any devices that require filtered, resettable or nonresettable power. The FCPS-24FS6 can provide up to 4 amps of continuous current and the FCPS-24FS8 can provide up to 6 amps of continuous current. The power supply must be set for Split Alarm mode. Output circuits 1 & 2 are configured as resettable power outputs by connecting the resettable power from an FACP to Control Input 1 Terminals 3(+) & 4(-) on TB4 of the FCPS-24FS. Output circuits 3 & 4 are configured as nonresettable power outputs by connecting jumpers between the auxiliary 24 VDC output on TB4 to the Control Input 2 terminals on TB4 [Terminals 9(+) to 7(+) and 1(-) to 8(-)].

Note: All four outputs can be configured as resettable or all four can be configured as nonresettable by setting the power supply for General Alarm and then connecting a resettable power source to Control Input 1 or a nonresettable power source, such as the Aux. Power output of the FCPS-24FS, to Control Input 1.

For addressable panel applications, an addressable monitor module can be used to monitor the trouble contact of the FCPS-24FS and the resettable power connection from the FACP using an End-of-Line power supervision relay. If the FCPS-24FS enters a trouble condition, the Normally Closed trouble contact will open and if the resettable power from the FACP is lost, the Normally Closed power supervision relay contact will open.

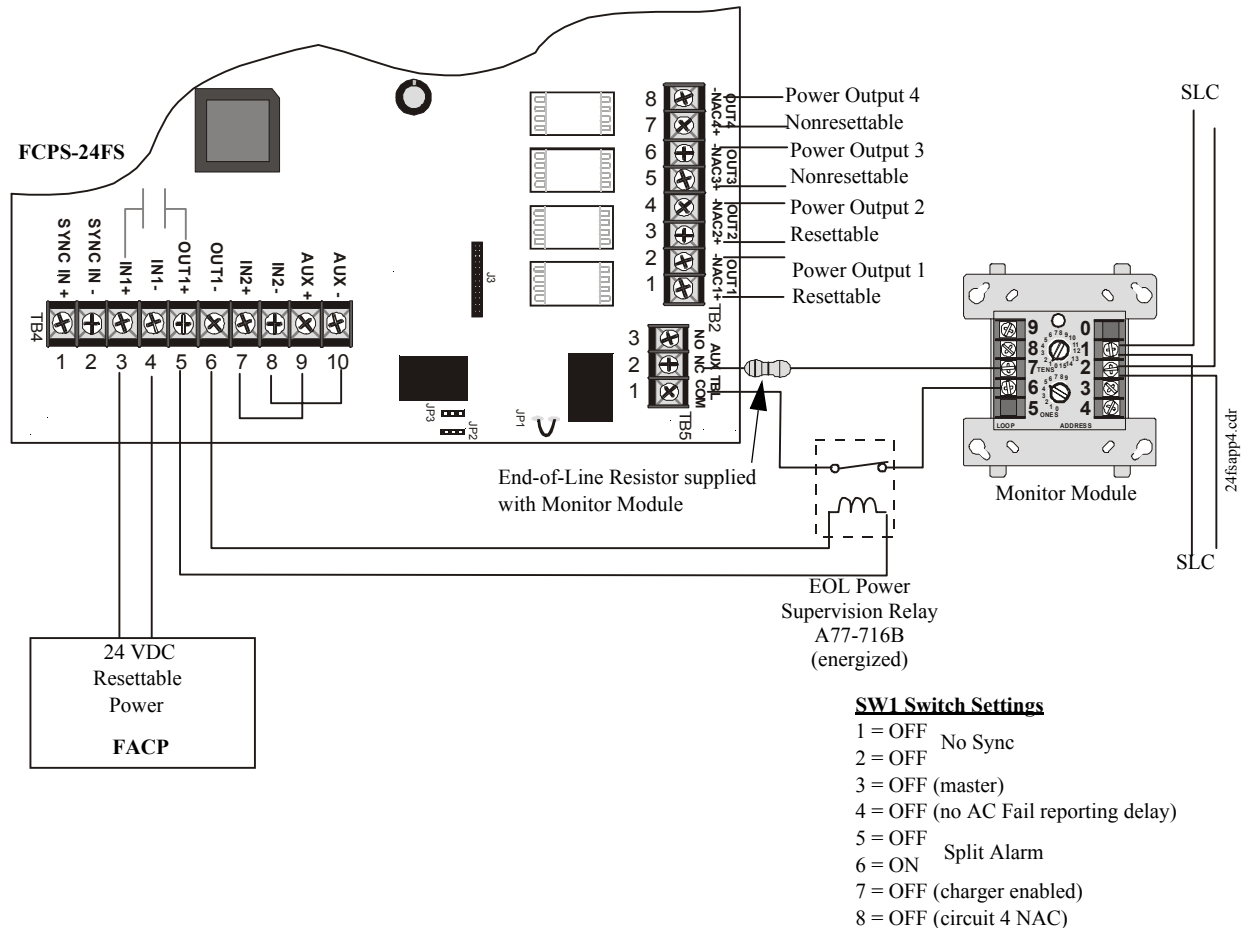


Figure 5.4 Remote Power Supply Application

Notes: The following notes apply to Figure 5.4 on page 32.

1. An End-of-Line Resistor must be installed between TB5, Terminal 1 (trouble relay common) and the monitor module input circuit for module wiring supervision (the ELR value is dependent on the module employed).
2. An End-of-Line power supervision relay must be connected between TB4, Terminals 5 & 6. The Normally Closed (when energized) power supervision relay contact must be in series with the End-of-Line Resistor referred to in note 1.
3. Do not loop wires under screw terminals. Break wires to maintain proper supervision.
4. For a list of compatible devices, refer to the Device Compatibility Document.

5.5 Door Release Service For All Four Outputs

This application illustrates the use of the FCPS-24FS to power 24 VDC door holders. The power supply must be set for General Alarm. A signal must be supplied from the FACP to activate the FCPS-24FS outputs. This signal should consist of a +24 VDC nonresettable source connected through the FACP Normally Closed alarm contacts. During normal (nonalarm) condition, the +24 VDC should be applied to the FCPS-24FS Control Input 1. This will result in the outputs of the power supply being activated which will in turn energize the door holders. When the FACP enters an alarm condition, the alarm contacts will open, removing the +24 VDC signal from the FCPS-24FS, causing the door holders to release. *It is important to note that, for this application, doors will close immediately on activation of an alarm condition. AC loss, however, will switch to batteries in sufficient time to prevent doors from closing.*

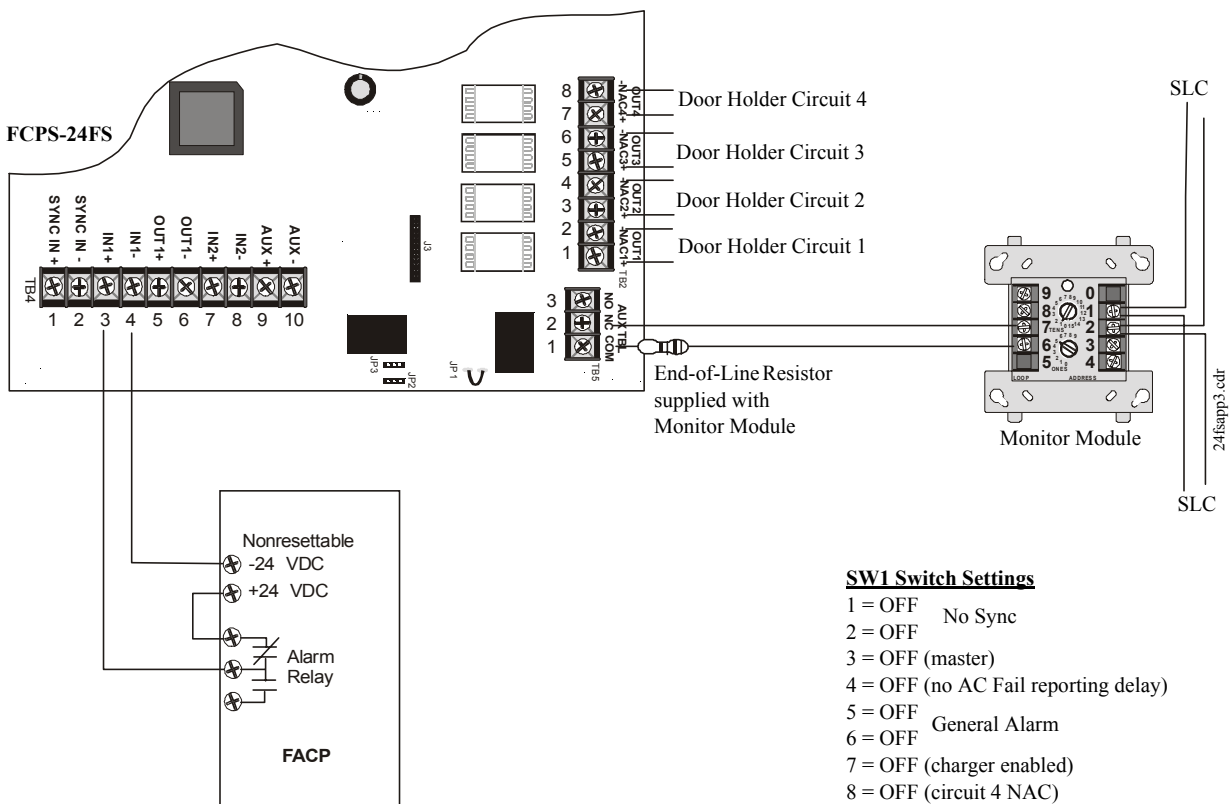


Figure 5.5 Using the FCPS-24FS with 24 VDC Door Holders

Notes: The following notes apply to Figure 5.5.

1. During a normal (nonalarm) condition, nonresettable +24 VDC should be applied to TB4, Terminal 3 (-24 VDC is applied directly to Terminal 4 from the FACP)
2. The Normally Closed alarm relay may consist of an actual relay in the FACP or a control module which may be mounted remotely or at the FACP.
3. A monitor module may be used to monitor the FCPS-24FS Trouble contacts at TB5. Any power supply trouble will cause the contacts to change states.
4. A maximum of 4.0 amps from the FCPS-24FS-6 and 6.0 amps from the FCPS-24FS8 may be drawn continuously for holding doors
5. For a list of compatible devices, refer to the Device Compatibility Document
6. An alarm condition will cause the doors to close immediately.

In this application, multiple FCPS-24FS power supplies, configured as Slave units, are connected to a master FACP NAC programmed for synchronized output. Each power supply should be set for synchronization which matches the FACP programming.

Note: One Relay Module can be mounted directly to each FCPS-24FS circuit board inside the power supply cabinet.

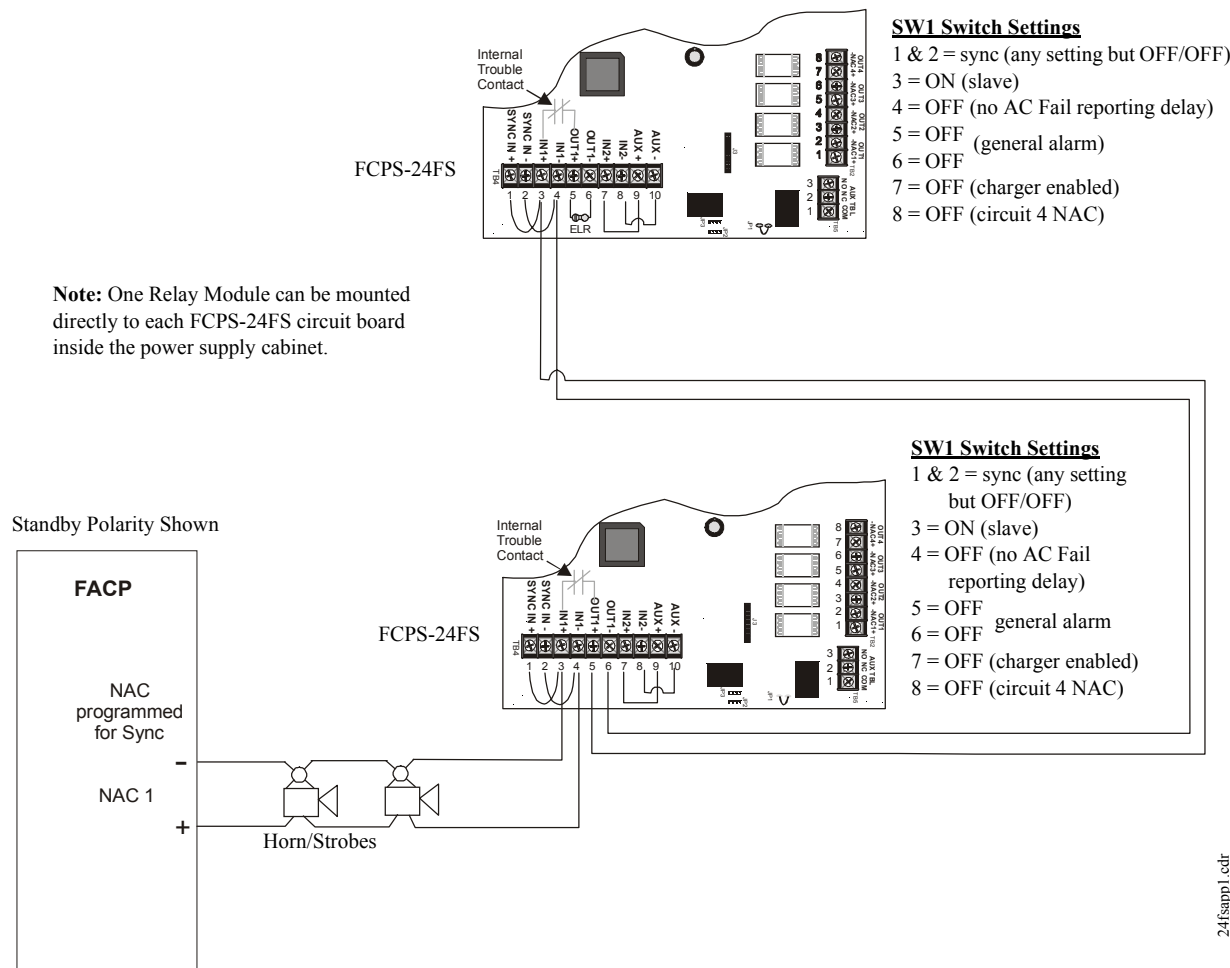


Figure 5.6 Supervised Master/Slave Connections

Note: The following notes apply to Figure 5.6

1. Refer to NFPA 72, Chapter 4-4, Visible Characteristics, Public Mode.
2. The NAC output devices from one power supply must be partitioned with walls and/or floors from the next power supplies and their NAC output devices.
3. Use only devices from the same manufacturer in each system.
4. Relay Modules programmed as silenceable points will selectively silence the notification appliances when its Normally Open contact (7 & 9) closes

In this application, multiple FCPS-24FS power supplies, configured as Slave units, are cascaded from a power supply which is connected to a master FACP NAC programmed for synchronized output. Each power supply should be set for synchronization which matches the FACP programming. A maximum of ten cascaded supplies can maintain synchronization using System Sensor and Wheelock devices while a maximum of four can maintain synchronization using Gentex devices.

SW1 Switch Settings

-
- SW1 Switch Settings**
- 1 & 2 = sync (any setting but OFF/OFF)
 - 3 = ON (slave)
 - 4 = OFF (no AC Fail reporting delay)
 - 5 = OFF (general alarm)
 - 6 = OFF
 - 7 = OFF (charger enabled)
 - 8 = OFF (circuit 4 NAC)
- to next FCPS-24FS input (if needed)
- SW1 Switch Settings**
- 1 & 2 = sync (any setting but OFF/OFF)
 - 3 = ON (slave)
 - 4 = OFF (no AC Fail reporting delay)
 - 5 = OFF (general alarm)
 - 6 = OFF
 - 7 = OFF (charger enabled)
 - 8 = OFF (circuit 4 NAC)
- Standby Polarity Shown
- FACP**
- NAC programmed for Sync
- NAC 1
- Horn/Strobes
- FCPS-24FS
- Internal Trouble Contact
- 4.7KΩ ELR for FACP NAC
- 24/sapp1.cdr

Figure 5.7 Supervised Cascaded Connections

Note: The following notes apply to this illustration

1. Refer to NFPA 72, Chapter 4-4, Visible Characteristics, Public Mode.
2. Use only devices from the same manufacturer in each system.

SECTION 6

Power Supply Requirements

6.1 Overview

This section contains instructions and tables for calculating power supply currents in alarm and standby conditions. This is a four-step process, consisting of the following:

1. Calculating the total amount of AC branch circuit current required to operate the system
2. Calculating the power supply load current for non-fire and fire alarm conditions and calculating the secondary (battery) load
3. Calculating the size of batteries required to support the system if an AC power loss occurs
4. Selecting the proper batteries for your system

6.2 Calculating the AC Branch Circuit

The power supply requires connection to a separate, dedicated AC branch circuit, which must be labeled **FIRE ALARM**. This branch circuit must connect to the line side of the main power feed of the protected premises. No other non-fire alarm equipment may be powered from the fire alarm branch circuit. The branch circuit wire must run continuously, without any disconnect devices, from the power source to the power supply. Overcurrent protection for this circuit must comply with Article 760 of the National Electrical Codes as well as local codes. Use 14 AWG (2.00 mm²) wire with 600 volt insulation for this branch circuit.

Use Table 6.1 to determine the total amount of current, in AC amperes, that must be supplied to the system

Table 6.1 120 VAC Branch Circuit Requirements

Device Type	Number of Devices		Current Draw (AC amps)		Total Current per Device
FCPS-24S	1	X	3.2	=	3.2
[]	[]	X	[]	=	
[]	[]	X	[]	=	
Sum Column for AC Branch Current Required				=	

6.3 Calculating the System Current Draw

6.3.1 Overview

The power supply must be able to power all internal and external devices continuously during the non-fire alarm condition. To calculate the non-fire alarm load on the power supply when primary power is applied, use Calculation Column 1 in Table 6.3 on page 39. The power supply must support a larger load current during a fire alarm condition. To calculate the fire alarm load on the power supply, use Calculation Column 2 in Table 6.3 on page 39. The secondary power source (batteries) must be able to power the system during a primary power loss. To calculate the non-fire alarm load on the secondary power source, use Calculation Column 3 in Table 6.3 on page 39.

When calculating current draw and the battery size, note the following:

- *Primary* refers to the main power source for the power supply
- *Secondary* refers to the power supply's backup batteries
- All currents are given in amperes (A). Table 6.2 shows how to convert milliamperes and microamperes to full amperes

Table 6.2 Converting to Full Amperes

To convert...	Multiply	Example
Milliamperes (mA) to amperes (A)	$\text{mA} \times 0.001$	$3 \text{ mA} \times 0.001 = 0.003 \text{ A}$
Microamperes (μA) to amperes (A)	$\mu\text{A} \times 0.000001$	$300 \mu\text{A} \times 0.000001 = 0.0003 \text{ A}$

6.3.2 How to Calculate System Current Draw

Use Table 6.3 on page 39 to calculate current draws as follows:

1. Enter the quantity of devices in all three columns
2. Enter the current draw where required. Refer to the Fire-Lite Device Compatibility Document for compatible devices and their current draw
3. Calculate the current draws for each in all columns
4. Sum the total current for each column
5. Copy the totals from Column 2 and Column 3 to Table 6.3 on page 39

Following are the types of current that can be entered into Table 6.3 on page 39

- ✓ **Calculation Column 1** - The primary supply current load that the power supply must support during a non-fire alarm condition, with AC power applied
- ✓ **Calculation Column 2** - The primary supply current load the power supply must support during a fire alarm condition, with AC power applied
- ✓ **Calculation Column 3** - The standby current drawn from the batteries in a non-fire alarm condition during a loss of AC power

Table 6.3 contains three columns for calculating current draws. For each column, calculate the current and enter the total (in amperes) in the bottom row. When finished, copy the totals from Calculation Column 2 and Calculation Column 3 to Table 6.4 on page 40.

Table 6.3 System Current Draw Calculations

Device Type	Calculate Column 1 Primary, Non-Fire Alarm Current (amps)			Calculate Column 2 Primary, Fire Alarm Current (amps)			Calculation Column 3 Secondary, Non-Fire Alarm Current (amps)		
	Qty	X (current draw) =	Total	Qty	X (current draw) =	Total	Qty	X (current draw) =	Total
Main Circuit Board	1	X [0.091] =		1	X [0.091] =		1	X [0.065] =	
Power Supervision Relay	[]	X [0.025] =		[]	X [0.025] =		[]	X [0.025] =	
NAC/Output #1				[]	X [] =				
NAC/Output #2				[]	X [] =				
NAC/Output #3				[]	X [] =				
NAC/Output #4				[]	X [] =				
Current Draw from TB4 Terminals 9 & 10	[] =			[] =			[] =		
Sum each column for totals	Primary Non-Alarm =			Primary Alarm =			Secondary Alarm =		

6.4 Calculating the Battery Size

Use Table 6.4 to calculate the total Standby and Alarm load in ampere hours (AH). This total load determines the battery size (in AH) required to support the power supply under the loss of AC power. Complete Table 6.4 as follows:

1. Enter the totals from Table 6.3 on page 39, Calculation Columns 2 and 3 where shown
2. Enter the NFPA Standby and Alarm times. Refer to “NFPA Battery Requirements”
3. Calculate the ampere hours for Standby and Alarm, then sum the Standby and Alarm ampere hours
4. Multiply the sum by the derating factor of 1.2 to calculate the proper battery size (in AH)
5. Write the ampere hour requirements on the Protected Premises label located inside the cabinet door

Table 6.4 Total Secondary Power Requirements at 24 VDC

Secondary Standby Load (total from Table 6.3 Calculation Column 3) []	Required Standby Time (24 or 60 hours) X []	=	AH
Primary Alarm Load (total from Table 6.3 Calculation Column 2) []	Required Alarm Time (for 5 min., enter 0.084, for 10 min., enter 0.168) X []	=	AH
Sum of Standby and Alarm Ampere Hours		=	AH
Multiply by the Derating Factor		X 1.2	
Battery Size, Total Ampere Hours Required		=	AH

6.4.1 NFPA Battery Requirements

- NFPA 72 Local and Proprietary Fire Alarm Systems require 24 hours of standby power followed by 5 minutes in alarm
- NFPA 72 Central, Auxiliary and Remote Station Fire Alarm Systems require 60 hours of standby followed by 5 minutes in alarm. Batteries installed in a system powered by a generator need to provide at least 4 hours of standby power

6.4.2 Selecting and Locating Batteries

Select batteries that meet or exceed the total ampere hours calculated in Table 6.4. The power supply can charge batteries in the 7 AH to 18 AH range. The power supply cabinet is capable of housing batteries up to 7 AH. Batteries larger than 7 AH require the BB-17F or other UL listed external battery cabinet.

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Limited Warranty

The manufacturer warrants its products to be free from defects in materials and workmanship for eighteen (18) months from the date of manufacture, under normal use and service. Products are date-stamped at time of manufacture. The sole and exclusive obligation of the manufacturer is to repair or replace, at its option, free of charge for parts and labor, any part which is defective in materials or workmanship under normal use and service. For products not under the manufacturer's date-stamp control, the warranty is eighteen (18) months from date of original purchase by the manufacturer's distributor unless the installation instructions or catalog sets forth a shorter period, in which case the shorter period shall apply. This warranty is void if the product is altered, repaired, or serviced by anyone other than the manufacturer or its authorized distributors, or if there is a failure to maintain the products and systems in which they operate in a proper and workable manner. In case of defect, secure a Return Material Authorization form from our customer service department. Return product, transportation prepaid, to the manufacturer.

This writing constitutes the only warranty made by this manufacturer with respect to its products. The manufacturer does not represent that its products will prevent any loss by fire or otherwise, or that its products will in all cases provide the protection for which they are installed or intended. Buyer acknowledges that the manufacturer is not an insurer and assumes no risk for loss or damages or the cost of any inconvenience, transportation, damage, misuse, abuse, accident, or similar incident.

THE MANUFACTURER GIVES NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR OTHERWISE WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. UNDER NO CIRCUMSTANCES SHALL THE MANUFACTURER BE LIABLE FOR ANY LOSS OF OR DAMAGE TO PROPERTY, DIRECT, INCIDENTAL, OR CONSEQUENTIAL, ARISING OUT OF THE USE OF, OR INABILITY TO USE THE MANUFACTURER'S PRODUCTS. FURTHERMORE, THE MANUFACTURER SHALL NOT BE LIABLE FOR ANY PERSONAL INJURY OR DEATH WHICH MAY ARISE IN THE COURSE OF, OR AS A RESULT OF, PERSONAL, COMMERCIAL, OR INDUSTRIAL USE OF ITS PRODUCTS.

This warranty replaces all previous warranties and is the only warranty made by the manufacturer. No increase or alteration, written or verbal, of the obligation of this warranty is authorized.



World Headquarters

One Fire-Lite Place, Northford, CT 06472-1653 USA

Miami Dade County Department of Regulatory and Economic Resources - Job Copy
3226007430 - 7/8/2026 11:15:57 AM
FCPS-24FS6 WIRING MANUAL.pdf

www.firelite.com

ISO 9001
CERTIFIED
ENGINEERING & MANUFACTURING

MIAMI-DADE COUNTY**DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES**<http://www.miamidade.gov/building/home.asp>

7/8/2026 11:15:57 AM

Tracking #	Process #	Permit #
3226007430	M2026007430	2026056665

THIS COPY OF PLANS MUST BE AVAILABLE ON BUILDING SITE OR AN INSPECTION WILL NOT BE MADE.				
Process #	Review	Disposition	Reviewer	Date
M2026007430	FIRE	A	MARCHI, MICHAEL	7/7/2026
M2026007430	UPFRONT FEES	A	WEB APPLICATION ID	1/21/2026

Disclaimer.

Subject to compliance with all Federal, State, and County Laws, rules and regulations. Miami-Dade County assumes no responsibility for accuracy of or results of these plans.

NOTICE: In addition to the requirements of this permit, there may be additional restrictions applicable to the property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies or federal agencies.

Stamp Name	Trade	Disposition	Stamp Description
Approved	FIRE	A	Approved
Approved As Noted	FIRE	P	Approved as noted. See comments, markups and stamps.
Disapproved	FIRE	D	DISAPPROVED
Void	FIRE	V	Void

05/20/2026

PROCESS NUMBER: M2026007430
PLAN REVIEWER: MARCHI, MICHAEL
SITE ADDRESS: 15700 NW 67TH AVE, MIAMI LAKES, FL 33014

RESPONSE TO COMMENTS AND NARRATIVE OF CHANGES FOR REV2 DRAWINGS DATED 05.20.2026

As discussed in the meeting with plan reviewer and building owner, these drawings have been revised to reflect a new FACP upgrade and compliance with MDC 14-61 regarding bringing the complete system up to code. New devices have been added throughout the building for code compliance.

All devices are new, except where noted as EX, which are devices being re-used at the same location. Clouds have been omitted for clarity since most of the system is new.

Elevator recall has been added per letter from elevator contractor indicating the system is capable of such functionality.

Sincerely,



Marlon Sebelen, P.E.

Project Engineer

Eng Tech Net, Inc.

954-579-9398

Marlon@PermitEngineering.com

06/22/2026

PROCESS NUMBER: M2026007430
PLAN REVIEWER: MARCHI, MICHAEL
SITE ADDRESS: 15700 NW 67TH AVE, MIAMI LAKES, FL 33014

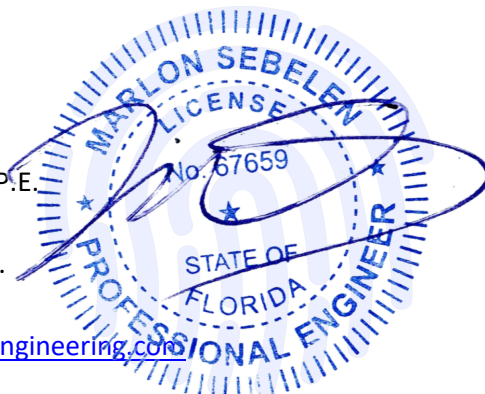
RESPONSE TO COMMENTS AND NARRATIVE OF CHANGES FOR REV3 DRAWINGS DATED 06.22.2026

- 1) Comments reviewed by E.O.R.
- 2) Control Unit diagrams and additional termination details have been added to sheet FA-401.
- 3) Supplemental "Wiring Details.pdf" from manufacturer documents have been provided in this submittal.
- 4) A copy of the manufacturer calculation table from the latest manual is being provided. Values and calculation methods used on the drawings are similar to the manufacturer calculation. In some instances, minor discrepancies in current draw values occur depending on the version/date and source of the information. A derating factor of 1.30 (instead of 1.20) is being used on our calculations to account for these minor discrepancies.
- 5) All Horn devices are set to High (H). This has been clarified on the device legend to avoid cluttering the drawings with additional text information.
- 6) Relays have been added to interface automatic light control with Fire Alarm System.
- 7) Design sound pressure level has been indicated on plans (Sheet FA-001). Contractor shall provide a test report during final inspection.
- 8) Note removed.
- 9) Additional Visual notification devices have been added to these areas.
- 10) Additional Horn/Strobe devices have been added to improve the sound pressure as required. Design sound pressure level has been indicated on plans (Sheet FA-001). Contractor shall provide a test report during final inspection.
- 11) Isolator modules have been added to separate SLC circuit per fire zone (each floor)
- 12) Monitor modules have been added for Cellular Dialer and NAC Power Supplies.
- 13) Riser and calculation tables have been updated.

Sincerely,

Marlon Sebelen, P.E.
Project Engineer
Eng Tech Net, Inc.
954-579-9398

Marlon@PermitEngineering.com



5220 S. UNIVERSITY DRIVE #204, DAVIE FL 33328

04/06/2026

PROCESS NUMBER: M2026007430
PLAN REVIEWER: MARCHI, MICHAEL
SITE ADDRESS: 15700 NW 67TH AVE, MIAMI LAKES, FL 33014

RESPONSE TO COMMENTS AND NARRATIVE OF CHANGES FOR REV1 DRAWINGS DATED 04.06.2026

These drawings have been revised in their entirety to incorporate the complete fire alarm system for this building as requested in rejection comments dated 02/23/2026. Clouds have been omitted for clarity. These drawings shall be reviewed in their entirety due to the amount of changes made. New sheets have been included.

Only partial Approved Record Drawings have been located. Due to the lack of prior records, a site survey was carried out on 03/03/2026. All existing devices discovered during site survey are shown on this revision. These shall be considered "As Discovered" drawings for this building. Areas outside of the scope of work dashed line shown on these plans are not being modified nor tested under the scope of this permit.

To expedite the approval of this permit I'm available to answer any questions regarding this project.

Sincerely,



Marlon Sebelen, P.E.

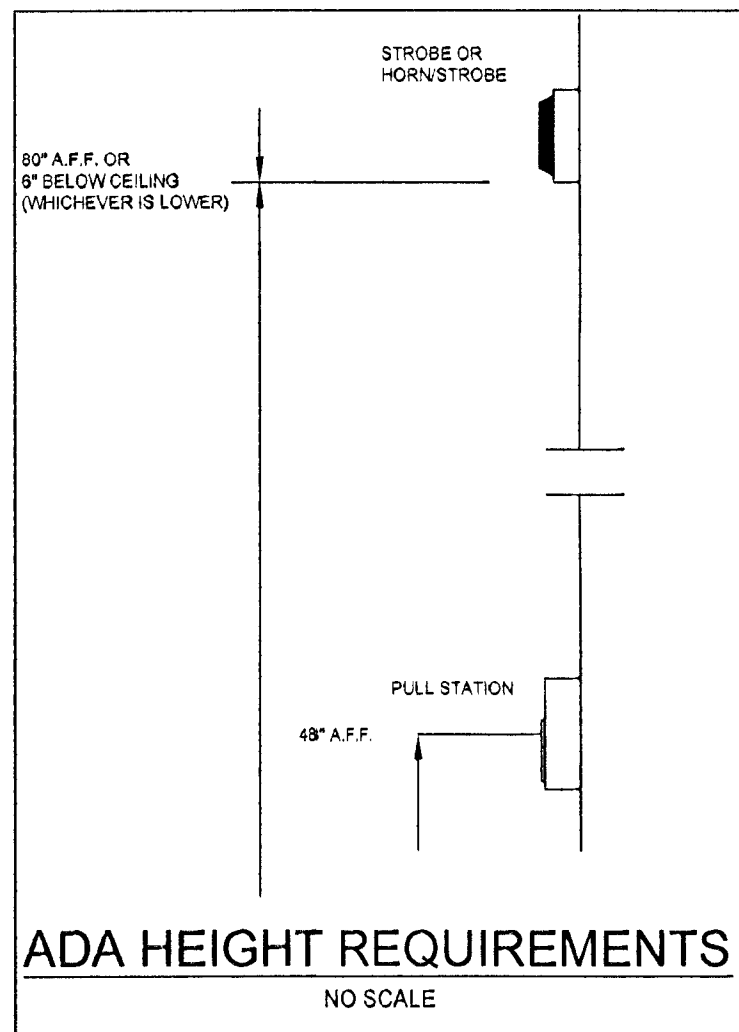
Project Engineer
Eng Tech Net, Inc.
954-579-9398

Marlon@PermitEngineering.com

FIRE ALARM BATTERY CALCULATIONS & VOLTAGE DROP

FACP (EXISTING) FIRE-LITE (MS-5024UD)						
3.0 AMPS MAX						
	CD	QTY	STANDBY PER DEV.	TOTAL STANDBY	ALARM PER DEV.	TOTAL ALARM
MAIN	N/A	1	0.1	0.1	0.17	0.17
EXISTING ANNUNCIATOR (RZA-5F)	N/A	1	0	0	0.046	0.046
TOTAL INPUT						0.216
CIRCUIT #1 (2.5 AMP MAX)						
HORN STROBE (P2R)	75CD	5		0.175	0.55	0.725
STROBE (SN)	75CD	1		0.158	0.158	0.158
TOTAL CIRCUIT #1						1.033
CIRCUIT #2 (2.5 AMP MAX) SPARE						
TOTAL CIRCUIT #2						0
TOTAL AMPS						1.254
(A) TOTAL STANDBY:						
(B) STANDBY HOURS (24 OR 60):						
(C) TOTAL STANDBY AMP HOURS:						
(D) ALARM SOUNDING PERIOD IN MINUTES (5 OR 15):						
(E) TOTAL ALARM AMP HOURS:						
(F) TOTAL ALARM + STANDBY AH:						
MULT. BY DERATING FACTOR x 1.2						
QTY: MINIMUM TWO 2AH BATTERY PROVIDED						

RPS (NEW) FIRE-LITE (FCPS-24FS6)						
6.0 AMPS MAX						
	CD	QTY	STANDBY PER DEV.	TOTAL STANDBY	ALARM PER DEV.	TOTAL ALARM
MAIN	N/A	1	0.091	0.091	0.145	0.145
TOTAL INPUT						0.145
CIRCUIT #1 MAX 3.0 AMP						
HORN STROBE	75	0		0.175	0	0
STROBE LIGHT	75	5		0.158	0.79	0.948
TOTAL CIRCUIT #1						0.948
CIRCUIT #2 MAX 3.0 AMP						
HORN STROBE	75	3		0.175	0.528	0.703
STROBE LIGHT	75	2		0.158	0.316	0.474
TOTAL CIRCUIT #2						0.844
CIRCUIT #3 MAX 3.0 AMP						
HORN STROBE	75	5		0.175	0.55	0.725
STROBE LIGHT	75	4		0.158	0.632	0.79
HORN STROBE	110	1		0.212	0.212	0.212
TOTAL CIRCUIT #3						1.724
CIRCUIT #4 MAX 3.0 AMP						
HORN STROBE	75	0		0	0	0
STROBE LIGHT	75	0		0	0	0
TOTAL CIRCUIT #4						0
TOTAL AMPS						3.503
(A) TOTAL STANDBY:						
(B) STANDBY HOURS (24 OR 60):						
(C) TOTAL STANDBY AMP HOURS:						
(D) ALARM SOUNDING PERIOD IN MINUTES (5 OR 15):						
(E) TOTAL ALARM AMP HOURS:						
(F) TOTAL ALARM + STANDBY AH:						
MULT. BY DERATING FACTOR x 1.2						
QTY: MINIMUM TWO 2AH BATTERY PROVIDED						



FIRE ALARM GENERAL NOTES

- EXISTING CONVENTIONAL (FIRELITE MS-5024UD) FIRE ALARM CONTROL PANEL, SYSTEM TO BE POWER LIMITED AND HAVE BATTERY BACKUP
- BUILDING IS AN EXISTING 3 STORY, MEASURING 8,384 SQUARE FEET PER FLOOR.
- BUILDING IS NOT SPRINKLERED.
- OCCUPANCY BUSINESS.
- SYSTEM AND INSTALLATION TO COMPLY WITH FLORIDA FIRE PREVENTION CODE 2007 EDITION, LIFE SAFETY NFPA101 2006 EDITION, NATIONAL FIRE ALARM CODE NFPA72 2002 EDITION AND NATIONAL ELECTRIC CODE NFPA70 2005 EDITION.
- THE DESIGN INSTALLATION COMPLIES WITH FBC 11-4.28.3
- WIRING MINIMUMS;
- INITIATING CIRCUITS 18/2 FPL INDICATING CIRCUITS 14/2 FPL (NAC)
- CONDUIT IF REQUIRED WILL BE 1/2" MINIMUM 40% FILL MAX.
- ALL DEVICES TO BE MOUNTED PER NFPA GUIDELINES OR ADA WHERE REQUIRED.
- SYSTEM COMPONENTS SHALL BE U.L LISTED AND COMPATIBLE.
- CIRCUITS TO BE CLASS B STYLE Y.
- AUDIBLE SIGNAL SHALL BE A MINIMUM OF 15 DB ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 DB ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS (WHICHEVER IS GREATER), MEASURED 5 FT AFF IN THE OCCUPIABLE AREA.
- EACH STROBE SHALL BE ADEQUATE TO PROVIDE REQUIRED COVERAGE.
- UPON COMPLETION THIS FIRE ALARM SYSTEM IS TO BE ETL CERTIFICATED BY AN ETL CENTRAL STATION.
- INTERCONNECTED FIRE ALARM CONTROL PANEL AND DEVICES SHALL BE ARRANGED TO FUNCTION AS A SINGLE SYSTEM AND MONITORED FOR INTEGRITY PER NFPA72.

FIRE ALARM SEQUENCE OF OPERATION

THE ACTUATION OF THE FIRE ALARM INITIATING DEVICE SHALL AUTOMATICALLY INITIATE THE FUNCTION DETAILED BELOW.

A. MANUAL FIRE ALARM PULL STATION

- ACTIVATION OF THE MANUAL FIRE ALARM PULL STATION SHALL INITIATE THE FOLLOWING FUNCTIONS:
- GENERATE AN AUDIBLE SIGNAL AT FIRE ALARM CONTROL PANEL.
 - GENERATE AN AUDIBLE ALARM SIGNAL SIMULTANEOUSLY ON DESIGNATED AREAS OF THE BUILDING BY MEANS OF A HORN/STROBE DEVICE. GENERATE A VISUAL ALARM SIGNAL SIMULTANEOUSLY ON ALL AREAS OF THE BUILDING BY THE USE OF STROBE DEVICES OR COMBINATION HORN/ STROBE NOTIFICATION DEVICES.
 - INDICATE THE LOCATION OF THE PULL STATION, BY DISPLAYING IN ENGLISH THE ARMED DEVICE AND ITS ZONE ON THE FACP
 - WHEN ARMED, TRANSMITS A FIRE ALARM SIGNAL TO THE DESIGNATED ETL CENTRAL STATION VIA DACT.

B. SMOKE/HEAT DETECTORS

- ACTIVATION OF SMOKE/HEAT DETECTORS SHALL INITIATE THE FOLLOWING FUNCTIONS:
- GENERATE AN AUDIBLE SIGNAL AT FIRE ALARM CONTROL PANEL.
 - GENERATE AN AUDIBLE ALARM SIGNAL SIMULTANEOUSLY ON DESIGNATED AREAS OF THE BUILDING BY MEANS OF A HORN/STROBE DEVICE. GENERATE A VISUAL ALARM SIGNAL SIMULTANEOUSLY ON ALL AREAS OF THE BUILDING BY THE USE OF STROBE DEVICES OR COMBINATION HORN/ STROBE NOTIFICATION DEVICES.
 - INDICATE THE LOCATION OF THE SMOKE/HEAT DETECTOR, BY DISPLAYING IN ENGLISH THE ARMED DEVICE AND ITS ZONE ON THE FACP
 - WHEN ARMED, TRANSMITS A FIRE ALARM SIGNAL TO THE DESIGNATED ETL CENTRAL STATION VIA DACT.

C. TROUBLE/SUPERVISORY SIGNAL

- TRouble AND SUPERVISORY DEVICES SHALL NOT ACTIVATE AUDIBLE AND VISIBLE DEVICES, INSTEAD THEY SHOULD SHOW A SUPERVISORY OR TROUBLE INDICATION AT FACP
- A TROUBLE SIGNAL COULD INDICATE A BREAK IN THE CIRCUIT WIRING OR A DETECTOR THAT IS NOT OPERATING PROPERLY.
- WHEN ARMED, TRANSMITS A SIGNAL TO THE DESIGNATED ETL CENTRAL STATION VIA DACT.

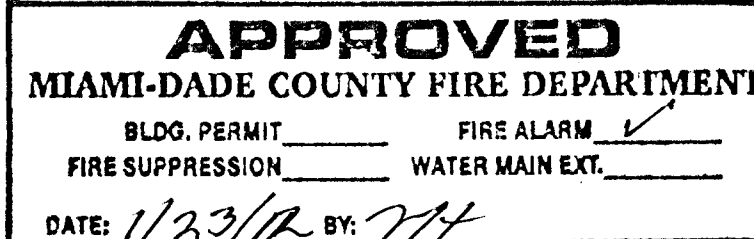
SCOPE OF WORK:

- RELOCATE EXISTING NOTIFICATION AND ADD POWER BOOSTER FOR EXISTING LOAD WITHIN DASHED BOLD LINES.
- THE EXISTING FACP AND POWER BOOSTER ARE TO BE PROTECTED BY A SMOKE DETECTOR.
- SCOPE OF WORK IS LIMITED ONLY TO WHAT IS PROVIDED IN DASHED BOLD LINES ON FLOOR PLANS AND RISER.

REVISION BASED ON COMMENTS DATED 1/19/11			
2	CLARIFIED SCOPE OF WORK ON FLOOR PLAN AND RISER		
3	CLARIFIED NEW AND RELOCATED DEVICES ON RISER		
4	FURTHER CLARIFICATION OF MONITORING ALSO PLEASE SEE ATTACHED CONTRACTS AND LICENSING		

FIRE ALARM SYSTEM TO BE INSTALLED IN ACCORDANCE WITH NFPA 72, 70, 101.

FIRE ALARM SHALL BE A CENTRAL STATION SERVICE. A CERTIFICATE OR PLACARD SHALL BE POSTED AT FINAL INSPECTION. AS PER NFPA 72



NAC VOLTAGE DROP CALCULATIONS			
DC RESISTANCE FOR SOLID COPPER WIRES AT 75 DEGREES -C			
SIZE	OHMS PER FOOT		
18	0.00777		
16	0.00489		
14	0.00307		
12	0.00193		
10	0.00121		
VALUES TAKEN FROM 1999 NEC CHAPTER 9 TABLE 8			
FORMULA FOR CALCULATION OF VOLTAGE DROP IN DC 2 WIRE CIRCUITS			
VD = R x 2 L x I			
WHERE VD = VOLTAGE DROP AT THE LAST DEVICE ON THE CIRCUIT			
"R" = RESISTANCE OF WIRE IN OHMS PER FOOT (VALUES OF RESISTANCE FOR COPPER WIRE PER TABLE ABOVE) "I" = TOTAL CIRCUIT CURRENT IN AMPERES			
"L" = LENGTH ONE WAY OF THE CIRCUIT IN FEET			
STARTING VOLTAGE USED IN CALCULATIONS IS 20.4 PER U.L. & NFPA REQUIREMENTS			
(INFORMATION PROVIDED BY CUSTOMER)			

NAC VOLTAGE DROP CALCULATIONS			
DC RESISTANCE FOR SOLID COPPER WIRES AT 75 DEGREES -C			
SIZE	OHMS PER FOOT		
18	0.00777		
16	0.00489		
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"L" = LENGTH ONE WAY OF THE CIRCUIT IN FEET			
STARTING VOLTAGE USED IN CALCULATIONS IS 20.4 PER U.L. & NFPA REQUIREMENTS			
(INFORMATION PROVIDED BY CUSTOMER)			

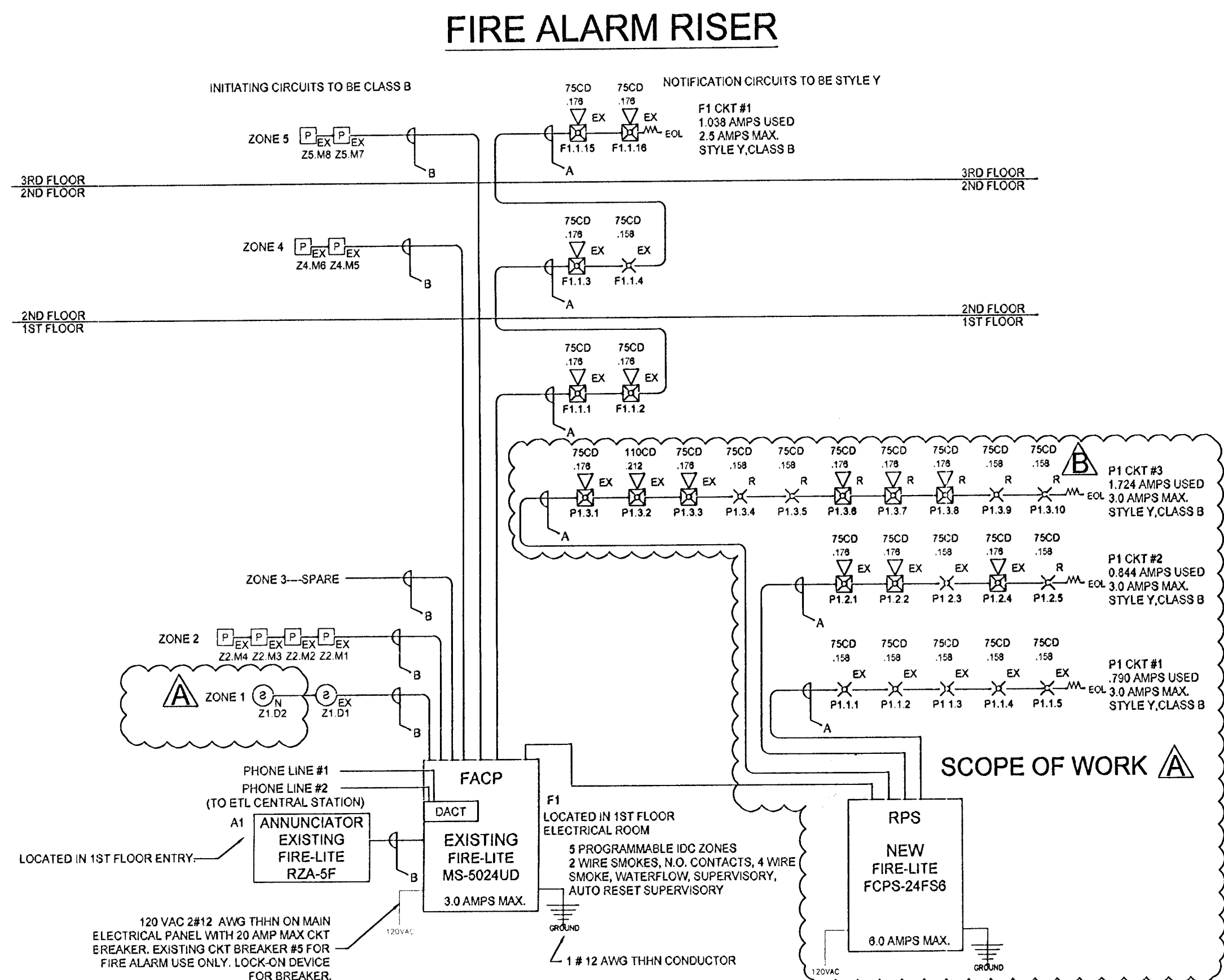
ZONE LEGEND	
ZONE #	DESCRIPTION
1	1ST FLOOR SMOKE DETECTORS
2	1ST FLOOR PULL STATIONS
3	SPARE
4	2ND FLOOR PULL STATIONS
5	3RD FLOOR PULL STATIONS

WIRE LEGEND

SYMBOL	MINIMUM WIRE TYPE AND DESCRIPTION
A	14-2 FPL OR THHN WIRE FOR HORNS AND STROBES
B	18-2 FPL OR THHN WIRE FOR INITIATION
C	12 AWG THHN WIRE FOR FACP & POWER SUPP. POWER
D	12 AWG THHN WIRE FOR FACP & POWER SUPP. GROUND
F	18-2 FPL 24 VOLT POWER

FIRE ALARM LEGEND

SYMBOL	QTY.	DESCRIPTION	MANUFACTURER	MODEL
[FACP]	01	EXISTING FIRE ALARM CONTROL PANEL W/ DIALER	FIRE-LITE	MS-5024UD
[ANN]	01	EXISTING ANNUNCIATOR	FIRE-LITE	RZA-5F
[RPS]	01	NEW REMOTE POWER SUPPLY	FIRE-LITE	FCPS-24FS6
[P]	08	EXISTING PULL STATION	FIRE-LITE	BG-10
(2)	01	EXISTING SMOKE DETECTOR	FIRE-LITE	2400
(SD)	01	NEW SMOKE DETECTOR	FIRE-LITE	i3 SERIES 2WB
X	12	EXISTING / RELOCATED STROBES	SYSTEM SENSOR	SR
[X]	14	EXISTING / RELOCATED HORN STROBES	SYSTEM SENSOR	P2R
EX		EXISTING DEVICE		
R		RELOCATED DEVICE		



REVISIONS

REVISION BASED ON MDF COMMENTS

DATED 11/22/11

CHASE BANK

15700 NW 67TH AVENUE

MIAMI LAKES, FL 33014

DRAWING TYPE

FIRE ALARM PLAN

SEAL

[Signature]

FIRE ALARM SYSTEMS AND SECURITY, INC.

BROWARD (954) 327-8670

DADE (305) 652-1613

STATEWIDE (800) 413-FIRE

FAX# (954) 327-8674

3901 S.W. 47th Avenue, Suite 408.

DAVIE, FLORIDA 33314

STATE CERTIFIED EF-0000008

UL CERTIFIED UFPX S24027-1

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REVISION DATED 1/11/012

DRAWN BY O.T.

DATE: 11/01/11

APPROVED BY

SCALE: 1/8"=1'-0"

DRAWN BY K.P.

CHECKED BY K.P.

SHEET FA-2 OF 3

FIRE ALARM BATTERY CALCULATIONS & VOLTAGE DROP

FACP (EXISTING) FIRE-LITE (MS-5024UD)						
3.0 AMPS MAX						
	CD	QTY	STANDBY PER DEV.	TOTAL STANDBY	ALARM PER DEV.	TOTAL ALARM
MAIN	N/A	1	0.1	0.1	0.17	0.17
EXISTING ANNUNCIATOR (RZA-5F)	N/A	1	0	0	0.048	0.048
					TOTAL INPUT	0.216
CIRCUIT #1 (2.5 AMP MAX)						
HORN STROBE (P2R)	75CD	5		0.178	0.178	0.88
STROBE (SR)	75CD	1		0.158	0.158	0.158
				TOTAL CIRCUIT # 1		1.038
CIRCUIT #2 (2.5 AMP MAX) SPARE						

FIRE ALARM BATTERY CALCULATIONS & VOLTAGE DROP

FACP (EXISTING) FIRE-LITE (MS-5024UD)						
2.3 AMPS MAX						
	CD	QTY	STANDBY PER DEV.	TOTAL STANDBY	ALARM PER DEV.	TOTAL ALARM
MAIN	N/A	1	0.1	0.1	0.17	0.17
EXISTING ANNUNCIATOR (RZA-SF)	N/A	1	0	0	0.046	0.046
EXISTING SMOKE DETECTOR (2400)	N/A	1	0.12	0.12	0.1	0.1
					TOTAL INPUT	0.316
CIRCUIT #1 (2.5 AMP MAX)						
HORN STROBE (P2R)	75CD	8			0.176	1.408
STROBE (SR)	75CD	5			0.158	0.79
						0
						0
					TOTAL CIRCUIT # 1	2.198
CIRCUIT #2 (2.5 AMP MAX)						
HORN STROBE (P2R)	75CD	6			0.176	1.056
STROBE (SR)	75CD	4			0.158	0.632
						0
					TOTAL CIRCUIT # 2	1.688

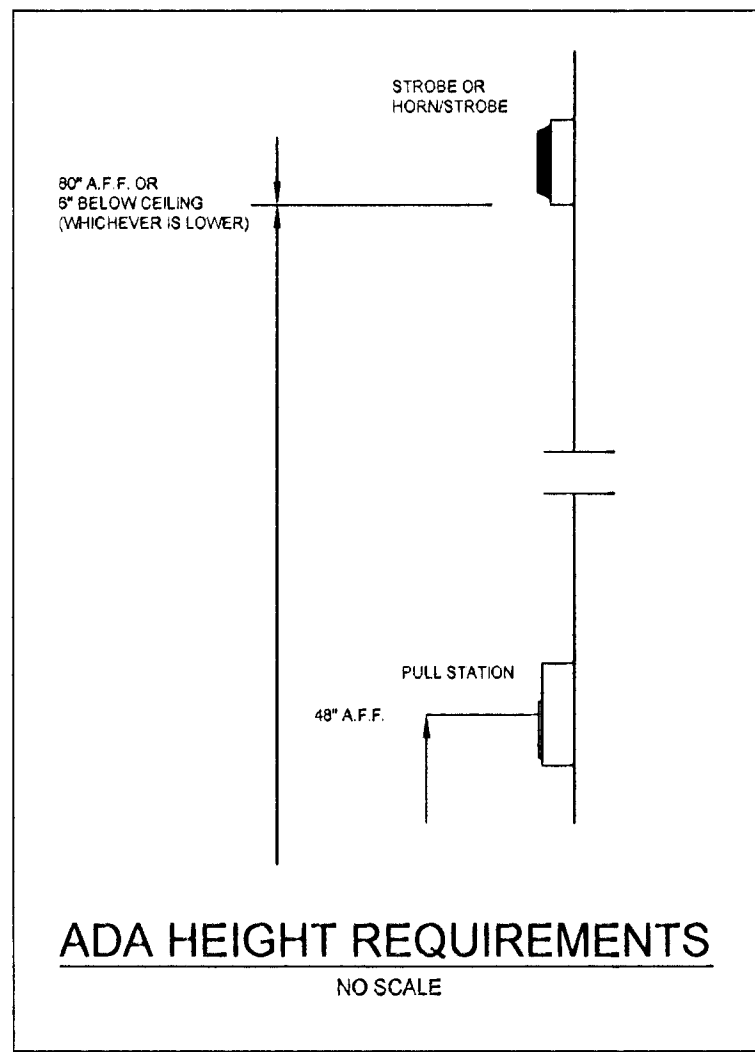
SEQUENCE OF OPERATION:

THE ACTUATION OF THE FIRE ALARM INITIATING DEVICE SHALL AUTOMATICALLY INITIATE THE FUNCTION DETAILED BELOW.

A. MANUAL FIRE ALARM PULL STATION
ACTIVATION OF THE MANUAL FIRE ALARM PULL STATION SHALL INITIATE THE FOLLOWING FUNCTIONS:
1. GENERATE AN AUDIBLE SIGNAL AT FIRE ALARM CONTROL PANEL.
2. GENERATE AN AUDIBLE GENERAL ALARM SIGNAL THROUGHOUT THE BUILDING BY MEANS OF A HORN/STROBE DEVICE. GENERATE A VISUAL ALARM SIGNAL SIMULTANEOUSLY ON ALL AREAS OF THE BUILDING BY THE USE OF STROBE DEVICES OR COMBINATION SPEAKER/ STROBE NOTIFICATION DEVICES.
3. INDICATE THE LOCATION OF THE PULL STATION, BY DISPLAYING IN ENGLISH THE ALARMED DEVICE AND ITS LOCATION ON THE FACP ANNUNCIATOR DISPLAY.
4. WHEN ALARMED, TRANSMITS A FIRE ALARM SIGNAL TO THE DESIGNATED UL LISTED CENTRAL STATION BY WAY OF DIGITAL TELEPHONE DIALER.

B. SMOKE DETECTORS
ACTIVATION OF SMOKE DETECTORS SHALL INITIATE THE FOLLOWING FUNCTIONS:
1. GENERATE AN AUDIBLE SIGNAL AT FIRE ALARM CONTROL PANEL.
2. GENERATE AN AUDIBLE GENERAL ALARM SIGNAL THROUGHOUT THE BUILDING BY MEANS OF A HORN/STROBE DEVICE. GENERATE A VISUAL ALARM SIGNAL SIMULTANEOUSLY ON ALL AREAS OF THE BUILDING BY THE USE OF STROBE DEVICES OR COMBINATION HORN/ STROBE NOTIFICATION DEVICES.
3. INDICATE THE LOCATION OF THE SMOKE DETECTOR, BY DISPLAYING IN ENGLISH THE ALARMED DEVICE AND ITS LOCATION ON THE FACP ANNUNCIATOR DISPLAY.
4. WHEN ALARMED, TRANSMITS A FIRE ALARM SIGNAL TO THE DESIGNATED U.L. LISTED CENTRAL STATION BY WAY OF DIGITAL TELEPHONE DIALER.

THE MAXIMUM TIME PERIOD FROM THE ACTUATION OF THE INITIATING DEVICE UNTIL INITIATION OF ALL RELATED FUNCTIONS AS LISTED ABOVE SHALL BE TEN SECONDS.
ALL SIGNALING LINE CIRCUIT SHALL BE CLASS B
ALL NOTIFICATION CIRCUITS (NAC) SHALL BE STYLE Y.



SCOPE OF WORK:

- RELOCATE EXISTING NOTIFICATION DEVICES IN NEW REMODELED AREA (DASHED AREA- FA-1) ON 1ST FLOOR
- THE EXISTING FACP IS TO BE PROTECTED BY A SMOKE DETECTOR.
- SCOPE OF WORK IS LIMITED ONLY TO WHAT IS PROVIDED ON FLOOR PLANS AND RISER.

WIRE LEGEND

SYMBOL	MINIMUM WIRE TYPE AND DESCRIPTION
A	14-2 FPL OR THHN WIRE FOR HORNS AND STROBES
B	18-2 FPL OR THHN WIRE FOR INITIATION
C	12 AWG THHN WIRE FOR FACP & POWER SUPP. POWER
D	12 AWG THHN WIRE FOR FACP & POWER SUPP. GROUND
F	18-2 FPL 24 VOLT POWER

FIRE ALARM LEGEND

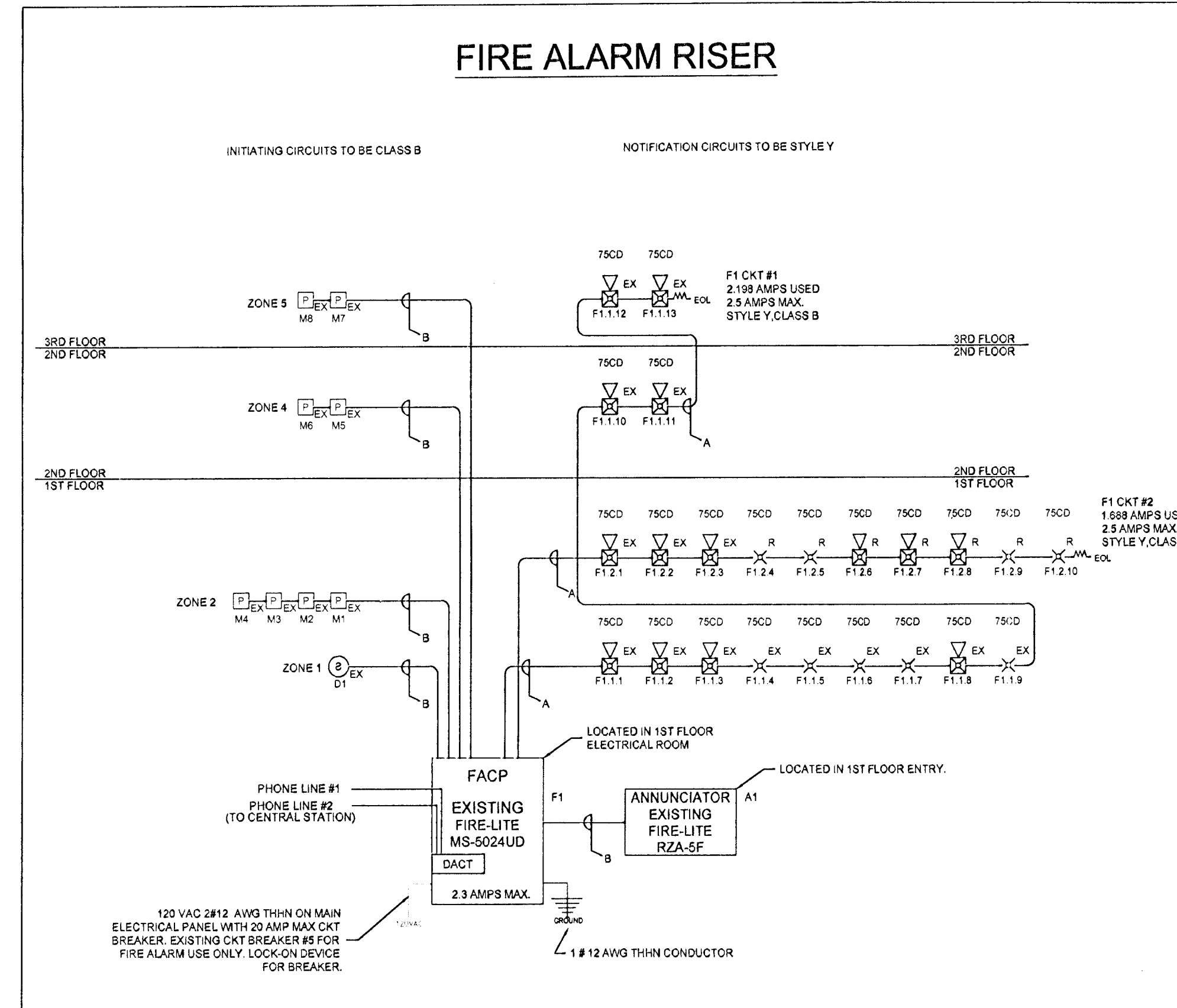
SYMBOL	QTY.	DESCRIPTION	MANUFACTURER	MODEL
FACP	01	EXISTING FIRE ALARM CONTROL PANEL VV DIALER	FIRE-LITE	MS-5024UD
ANN	01	EXISTING ANNUNCIATOR	FIRE-LITE	RZA-SF
P	08	EXISTING PULL STATION	FIRE-LITE	BG-10
S	01	EXISTING SMOKE DETECTOR	FIRE-LITE	2400
X	09	EXISTING STROBE	SYSTEM SENSOR	SR
H	14	EXISTING HORN STROBE	SYSTEM SENSOR	P2R
EX		EXISTING DEVICE		
R		RELOCATED DEVICE		

ZONE LEGEND

ZONE #	DESCRIPTION
1	1ST FLOOR SMOKE DETECTORS
2	1ST FLOOR PULL STATIONS
3	SPARE
4	2ND FLOOR PULL STATIONS
5	3RD FLOOR PULL STATIONS

FIRE ALARM SPECIFICATIONS:

- EXISTING CONVENTIONAL (MS-5024UD) FACP TO BE POWER LIMITED AND HAVE A BATTERY BACKUP.
- BUILDING IS EXISTING.
- BUILDING IS NOT SPRINKLERED.
- OCCUPANCY BUSINESS BUILDING.
- SYSTEM AND INSTALLATION TO COMPLY WITH LIFE SAFETY NFPA101 2008, NATIONAL FIRE ALARM CODE NFPA 72 2002 EDITION, NEC-NFPA 70 2008 EDITION, AND FLORIDA FIRE PREVENTION CODE-2007 EDITION, NFPA(1) UNIFORM CODE 2006.
- THE DESIGN INSTALLATION COMPLIES WITH FBC 11-4.28.3
- WIRING MINIMUMS; INITIATING CIRCUITS 18/2 FPL INDICATING CIRCUITS 14/2 FPL (NAC)
- CONDUIT IF REQUIRED WILL BE 1/2" MINIMUM 40% FILL MAX.
- ALL DEVICES TO BE MOUNTED PER NFPA GUIDELINES OR ADA WHERE REQUIRED.
- SYSTEM COMPONENTS SHALL BE U.L. LISTED AND COMPATIBLE.
- CIRCUITS TO BE CLASS B STYLE Y.
- AUDIBLE SIGNAL SHALL BE A MINIMUM OF 15 DB ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 DB ABOVE THE MINIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS (WHICHEVER IS GREATER), MEASURED 5 FT AFF IN THE OCCUPIABLE AREA.
- CEILING AREA SMOKE DETECTORS SHALL BE A MINIMUM OF 3 FEET AWAY FROM A/C SUPPLIES AND RETURNS.
- THIS SYSTEM IS MONITORED BY A U.L. LISTED CENTRAL STATION.
- ALL EQUIPMENT SHALL BE NEW U.L. LISTED, AND SHALL BE LISTED FOR USE AND COMPATIBLE.
- THE INSTALLATION OF THE FIRE ALARM SYSTEM SHALL COMPLY WITH NFPA 70, NATIONAL ELECTRICAL CODE (2005 EDITION), FLORIDA FIRE PREVENTION CODE (2004 EDITION), NFPA 72 (2002 EDITION), AND THE FLORIDA ACCESSIBILITY CODE PER FBC (2004 EDITION), 11-4.28
- THE FIRE ALARM SYSTEM SHALL CONSIST OF A FIRE DETECTION CONTROL AND NOTIFICATION SYSTEM.
- THE FIRE ALARM EQUIPMENT SHALL BE "POWER LIMITED".
- THE FIRE ALARM CONTROL PANEL SHALL BE INTELLIGENT AND HAVE STANDBY BATTERY BACKUP AS PER NFPA 72, (2002 EDITION) CHAPTER 4.4.1 PROVIDING BATTERY POWER CAPACITY FOR THE ENTIRE SYSTEM TO OPERATE FOR 24 HOURS IN STANDBY MODE AND THE ENTIRE SYSTEM FOR 5 MINUTES IN THE ALARM MODE.
- THE PRIMARY POWER SOURCE FOR THE FIRE ALARM SYSTEM SHALL BE CONNECTED TO A DEDICATED LOCKED CIRCUIT BREAKER.
- CABLE TYPE, SIZE AND INSTALLATION REQUIREMENTS SHALL COMPLY WITH ARTICLE 760 OF NFPA 70, NATIONAL ELECTRICAL CODE (2005 EDITION) FOR POWER LIMITED FIRE PROTECTION SIGNALING CIRCUITS-WIRING METHODS AND MATERIALS.
- ALL WIRING AND CONDUIT TO CONFORM TO NFPA 70, NATIONAL ELECTRICAL CODE (2005 EDITION). WIRE SHALL BE SOLID COPPER OR STRANDED COPPER WITH A MAXIMUM OF 7 STRANDS FOR SIZES 16 AND 18AWG. STRANDED COPPER WITH A MAXIMUM OF 19 STRANDS.
- ALL WIRING INSTALLED IN DUCTS, PLENUMS AND OTHER SPACES USED FOR ENVIRONMENTAL AIR SHALL BE TYPE FPLP, AS PER NFPA 70, NATIONAL ELECTRICAL CODE (2005 EDITION).
- ALARM NOTIFICATION APPLIANCES SHALL BE VISUAL, AUDIBLE-VISUAL AND/OR AUDIBLE TYPE.
- VISUAL DEVICES SHALL BE XENON, WITH A MINIMUM CANDELA RATING OF 75 CANDELA AND SHALL BE PLACED AT 80" TO THE BOTTOM OR 6" FROM THE CEILING WHICHEVER IS LOWER PER ARTICLE 4.28 OF THE FLORIDA ACCESSIBILITY CODE. VISUAL DEVICES SHALL CONFORM WITH NFPA 72 (2002 EDITION), CHAPTER 7.5 FOR SPACING IN ROOMS AND CORRIDORS. IF MORE THAN 2 VISUAL DEVICES ARE IN ANY FIELD OF VIEW THEY SHALL BE SYNCHRONIZED, PER NFPA 72 (2002 EDITION) CHAPTER 7.5.4.1.2(3) AND 7.5.4.2.7
- THE LOCATION OF SMOKE DETECTORS SHALL BE SPECIFIED ON THE DRAWINGS. LOCATION AND SPACING SHALL BE IN CONFORMANCE WITH NFPA 72 (2002 EDITION) CHAPTER 5.5.2, 5.7, 5.8 AND 5.9
- MANUAL PULL STATIONS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 72 (2002 EDITION) CHAPTER 5.1.2 AND THE FLORIDA FIRE PREVENTION CODE CHAPTER: 13.7.1.4.7.1-6
- THE FIRE ALARM PANEL(S) SHALL NOT BE USED TO POWER ANY UNAUTHORIZED EXTERNAL DEVICES.
- THE FIRE ALARM PANEL MUST HAVE AN EARTH GROUND CONNECTION AS PER NATIONAL ELECTRICAL CODE (2005 EDITION). MINIMUM WIRE SIZE IS 14 AWG FOR GROUND CONNECTION. (NOTE: PANEL NEUTRAL OR CONDUIT GROUND IS NOT ACCEPTABLE).
- ALL SURGE/TRANSIENT SUPPRESSERS MUST BE CONNECTED TO BUILDING OR COLD WATER GROUND.
- A BREAK IN ANY FIELD WIRING OR GROUNDING OF ANY CONDUCTOR WILL RESULT IN THE ACTIVATION OF THE FIRE ALARM CONTROL PANEL(S) "TROUBLE" SIGNAL WHICH WILL PRODUCE AN AUDIBLE AND VISIBLE ANNUNCIATION AT THE PANEL(S) AND ANY REMOTE ANNUNCIATOR.
- THE 120-VAC POWER FEED FOR THE FIRE ALARM PANELS AND POWER SUPPLIES MUST BE FROM A DEDICATED EMERGENCY PANEL BREAKER AND THE BREAKER SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT", AS PER NFPA 72 (2002 EDITION) 4.4.1.4.2.2
- THE FIRE ALARM SYSTEM SHALL BE MONITORED OFF-PREMISE BY A U.L. LISTED CERTIFICATED CENTRAL STATION IN ACCORDANCE WITH NFPA 72, CHAPTER 8.2 (2002 EDITION)
- TWO TELEPHONE LINES SHALL BE PROVIDED TO THE FIRE ALARM COMMUNICATOR FOR PURPOSES OF MONITORING THE FIRE ALARM SYSTEM. TELEPHONE LINES SHALL BE CONNECTED IN CONFORMANCE WITH NFPA 72, CHAPTER 8.5.3.2.1 (2002 EDITION)
- ALL EQUIPMENT SHALL BE INSTALLED IN CONFORMITY OF THE LIFE SAFETY CODE (2003 EDITION)
- THIS IS A CERTIFICATED CENTRAL STATION SERVICE SYSTEM.



11-22-11
BATT. CAL.
VOID
MDFR

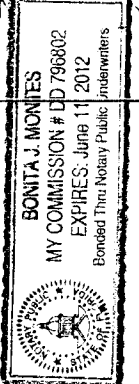
REVISIONS

CHASE BANK
15700 NW 67TH AVENUE
MIAMI LAKES, FL 33014

DRAWING TYPE

FIRE ALARM PLAN

SEAL



FIRE ALARM SYSTEMS AND SECURITY INC.

BROWARD (954) 327-8670
DADE (305) 652-1613
STATEWIDE (800) 413-FIRE
FAX# (954) 327-8674
3901 S.W. 47th Avenue, Suite 408,
DAVE, FLORIDA 33314



DATE: 11/01/11

APPROVED BY

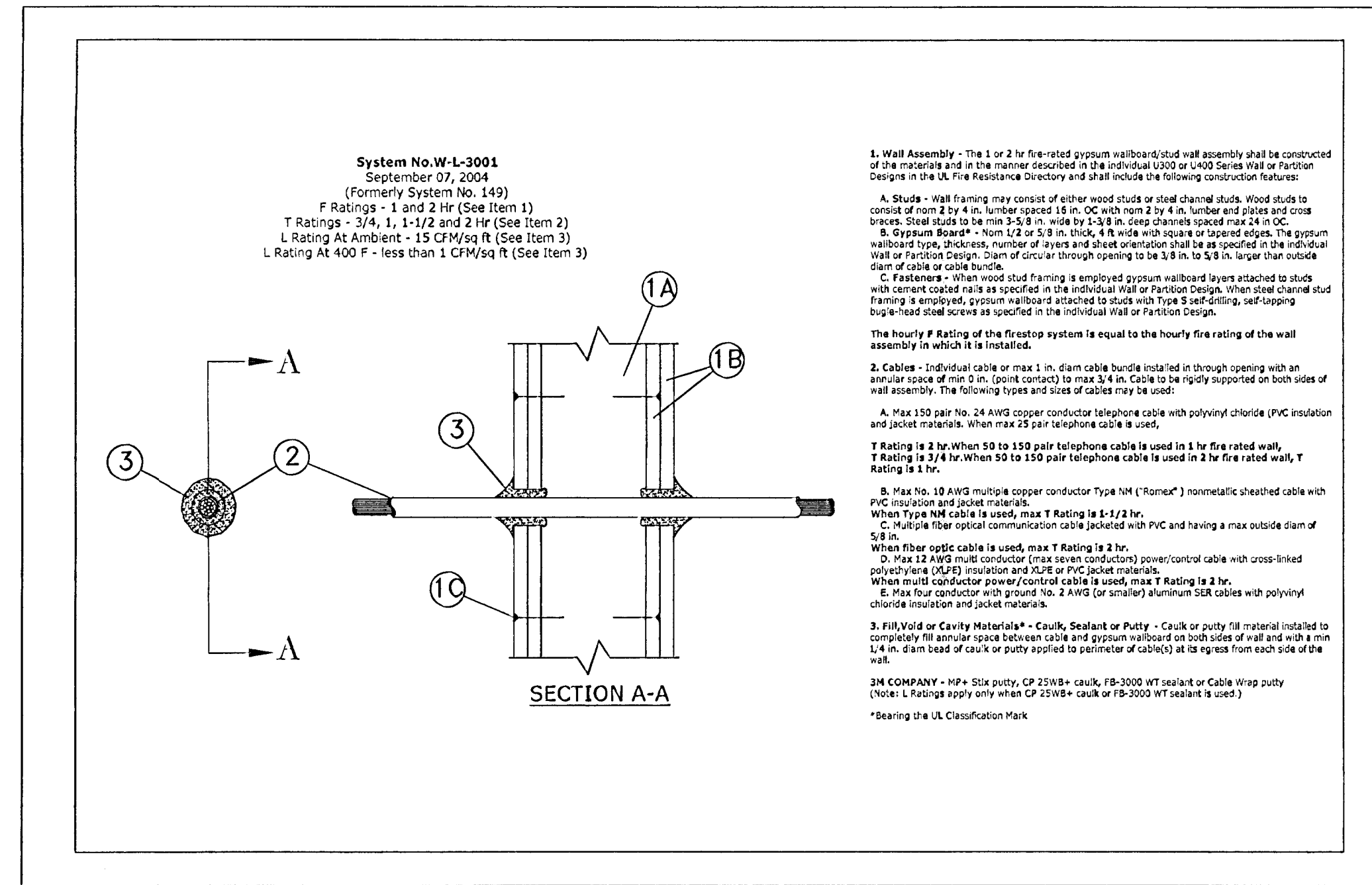
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DRAWN BY K.P.

CHECKED BY K.P.

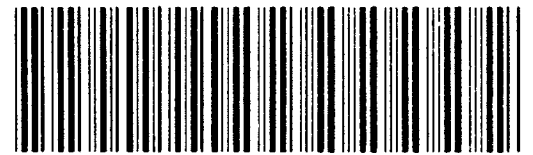
SHEET FA-213

11/9/2011



11-23-11

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MIAMI DADE FIRE RESCUE	
OFFICE COPY	
Process No:	
Municipal Insp No:	
Project Name:	
Address:	15700 NW 67 Ave
INITIAL	REVIEW
Date	11/23/11
Approved	Disapp
Not Applicable	
Revision Process No:	11/23/11
Date	11/23/11
Approved	Disapp
Not Applicable	

OFFICE COPY

M/2011-1386

32200140220020

M/13 2011-1386

15700 NW 67 Ave

FOLIO # 3220140220020
ADDRESS: 15700 NW 67 AVENUE
PROCESS # E2012-0200

MIAMI DADE FIRE RESCUE	
OFFICE COPY	
Process No:	
Municipal Insp No:	
Project Name:	
Address:	15700 NW 67 Ave
INITIAL	REVIEW
Date	11/23/11
Approved	Disapp
Not Applicable	
Revision Process No:	11/23/11
Date	11/23/11
Approved	Disapp
Not Applicable	

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9-1
19-5

91

NOTED

1/10/11



Address: **15700 NW 67 AVE 100**

Folio #: **3220140220020**

MDC Process #: **M2026007430**

MDC Tracking #: **3226007430**

Job Description: **FIRE ALARM RETROFIT**

Master Permit #: **ELC2026-0149**

Sub Permit #:

Revision #:

OFFICE USE ONLY

ZONING	☐ Approved	Date	Disapproved	BUILDING	☐ Approved	Date	Disapproved	STRUCT.	☐ Approved	Date	Disapproved
	Date				Date				Date		
	Initials				Initials				Initials		
ROOFING	☐ Approved	Date	Disapproved	ELECT.	☐ Approved	Date	Disapproved	MECH.	☐ Approved	Date	Disapproved
	Date				Date				Date		
	Initials				Initials				Initials		
PLUMBING	☐ Approved	Date	Disapproved	FLOOD	☐ Approved	Date	Disapproved		☐ Approved	Date	Disapproved
	Date				Date				Date		
	Initials				Initials				Initials		

PLANS CHECKED-OUT

DATE	NAME

PLANS CHECKED-IN

DATE	NAME

	AMOUNT\$
BASE PERMIT	
ZONING FEE	
CODE COMPLIANCE FEE	
TECHNOLOGY FEE	
DBPR SURCH. STATE	
DBPR SURCH. BUILDING	
SCANNING FEE	
WORK W/O PERMIT FEE	
UPFRONT FEE PAID	
BALANCE DUE:	



6601 Main St • Miami Lakes, Florida, 33014
Office: (305) 827-4015 • Fax: (305) 558-9884
Website: www.miamilakes-fl.gov

BUILDING PERMIT APPLICATION

Job Address: 15700 NW 67th Ave

Unit #: Suite 100

Folio #: 32- 2014-022-0020

Owner-Builder: ☐

Master Permit #: EC2026-0149 Sub Permit #: _____ Revision #: _____

OWNER INFORMATION	NAME : JULISSA ASSETS LLC	LEGAL USE/ WORK	Current Use of Property: Commercial Office Space
	Address: P O BOX 4189		Job Description Fire Alarm Retrofit
	City, State, Zip DEERFIELD BEACH FL 33442		
	Phone #: 954-363-9616 Cell #:		
	Email Address: ALI@MCMHEALTHCARE.COM		
CONTRACTOR INFORMATION	Company Name:	ARCHITECT/ ENGINEER	JOB COST \$21,501.28 AREA/LENGTH: _____ SF/LF
	Qualifier Name: Alexander G. Minicozzi		Residential ☐ Multi-Family ☒ Commercial ☐ Industrial ☐
	License # EF20001602		Code in Effect: _____
	Address 3921 SW 47th Ave Suite 1010		Occupancy: _____
	City, State, Zip Davie FL 33314		Construction Type: _____
	Phone #: 954-963-3366 Cell #:		Flood Zone/B.F.E.: _____ F.F.E.: _____
	Email Address: Reinaldo.Sanchez@GenSecurity.com		
Permit Type — Check only One		Change to Permit — Check only One	
☐ Building ☒ Electrical ☐ Mechanical ☐ Plumbing/Gas		☐ Extension ☐ Renewal ☐ Revision	
☐ Paving/Drainage ☐ Sign ☐ Roofing ☐ P/W		☐ Change Contractor ☐ Shop Drawing ☐ Cancellation	

Application is hereby made to obtain a permit to do work and installation as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work will be performed to meet the standards, of all laws regulating construction in this jurisdiction. I understand that a separate permit must be secured for ELECTRICAL WORK, MECHANICAL, PLUMBING, SIGNS, WELLS, POOLS, RE-ROOFING, SHUTTERS, WINDOWS, FURNACES, BOILERS, HEATERS, TANKS, and AIR CONDITIONERS, etc. I understand that in signing this application I am responsible for the supervision and completion of the construction including scheduling of inspections and obtaining final inspections in accordance with the plans and specification WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR ATTORNEY OR LENDER BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT. OWNER/CONTRACTOR AFFIDAVIT: I Certify that all the foregoing information is accurate and that all work will be done in compliance with all applicable laws regulating construction and zoning.

X

Signature of Owner or Owner's Agent

Date

1/7/25

Print Name of Owner or Owner's Agent

X

Signature of Qualifier

Date

1/7/25

Print Name of Qualifier

STATE OF Florida COUNTY OF DADE

Sworn to and subscribed before me this January 7 2025

by Mazin Shikara

Personally known ☒ or I.D. _____

STATE OF Florida COUNTY OF Broward

Sworn to and subscribed before me this January 7 2026

by Alexander Minicozzi (SEAL)

Personally known ☐ or I.D. _____

NOTICE: In addition to the requirements of this permit, there may be additional deed restrictions enforced by the homeowner's associations that may be applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies.

May 11, 2026

To Whom It May Concern,

This letter is to confirm that the elevator located at Town Plaza Center, 15700 NW 67 Ave, Miami Lakes, FL 33014, is equipped with fire recall functionality in accordance with applicable code requirements.

Please contact us if any additional information or documentation is required.

Sincerely,



Juliana Monsalve

Account Manager

Juliana.monsalve@EFSteam.com



800.526.6115



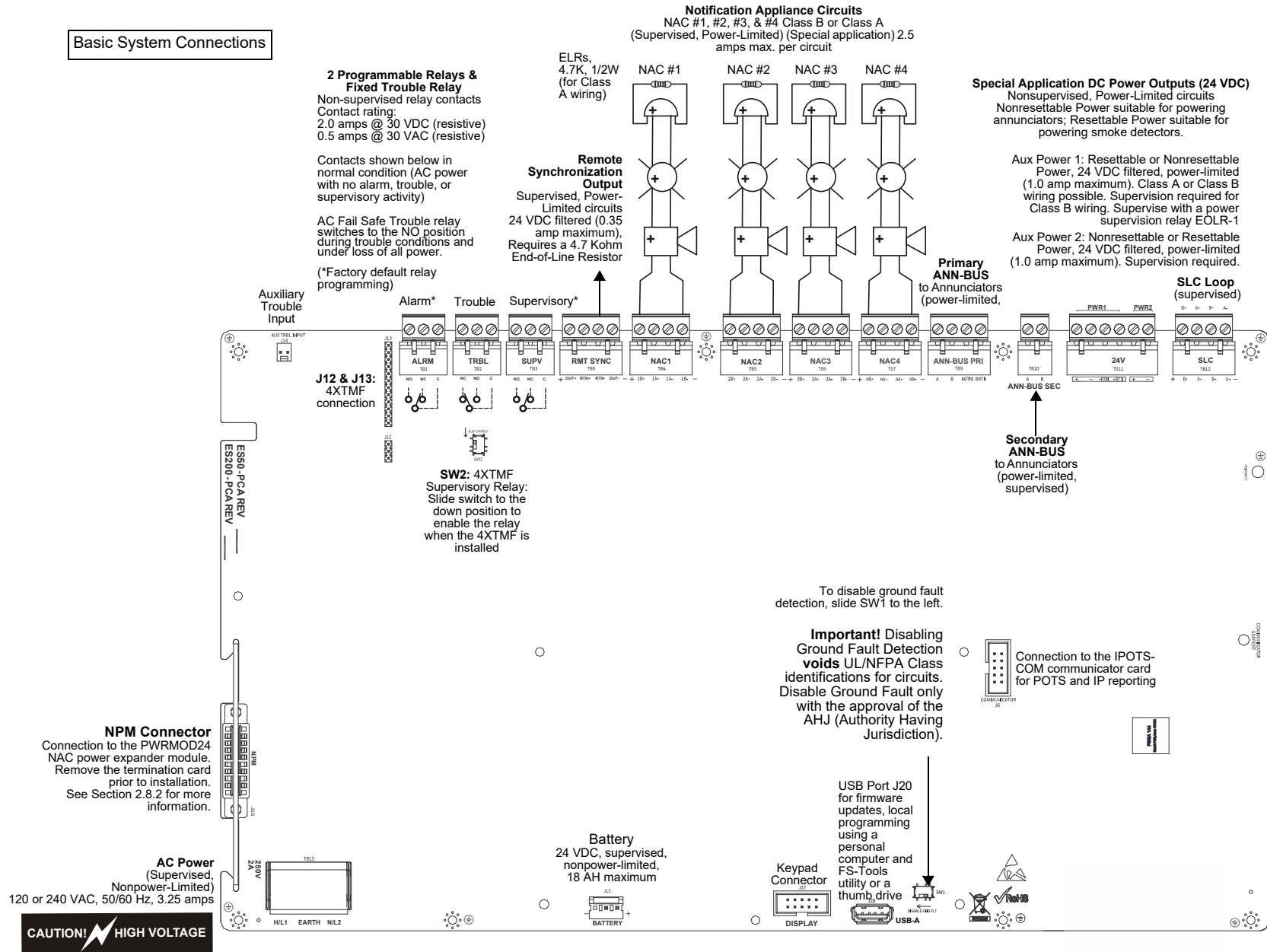
13801 NW 4th Street
Sunrise, Florida 33325



www.ElevatedFacilityServices.com

FIRELITE ES-200X

Basic System Connections



FIRELITE FCPS-24FS6

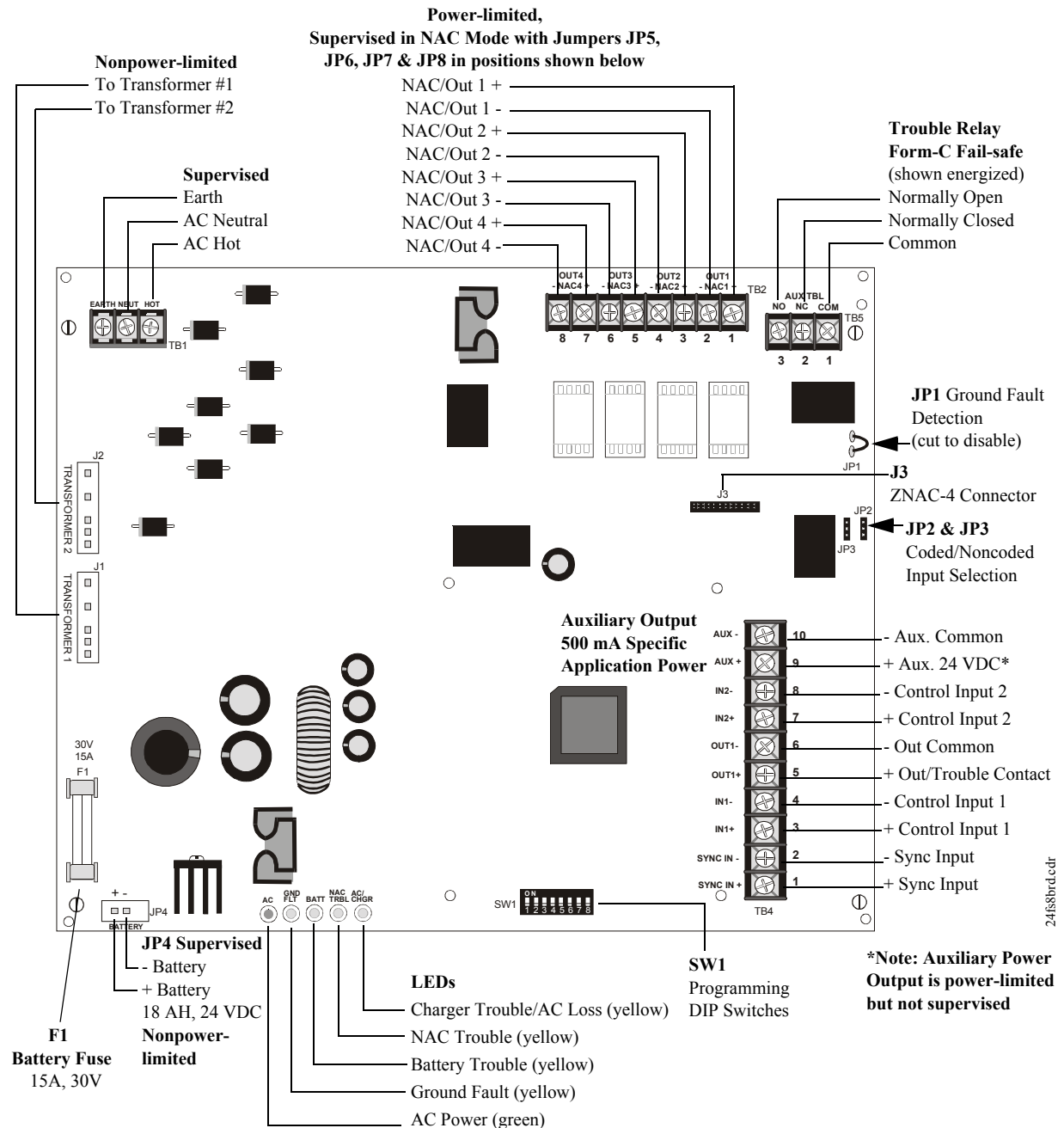
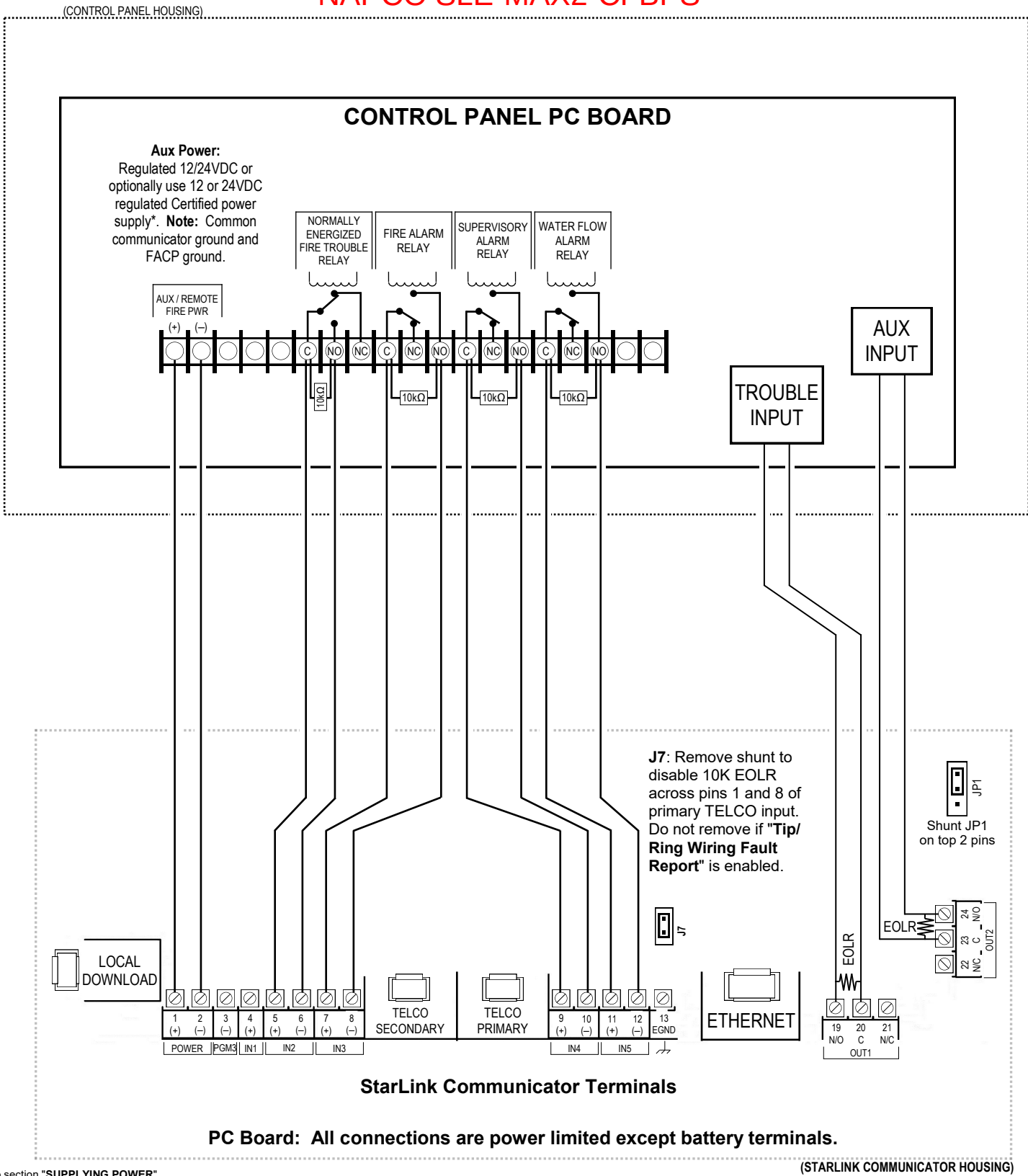


Figure 1.1 FCPS-24FS Board Layout

24fs8brd.cdr

Wiring Diagram for FACP Relay Trigger Input Reporting

NAPCO SLE-MAX2-CFBPS



Refer to section "SUPPLYING POWER".

CRF-300 Relay Control Module

One FireLite Place
Northford, CT 06472
Phone: 203.484.7161

SPECIFICATIONS

Normal Operating Voltage:	15 to 32 VDC
Maximum Current Draw:	6.5mA (LED on)
Average Operating Current:	230 µA direct poll; 255 µA group poll
EOL Resistance:	Not used
Temperature Range:	32°F to 120°F (0°C to 49°C)
Humidity:	10% to 93% Non-condensing
Dimensions:	4.675" H x 4.275" W x 1.4" D (Mounts to a 4" square by 2 1/8" deep box.)
Accessories:	SMB500 Electrical Box; CB500 Barrier

RELAY CONTACT RATINGS:

CURRENT RATING	MAXIMUM VOLTAGE	LOAD DESCRIPTION	APPLICATION
2 A	25 VAC	PF = 0.35	Non-coded
3 A	30 VDC	Resistive	Non-coded
2 A	30 VDC	Resistive	Coded
0.46 A	30 VDC	(L/R = 20ms)	Non-coded
0.7 A	70.7 VAC	PF = 0.35	Non-coded
0.9 A	125 VDC	Resistive	Non-coded
0.5 A	125 VAC	PF = 0.75	Non-coded
0.3 A	125 VAC	PF = 0.35	Non-coded

BEFORE INSTALLING

This information is included as a quick reference installation guide. Refer to the control panel installation manual for detailed system information. If the modules will be installed in an existing operational system, inform the operator and local authority that the system will be temporarily out of service. Disconnect power to the control panel before installing the modules.

NOTICE: This manual should be left with the owner/user of this equipment.

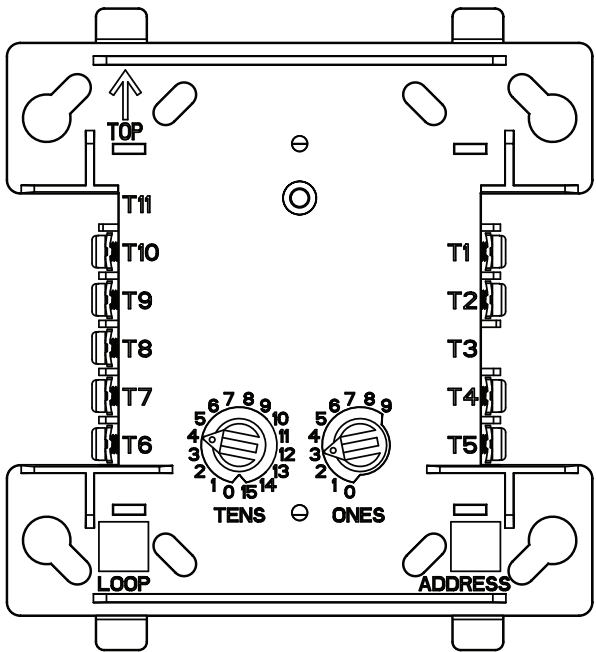
GENERAL DESCRIPTION

The CRF-300 Relay Control Module is intended for use in addressable, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It allows a compatible control panel to switch discrete contacts by code command. The relay contains two isolated sets of Form-C contacts, which operate as a DPDT switch and are rated in accordance with the table in the manual. Circuit connections to the relay contacts are not supervised by the module. The module also has a panel controlled LED indicator. This module can be used to replace an C304 module that has been configured for Form-C operation.

COMPATIBILITY REQUIREMENTS

To ensure proper operation, these modules shall be connected to listed compatible system control panels only.

FIGURE 1. CONTROLS AND INDICATORS:

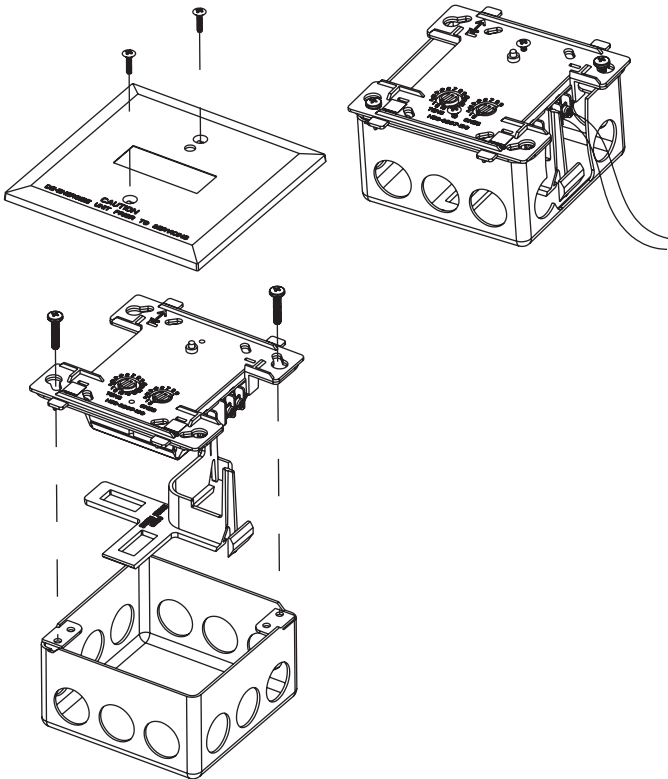


C1071-00

MOUNTING

The CRF-300 mounts directly to 4-inch square electrical boxes (see Figure 2A). The box must have a minimum depth of 2 1/8 inches. Surface mounted electrical boxes (SMB500) are available. The module can also mount to the D355PL or DNR(W) duct housing.

FIGURE 2A. MODULE MOUNTING WITH BARRIER:



WIRING

NOTE: All wiring must conform to applicable local codes, ordinances, and regulations. When using control modules in nonpower limited applications, the CB500 Module Barrier must be used to meet UL requirements for the separation of power-limited and nonpower-limited terminals and wiring. The barrier must be inserted into a 4"x4"x2 1/8" junction box, and the control module must be placed into the barrier and attached to the junction box (Figure 2A). The power-limited wiring must be placed into the isolated quadrant of the module barrier (Figure 2B).

1. Install module wiring in accordance with the job drawings and appropriate wiring diagrams.
2. Set the address on the module per job drawings.
3. Secure module to electrical box (supplied by installer), as shown in Figure 2A.

Wire should be stripped to the appropriate length (recommended strip length is 1/4" to 3/8"). Exposed conductor should be secured under the clamping plate and should not protrude beyond the terminal block area. Caution: Do not loop wire under terminals. Break wire run to provide supervision of connections.

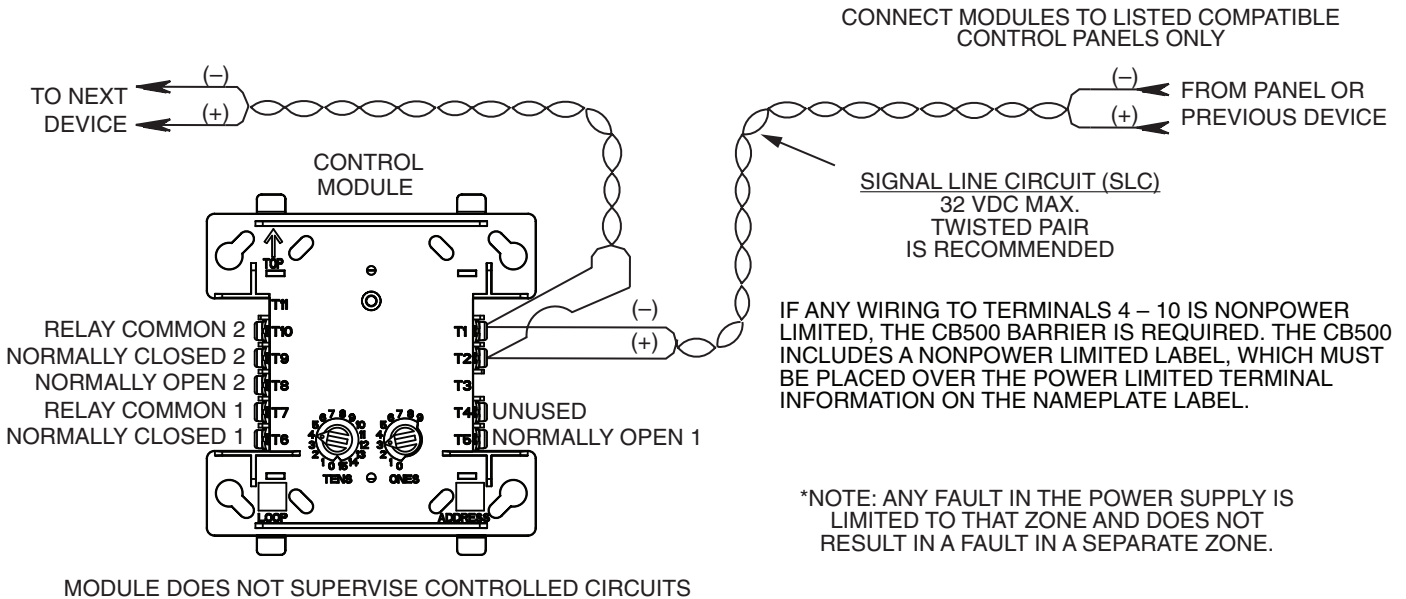
NOTE: All references to power limited represent "Power Limited (Class 2)."

C1070-00

WARNING

All relay switch contacts are shipped in the standby state (open) state, but may have transferred to the activated (closed) state during shipping. To ensure that the switch contacts are in their correct state, modules must be made to communicate with the panel before connecting circuits controlled by the module.

FIGURE 3. RELAY MODULE WIRING DIAGRAM:



C0924-04



BG-12LX Addressable Pull Station

Document 52141

156-3655-003

Description

The BG-12LX Addressable pull station is a non-coded, dual-action manual pull station with a key-lock reset feature. It provides Fire•Lite intelligent control panels with one addressable alarm initiating input. The addressable module is housed inside the pull station. The BG-12LX is compatible with all Fire•Lite intelligent panels. The BG-12LX meets the ADAAG controls and operating mechanisms guidelines (section 4.1.3[13]), and the ADA requirement for a 5 lb. maximum pull force to activate the pull station. Operating instructions are molded into the pull station handle along with Braille text. Molded Terminal numbers are also present. Conforms to ANSI/UL Standard 38 and ULC Standard S528.

Ratings

Normal Operating Voltage: 24 VDC.
Average Operating Current (LED Flash): 375 μ A.
Maximum Operating Current (LED On): 5 mA.
Temperature Range: 32° F - 120° F (0° C - 49° C).
Relative Humidity Range: 10% - 93% non-condensing.

Installation

The BG-12LX Addressable pull station can be surface mounted to an SB-10 or SB-I/O surface backbox or semi-flush mounted on a standard single-gang, double-gang or 4" (10.16 cm) square electrical box. The optional BG-TR trim ring can be used if the BG-12LX is to be semi-flush mounted.

Operation

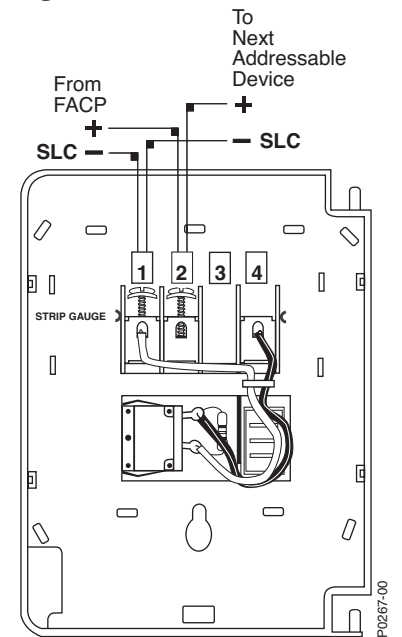
To activate the dual-action pull station, push in and pull down on the handle. The word 'ACTIVATED' appears after the handle is pulled down. This will remain until the pull station is reset.

The pull station includes one Single Pole, Single Throw (SPST) Normally Open (N/O) switch which closes upon activation of the pull station.

Resetting the Pull Station

1. Insert the key into the lock and rotate 1/4 turn counterclockwise.
2. Open the door until the handle returns to normal.
3. Close and lock the door.

Wiring



BG-12LX Addressable Pull Station

Document 52141

156-3655-003



NOTE: Closing the door automatically resets the switch to the 'Normal' position.

Opening the door will not activate or deactivate the alarm switch.

CAUTION! Do not detach the door of the pull station during installation. The door of the pull station cannot be reattached to the backplate after the backplate has already been installed onto an electrical box.

CAUTION!

Install the Fire•Lite BG-12LX addressable pull station in accordance with these instructions, applicable NFPA standards, national and local Fire and Electrical codes and the requirements of the AHJ (Authority Having Jurisdiction). Regular testing of the devices should be conducted in accordance with the appropriate NFPA standards. Failure to follow these directions may result in failure of the device to report an alarm condition. Fire•Lite is not responsible for devices that have been improperly installed, tested or maintained.

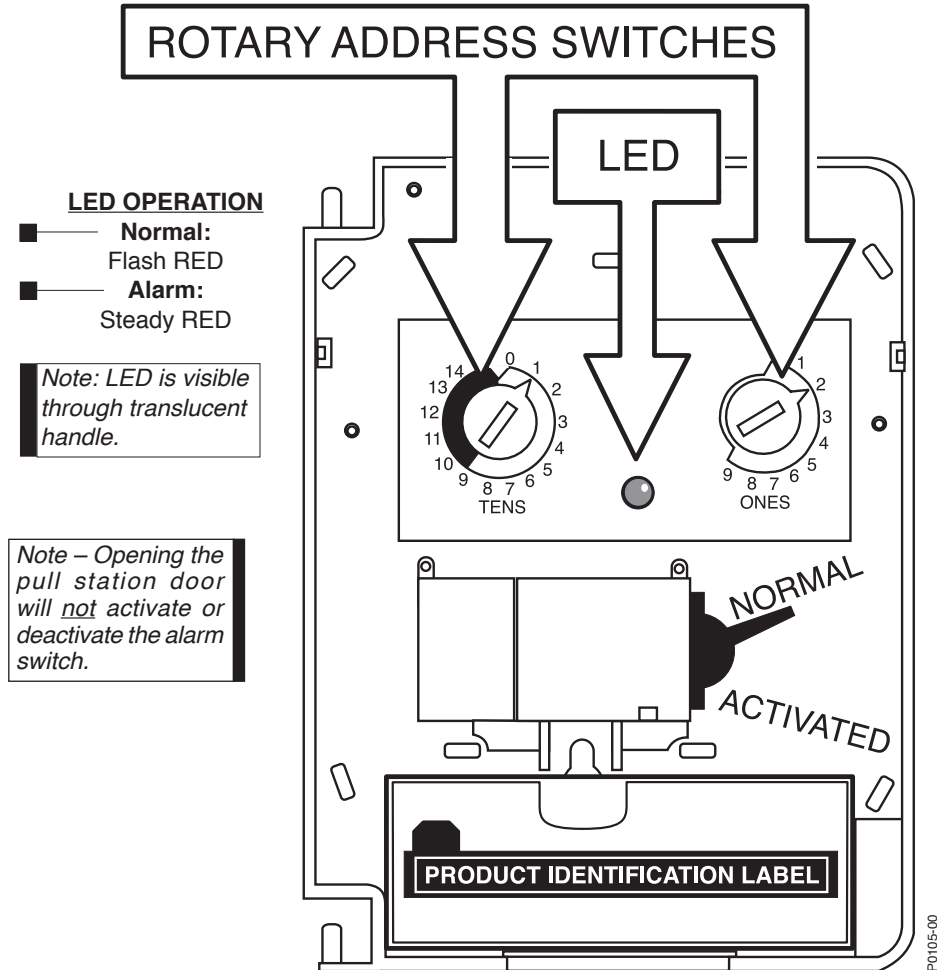
ADA Compliance

For ADA compliance, if the clear floor space only allows forward approach to an object, the maximum forward reach height allowed is 48 inches (121.92 cm). If the clear floor space allows parallel approach by a person in a wheelchair, the maximum side reach allowed is 54 inches (137.16 cm).

(over for Programming information)

Setting the BG-12LX Address

The BG-12LX Addressable pull station is factory preset with address '00.' Set the address for the pull station by turning the rotary address switches on the addressable module mounted inside the pull station. Only one device per address is allowed. Multiple modules may not be set to the same address on the Signaling Line Circuit. Once the address is set, record it in the space provided on the product ID label located inside the pull station.



I300 FAULT ISOLATOR MODULE

SPECIFICATIONS

Normal Operating Voltage:	15-32 VDC
Stand-By Current:	450µA (not isolating)
Maximum Current Draw:	17mA (device in isolation)
Temperature Range:	32°F to 120°F (0°C to 49°C)
Humidity:	10% to 93% Non-condensing
Dimensions:	4 1/2" H x 4" W x 1/4" D (Mounts to a 4" square by 2 1/8" deep box)

This information is included as a quick reference installation guide. Refer to the appropriate Fire-Lite control panel installation manual for detailed system information. If the modules will be installed in an existing operational system, inform the operator and local authority that the system will be temporarily out of service. Disconnect power to the control panel before installing the modules.

NOTICE: This manual should be left with the owner/user of this equipment.

GENERAL DESCRIPTION

I300 FAULT ISOLATOR MODULES enable part of the communications loop to continue operating when a short circuit occurs on it. An LED indicator blinks in the normal condition and turns on during a short circuit condition. The module will automatically restore the entire communications loop to the normal condition when the short circuit is removed. (The isolator module does not have decade switches.)

COMPATIBILITY REQUIREMENTS

To ensure proper operation, these modules must be connected to addressable, listed compatible Fire-Lite control panels only.

NOTE: The number of devices that may be installed between fault isolator modules will vary based on the types of devices being isolated. Contact the fire alarm control panel manufacturer for the isolator load ratings of individual devices.

MOUNTING

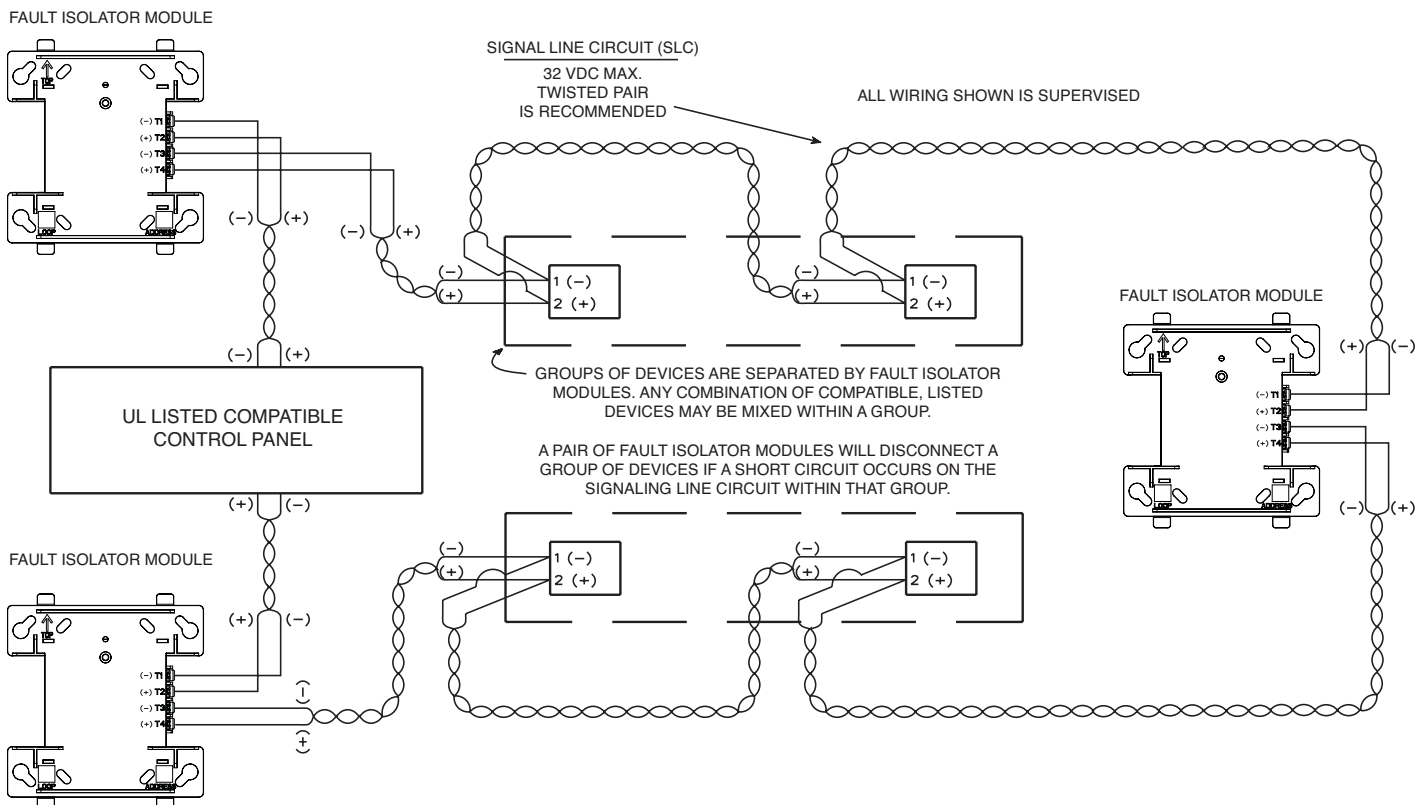
I300 modules mount directly to 4 inch square electrical boxes. The box must have a min. depth of 2 1/8".

WIRING

NOTE: All wiring must conform to applicable local codes, ordinances, and regulations.

1. Install module wiring in accordance with the job drawings and the wiring diagram in Figure 1.
2. Secure module to electrical box (supplied by installer).
3. Terminal wire gage: 12-18 AWG.

FIGURE 1. FAULT ISOLATOR MODULE WIRING:



C0774-05

MMF-301 Monitor Module

One FireLite Place
Northford, CT 06472
Phone: 203.484.7161

SPECIFICATIONS

Nominal Operating Voltage:	15-32 VDC
Average Operating Current:	375 μ A (group poll); 350 μ A (direct poll); 600 μ A Maximum (Communicating, IDC Shorted)
EOL resistance:	47K ohms
Maximum IDC Resistance:	1,500 Ohms
Maximum IDC Voltage:	11 Volts
Maximum IDC Current:	450 μ A
Temperature Range:	32°F to 120°F (0°C to 49°C)
Humidity:	10% to 93% Non-condensing
Dimensions:	1.3" H x 2.75" W x 0.65" D
Wire length:	6" minimum

BEFORE INSTALLING

This information is included as a quick reference installation guide. Refer to the control panel installation manual for detailed system information. If the modules will be installed in an existing operational system, inform the operator and local authority that the system will be temporarily out of service. Disconnect power to the control panel before installing the modules.

NOTICE: This manual should be left with the owner/user of this equipment.

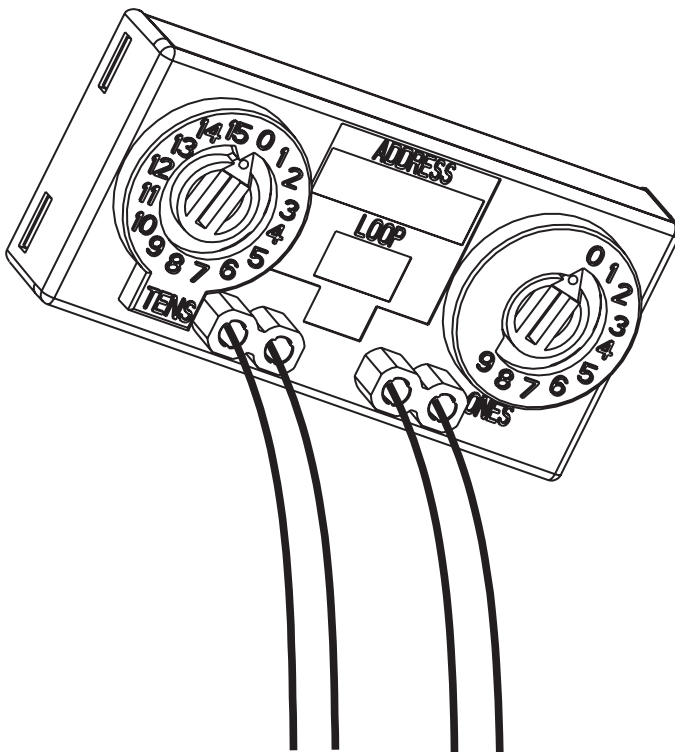
GENERAL DESCRIPTION

The MMF-301 monitor module can be installed in a single gang junction box directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting (see Figure 1). 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 circuit for normally open contact fire alarm and security devices. This module can be used to replace an M301 module in existing systems.

COMPATIBILITY REQUIREMENTS

To ensure proper operation, this module should only be connected to listed compatible system control panels only.

FIGURE 1:

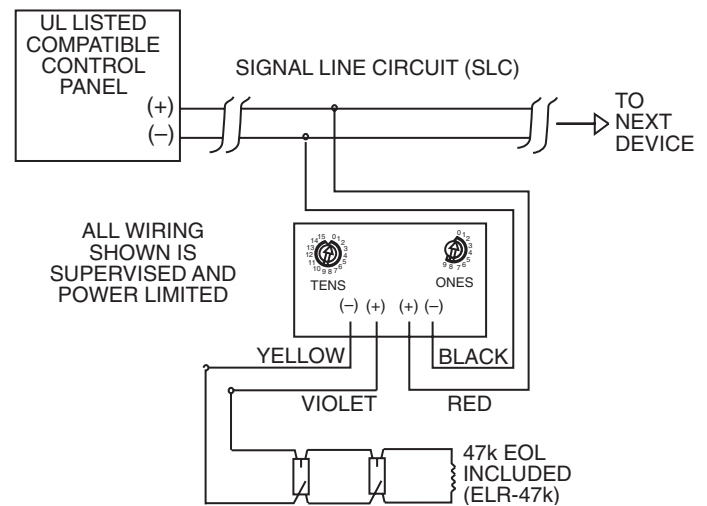


MOUNTING AND WIRING

NOTE: This 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.

1. Connect the red (+) and black (-) wires to the positive and negative loop power leads of the Signaling Line Circuit (SLC).
2. Connect the violet (+) and yellow (-) wires to a two-wire, normally open initiating loop.
3. Install the specified EOL resistor value to terminate the initiating loop.
4. Set the address on the module per job drawings.
5. Install the module in the desired mounting location.

FIGURE 2. TYPICAL 2-WIRE STYLE B INITIATING DEVICE CIRCUIT (IDC) CONFIGURATION:



C0614-02

C1063-00

MMF-300 Monitor Module Installation Instructions

Specifications

Normal Operating Voltage:	15 to 32 VDC
EOL Resistance:	47K Ohms
Maximum IDC Resistance:	1,500 Ohms
Temperature Range:	32°F to 120°F (0°C to 49°C)
Humidity:	10% to 93% Noncondensing
Dimensions:	4 $\frac{1}{2}$ " H x 4" W x 1 $\frac{1}{4}$ " D (Mounts to a 4" square by 2 $\frac{1}{8}$ " deep box.)
Accessories:	SMB500 Electrical Box

Before Installing

This information is included as a quick reference installation guide. Refer to the control panel installation manual for detailed system information. If the modules will be installed in an existing operational system, inform the operator and local authority that the system will be temporarily out of service. Disconnect power to the control panel before installing the modules.

NOTICE: This manual should be left with the owner/user of this equipment.

General Description

The MMF-300 Monitor Module is intended for use in addressable, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides either a 2-wire or 4-wire fault tolerant Initiating Device Circuit (IDC) for normally open contact fire alarm or supervisory devices. The module has a panel controlled LED indicator. The MMF-300 can be used to replace an M300 module in existing systems.

Compatibility Requirements

To ensure proper operation, these modules shall be connected to listed compatible system control panels only.

Mounting

The MMF-300 mounts directly to 4" square electrical boxes (see Figure 2). The box must have a minimum depth of 2 $\frac{1}{8}$ ". Surface mounted electrical boxes (SMB500) are available.

Wiring

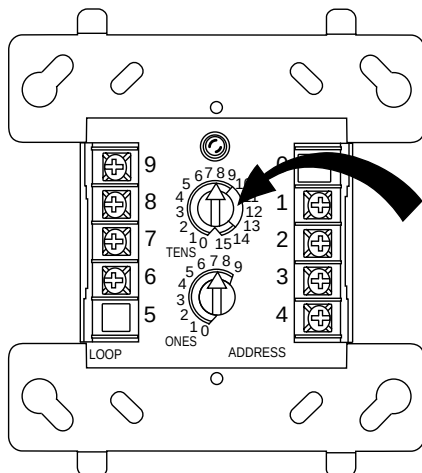
NOTE: All wiring must conform to applicable local codes, ordinances, and regulations. This module is intended for power limited wiring only.

1. Install module wiring in accordance with the job drawings and appropriate wiring diagrams.
2. Set the address on the module per job drawings.

NOTE: Some panels support extended addressing. In order to set the module above address 99 on Fire-Lite compatible systems, carefully remove the stop on the upper rotary switch with thumb in the direction shown in Figure 1.

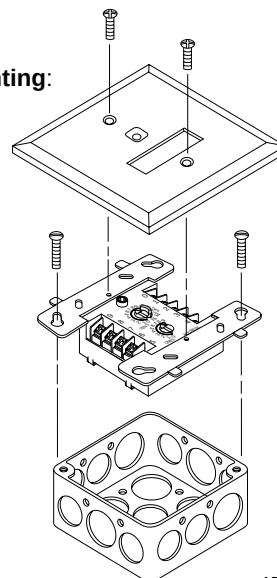
3. Secure module to electrical box (supplied by installer), as shown in Figure 2.

Figure 1. Controls and indicators:



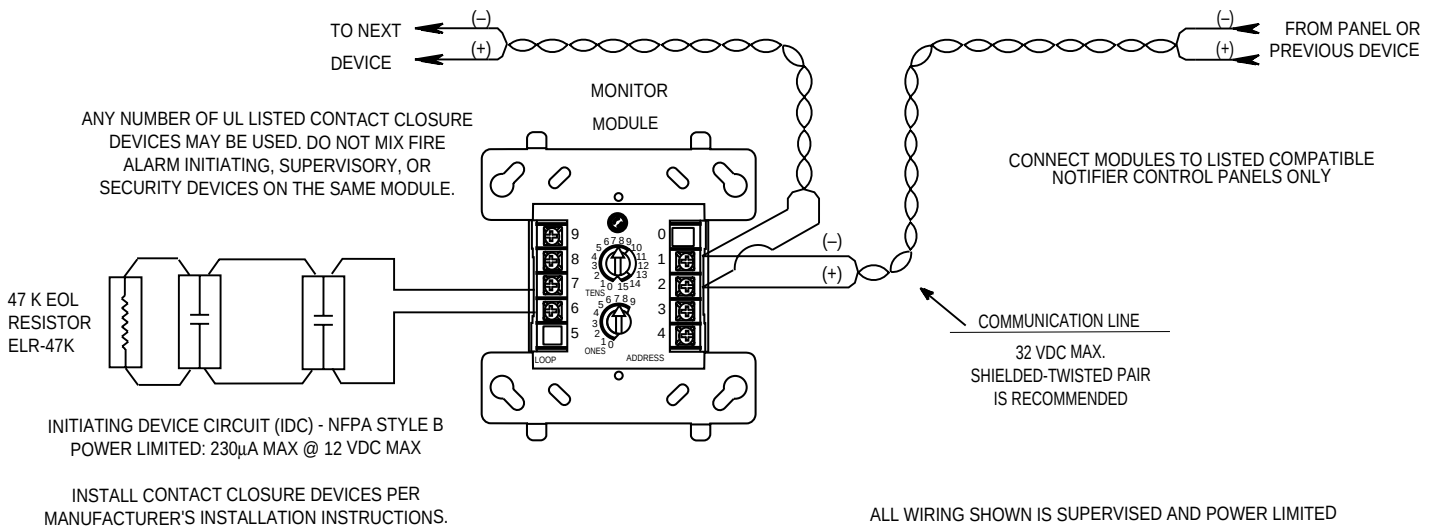
A78-2318-07

Figure 2. Module mounting:



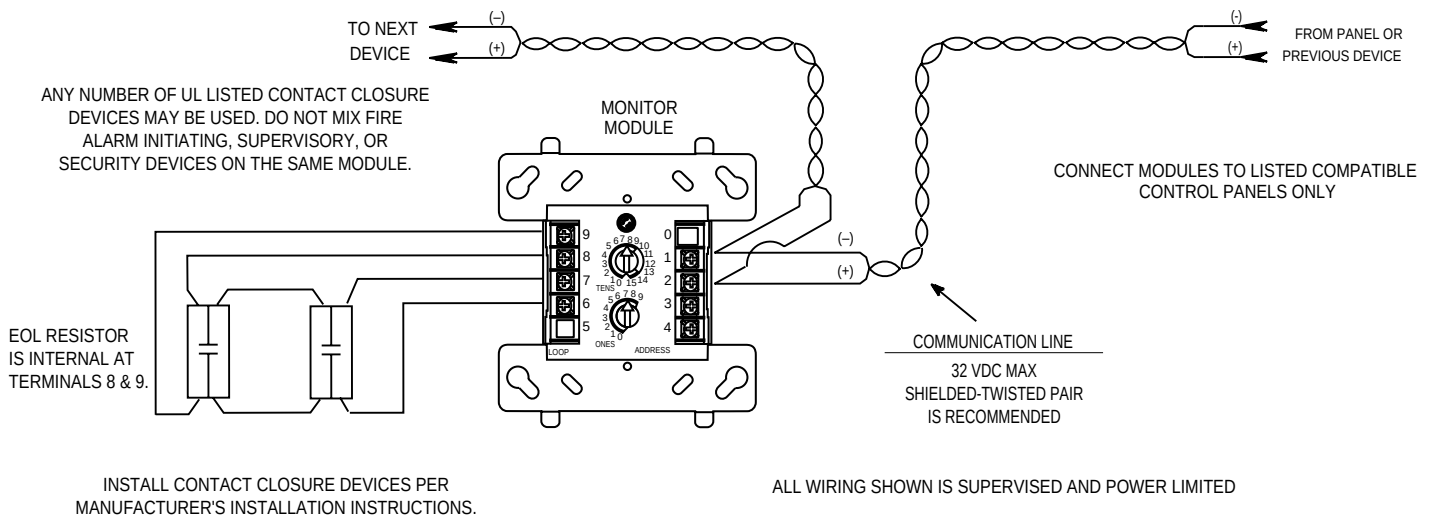
A78-2610-10

Figure 3. Typical 2-wire Initiating Device Circuit (IDC) configuration, NFPA Style B (Class B):



A78-2280-15

Figure 4. Typical 4-wire fault tolerant Initiating Device Circuit (IDC) configuration, NFPA Style D (Class A):



A78-2281-62

INSTALLATION AND MAINTENANCE INSTRUCTIONS



One FireLite Place
Northford, CT 06472
Phone: 203.484.7161

D355PL Duct Smoke Detector

SPECIFICATIONS

Operating Temperature:	-4° to 158°F (-20° to 70°C) 32° to 120°F (0° to 49°C) with module installed in the D355PL
Storage Temperature:	-22° to 158°F (-30° to 70°C)
Humidity:	0% to 93% Relative Humidity Non-condensing
Air Velocity:	100 to 4000 ft./min. (0.5 to 20.3 m/sec.)
Rectangular Footprint Dimensions:	14.38 in L × 5 in W × 2.5 in D (37 cm L × 12.7 cm W × 6.36 cm D)
Square Footprint Dimensions:	7.75 in L × 9 in W × 2.5 in D (19.7 cm L × 22.9 cm W × 6.35 cm D)
Weight:	1.8 pounds; 0.82 kg
Operating Voltage Range:	15 to 32 VDC
Standby Current:	300µA @ 24 VDC (one communication every 5 seconds with LED blink enabled)
Max. Alarm Current (LED on):	6.5 mA @ 24 VDC

ACCESSORY CURRENT LOADS AT 24 VDC		
DEVICE	STANDBY	ALARM
RA400Z/RA100Z	0mA	12mA Max.
RTS451/RTS151	0mA	12mA Max.
RTS451KEY/ RTS151KEY	12mA	12mA Max.

NOTE: The D355PL come with the sensor head factory installed, part number SD355R.

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[4] Detector Installation	1
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[9] Dectector Cleaning Procedures	4
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BEFORE INSTALLING

Read the System Sensor Guide for *Proper Use of Smoke Detectors in Duct Applications* (A05-1004), which provides detailed information on detector spacing, placement, zoning, wiring, and special applications. Copies of this manual are available online at www.systemsensor.com. NFPA Standards 72 and 90A should also be referenced for detailed information.

NOTICE: This manual shall be left with the owner/user of this equipment.
IMPORTANT: This detector must be tested and maintained regularly following NFPA 72 requirements. The detector must be tested an maintained regularly following NFPA 72 requirements. According to NFPA, the detector should be visually inspected semiannually and functionally tested at least once a year. This may need to be more frequent depending on the air quality of the duct supply air.

[1]LIMITATIONS OF DUCT SMOKE DETECTORS



The National Fire Protection Association has established that DUCT DETECTORS MUST NOT BE USED AS A SUBSTITUTE FOR OPEN AREA DETECTOR PROTECTION as a means of providing life safety. Nor are they a substitute for early warning in a building’s regular fire detection system.

System Sensor supports this position and strongly recommends that the user read NFPA Standards 90A, 72, and 101. The D355PL Air Duct Smoke Detectors are listed per UL 268A.

This device will not operate without electrical power. Fire situations may cause an interruption of power. The system safeguards should be discussed with your local fire protection specialist.

This device will not sense smoke unless the ventilation system is operating and the cover is installed.

For this detector to function properly, it MUST be installed according to the instructions in this manual. Furthermore, the detector MUST be operated within ALL electrical and environmental specifications listed in this manual and the sensor head installation manual. Failure to comply with these requirements may prevent the detector from activating when smoke is present in the air duct.

[2]GENERAL DESCRIPTION

Smoke introduced into this air duct system will be distributed throughout the entire building. Smoke detectors designed for use in air duct systems are used to sense the presence of smoke in the duct.

Model D355PL Air Duct Smoke Detector utilizes photoelectric technology for the detection of smoke. This detection method, when combined with an efficient housing design, samples air passing through the duct and allows detection of a developing hazardous condition. When sufficient smoke is sensed, an alarm signal is initiated at the fire control panel monitoring the detector, and appropriate action can be taken to shut off fans, blowers, change over air handling systems, etc. These actions can facilitate the management of toxic smoke and fire gases throughout the areas served by the duct system.

The D355PL incorporates a sensor cover tamper feature that provides a trouble signal at the panel immediately if the cover is removed or improperly installed. Proper installation of the sensor cover removes the trouble condition.

If programmed with the system control panel, two LEDs on each duct smoke detector light to provide local visible indication.

The D355PL provides a remote alarm output for use with auxiliary devices, such as the RA400Z/RA100Z remote LED annunciator, as well as remote test capability with the RTS451/151 or RTS451KEY/RTS151KEY Remote Test Stations.

[2.1] DETECTOR FEATURE SET

- Utilizes plug-in head, part number SD355R
- Sampling tubes install from front and rear
- Compatible with existing accessories
- Able to address detector per code switches on sensor head.

[3]CONTENTS OF THE DUCT SMOKE DETECTOR KIT

1. Sensor/power board assembly and covers sensor head is factory installed
2. Three #10 sheet metal screws for mounting
3. Drilling template
4. One sampling tube end cap
5. One plastic exhaust tube

NOTE: A sampling tube must be ordered to complete the installation. It must be the correct length for the width of the duct where it will be installed. See Table 1 on page 3 to determine the inlet tube required for different duct widths.

[4]DETECTOR INSTALLATION

[4.1]VERIFY DUCT AIR FLOW DIRECTION AND VELOCITY

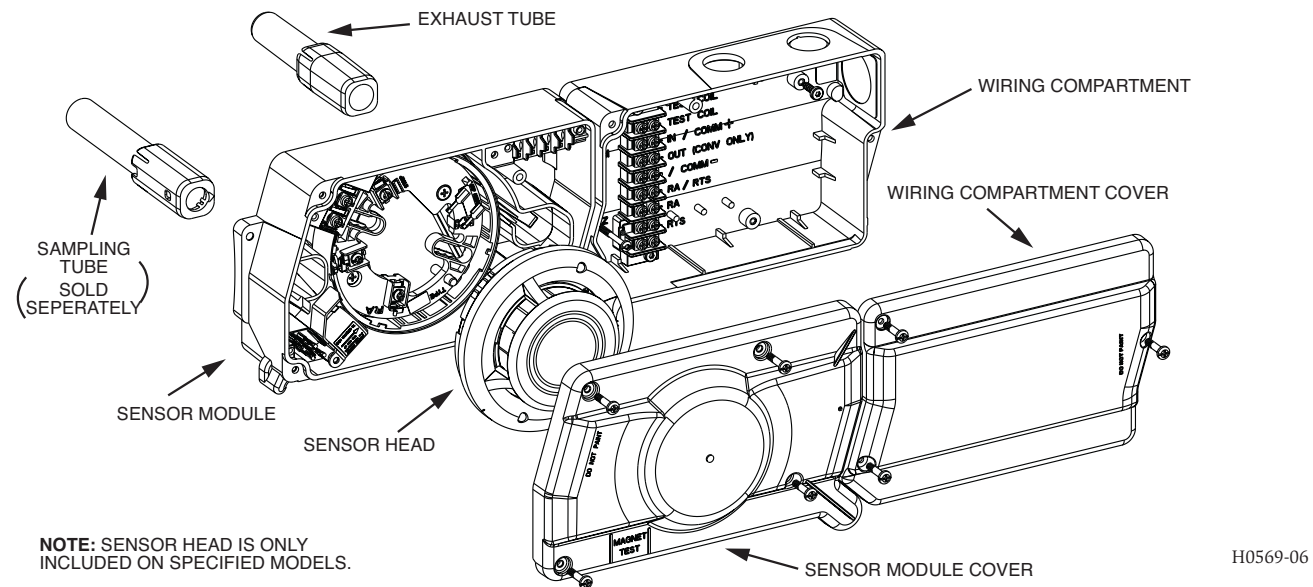
Model D355PL detectors are designed to be used in air handling systems having air velocities of 100 to 4000 feet per minute. Duct widths from 6 inches to 12 feet can be accommodated. Be sure to check engineering specifications to ensure that the air velocity in the duct falls within these parameters. If necessary, use a velocity meter (anemometer) to check the air velocity in the duct.

[4.2]DETERMINE MOUNTING LOCATION AND CONFIGURATION

On ducts wider than 18 inches it is recommended that the detector be mounted downstream of a bend, obstruction in the duct, or the supply or return air inlet.

Exception: Installation of duct detectors can be on or within a commercial

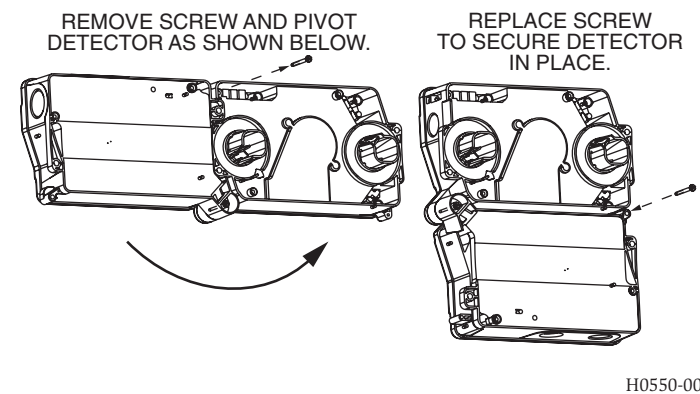
FIGURE 1. EXPLODED VIEW OF DUCT SMOKE DETECTOR COMPONENTS:



packaged rooftop heating and air-conditioning system, fire/smoke dampers and economizers. They may be mounted in either the supply and/or return air section as determined by local code.

Once a suitable location is selected, determine if the detector is to be mounted in a side-by-side “rectangular” configuration or a top-over-bottom “square” configuration as shown in Figure 2. If mounting in the square configuration, remove the rear attachment screw, rotate the unit at hinge, and replace the screw into the new attachment hole as shown in Figure 2. Do NOT remove the hinge screw during this process. Final installation approval shall be based upon passing differential pressure and smoke entry tests described in the Measurement Tests section.

FIGURE 2:



[4.3]DRILL THE MOUNTING HOLES

Remove the paper backing from the mounting template supplied. Affix the template to the duct at the desired mounting location. Make sure the template lies flat and smooth on the duct.

[4.3.1] FOR RECTANGULAR SIDE-BY-SIDE MOUNTING CONFIGURATION:

Center punch at (4) target centers: (2) "A" for sampling tubes and (2) "B" for the rectangular configuration mounting tabs as shown on mounting template. Drill pilot holes at target "A" centers and cut two 1.375 inch diameter holes using a 1 $\frac{3}{8}$ -inch hole saw or punch. Drill .156 inch diameter holes using a $\frac{5}{32}$ inch drill at target "B" centers.

[4.3.2]FOR SQUARE TOP-OVER-BOTTOM MOUNTING CONFIGURATION:

Center punch at (4) target centers: (2) "A" for sampling tubes and (2) "C" for the square configuration mounting tabs as shown on mounting template. Drill pilot holes at target "A" centers and cut two 1.375 inch diameter holes using a 1 3/8-inch hole saw or punch. Drill .156 inch diameter holes using a 5/32 inch drill at target "C" centers. If desired, drill an additional .156 inch hole at the location of one of the mounting tabs on the lower housing.

[4.4] SECURE THE DUCT DETECTOR TO THE DUCT

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Use two (rectangular configuration) or three (square configuration) of the provided sheet metal screws to screw the duct detector to the duct.

CAUTION: Do not overtighten the screws.

[5] SAMPLING TUBE INSTALLATION

[5.1] SAMPLING TUBE SELECTION

The sampling tube must be purchased separately. Order the correct length, as specified in Table 1, for width of the duct where it will be installed. The sampling tube length must extend at least $\frac{2}{3}$ across the duct width for optimal performance.

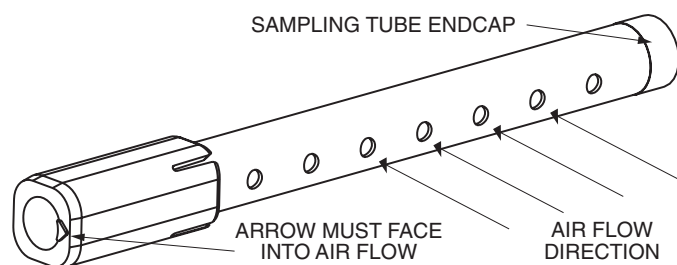
The sampling tube is always installed with the air inlet holes facing into the air flow. To assist proper installation, the tube's connector is marked with an arrow. Make sure the sampling tube is mounted so that the arrow points into the airflow as shown in Figure 3. Mounting the detector housing in a vertical orientation is acceptable provided that the air flows directly into the sampling tube holes as indicated in Figure 3. The sampling tube and exhaust tube can be mounted in either housing connection as long as the exhaust tube is mounted downstream from the sampling tube.

TABLE 1. SAMPLING TUBES RECOMMENDED FOR DIFFERENT DUCT WIDTHS:

Outside Duct Width	Sampling Tube Recommended*
Up to 1 ft.	DST1
1 to 2 ft.	DST1.5
2 to 4 ft.	DST3
4 to 8 ft.	DST5
8 to 12 ft.	DST10 (2-piece)

*Must extend a minimum of $\frac{2}{3}$ the duct width

FIGURE 3. AIR DUCT DETECTOR SAMPLING TUBE:



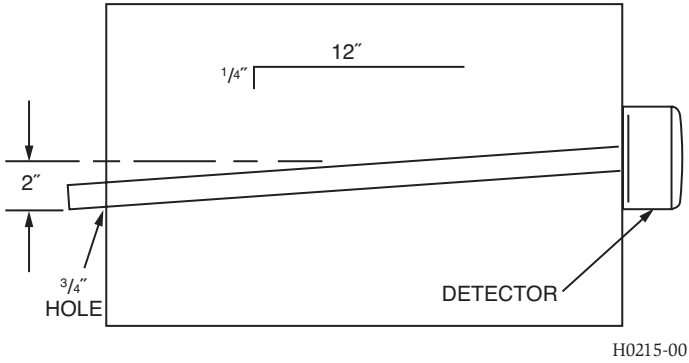
CAUTION: The sampling tube end cap, included with the detector, is critical to proper operation of the duct smoke detector. The end cap is needed to create the proper air flow to the sensor of the duct smoke detector. Once any sampling tube length adjustments are made, plug the end of the sampling tube with the provided end cap.

A plastic exhaust tube is included with the unit to be installed if needed. Install into the housing connection that is downstream from the sampling tube connection. The exhaust tube can be installed from the front of the detector or the back. A longer 1 foot exhaust tube, model ETX, is available as an accessory in cases where the molded exhaust tube does not extend at least 2 inches into the duct.

[5.2]SAMPLING TUBE INSTALLATION

- For tubes shorter than the width of the duct, slide the sampling tube, with installed end cap, into the housing connection that meets the air-flow first. Position the tube so that the arrow points into the airflow as shown in Figure 3. Per NFPA sampling tubes over 3 feet long should be supported at the end opposite of the duct detector. In ducts wider than 8 feet, work must be performed inside the duct to couple the other section of the sampling tube to the section already installed using the ½-inch conduit fitting supplied. Make sure that the holes on both sections of the air inlet sampling tube are lined up and facing into the airflow.
- For tubes longer than the width of the air duct, the tube should extend out of the opposite side of the duct. Drill a ¾-inch hole in the duct opposite the hole already cut for the sampling tube. Ensure that the sampling tube is angled downward from the duct smoke detector to allow for moisture drainage away from the detector. The sampling tube should be angled at least ¼" downward for every 12" of duct width per Figure 4. There should be 10 to 12 holes spaced as evenly as possible across the width of the duct. If there are more than 2 holes in the section of the tube extending out of the duct, select a shorter tube using Table 1. Otherwise, trim the tube to leave approximately 1 to 2 inches extending outside the duct. Plug the end with the end cap and tape closed any holes in the protruding section of the tube. Be sure to seal the duct where the tube protrudes.

FIGURE 4.



NOTE: Air currents inside the duct may cause excessive vibration, especially when the longer sampling tubes are used. In these cases, a 3-inch floor flange (available at most plumbing supply stores) may be used to fasten the sampling tube to the other side of the duct. When using the flange/connector mounting technique, drill a 1 to 1 ¼-inch hole where the flange will be used

[5.3]MODIFICATIONS OF SAMPLING TUBES

There may be applications where duct widths are not what is specified for the installation. In such cases, it is permissible to modify a sampling tube that is longer than necessary to span the duct width.

Use a 0.193-inch diameter (#10) drill and add the appropriate number of holes so that the total number of holes exposed to the air flow in the duct is 10 to 12. Space the additional holes as evenly as possible over the length of the tube.

CAUTION: This procedure should only be used as a temporary fix. It is not intended as a permanent substitute for ordering the correct length tubes.

[5.4]REMOTE SAMPLING TUBE INSTALLATION

The detector arrangement can also incorporate the remote mounting of the sampling tube and/or exhaust tube. In this case both the detector, sampling tube and exhaust tube (if included) should be rigidly mounted to withstand the pressure and vibrations caused by the air velocity. The location of the detector’s sampling tube should be such that there is uniform airflow in the cross section area.

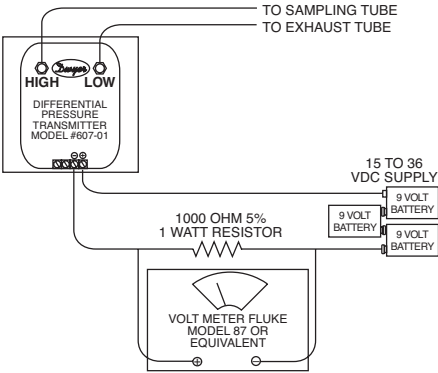
Pressure differential across the sampling and exhaust ports in the detector housing shall be verified to be between 0.01 and 1.11 inches of water. Do so by measuring the pressure difference between the inlet and outlet ports on the detector housing using a manometer as described in the Measurement Tests section of this manual.

[6]MEASUREMENT TESTS

[6.1]AIR FLOW

The D355PL is designed to operate over an extended air speed range of 100 to 4000 FPM. To verify sufficient sampling of ducted air, turn the air handler on and use a manometer to measure the differential pressure between the two sampling tubes. The differential pressure should measure at least 0.01 inches of water and no more than 1.11 inches of water. Because most commercially available manometers cannot accurately measure very low pressure differentials, applications with less than 500 FPM of duct air speed may require one of the following: 1) the use of a current-sourcing pressure transmitter (Dwyer Series 607) or 2) the use of aerosol smoke, see below for test descriptions.

FIGURE 5. PROCEDURE FOR VERIFYING AIR FLOW:



[6.2]LOW FLOW AIR FLOW TEST USING DWYER SERIES 607 DIFFERENTIAL PRESSURE TRANSMITTER

Verify the air speed of the duct using an anemometer. Air speed must be at least 100 FPM. Wire the Dwyer transmitter as shown in Figure 5. Connect the leads of the meter to either side of the 1000Ω resistor. Allow unit to warm up for 15 seconds. With both HIGH and LOW pressure ports open to ambient air, measure and record the voltage drop across the 1000Ω resistor (measurement 1), 4.00 volts is typical. Using flexible tubing and rubber stoppers, connect the HIGH side of the transmitter to the sampling tube of the duct smoke detector housing, and the LOW side of the transmitter to the exhaust tube of the duct smoke detector housing. Measure and record the voltage drop across the 1000Ω resistor (measurement 2). Subtract the voltage recorded in measurement 1 from the voltage recorded in measurement 2. If the difference is greater than 0.15 volts, there is enough air flow through the duct smoke detector for proper operation.

[7]FIELD WIRING; INSTALLATION GUIDELINES

All wiring must be installed in compliance with the National Electrical Code and the local codes having jurisdiction. Proper wire gauges should be used. The conductors used to connect smoke detectors to control panels and accessory devices should be color-coded to prevent wiring mistakes. Improper connections can prevent a system from responding properly in the event of a fire.

For signal wiring (the wiring between detectors or from detector to auxiliary devices), it is usually recommended that single conductor wire be no smaller than 18 gauge. The duct smoke detector terminals accommodate wire sizes up to 12 gauge. Flexible conduit is recommended for the last foot of conduit; solid conduit connections may be used if desired.

Duct smoke detectors and alarm system control panels have specifications for Signaling Line Circuit (SLC) wiring. Consult the control panel manufacturer’s specifications for wiring requirements before wiring the detector loop.

Please refer to insert for the Limitations of Fire Alarm Systems

THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed product to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for the enclosed product. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company’s obligation of this Warranty shall be limited to the replacement of any part of the product which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor’s toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: System Sensor Returns Department, P.O. Box 1000, 3825 Ohio Avenue, St. Charles, IL 60174. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company’s negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

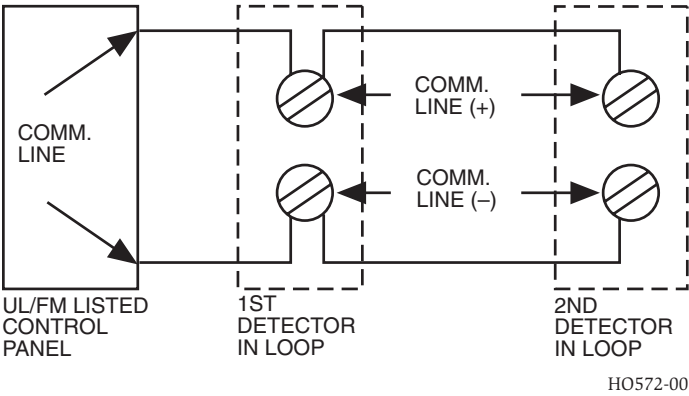
_____, 3825 Ohio Avenue, St. Charles, IL 60174. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company’s negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

[7.1]WIRING INSTRUCTIONS

Disconnect power from the communication line before installing the D355PL duct smoke detector.

The D355PL detectors are designed for easy wiring. The housing provides a terminal strip with clamping plates. Wiring connections are made by sliding the bare end under the plate, and tightening the clamping plate screw. See Figure 6 below for system wiring.

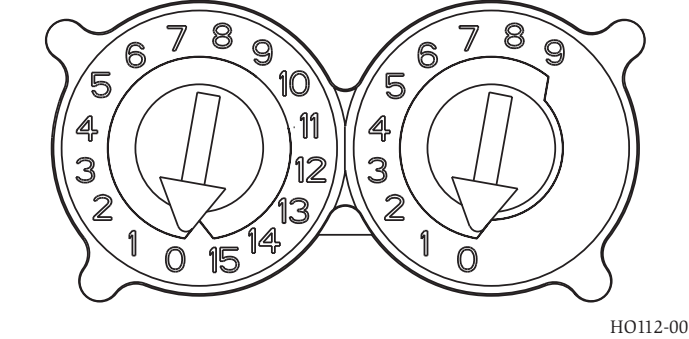
FIGURE 6. SYSTEM WIRING DIAGRAM FOR D355PL:



[7.2] SET THE ADDRESS

Set the desired address on the sensor head code wheel switches. on the back of the sensor head.

FIGURE 7. ROTARY ADDRESS SWITCHES



[8] VERIFICATION OF OPERATION

[8.1]INSTALL THE COVER

Install the covers making sure that the cover fits into the base groove. Tighten the seven screws that are captured in the covers. Note that the cover must be properly installed for proper operation of the sensor.

[8.2] POWER THE UNIT

Activate the communication line on terminals COM + and COM –.

[8.3] DETECTOR CHECK

Standby – If programmed by the system control panel, look for the presence of the flashing LEDs through the transparent housing cover. The LED will flash with each communication.

Trouble – If programmed by the system control panel and the detector LEDs do not flash, then the detector lacks power (check wiring, missing or improperly placed cover, panel programming, or power supply), the sensor head is missing (replace), or the unit is defective (return for repair).

[8.4]DUCT SMOKE DETECTOR TEST & MAINTENANCE PROCEDURES

Test and maintain duct smoke detectors as recommended in NFPA 72. The tests contained in this manual were devised to assist maintenance personnel in verification of proper detector operation.

Before conducting these tests, notify the proper authorities that the smoke detection system will be temporarily out of service. Disable the zone or system under test to prevent unwanted alarms.

[8.4.1]TEST THE UNIT

1. M02-04-00 Magnet Test (not included) This sensor can be functionally tested with a test magnet. The test magnet electronically simulates smoke in the sensing chamber, testing the sensor electronics and connections to the control panel.
2. Remote Test Accessory – The use of a remote accessory for visible indication of power and alarm is recommended.

Verify system control panel alarm status and control panel execution of all intended auxiliary functions (i.e. fan shutdown, damper control, etc.).

Two LEDs on the sensor are controlled by the panel to indicate sensor status. Coded signals, transmitted from the panel, can cause the LEDs to blink, latch on, or latch off. Refer to the control panel technical documentation for sensor LED operation and expected delay to alarm.

[8.4.2] THE DETECTOR MUST BE RESET BY THE SYSTEM CONTROL PANEL
[8.4.3]SMOKE ENTRY TEST USING AEROSOL SMOKE

This test is intended for low-flow systems (100-500 FPM). If the air speed is greater than 500 FPM, use a conventional manometer to measure differential pressure between the sampling tubes, as described under Measurement Tests on Page 3.

Drill a 1/4-inch hole 3 feet upstream from the duct smoke detector. With the air handler on, measure the air velocity with an anemometer. Air speed must be at least 100 FPM. Spray aerosol smoke* into the duct through the 1/4-inch hole for five seconds. Wait two minutes for the duct smoke detector to alarm. If the duct smoke detector alarms, air is flowing through the detector. Remove the duct smoke detector cover and blow out the residual aerosol smoke from the chamber and reset the duct smoke detector at the panel. Use duct tape to seal the aerosol smoke entry hole. Remember to replace the cover after the test or the detector will not function properly.

*Aerosol smoke can be purchased from Home Safeguard Industries at home-safeguard.com, model 25S Smoke Detector Tester, and Chekkit Smoke Detector Tester model CHEK02 and CHEK06 available from SDi. When used properly, the canned smoke agent will cause the smoke detector to go into alarm. Refer to the manufacturer’s published instructions for proper use of the canned smoke agent.

CAUTION

Canned aerosol simulated smoke (canned smoke agent) formulas will vary by manufacturer. Misuse or overuse to these products may have long term adverse effects on the smoke detector. Consult the canned smoke agent manufacturer’s published instructions for any further warnings or caution statements.

[9]DETECTOR CLEANING PROCEDURES

Notify the proper authorities that the smoke detector system is undergoing maintenance, and that the system will temporarily be out of service. Disable the zone or system undergoing maintenance to prevent unwanted alarms and possible dispatch of the fire department.

[9.1]DETECTOR SENSOR

1. Remove the sensor to be cleaned from the system.
2. Remove the sensor cover by pressing firmly on each of the four removal tabs that hold the cover in place.
3. Vacuum the screen carefully without removing it. If further cleaning is required continue with Step 4, otherwise skip to Step 7.
4. Remove the chamber cover/screen assembly by pulling it straight out.
5. Use a vacuum cleaner or compressed air to remove dust and debris from the sensing chamber.
6. Reinstall the chamber cover/screen assembly by sliding the edge over the sensing chamber. Turn until it is firmly in place.
7. Replace the cover using the LEDs to align the cover and then gently pushing it until it locks into place.
8. Reinstall the detector.

[9.2]REINSTALLATION

1. Reinstall the detector in its housing.
2. Restore system power.
3. Perform Detector Check.
4. Notify the proper authorities testing has been completed and the smoke detector system is back in operation.

[10]SENSOR REPLACEMENT

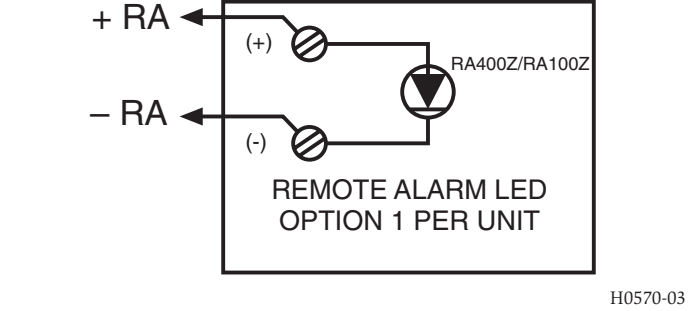
1. Remove the sensor head by rotating counterclockwise.
2. Pull gently to remove it.
3. To replace the sensor head, align the mounting features and rotate clockwise into place.

[11] OPTIONAL ACCESSORIES

Optional accessories include RA400Z/RA100Z, RTS451/RTS151 and RTS451KEY/RTS151KEY.

NOTE: Ensure blue wire always remains connected to RA + on the field connector side of the terminal block.

FIGURE 8. WIRING DIAGRAM FOR D355PL TO RA400Z/RA100Z:



Note: If using a RA400Z, the tab should be broken for use with the intelligent duct smoke detector. If using RA100Z, ensure that jumper is removed.

The RTS451/RTS151/RTS451KEY/RTS151KEY Remote Test Station facilitates test of the alarm capability of the duct smoke detector. These accessories provide the stimulus to initiate an alarm condition at the detector. The D355PL duct smoke detector must be reset by the system control panel.

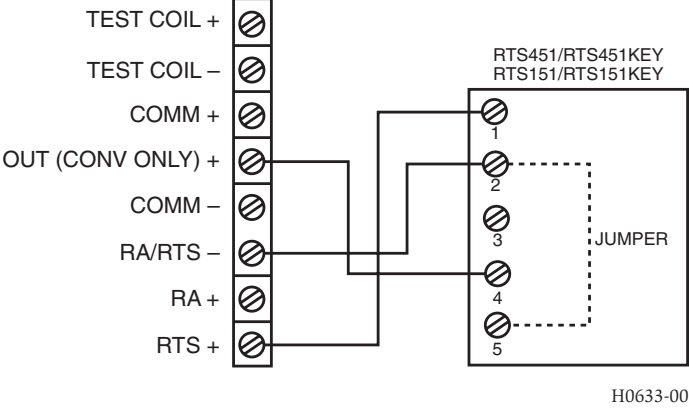
[11.1] OPTION 1:
REMOTE TEST USING SENSOR WITH REMOTE TEST CAPABILITY (WITHOUT A TEST COIL):

A sensor with suffix "R" is available for use inside the D355PL. Suffix "R" represents a head with Remote Test Capability. Using this head inside the D355PL eliminates the need for a test coil when wired to a RTS451/RTS151/RTS451KEY/RTS151KEY Remote Test Station.

To install the RTS451/RTS151/RTS451KEY/RTS151KEY, using the sensor with remote test capability connect the device as shown in Figure 9; wire runs must be limited to 25 ohms or less per interconnecting wire.

NOTE: Resistor assembly must be in place between RA + and OUT + inside the D355PL for Remote Test function to operate.

FIGURE 9. RTS451/RTS451KEY/RTS151/RTS151KEY USING SENSOR WITH REMOTE TEST CAPABILITY



[11.2] OPTION 2: REMOTE TEST USING A TEST COIL:

The use of a remote test station requires the installation of an accessory coil, part number DCOIL, sold separately.

- 1) Install DCOIL in housing pocket insuring that arrow is pointing toward detector
 - 2) Install DCOIL mounting screw
 - 3) Connect each DCOIL lead to a Test Coil Terminal
- See Figure 10 below for reference.

FIGURE 10. D355PL USING A TEST COIL

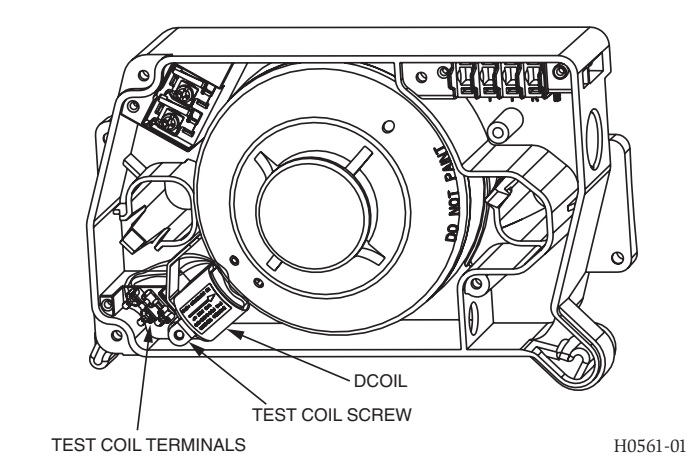
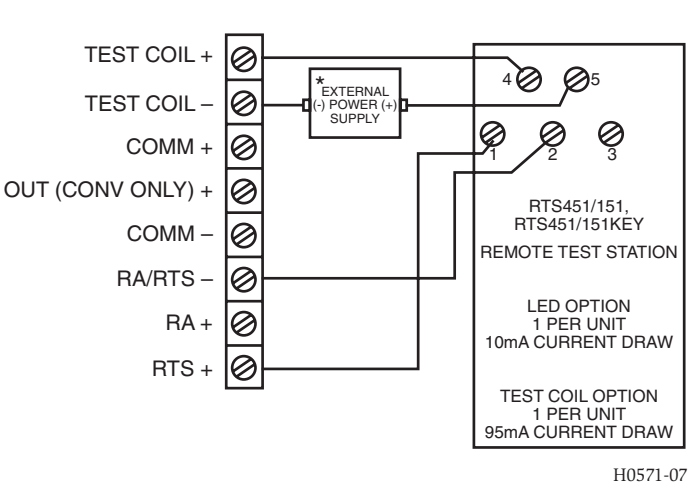


FIGURE 11. WIRING DIAGRAM FROM D355PL TO RTS451/RTS151/RTS451KEY/RTS151KEY USING A TEST COIL:



NOTE: The RTS451/151, RTS451/151KEY test coil circuit requires an external 24 VDC power supply which must be UL listed.

[11.3] ADDITIONAL MODULE OPTION

The D355PL can also accommodate a relay or control module (sold separately) within the power board side of the housing. The relay or control module must be listed as compatible to the fire alarm control panel.

Physical Module Mounting

- 1) Remove the breakaway tabs at the four corners of the module
- 2) Locate the module at right most corner of the power board. The upper left corner mounting hole of the module will align with a screw boss in the housing.
- 3) Install a #8 × 3/8" Plastite screw at the screw boss location

Note: See the corresponding module Installation Instructions for general description, control panel compatibility, wiring and ratings.

Selectable Output Horn Strobes, Chime Strobes and Strobes – Wall Mount

For use with the following models:

Standard Wall Mount Horn Strobes: P2RL, P2WL, P2RL-P, P2WL-P, P2RL-SP, P2WL-SP

Compact Wall Mount Horn Strobes: P2GRL, P2GWL

Standard Wall Mount Chime Strobes: CHSRL, CHSWL

Standard Wall Mount Strobes: SRL, SWL, SRL-P, SWL-P, SRL-SP, SWL-CLR-ALERT

Compact Wall Mount Strobes: SGRL, SGWL

PRODUCT 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 12VDC or regulated 24DC/FWR
Operating Voltage Range:	8 to 17.5V (12V nominal) or 16 to 33V (24V nominal)
Operating Voltage with MDL3 Sync Module:	8.5 to 17.5V (12V nominal) or 16.5 to 33V (24V nominal)
Input terminal wire gauge:	12 to 18 AWG

DIMENSIONS FOR PRODUCTS AND ACCESSORIES

WALL PRODUCTS	Length	Width	Depth
Standard Strobe, Chime Strobe and Horn Strobe	5.6" (143mm)	4.7" (119mm)	1.25" (32mm)
Compact Strobe and Horn Strobe	5.26" (133 mm)	3.46" (88 mm)	1.93 (49 mm)
Standard device with SBBRL/WL Surface Mount Back Box	5.9" (149 mm)	4.9" (125 mm)	1.85" (47 mm)
Compact device with SBBGRL/WL Surface Mount Back Box	5.5" (140 mm)	3.7" (94 mm)	1.6" (39 mm)
NOTE: SBBRL/WL Surface Mount Back Box intended only for standard horn strobes, chime strobes and strobes. SBBGRL/WL Surface Mount Back Box intended for compact horn strobes and strobes.			

MOUNTING BOX OPTIONS

Standard 2-Wire Indoor Products:	4" x 4" x 1½", Single Gang, Double Gang, 4" Octagon, SBBRL/WL (wall), SBBGRL/WL (wall)
Compact 2-Wire Indoor Products:	Single Gang, SBBGRL/WL (wall)

NOTICE: This manual shall be left with the owner/user of this equipment.

BEFORE INSTALLING

Please read the System Sensor Audible Visible Application Reference Guide, which provides detailed information on notification devices, wiring and special applications. Copies of this manual are available from System Sensor. NFPA 72 and NEMA guidelines should be observed.

Important: The notification appliance used must be tested and maintained following NFPA 72 requirements.

GENERAL DESCRIPTION

System Sensor series of notification appliances offer a wide range of audible and visible devices for life safety notification. Our 2-wire horn strobes, chime strobes and strobes come with 8 field selectable tone and volume combinations and 7 field selectable candela settings. Intended for indoor applications and approved for wall mount installations only. Available in two attractive mounting designs, standard and compact (horn strobe and strobe only).

2-wire horn strobes and strobes are public mode notification appliances intended to alert occupants of a life safety event. The 2-wire chime strobe is a private mode notification appliance. The horn is listed to ANSI/UL 464 requirements (public mode) and the strobe is listed to ANSI/UL 1638 (public mode). 2-wire chime strobe is a private mode notification appliances intended to alert trained personnel to investigate a life safety event and take appropriate actions. The chime portion of the chime strobe is listed to ANSI/UL 464 (private mode) and the strobe portion is listed to ANSI/UL 1638 (private mode).

System Sensor notification appliances are designed to be used in either 12 VDC, 24VDC, or 24V FWR (full wave rectified) systems. System Sensor AV devices can be activated by a compatible fire alarm control panel or power supply. Refer to the appropriate fire alarm control panel manufacturer or power supply for more information.

System Sensor wall 2-wire horn strobes, 2-wire chime strobes, and strobes are electrically backward compatible with the previous generation, since 1996, of notification appliances. They come enabled with System Sensor synchronization protocol which requires connections to a power supply capable of generating the System Sensor synchronization pulses, a FACP NAC output configured to System Sensor synchronization protocol, or the use of MDL3 module to generate the synchronization protocol.

FIRE ALARM SYSTEM CONSIDERATIONS

The National Fire Alarm and Signaling Code, NFPA 72, requires that all notification appliances, used for building evacuation installed after July 1, 1996, produce temporal coded signals. Signals other than those used for evacuation purposes do not have to produce the temporal coded signal. System Sensor recommends spacing notification appliances in compliance with NFPA 72.

SYSTEM DESIGN

The system designer must make sure that the total current draw by the devices on the loop does not exceed the current capability of the panel supply, and that the last device on the circuit is operated within its rated voltage. The current draw information for making these calculations can be found in the tables within the manual. For convenience and accuracy, use the voltage drop calculator on the System Sensor website (www.systemsensor.com).

When calculating the voltage available to the last device, it is necessary to consider the voltage due to the resistance of the wire. The thicker the wire, the smaller the voltage drop. Wire resistance tables can be obtained from electrical handbooks. Note that if Class A wiring is installed, the wire length may be up to twice as long as it would be for circuits that are not fault tolerant. The total number of strobes on a single NAC must not exceed 69 for 24 volt applications.

AVAILABLE TONES

System Sensor offers a wide variety of tones for your life safety needs, including temporal 3 pattern (½ second on, ½ second off, ½ second on, ½ second off, ½ second on, 1½ off and repeat) which is specified by ANSI and NFPA 72 for standard emergency evacuation signaling.

To select the tone, turn the rotary switch on the back of the product to the desired setting. (See Figure 1.)

Available horn settings can be found in Table 1. Available chime settings can be found in Table 2.

TABLE 1. HORN TONES

Pos	Tone	Volume Setting
1	Temporal	High
2	Temporal	Low
3	Non-Temporal	High
4	Non-Temporal	Low
5	3.1 KHz Temporal	High
6	3.1 KHz Temporal	Low
7	3.1 KHz Non-Temporal	High
8	3.1 KHz Non-Temporal	Low

TABLE 2. CHIME TONES

Pos	Tone	Volume Setting
1	1 Second Chime	High
2	1 Second Chime	Low
3	¼ Second Chime	High
4	¼ Second Chime	Low
5	Temporal Chime	High
6	Temporal Chime	Low
7	5 Second Whoop	High
8	5 Second Whoop	Low

AVAILABLE CANDELA SETTINGS

System Sensor offers a wide range of candela settings for your life safety needs. In order to select your candela output, adjust the slide switch on the rear of the product to the desired candela setting on the selector switch. (See Figure 2.)

The candela setting can also be verified by looking into the small window on the front of the unit. See Table 3 for candela settings for wall products. All products meet the light output profiles specified in the appropriate UL Standards. (See Figures 3 and 4.)

CURRENT DRAW AND AUDIBILITY RATINGS

For the strobe, the current draw for each setting is listed in Table 3. For the horn strobe, the current draw and audibility settings are listed in Table 4. For the chime strobe, the current draw and audibility settings are listed in Table 5.

FIGURE 1. AUDIO SELECTOR

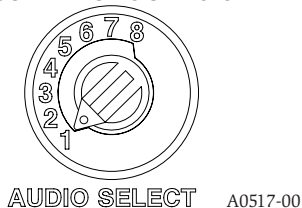


FIGURE 2. CANDELA SELECTOR

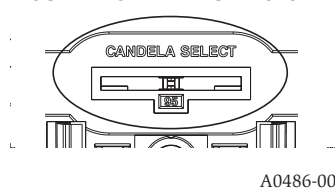


TABLE 3. WALL-MOUNT STROBE CURRENT DRAW (mA)

Candela	8-17.5 Volts		16-33 Volts	
	DC	DC	FWR	
15	88	43	60	
30	143	63	83	
75	-	107	136	
95	-	121	155	
110	-	148	179	
135	-	172	209	
185	-	222	257	

NOTE: Products set at 15 and 30 candela automatically work on either 12V or 24V power supplies. The products are not listed for 12V DC operation when set to any other candela settings.

FIGURE 3. LIGHT OUTPUT – HORIZONTAL DISPERSION

Degrees*	Percent of Rating
0	100
5-25	90
30-45	75
50	55
55	45
60	40
65	35
70	35
75	30
80	30
85	25
90	25
Compound 45 to the left	24
Compound 45 to the right	24

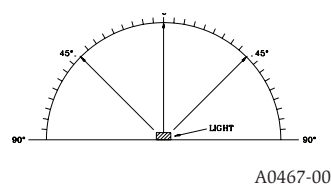
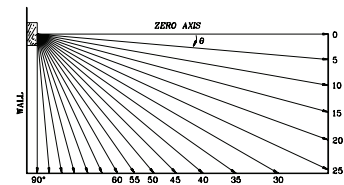


FIGURE 4. VERTICAL DISPERSION – WALL TO FLOOR

Degrees*	Percent of Rating
0	100
5-30	90
35	65
40	46
45	34
50	27
55	22
60	18
65	16
70	15
75	13
80	12
85	12
90	12



*Tolerance of ± 1 degree is permitted.

WIRING AND MOUNTING

All wiring must be installed in compliance with the National Electric Code and the local codes as well as the authority having jurisdiction. Wiring must not be of such length or wire size which would cause the notification appliance to operate outside of its published specifications. Improper connections can prevent the system from alerting occupants in the event of an emergency.

Wire sizes up to 12 AWG (2.5 mm²) may be used with the mounting plate. The mounting plate ships with the terminals set for 12 AWG wiring.

Make wire connections by stripping about 3/8" of insulation from the end of the wire. Then slide the bare end of the wire under the appropriate clamping plate and tighten the clamping plate screw.

We provide a wire strip guide. See Figure 5 for wiring terminals and strip guide reference.

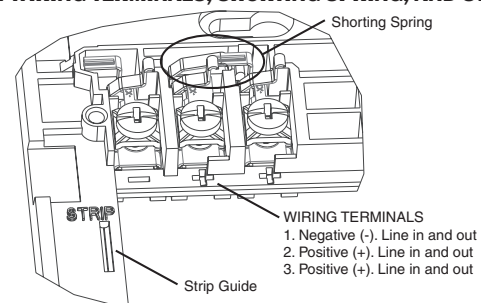
CAUTION

Factory finish should not be altered: Do not paint!

CAUTION

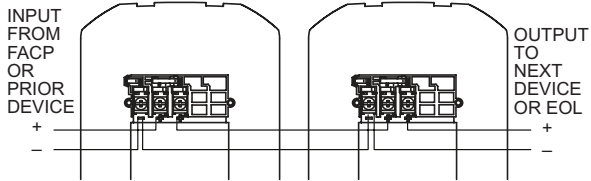
Do not over tighten mounting plate screws; this may cause mounting plate to flex.

FIGURE 5. WIRING TERMINALS, SHORTING SPRING, AND STRIP GUIDE



SYSTEM WIRING

The 2-wire horn strobe, chime strobe and strobe only require two wires for power and supervision. (See Figure 6.) Please consult your FACP manufacturer or power supply manufacturer for specific wiring configurations and special cases.

FIGURE 6. 2-WIRE CIRCUIT

A0367-02

SHORTING SPRING FEATURE

System Sensor notification appliances come with a shorting spring that is provided between terminals 2 and 3 of the mounting plate to enable system continuity checks after the system has been wired, but prior to installation of the final product. (See Figure 5.) This spring will automatically disengage when the product is installed, to enable supervision of the final system.

MOUNTING AND REMOVING APPLIANCE

1. Attach mounting plate to junction box. (See Figures 7 and 8.)
2. Connect field wiring according to terminal designations. (See Figures 5 and 6.)
3. If the product is not to be installed at this point, use the protective dust cover to prevent contamination of the wiring terminals on the mounting plate.
4. To attach product to mounting plate:
 - a. Remove the protective dust cover.
 - b. Hook the tabs on the top of the product housing into the grooves on mounting plate.

- c. Pivot the product into position to engage the terminals on the mounting plate. Make sure that the tabs on the back of the product housing fully engage with the mounting plate.
- d. Hold product in place with one hand, and secure product by tightening the single mounting screw in the front of the product housing.

INSTALLING A SURFACE MOUNT BACK BOX

1. The surface mount back box may be secured directly to the wall or ceiling. Use of grounding bracket with ground screw is optional. (See Figures 9 and 10.)
 2. The wall mount back box must be mounted with the up arrow pointing up. (See Figure 12.)
 3. Threaded knockout holes are provided for the sides of the box for 3/4 inch and 1/2 inch conduit adapter. Knockout holes in the back of the box can be used for 3/4 inch and 1/2 inch rear entry.
 4. To remove the 3/4 inch knockout, place the blade of a flat-head screwdriver along the outer edge and work your way around the knockout as you strike the screwdriver. (See Figure 13.)
- NOTE: Use caution not to strike the knockout near the top edge of the surface mount back box.**
5. V500 and V700 raceway knockouts are also provided. Use V500 for low profile applications and V700 for high profile applications.
 6. To remove the knockout, turn pliers up. (See Figure 13.)

TABLE 4. WALL-MOUNT HORN STROBE CURRENT DRAW (mA) AND SOUND OUTPUT (dBA)

			Current draw (mA)																Sound Output (dBA)			
Pos	Tone	Volume Setting	8-17.5 VDC		16-33 VDC							16-33 FWR							8-17.5 V		16-33 V	
			15	30	15	30	75	95	110	135	185	15	30	75	95	110	135	185	DC	DC	FWR	
1	Temporal	High	98	158	54	74	121	142	162	196	245	83	107	156	177	198	234	287	84	89	89	
2	Temporal	Low	93	154	44	65	111	133	157	184	235	68	91	145	165	185	223	271	75	83	83	
3	Non-Temporal	High	106	166	73	94	139	160	182	211	262	111	135	185	207	230	264	316	85	90	90	
4	Non-Temporal	Low	93	156	51	71	119	139	162	190	239	79	104	157	175	197	235	283	76	84	84	
5	3.1 KHz Temporal	High	93	156	53	73	119	140	164	190	242	81	105	155	177	196	234	284	83	88	88	
6	3.1 KHz Temporal	Low	91	154	45	66	112	133	160	185	235	68	90	145	166	186	222	276	76	82	82	
7	3.1 KHz Non-Temporal	High	99	162	69	90	135	157	175	208	261	104	131	177	204	230	264	326	84	89	89	
8	3.1 KHz Non-Temporal	Low	93	156	52	72	119	138	162	192	242	77	102	156	177	199	234	291	77	83	83	

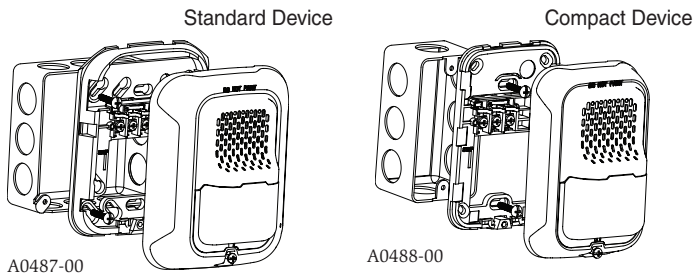
NOTE: Products set at 15 and 30 candela automatically work on either 12V or 24V power supplies. The products are not listed for 12VDC operation when set to any other candela settings.

TABLE 5. WALL MOUNT CHIME STROBE CURRENT DRAW (mA) AND SOUND OUTPUT (dBA)

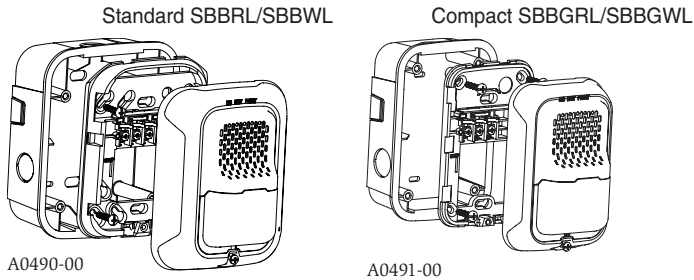
			Current draw (mA)																Sound Output (dBA)			
Pos	Chime Tone	Volume Setting	8-17.5 VDC		16-33 VDC								16-33 FWR						8-17.5 V		16-33 V	
			15	30	15	30	75	95	110	135	185	15	30	75	95	110	135	185	DC	DC	FWR	
1	1 Second	High	90	154	51	71	116	136	161	202	242	70	90	160	176	197	233	275	61	62	62	
2	1 Second	Low	89	154	50	70	115	136	154	199	238	67	88	158	175	191	232	271	56	55	55	
3	¼ Second	High	90	154	52	72	117	137	168	201	242	69	93	159	175	198	233	272	67	70	70	
4	¼ Second	Low	89	153	49	70	115	136	165	199	241	68	93	154	169	196	232	270	61	61	61	
5	Temporal	High	88	153	49	69	112	137	168	201	246	65	90	145	170	189	228	283	64	66	66	
6	Temporal	Low	88	152	47	68	111	136	167	196	241	64	89	142	170	188	219	282	59	60	60	
7	5 Second Whoop	High	91	154	52	70	113	132	176	206	243	70	93	145	168	187	223	278	76	78	78	
8	5 Second Whoop	Low	87	149	46	66	108	130	170	202	240	62	84	137	159	180	216	272	62	64	64	

NOTE: Products set at 15 and 30 candela automatically work on either 12V or 24V power supplies. The products are not listed for 12VDC operation when set to any other candela settings.

FIGURES 7 AND 8. MOUNTING



FIGURES 9 AND 10. SURFACE MOUNTING



TAMPER SCREW

For tamper resistance, the standard captive screw may be replaced with a Torx screw, ordered separately.

1. To remove the captive screw, back out the screw and apply pressure to the back of the screw until it disengages from the housing. Replace with Torx screw. (See Figure 11.)

FIGURE 11. TAMPER SCREW



FIGURE 12. SURFACE MOUNT BACK BOX UP ARROW

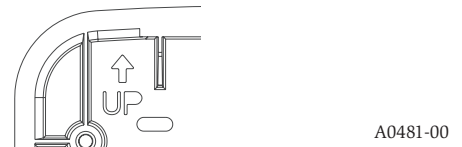
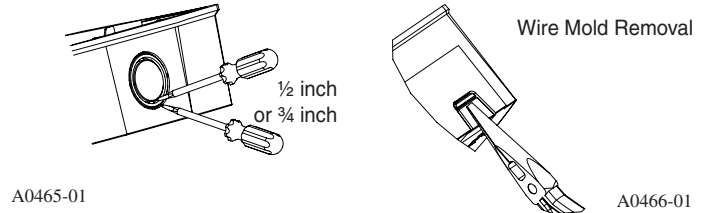


FIGURE 13. KNOCKOUT AND V500/V700 REMOVAL FOR SURFACE MOUNT BACK BOX



WARNING

THE LIMITATIONS OF HORN/STROBES

The horn and/or strobe will not work without power. The horn/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the horn/strobe will not provide the desired audio or visual warning.

The horn may not be heard. The loudness of the horn meets (or exceeds) current Underwriters Laboratories' standards. However, the horn may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The horn may not be heard if it is placed on a different floor from the person in hazard or if placed too far away to be heard over the ambient noise such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. The horn may not be heard by persons who are hearing impaired.

NOTE: Strobes must be powered continuously for horn operation.

The signal strobe may not be seen. The electronic visual warning signal uses an extremely reliable xenon flash tube. It flashes at least once every second. The strobe must not be installed in direct sunlight or areas of high light intensity (over 60 foot candles) where the visual flash might be disregarded or not seen. The strobe may not be seen by the visually impaired.

The signal strobe may cause seizures. Individuals who have positive photoic response to visual stimuli with seizures, such as persons with epilepsy, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

The signal strobe cannot operate from coded power supplies. Coded power supplies produce interrupted power. The strobe must have an uninterrupted source of power in order to operate correctly. System Sensor recommends that the horn and signal strobe always be used in combination so that the risks from any of the above limitations are minimized.

FCC STATEMENT

System Sensor Strobes and Horn/Strobes have been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and

can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

SUPPLEMENTAL INFORMATION

For the latest Warranty information, please go to:
<http://www.systemsensor.com/en-us/Documents/E56-4000.pdf>

For Limitations of Fire Alarm Systems, please go to:
<http://www.systemsensor.com/en-us/Documents/I56-1558.pdf>

Speakers only: For the latest Important Assembly Information, please go to:
<http://www.systemsensor.com/en-us/Documents/I56-6556.pdf>



Warranty



Limitations of
Fire Alarm Systems



Speakers Only:
Assembly Information

RTS151 Remote Test Station

SPECIFICATIONS

Dimensions:	4.8" H × 2.90" W × 1.4" D
Weight:	.16 lbs.
Power Requirements	
Alarm LED:	2.8 – 32 VDC, 10 mA max.
Coil Current:	95 mA max.
Test Switch:	10 VA @ 32 VDC
Reset Switch:	10 VA @ 32 VDC
Alarm Response Time:	40 sec. max.
Temperature:	-10°C to 60°C (14°F to 140°F)
Humidity:	95% RH Non-condensing Max
Listing:	UL, FM, CE

NOTE: RTS151 replaces RTS451.

NOTICE: This manual shall be left with the owner/user of this equipment.

NOTE: A test coil is required only for use with D2/DNR/DH400/DH500 models. For D2 models order part #DCoil. For the DH400/500 models order part is #Coil.

GENERAL INFORMATION

System Sensor's RTS151 is an automatic fire detector accessory designed to test a remotely located detector. Consult detector installation instructions for additional information.

The National Fire Protection Association has published codes, standards, and recommended practices for the installation and use of the above product. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local authority having jurisdiction.

RTS151 CONTENTS

- 1 RTS151 remote test station
- 1 screw pack (2 mounting screws)
- 1 M02-04 test magnet

WIRING OF RTS151

Consult the appropriate detector installation instructions for the applicable wiring diagram. The RTS151 mounts to a single gang box (2 1/2" minimum depth), or directly to the wall or ceiling.

See Figure 8 for wiring diagram of RTS151 with Duct Smoke Detectors.

In Canadian applications, the RTS151 is intended to be located in the same room as the smoke detector and within 60 feet of the unit.

OPERATION

Test Function

Place and hold the painted side of the magnet to the test location RTS151.

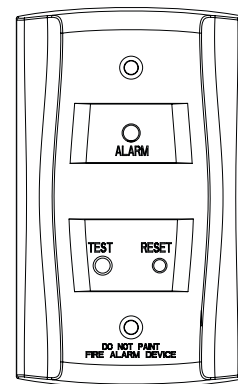
Alarm Indication

With the magnet in place some time will elapse (40 sec. maximum) depending on the detector type, before the alarm indicating LED will light.

Reset Function

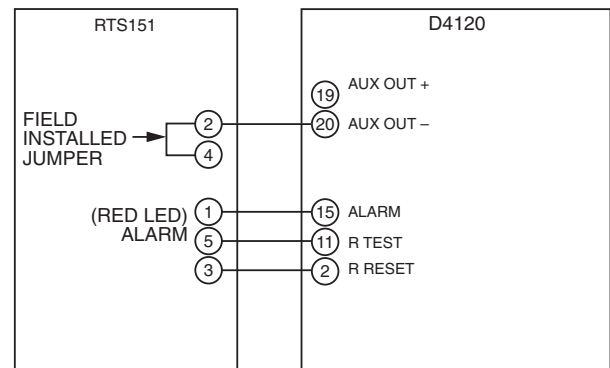
Gently insert a 1/8" maximum diameter tool into the hole until it stops and LED turns off. The RTS151 is capable of resetting only certain System Sensor models of detectors. Refer to detector installation instructions for additional information.

FIGURE 1. RTS151 REMOTE TEST STATION:



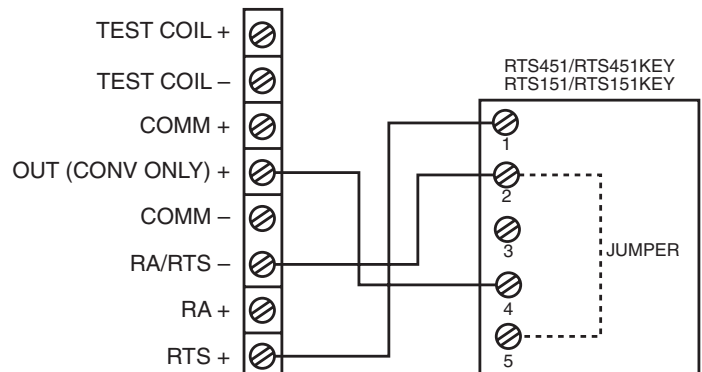
H0196-01

FIGURE 2. WIRING DIAGRAM FOR RTS151 TO D4120 4-WIRE DUCT SMOKE DETECTOR:



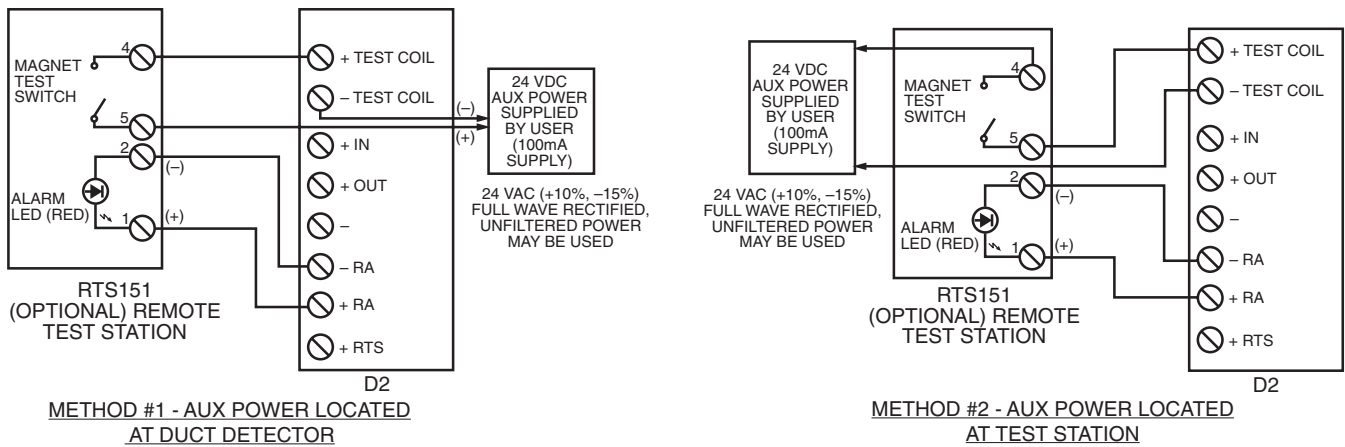
H0582-20

FIGURE 3. WIRING DIAGRAM FOR RTS151 TO DNR 2-WIRE DUCT SMOKE DETECTOR WITH REMOTE TEST CAPABLE HEAD:



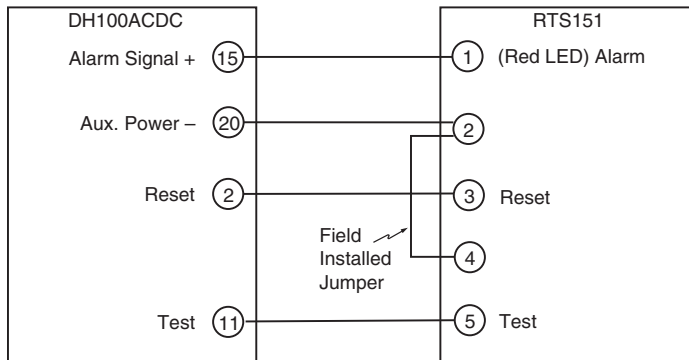
H0633-00

FIGURE 4. WIRING DIAGRAM FOR RTS151 TO D2-2WIRE DUCT SMOKE DETECTOR:



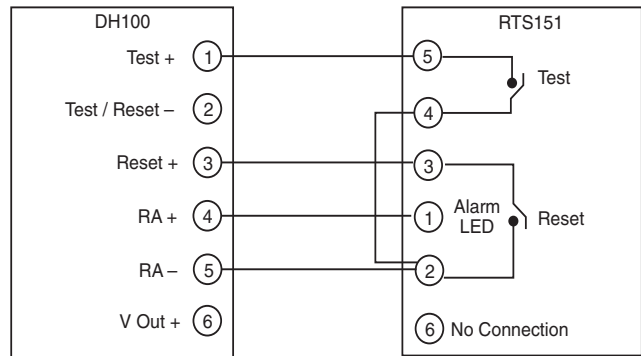
H0612-11

FIGURE 5. WIRING DIAGRAM FOR RTS151 TO DH100ACDC 4-WIRE DUCT SMOKE DETECTOR:



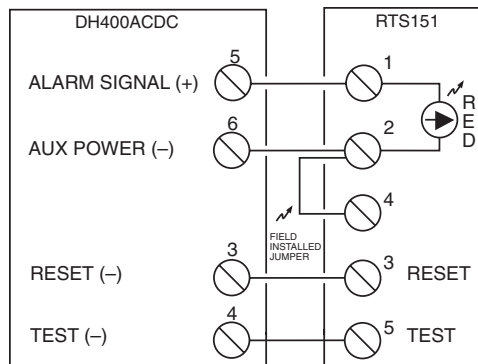
H0197-01

FIGURE 6. WIRING DIAGRAM FOR RTS151 TO DH100 2-WIRE DUCT SMOKE DETECTOR:



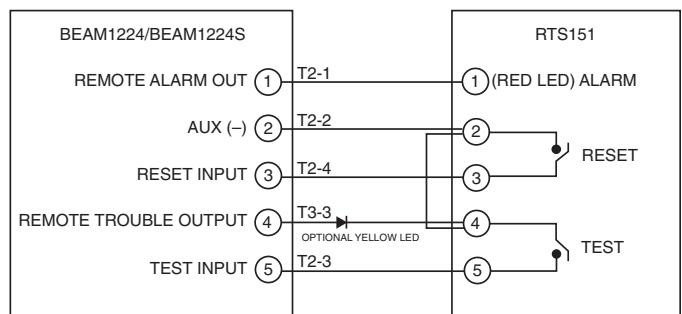
H0198-04

FIGURE 7. WIRING DIAGRAM FOR RTS151 TO DH400ACDC DUCT SMOKE DETECTOR:



H0149-02

FIGURE 8. WIRING DIAGRAM FOR RTS151 TO BEAM1224/BEAM1224S SMOKE DETECTOR:



H0586-03

THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed product to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for the enclosed product. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the replacement of any part of the product which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to Honeywell, 12220 Rojas Drive, Suite 700, El Paso, TX 79936, USA.

Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



DITEK Corporation
ONE DITEK CENTER
1720 Starkey Road
Largo, FL 33771

INSTALL INSTRUCTIONS

DTK-120/240HW

This Surge Protective Device (SPD) is a high performance device, designed to provide protection for sensitive electronic loads connected to service panels, fire panels, or where the SPD is directly connected to the electronic device. Maximum protection will only be achieved if the SPD is properly installed. Please read and follow the installation instructions carefully.

NOTICE: This SPD should be installed by a qualified electrician in accordance with the National and Local Electrical Codes and the following instructions.

APPLICATION: Type 1 and Type 2 SPD for hardwired parallel installations on 120/240 VAC split phase circuits with a neutral leg. Expected system voltages: L1-G = 120VAC, L2-G = 120VAC, L1-N = 120VAC, L2-N = 120VAC, L1-L2 = 240VAC.

INSTRUCTIONS:

Caution: Measure all voltages to insure applied voltage does not exceed the voltage rating of the unit. Improper installation voids the warranty.

Warning: No Serviceable Parts - **Attention:** Aucune pièce remplaçable ou réparable
For Use Only With A Flexible Conduit System Or Direct Connection To Panel

NOTE: Suitable for use on a circuit capable of delivering not more than 10,000 rms symmetrical Amperes, when protected by a 20 Ampere circuit breaker rated 120 Volts minimum.

1. Turn off the power at the circuit breaker or main before beginning installation.
2. If necessary, remove front cover from the panel.
3. Remove 3/4" knockout on side of panel box.
4. Unscrew nut from unit.
5. Feed all wires and the DTK-120/240HW nipple through knockout hole then through the nut, tighten nut securing the unit as shown.
6. For **Alarm/Control Panel Installation**, refer to Diagram #1. In this application, make sure the leads are as short as possible from the DTK-120/240HW to the connection point (isolated lugs or terminal). Also, allow reaction time by providing 3' of conductor length between the connection point and the panel it is protecting.
7. For **Electrical Panel/Disconnect Installation**, refer to Diagram #2. In this application, connect the DTK-120/240HW to the load side of the fuse or two pole circuit breaker. Also, make sure the leads are as short as possible with the ground wire being the shortest of all.

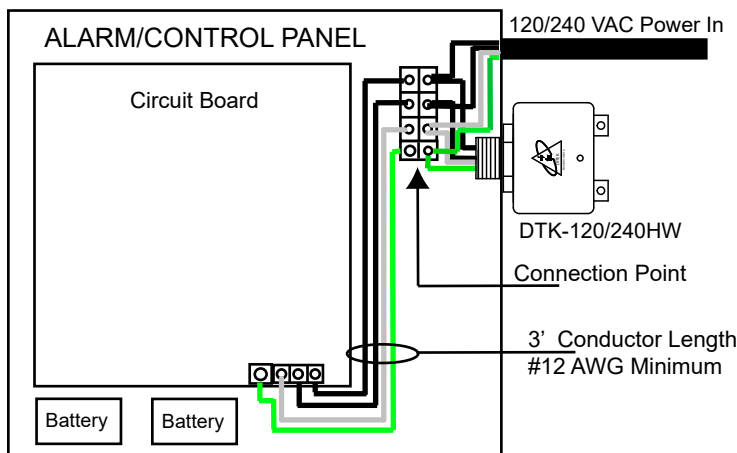
Ground Resistance Rule: Max ground resistance is 25 ohms, 5 ohms or less is optimum.

This cannot be an assumed value and must be measured to assure proper grounding.

8. After all connections have been made and no hazards exist, replace cover and restore power.
9. This device features an internal protection that will disconnect the surge protective component but will maintain power to the load - now unprotected. If this situation is undesirable for the application, follow the manufacturer's instructions for replacing the device.

NOTE: The LED on the unit must be on, if the LED is off than the surge protection is compromised and the unit must be replaced.

**ALARM/CONTROL PANEL INSTALLATION
DIAGRAM #1**



**ELECTRICAL PANEL/DISCONNECT INSTALLATION
DIAGRAM #2**

