



# Analog Addressable Fire Panels

FPA-1000



**BOSCH**

en Installation and Operation Guide



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# 1 Safety

## 1.1 General

Before using the device, read these instructions. If you do not read and understand these explanations, you will not be able to operate the device properly. The operating instructions do not eliminate the need for training by authorized personnel.

Install, operate, test and maintain this device according to this Installation and Operation Guide, NFPA 72, Local Codes and the Authority Having Jurisdiction (AHJ). Failure to follow these procedures may cause the device not to function properly. Bosch Security Systems, Inc. is not responsible for any devices that are improperly installed, tested or maintained.

For proper installation, read and understand NFPA 72, The National Fire Alarm Code before installation.

The Installation and Operation Guide does not contain special information about local requirements and safety issues. Information on such issues is provided only to the extent that it is needed for operation of the device. Ensure that you are familiar with all safety-related processes and regulations in your area. This also includes how to act in the event of an alarm and the initial steps to take if a fire breaks out.

The operating instructions should always be available on site. It is a required part of the system and must be given to the new owner if the system is ever sold.

## 1.2 Disclaimer



### NOTICE!

Bosch Security Systems, Inc. has tested and approved the FPA-1000 Analog Addressable Fire Panels and their associated Networking Cards including the system software. The system must only be operated with the software included in the product delivery or with authorized software upgrades (downloadable from the official Bosch homepage). Bosch cannot be held responsible if devices are operated with any modified software or software from other sources.

### 1.2.1 Disclaimer According to the GNU General Product Licence

#### NO WARRANTY

BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

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## 1.3 Symbols and Notes Used

The various chapters contain only whatever safety information and notes are required for installation and operation of the system.

The following symbols are used:



### NOTICE!

Contains useful information to help you operate the FPA-1000 Analog Addressable Fire Panels and to avoid damages or possible dangerous situations.

---



### CAUTION!

A hazard or unsafe practice could result in minor injury.

---



### WARNING!

A hazard or unsafe practice could result in severe injury or death.  
Follow the instructions without fail – for your own safety as well as that of the people around you.

---



### DANGER!

A hazard or unsafe practice will result in severe injury or death.  
Follow the instructions without fail – for your own safety as well as that of the people around you.  
For example:  
Hazardous Voltage.  
Danger of contact with live parts and wires.  
Disconnect and lock out power before connecting equipment or servicing!

---



## 1.4 FCC Compliance Notice

This equipment was 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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, might cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, that can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

### FCC Phone Connection to Users

This control panel complies with Part 68 of the FCC rules.

On the inside of the enclosure is a label that contains, among other information, the ringer equivalence number (REN) for this equipment. You must, upon request, provide this information to your local telephone company.

The REN is useful to determine the quantity of devices that can be connected to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the RENs of all devices connected to one line should not exceed five. To ascertain the number of devices that you can connect to your line, contact your local telephone company to determine the maximum REN for your local calling area.

This equipment can not be used on coin service provided by the telephone company. Do not connect this control panel to party lines. If this equipment causes harm to the telephone network, the telephone company might discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice isn't practical, you will be notified as soon as possible.

You will be informed of your right to file a complaint with the FCC. The telephone company might make changes in its facilities, equipment, operations, or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this equipment, contact the manufacturer for information on obtaining service or repairs.

The telephone company might ask that you disconnect this equipment from the network until the problem is corrected or until you are sure that the equipment is not malfunctioning. The manufacturer, not the user, must make the repairs to this equipment.

To guard against accidental disconnection, there is ample room to mount the telco jack inside of the control panel cabinet.

The operation of this control communicator might also be affected if events such as accidents or acts of God cause an interruption in telephone service.

## 2 Product Description

### 2.1 Introduction

The FPA-1000 Analog Addressable Fire Panels are advanced analog addressable control panels for small to medium facilities in residential, commercial or public building applications. They are listed by UL for central station, local, auxiliary, and remote station systems.

These fire panels combine complete built-in Fire Alarm Control Panel (FACP) equipment such as Notification Appliance Circuits (NACs), Signaling Line Circuits (SLCs), relays, power supply, Digital Alarm Communicator Transmitter (DACT) and Ethernet connection with the expandability through the Option Bus or plug-in boards. Each FPA-1000 has two integrated NACs that can be expanded with addressable Remote Notification Appliance Circuit Power Supplies. These circuits can be programmed with specific activation patterns.

The standard control panel supports one Signaling Line Circuit (SLC) for up to 254 detectors and modules, or up to 127 analog sounder bases in combination with a suitable detector, for a total of 254 addressable device capacity per SLC. The control panel is easily expandable with a second FPE-1000-SLC Signaling Line Circuit doubling the address points.

The panel has a compact and solid metal housing with a removable front door with keyed lock and a removable dead front door to access electronics. It features surface and semi-flush mounting options.

On the front of the panel, six light-emitting diodes (LEDs) show fire alarm, gas alarm, power, supervisory, silence and trouble conditions. The built-in keypad can be used for total system control and programming. In addition, a large 4-line by 20-character alphanumeric LCD display shows programmed device point information. Four keys enable acknowledge, reset, silence, and drill functions.

The FPA-1000 fire panels enable various programming approaches:

- Front panel programming
- On-site programming, using a laptop with the possibility of pre-programming at the office
- Off-site programming, with remote access via Ethernet (browser-based) or phone line (PSTN).

For front panel programming, the system provides an Auto Learn function, allowing the installer to configure the system quickly and easily in default mode.

Using a local laptop or remote access through a communicator, the programming is carried out by means of browser-based user interface. Therefore, no software installation is required.

The panel can receive diagnostics from a Web browser running on a networked PC.

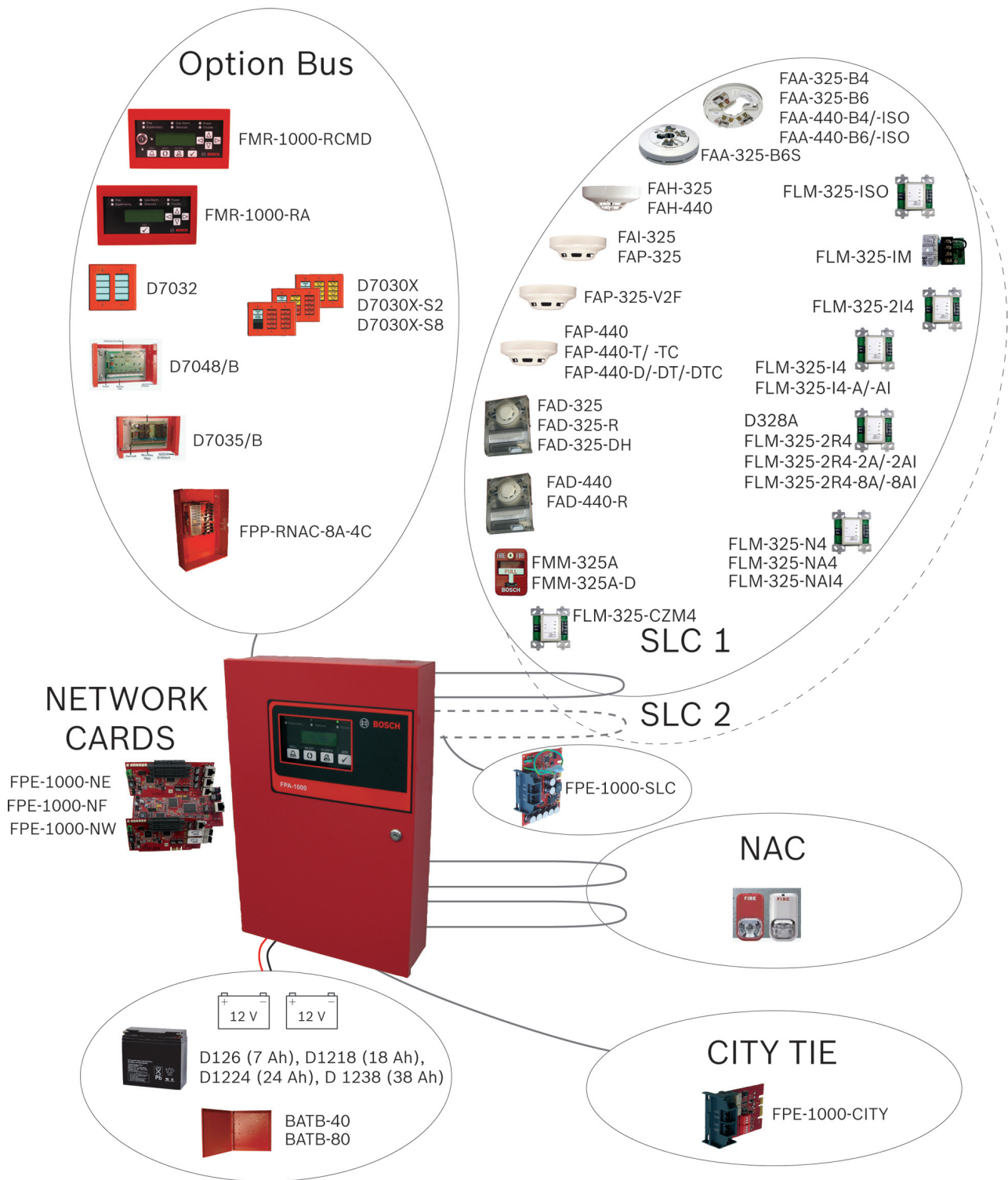
The FPA-1000 Analog Addressable Fire Panels comply with the relevant standards.

#### Options

The Remote Command Center FMR-1000-RCMD is a four-wire LCD annunciator with system control capability. It shows the equivalent LEDs and LCD display and includes a piezo, scrolling buttons, and operation keys for acknowledge (ACK), drill, reset and silence. The scrolling functions and the acknowledge key are accessible without restriction. The keys for reset, silence or drill can be enabled and disabled by the device key lock.

The Remote Annunciator FMR-1000-RA is an LCD annunciator without control. It shows the equivalent LEDs and LCD display. It includes a piezo sounder, scrolling buttons and acknowledge key. The scrolling functions and the acknowledge key are accessible without restriction.

The City Tie Plug-in Module FPE-1000-CITY provides the system with two supervised City Tie Local Energy circuits or Reverse Polarity circuits. The FPE-1000-CITY plugs into the FPA-1000 mainboard.



**Figure 2.1** FPA-1000 System Architecture with Options

Optional Networking Cards allow multiple panels to be interconnected into a networked system.

## 2.2

### Features

#### System Configuration

- Basic configuration includes one analog addressable Signaling Line Circuit (SLC), configurable as two Class B Style 4 or one Class A Style 6 or 7
- Second SLC easily expandable with FPE-1000-SLC Signaling Line Circuit
- Up to 254 detectors and modules, or up to 127 analog sounder bases in combination with a suitable detector, for a total of 254 addressable device capacity per SLC
- SLC circuits use standard wire; no shielded or twisted pair required. Twisted pair wire, CAT 5 cable, or fiber optic cable used on network connections.
- Programmable sensitivity levels per device, and automatic day and night sensitivity modes
- Automatic calibration and drift compensation routine
- 120 V/240 V AC power, total 5.5 A transformer output
- Two integrated NAC circuits rated at 2.5 A each, allowing up to 4 A total current (shared between AUX power, Option Bus, and NAC)
- Up to four addressable Remote Notification Appliance Circuit Power Supplies, providing Aux power and up to 16 synchronized remote NAC circuits
- Mainboard NAC patterns include Steady, Pulsing, Temporal Code 3, and Temporal Code 4, Wheelock, System Sensor, and Gentex
- Built-in synchronization for appliances from Wheelock, System Sensor, and Gentex
- Three programmable Form C relays on the mainboard (fire, trouble, supervisory, gas alarm or activation by zone)
- Option Bus for optional boards and expansions including LCD/LED annunciators, Octal Driver Module, Octal Relay Module, and Remote Notification Appliance Circuit Power Supply
- Optional City Tie Plug-in Module FPE-1000-CITY with two circuits, each programmable to Local Energy or Reverse Polarity
- Optional plug-in Networking Cards (three models) for connecting fire panels into a networked system
- Built-in Ethernet interface for Conettix IP reporting and/or programming and diagnostics
- Built-in dual phone line PSTN/IP DACT communicator
- Contact ID, SIA 300 and Modem IIIa<sup>2</sup> reporting formats
- UL Listed, FM/CSFM/MEA approved

#### Ease of Use and Functionality

- Large 4-line by 20-character LCD display
- Six LED status indicators on each panel keypad or remote LCD annunciators, including gas alarm LED
- Menu-driven user interface on panel
- Easy programming from panel keypad
- Browser-based user interface for programming and diagnostics running on a networked PC with Microsoft Windows XP and Microsoft Windows Vista or Unix/Linux based operating system, no software installation is required
- Programmable authority levels, secured with a user-definable four-digit PIN
- 225 software zones for flexible input-output mapping on a non-networked panel
- 128 local zones per panel and 97 grouped zones for flexible input-output mapping on a network
- Programming option for sandwich alarm allows time-triggered phased evacuation (evacuation floor by floor)
- Auto Learn feature for easy start-up programming

- Local piezo sounder
- Fire drill test function
- Walk test function
- Alarm verification feature
- Bypass or unbypass point, output or zone individually
- 2999 events history buffer
- Event and history printing via network printer
- Three language versions (English, Spanish, and Portuguese), software configurable, LED and keypad labeling easy exchangeable
- Programming option for IP reporting communication with the Advanced Encryption Standard (AES)

**Hardware Features**

- Removable front door with keyed lock
- Removable dead front door to access electronics
- Mounting kit available for semi-flush installation with trim ring
- Metal oxide varistors (MOVs) and spark gaps for protection from lightning surges and static discharges

## 2.3 System Overview Mainboard Components

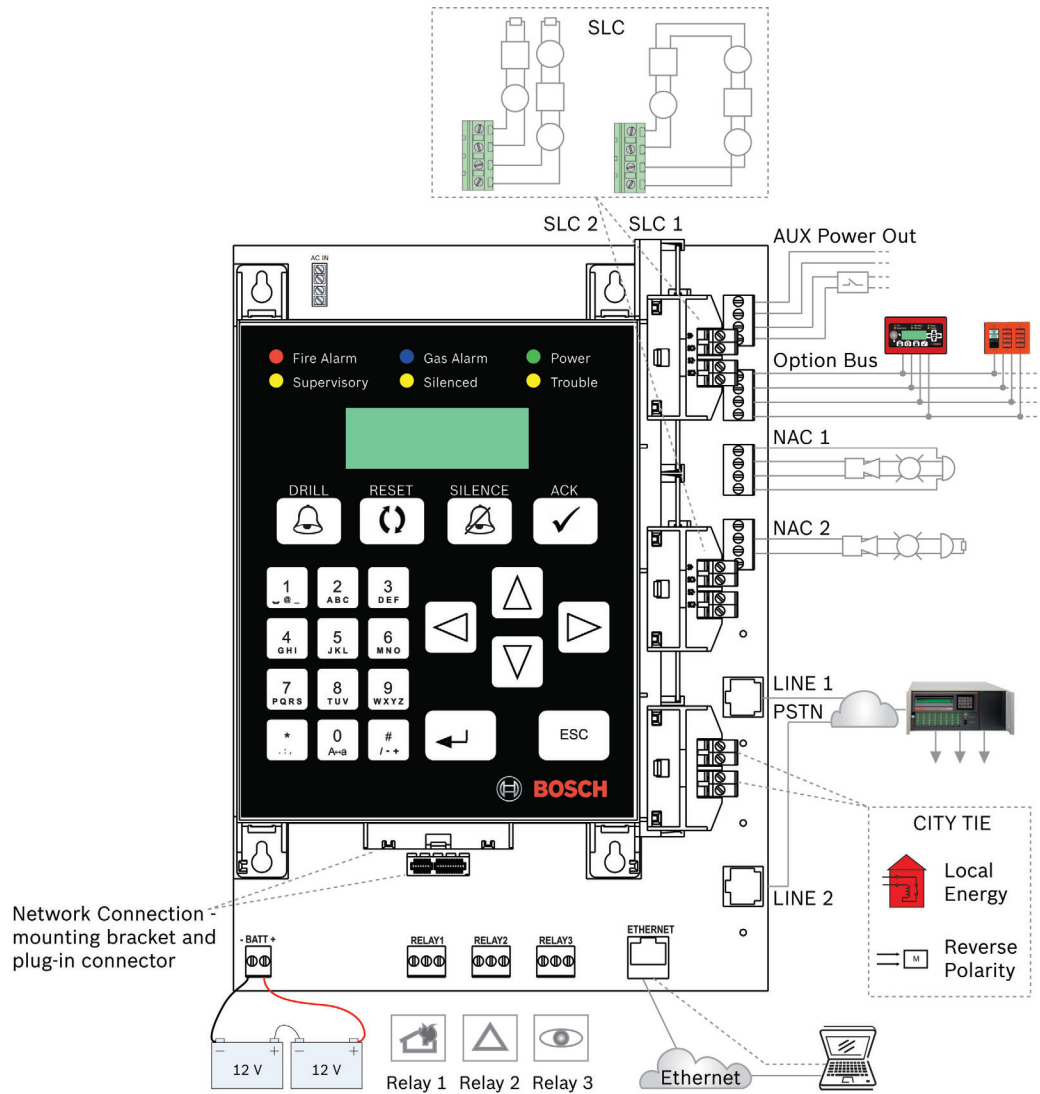


Figure 2.2 FPA-1000-UL Mainboard

Designation	Description
Keypad	With LEDs, LCD display and keys.
Transformer	Works with 120 V AC, 60 Hz or 240 V AC, 50 Hz.
SLC 1 / SLC 2	Signaling Line Circuit (SLC), standard configuration with one SLC, second SLC with FPE-1000-SLC Plug-in Module, nominal 39 V DC (30 to 40 V DC), 260 mA maximum (per SLC), power-limited, supervised.
Option Bus	Provides serial data interface, with 500 mA at 12 V DC, power-limited, supervised.
AUX : FWR-   FWR+ RST-   RST+	Two auxiliary power supply terminals, with 500 mA at 24 V DC each, power-limited, non-supervised, FWR = Full Wave Rectified, non-switched RST = Resettable, switched and filtered.
NAC 1 / NAC 2	Terminal strips for two NACs, 2.5 A each. Wiring options Class A Style Z or Class B Style Y. See wiring example <i>Figure 2.2</i> on <i>Page 14</i> : – NAC 1: Class A Style Z – NAC 2: Class B Style Y
CITY TIE	Slot for City Tie Plug-in Module FPE-1000-CITY.
Networking Card	Slot for one of three models of Networking Card.
RELAY 1 RELAY 2 RELAY 3	Mainboard relays, default assignment is for alarm, trouble and supervisory; individually programmable for alarm, trouble, supervisory, gas alarm, activation by zone and system events, rated at 5 A, 30 V DC/10 A, 120 V AC.
LINE 1 / LINE 2	Phone line connections through central station receiver (2 x RJ45).
ETHERNET	Ethernet connection (RJ45).
BATT	Terminal strip for battery connection, 2 x 12 V, 18 Ah maximum within enclosure or 40 Ah maximum external.

**Table 2.1** Mainboard (MB) Components

The boards, expanders and devices, listed in the following sections, are available from Bosch Security Systems, Inc. to be used with the FPA-1000 fire panels. For a complete description of and installation instructions for each product, refer to the appropriate section of this manual and the documents supplied with the device.

## 2.4 Plug-in Modules

The following plug-in modules are available for the FPA-1000 fire panels:

Type Number	Description
FPE-1000-NE	Ethernet Networking Card
FPE-1000-NF	Fiber Optic Networking Card
FPE-1000-NW	Wired Networking Card
FPE-1000-SLC	Signaling Line Circuit (second circuit or replacement)
FPE-1000-CITY	City Tie Plug-in Module

**Table 2.2** Plug-in Modules

When a networked system of fire panels is desired, the Networking Cards provide the means to interconnect the panels.

A second Signaling Line Circuit (SLC) can easily be added by plugging in the FPE-1000-SLC to the mainboard.

The City Tie Plug-in Module FPE-1000-CITY provides two circuits which can be programmed as Local Energy or Reverse Polarity mode

#### Compatible Gamewell Devices for the City Tie Plug-in Module in Local Energy Mode

Designation	Description
M34-56	Local energy Trip, Surface Mount, Cottage Shell
M34-110	Same as M34-56 wth plain door painted blue
M34-111	Same as M34-56 wth plain door painted red
M34-112	Same as M34-56 wth plain door painted yellow
M34-92	Local energy Trip, Flush Mount, Gasketed cast frame for interior and exterior use
M34-113	Same as M34-92 wth plain door painted blue
M34-114	Same as M34-92 wth plain door painted red
M34-75	Local energy Trip, Surface Mount, Cottage Shell (less inner case test block, tap key & bell)
M34-115	Same as M34-75 wth plain door painted blue
M34-116	Same as M34-75 wth plain door painted red
M34-72	Local energy Trip, Sheet Metal Housing (less inner case test block, tap key & bell), Plain Door

**Table 2.3** Compatible Gamewell Devices for the City Tie Plug-in Module in Local Energy Mode

## 2.5

### Power Supply

A transformer working with 120 V AC or 240 V AC is supplied standard with the control panel. Two backup batteries with 7 Ah or 18 Ah each fit inside the fire panel cabinet. A separate battery box can provide higher capacity.

Each FPA-1000 provides two auxiliary power supplies: one 0.5 A at 24 V FWR; one 0.5 A at 24 V DC RST (resettable). This auxiliary power can run expansion boards or other low current auxiliary devices.

Table 2.4 lists the available batteries and battery boxes. For selecting the necessary battery capacity, use the Microsoft Excel based *FPA-1000\_Battery\_Calculator.xls*. The spreadsheet is available on the product CD or can be downloaded at [www.boschsecurity.us](http://www.boschsecurity.us).



Type Number	Description
D126	Battery 12 V, 7 Ah
D1218	Battery 12 V, 18 Ah
D1224	Battery 12 V, 24 Ah
D1238	Battery 12 V, 38 Ah
BATB-40	Battery Box <ul style="list-style-type: none"> <li>– Provides a single level (two-battery capacity) of battery storage with an optional shelf that increases the battery capacity to four batteries.</li> </ul>
BATB-80	Battery Box <ul style="list-style-type: none"> <li>– Includes a mounted shelf that holds up to four batteries.</li> </ul>

**Table 2.4** Available Batteries and Battery Boxes

For installations requiring battery capacity higher than 40 Ah, a regulated and UL 1481 Listed external power supply can be used. The external power supplies connect through the panel's battery terminals. Batteries and battery charger are not supervised. For supervision of AC and battery fault use an input module (for example FLM-325-2I4) on the SLC.

## 2.6

### Components Connected to the Option Bus

#### Remote Command Center and Annunciators

Each FPA-1000 supports

- up to a total of eight FMR-1000-RCMD Remote Command Centers and/or FMR-1000-RA Remote Annunciators
- up to eight D7030X Series LED Annunciators with eight LED Zones each
- up to eight D7030X Series/D7032 combinations.

Type Number	Description
FMR-1000-RCMD	Remote Command Center <ul style="list-style-type: none"> <li>Remote operational terminal of the FPA-1000 panel, providing buttons for silence, reset, acknowledge, drill, scrolling keys, key switch with 1358 key, built-in piezo sounder.</li> </ul>
FMR-1000-RA	Remote Annunciator <ul style="list-style-type: none"> <li>Remote LCD annunciator, providing key for acknowledge and scrolling keys, built-in piezo sounder.</li> </ul>
D7030X	LED Annunciator <ul style="list-style-type: none"> <li>Identifies the location of a fire alarm for up to eight zones allowed per system.</li> </ul>
D7030X-S2	LED Annunciator <ul style="list-style-type: none"> <li>With two zones reserved for supervisory functions.</li> <li>With power and trouble LEDs plus eight-zone LEDs that can be individually labeled.</li> </ul>
D7030X-S8	LED Annunciator <ul style="list-style-type: none"> <li>With eight zones reserved for supervisory functions.</li> <li>With power and trouble LEDs plus eight-zone LEDs that can be individually labeled.</li> </ul>
D7032	Eight-Point LED Annunciator Expander <ul style="list-style-type: none"> <li>Attaches to a D7030X, D7030X-S2 or D7030X-S8.</li> <li>Identifies the location of a fire alarm for eight additional zones, showing 16 LED zones in the D7030X/D7032 combination.</li> </ul>

**Table 2.5** Controls and Annunciators for Connection to the Option Bus

For requirements of Option Bus address restrictions, refer to *Section 3.4.1 Option Bus Address Assignment* on Page 39.

For wiring requirements, refer to *Section 4.9 Option Bus Wiring* on Page 67.

### Modules

Each FPA-1000 supports up to two Octal Relay Modules or Octal Driver Modules.

The outputs are fully programmable, and can be activated by system events. These outputs have the same programming options as the local relays. Each output operates independently of the other seven to provide complete flexibility. Communication with the D7035/B or D7048/B is supervised.

Type Number	Description
D7048/B	Octal Driver Module
D7035/B	Octal Relay Module

**Table 2.6** Modules for Connection to the Option Bus

For wiring requirements, refer to *Section 4.9 Option Bus Wiring* on Page 67.

For requirements of address restrictions, refer to *Section 3.4.1 Option Bus Address Assignment* on Page 39.

### NAC Power Supply

The FPP-RNAC-8A-4C Remote Notification Appliance Circuit Power Supply adds four additional Notification Appliance Circuits (NFPA 72, Class A Style Z or Class B Style Y) to the fire panel or serves as a power supply for fire protective signaling systems. This regulated power supply provides up to 8 A of power that is used to recharge batteries and operate

continuous and intermittent alarm loads. This 8 A of power can be distributed through the four NAC Power Supply circuits that are part of the FPP-RNAC-8A-4C. The FPP-RNAC-8A-4C is UL Listed for use in commercial fire alarm applications.

Type Number	Description
FPP-RNAC-8A-4C	Remote Notification Appliance Circuit Power Supply

**Table 2.7** NAC Power Supply Connected to the Option Bus

For wiring requirements, refer to *Section 4.9 Option Bus Wiring* on Page 67.

## 2.7 Signaling Line Circuit Devices

The FPA-1000 fire panels communicate with each of the analog addressable devices located on the SLCs using fast and reliable protocol that allows the use of standard non-twisted, non-shielded wiring for the SLCs.

Each FPA-1000 supports two Class B, Style 4 or one Class A, Style 6 or 7 per SLC.

*Table 2.8* lists all compatible devices for the FPA-1000 SLCs:

Type Number	Description
FAP-440-T FAP-440-TC FAP-440-DT FAP-440-DTC [SMOKE-M]	Analog Multisensor Detector Photo/Heat Analog Multicriteria Detector Photo/Heat/CO <ul style="list-style-type: none"> <li>- Incorporates a thermal element and a high performance photoelectric smoke chamber. The -TC model includes a carbon monoxide (CO) sensor as an indicator of fire.</li> <li>- Provides two user-selectable modes for making the fire decision: multi-combined and multi-separated mode.</li> <li>- Allows programming LED behavior during polling of the internal device LED and a remote connected indicator.</li> <li>- D models incorporate dual photoelectric emitters (infrared and blue) to enhance catch performance.</li> <li>- Can use addresses 1 to 254.</li> </ul>
FAP-325-V2F [SMOKE-P]	Analog Photoelectric Smoke Detector Flat Head <ul style="list-style-type: none"> <li>- Detects optically dense smoke typical of fires involving materials such as soft furnishings, plastic, foam or other similar materials which tend to smolder and produce large visible smoke particles.</li> <li>- Allows programming LED behavior during polling of the internal device LED and a remote connected indicator.</li> <li>- Can use addresses 1 to 254.</li> </ul>
FAP-325 FAP-440 FAP-440-D [SMOKE-P]	Analog Photoelectric Smoke Detector Analog Photoelectric Detector <ul style="list-style-type: none"> <li>- Detects optically dense smoke typical of fires involving materials such as soft furnishings, plastic, foam or other similar materials which tend to smolder and produce large visible smoke particles.</li> <li>- The D model incorporates dual photoelectric emitters (infrared and blue) to enhance catch performance.</li> </ul>
FAH-325 FAH-440 [HEAT]	Analog Heat Detector Analog Heat Detector <ul style="list-style-type: none"> <li>- Detects heat in environments where smoke detectors are unsuitable because of the presence of steam or cooking fumes, such as in a kitchen.</li> </ul>
FAI-325 [SMOKE-I]	Analog Ionization Smoke Detector <ul style="list-style-type: none"> <li>- For use in areas where early warning of trouble from superheated or flaming combustibles is expected; also constructed to be used effectively where outside Radio Frequency Interference (RFI) and other electrical interference is expected.</li> </ul>
FAA-325-B4 FAA-440-B4 FAA-440-B4-ISO	Analog Detector Base Analog Standard Base (4-inch) Analog Isolator Base (4-inch) <ul style="list-style-type: none"> <li>- Compatible with all analog addressable detectors that use the advanced analog communication protocol, except the FAD-325-DH.</li> <li>- 4-in (10 cm) diameter.</li> <li>- ISO base contains built-in circuit isolator.</li> </ul>

Type Number	Description
FAA-325-B6 FAA-440-B6 FAA-440-B6-ISO	Analog Detector Base Analog Standard Base (6-inch) Analog Isolator Base (6-inch) <ul style="list-style-type: none"> <li>- Compatible with all analog addressable detectors that use the advanced analog communication protocol, except the FAD-325-DH.</li> <li>- 6-in (15 cm) diameter.</li> <li>- ISO base contains built-in circuit isolator.</li> </ul>
FAD-325-DH FAD-325-R [SMOKE-D]	Analog Duct Smoke Sensor Replacement Analog Duct Smoke Detector <ul style="list-style-type: none"> <li>- Provides early detection of smoke and products of combustion present in air moving through HVAC ducts in Commercial, Industrial and Residential applications.</li> </ul> The FAD-325-DH is a replacement for the sensor in either of the following units: <ul style="list-style-type: none"> <li>- FAD-325 Analog Duct Smoke Detector (with Housing)</li> <li>- FAD-325-R Analog Duct Smoke Detector with Relay (with Housing)</li> </ul>
FMM-325A FMM-325A-D [CONT-MOD]	Single-action Analog Manual Station Double-action Analog Manual Station <ul style="list-style-type: none"> <li>- Contact monitor module mounted in a corrosion-resistant rugged die-cast housing for single-gang mounting.</li> <li>- Loop powered.</li> </ul> The FMM-325A/FMM-325A-D devices are connected via an FLM-325-IM Contact Module. For programming, refer to the Contact Monitor information.
FLM-325-I [CONT-MOD]	Contact Monitors <ul style="list-style-type: none"> <li>- Designed to use with pull stations, water-flow switches, and other applications requiring the monitoring of dry-contact alarm-initiating devices.</li> <li>- Can be programmed in NO EOL, NC EOL, NC no EOL.</li> </ul> Two types available for input switches to be connected as Class B: <ul style="list-style-type: none"> <li>- FLM-325-I4 Contact Monitor 4-inch</li> <li>- FLM-325-IM Contact Monitor, Mini</li> </ul> Independently from the type, the panel lists only an FLM-325-I. Two types available for input switches to be connected as Class A: <ul style="list-style-type: none"> <li>- FLM-325-I4-AI Contact Monitor 4-inch Class A w/Isolator</li> <li>- FLM-325-I4-A Contact Monitor 4-inch Class A</li> </ul> The types FLM-325-IM, FLM-325-I4-AI, and FLM-325-I4-A can use addresses 1 to 254.
FLM-325-2I4 [CONT-MOD]	Dual Input Monitor <ul style="list-style-type: none"> <li>- Provides two independent contact monitoring circuits while utilizing only one address on the SLC.</li> <li>- Can be programmed to monitor normally open or normally closed contact fire alarm and supervisory devices (NO EOL, NC EOL, NC no EOL)</li> <li>- Supervises with Style B (Class B), loop powered.</li> </ul>

Type Number	Description
FLM-325-CZM4 [CONVZ-MOD]	<p>Conventional Zone Module</p> <ul style="list-style-type: none"> <li>- Monitors dry contacts (NO) devices such as two-wire conventional detectors or pull stations.</li> <li>- Transmits the status of one zone of devices back to the panel (25 maximum per zone; number depends on type of connected devices).</li> <li>- Class A or Class B wiring is configured with a jumper on the module</li> <li>- Auxiliary (AUX) powered.</li> </ul> <p>For compatible devices, refer to the manual supplied with the product. The number of Conventional Zone Modules (FLM-325-CZM4) for eachSLC module is limited to 32.</p>
FLM-325-2R4 [RELAY-MOD]	<p>Dual Relay Modules</p> <ul style="list-style-type: none"> <li>- Allows independent control of two Form C contacts for a variety of normally open (NO) and normally closed (NC) contact applications such as fan operation, elevator recall, door closure, and auxiliary notification.</li> <li>- Loop powered.</li> </ul> <p>Five types available:</p> <ul style="list-style-type: none"> <li>- FLM-325-2R4 Dual Relay Module, rated for 1.0 A at 30 V DC or 0.5 A at 125 V AC</li> <li>- FLM-325-2R4-2A Dual Relay Module 2A, rated for 2.0 A at 30 V DC or 1.0 A at 125 V AC</li> <li>- FLM-325-2R4-2AI Dual Relay Module 2A w/Isolator rated for 2.0 A at 30 V DC or 1.0 A at 125 V AC</li> <li>- FLM-325-2R4-8A Dual Relay Module 8A, rated for 8.0 A at 30 V DC or 8.0 A at 250 V AC)</li> <li>- FLM-325-2R4-8AIDual Relay Module 8A w/Isolator, rated for 8.0 A at 30 V DC or 8.0 A at 250 V AC)</li> </ul> <p>The types FLM-325-2R4-2A, FLM-325-2R4-2AI, FLM-325-2R4-8A and FLM-325-2R4-8AI can use addresses 1 to 254.</p>
D328A [RELAY-MOD]	<p>Analog Relay Module</p> <ul style="list-style-type: none"> <li>- Allows the control of one Form C contact (rated for 1.0 A at 30 V DC or 0.5 A at 125 V DC) for a variety of normally open (NO) and normally closed (NC) contact applications such as elevator recall systems or HVAC shutdown.</li> <li>- Loop powered.</li> </ul>

Type Number	Description
FLM-325-N4 [NAC-MOD]	Supervised Output Module <ul style="list-style-type: none"> <li>- Provides a supervised pole reversal output used for acoustic and optical signaling devices or to trigger a Remote Notification Appliance Circuit Power Supply.</li> <li>- Requires a 24 V DC auxiliary input voltage.</li> <li>- The output relay is rated to supply 2 A at 30 V DC.</li> <li>- Provides Steady, Pulsing and Temporal Code 3 output pattern</li> </ul> Class B type: <ul style="list-style-type: none"> <li>- FLM-325-N4 Supervised Output Module</li> </ul> Two types available for Class A: <ul style="list-style-type: none"> <li>- FLM-325-NA4 Supervised Output Module Class A</li> <li>- FLM-325-NAI4 Supervised Output Module Class A w/Isolator</li> </ul> The types FLM-325-NA4 and FLM-325-NAI4 can use addresses 1 to 254.
FLM-325-ISO	Short Circuit Isolator <ul style="list-style-type: none"> <li>- Isolates a shorted section on a specific polling circuit from the rest of the system to minimize the loss of devices.</li> </ul>

**Table 2.8** Compatible SLC Devices

When programming the SLC devices, first select the device group type and then specify the type number.

Refer to the type designations in brackets in *Table 2.8*, or refer to *Section SLC Configuration* beginning on *Page 171*.

## 2.8 Notification Appliance Circuit Devices

Two Class A Style Z or Class B Style Y Notification Appliance Circuits (NACs) provide up to 4 A of 24 V power (maximum 2.5 A on each circuit) to operate horns, strobes, bells, and other notification appliances. Each NAC can be programmed to provide Temporal Code 4, Temporal Code 3, and Steady, Pulsing, and synchronized output for Wheelock, System Sensor, and Gentex notification appliances.

Refer to the *Compatibility List* (P/N F.01U.075.636), available as a PDF at:

► [www.boschsecurity.us](http://www.boschsecurity.us)

Refer to *Section 3.15 Programming Requirements According to UL 864* on *Page 46* for UL approved patterns.

## 2.9 Communicator

Each FPA-1000 has a dual phone line PSTN/DACT circuit and an Ethernet connection featuring Conettix IP reporting. The panel communicates in Contact ID, SIA, and Modem IIIa<sup>2</sup>.

The panel provides miscellaneous reporting functions such as dialing control and transmission supervision, priorities of report groups, routing to destinations, manual and auto test reports, and Anti-Replay feature.

For the primary and secondary account, the following features are programmable:

- Two different phone or IP numbers
- Different dialing types for PSTN (pulse only, tone and pulse, or tone only)
- Individual PSTN line supervision (audible and visible trouble signal in the case of a transmission path failure)
- Selectable options for Report Steering Groups

- Programmable acknowledge wait time for each Conettix IP reporting account (15 to 255 seconds)
- Test call frequency individually programmable for each account (4-, 12-, 24-hour, 7- and 28-day intervals; standard frequency 24 hours)

With modem function, it is possible to program the control panel remotely (upload a new parameter file to the panel from a remote station).

#### Compatible Device for the PSTN/DACT Circuit and Ethernet Connection

Designation	Description
D6600	Communications Receiver/Gateway
D6100i	Communications Receiver/Gateway

**Table 2.9** Compatible Devices for the PSTN/DACT Circuit and Ethernet Connection

## 2.10 Components and Accessories

For semi-flush mounting of the control panel cabinet, the FPM-1000-SFMK Semi-flush Mounting Kit with trim ring is available.

The D5070 Analog Device Programmer provides easy programming of Signaling Line Circuit device addresses.

Alternatively to the complete FPA-1000 Analog Addressable Fire Panel, you can order separate components; the FPA-1000-LC includes the mainboard with keypad, and the FPM-1000-ENC includes the enclosure with the dead front door.

Type Number	Description
FPM-1000-SFMK	Semi-flush Mounting Kit <ul style="list-style-type: none"> <li>– Includes trim ring and mounting accessories.</li> </ul>
D5070	Analog Device Programmer <ul style="list-style-type: none"> <li>– Hand held device that programs address settings on EEPROM-programmable analog devices.</li> <li>– With base for detector head programming and two-module program adapter for module programming (for 4-in or single-gang back box).</li> <li>– Shows the current analog value of a connected detector.</li> </ul>
FPA-1000-LC	Fire Panel Less Enclosure
FPM-1000-ENC	Enclosure With Dead Front Door

**Table 2.10** Optional Accessories for the FPA-1000 Analog Addressable Fire Panels

## 2.11 Related Documents

To obtain a complete understanding of specific features of the fire control panel and related peripherals, see the following documentation:

- *NAC Compatibility List*
- *Operating Instruction Sheet, FPA-1000*
- *Wiring Diagram*
- *Release Notes*
- *Installation Guide FPE-1000-SLC Signaling Line Circuit*
- *Installation Guide FPE-1000-CITY City Tie Plug-in Module*
- *Installation Guide FPM-1000-SFMK Semi-flush Mounting Kit*
- *Installation and Operation Guide FMR-1000-RCMD Remote Command Center*



- *Installation and Operation Guide FMR-1000-RA Remote Annunciator*
- *Installation Guide FPM-1000-ENC Enclosure With Dead Front Door*

If your system is networked, also see the following:

- *Networking Cards Installation Guide*
- *Networking Quick Guide*

All documents (in PDF format) and panel related software can be downloaded at:

▶ [www.boschsecurity.us](http://www.boschsecurity.us)

You might also find the current version of all documents supplied with the devices.

## 3 Planning Information



### NOTICE!

If the panel is to be used in a networked system, be careful to plan properly before installing any panels. Check:

- whether the networked panels will be installed near each other or distributed over a wider area
- whether or not any of the networked panels will be in different buildings
- the types and numbers of Networking Cards needed
- interconnection requirements, including the maximum allowable cable lengths which depend on the intended interconnection method (Ethernet, fiber optic cable, or wire)

For each panel, be careful to plan properly before installing any devices. Check:

- the compatibility and number of devices to be connected
- the battery capacity needed
- the wiring requirements, including the maximum allowed cable length
- the installation requirements according to this Installation and Operation Guide, NFPA 72, Local Codes and the Authority Having Jurisdiction (AHJ).



### WARNING!

Any panel in a network can control all other panels in the network (e.g. silencing an alarm, resetting the system, etc.). Access to panels should be restricted to properly trained personnel.

### 3.1 Power Supply Calculations

To select the proper battery size for your system, calculate the required total current draw of your system using the Microsoft Excel based *FPA-1000\_Battery\_Calculator.xls*. The spreadsheet is available on the product CD or can be downloaded at [www.boschsecurity.us](http://www.boschsecurity.us).

### 3.2 Network Wiring/Connection Considerations

#### 3.2.1 Ground Fault Detection

Each networking card has a specific terminal or terminals that are Ground Fault Detection enabled. As indicated by the checked boxes in the following table, Port 1 on all three networking cards is ground fault enabled; as is Port 3 on the wired card (FPE-1000-NW).

Port	-NE	-NF	-NW
1	<input checked="" type="checkbox"/> Ethernet IN	<input checked="" type="checkbox"/> Ethernet IN	<input checked="" type="checkbox"/> Wired IN
2	<input type="checkbox"/> Ethernet OUT	<input type="checkbox"/> Fiber IN	<input type="checkbox"/> Wired OUT
3	<input type="checkbox"/> Ethernet	<input type="checkbox"/> Fiber OUT	<input checked="" type="checkbox"/> Ethernet IN

**Table 3.1** Network Port Identification

For Ground Fault Detection to work properly, one and only one end of a communication connection (cable) joining two networking cards must be Ground Fault Detection enabled. To facilitate this, the wired card (FPE-1000-NW) and the fiber optics card (FPE-1000-NF) each have a jumper located near the back of the the Ethernet IN port (Port 1 on the wired card and Port 3 on the fiber optic card). This jumper allows Ground Fault Detection to be disabled for this port. Recommended communication connection practice is to come out of one card and in on the next. In cases where you are switching from a wired or fiber optic card to a different

type of card, you must use the Ethernet port which should be OUT not IN which is the default. Move the jumper on this card so that Ground Fault Detection is disabled at this end of the connection (making it an Ethernet OUT). Remove the jumper from both pins and replace it on only one pin so that it does not get misplaced in case Ground Fault Detection needs to be re-enabled later.

## 3.3 Configuration and Programming Basics

### 3.3.1

#### Points

A point is defined as a device such as an automatic detector, a call point, or input line. Each point in the system is individually identified by the control unit and can be programmed with specific functions or responses.

Possible states are:

- Normal
- Active
- Bypassed
- Trouble
- Walk test mode

A point can have only one state at a time.

The point is activated in either of the following cases:

- The analog value of an analog detector crosses its threshold level.
- An input monitor is activated.

The point is dirty if the clean air value reaches a defined upper limit (depending on detector type). This takes place automatically during the calibration processes. After the panel is initialized successfully, the test interval for the calibrated detector sensitivity testing is 4 hours. The dirty condition is handled as a trouble status. If the clean air value is out of range, a calibration trouble status is indicated. The detector is still working, but the sensitivity set point can be different from the configured value. This means the risk of a false alarm increases.

The point is in trouble status in any of the following cases:

- Double address fault is detected on an address.
- Wrong type code error is detected.
- Missing device is detected on an address.
- Other types of fault conditions are detected.

If a point is in bypassed status, other status changes are ignored until it is unbypassed.

If a point is placed in walk test mode, activation and deactivation of this point are handled differently. Any other condition changes are ignored until the point is no longer in walk test mode.

The point is considered to be normal if it is not in any of the above states.

#### Point Types

Point type defines the condition that is indicated by activation of a point. Each point is programmed with a type. Not all point types are possible on a certain point, especially on an SLC point where a detector exists. Refer to *Table 3.2 on Page 28* for details on device type mapping and possible point types for each SLC device type. The panel lists only the acceptable point types for that SLC device.

Each of the points in the system can be programmed with its own characteristics. Point types simplify the programming of points by allowing you to define a common set of characteristics for similar points, and then assigning those characteristics to selected points as a point type. Each point is assigned to use the characteristics of one point type, and then is individually programmed for additional characteristics.

FPA-1000 Point Type	SLC Device Group Type			
	SMOKE-M	SMOKE-P, SMOKE-I, SMOKE-D, HEAT	CONVZ-MOD	CONT-MOD
Fire Automatic	D	D	D	P
Fire Alarm Manual			P	D
Waterflow			P	P
Waterflow Delay			P	P
Gas Alarm			P	P
Supervisory	P	P	P	P
Generic			P	P
Trouble			P	P
AC Failure			P	P
Battery Failure			P	P
Reset			P	P
Silence			P	P
Drill			P	P
Acknowledge			P	P
General Fire Alarm				P
D = default point type		P = possible point type		[Blank] = not available
SMOKE-M = FAP-440-T, FAP-440-TC, FAP-440-DT, FAP-440-DTC				
SMOKE-P = FAP-325, FAP-325-V2F, FAP-440, FAP-440-D				
SMOKE-I = FAI-325				
SMOKE-D = FAD-325, FAD-325-R, FAD-325-DH				
HEAT = FAH-325, FAH-440				
CONVZ-MOD = FLM-325-CZM4				
CONT-MOD = FLM-325-2I4, FLM-325-I4, FLM-325-IM, FLM-325-I4-A, FLM-325-I4-AI,				
FMM-325A and FMM-325A-D Pull Stations connected via FLM-325-IM Contact Monitor are assigned to Fire Alarm Manual by default and are programmable as Supervisory.				

**Table 3.2** Mapping Point Types to SLC Device Types

Generic point type can be used for output control with input activation. Activation of an input programmed as Generic point type generates an entry "Generic" in history but no off-normal event.

The point type General Alarm can be used for a key switch connected to a Contact Monitor Module or Input Module (type CONT-MOD) to activate a fire alarm without delay. A General Alarm overrides any Sandwich alarm delays (refer to *Section 3.3.5 Special Alarm Features* on Page 37).

### 3.3.2 Advanced Point Features and Processing

The panel provides flexible handling on a point so that more optional features are accomplished. These features are applicable to specific types. The control panel lists only possible point features for that point type when programming on menu and Web pages. Refer to *Table 3.3* on Page 29 for mapping of point type to available point features:

Point Type	Point Feature					
	Latching	AV	PAS/ Pre-signal	PAS (D)/ AV (N)	Waterflow Delay	AC Fail Delay
Fire Automatic	X	p 1)	P	p 1)		
Fire Alarm Manual	X					
Waterflow	X					
Waterflow delay	X				X	
Gas Alarm	X					
Supervisory	G					
Generic						
AC Failure						X
General Fire Alarm	X					
AV = Alarm Verification PAS = Positive Alarm Sequence D = Day, N = Night 1) Not for FAH-325			X = Fixed point feature P = Programmable point feature G = Dependent on global setting Blank = not available			

**Table 3.3** Mapping Point Types to Point Features

The following principles apply:

- For Supervisory point type, programming of latching or non-latching is panelwide.
- The point types Generic, Trouble, AC Failure, Battery Failure, Reset, Silence, Drill, and Acknowledge are non-latching. Refer to *Table 3.2* on *Page 28*.
- For Fire Automatic point type, only one of three programmable features can be selected: AV, or PAS/Pre-signal **or** PAS (Day)/AV (Night). AV and PAS (Day)/AV (Night) do not apply for the FAH-325 Analog Heat Detector.

Delay options can be selected individually for each SLC Fire Automatic input.

For programming details, see *Section Edit a Device 6-PROGRAMMING, 1-SLC DEVICES, 1-SLC 1, 2-EDIT A DEVICE* or *6-PROGRAMMING, 1-SLC DEVICES, 2-SLC 2, 2-EDIT A DEVICE* on *Page 112* and/or *Section 6.7.2 SLC 1 and SLC 2* on *Page 149*.

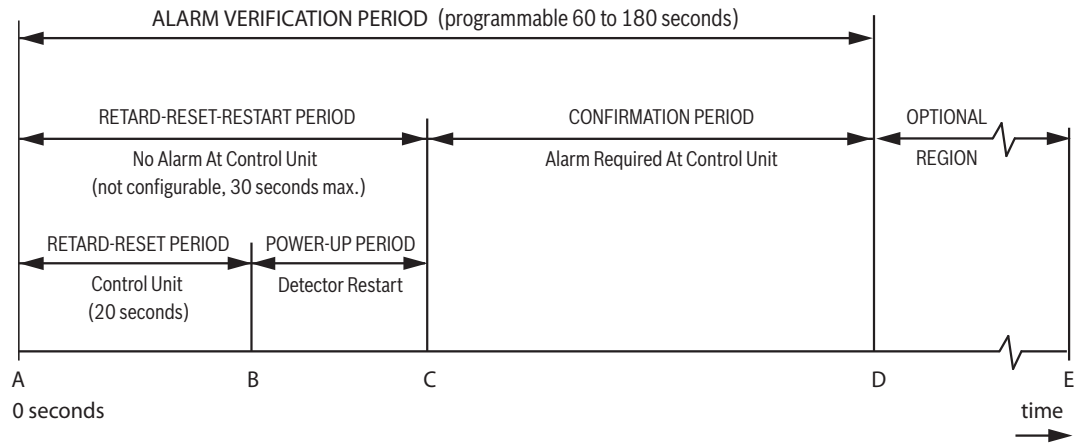
The following table shows the prioritization of both delay settings:

Programming SLC Fire Automatic Input	Day Mode (Site Data)		
	No delay	PAS	Pre-signal
No delay	No delay	No delay	No delay
AV	AV	AV	AV
PAS/Pre-signal	No delay	PAS	Pre-signal
PAS (D)/AV (N)	AV	PAS	Pre-signal
AV = Alarm Verification PAS = Positive Alarm Sequence D = Day, N = Night			

**Table 3.4** Prioritization of Day Mode and SLC Input Delay Options

**Alarm Verification**

If an input point is configured as “Alarm verification enabled” and goes into an active state, the panel does not immediately indicate the alarm and activate associated outputs, but resets the input point and waits for a verification period (programmable) to see if the point is still active.



**Figure 3.1** Alarm Verification Timing Diagram

Legend	
A	Smoke detector goes into alarm.
A→B	RETARD-RESET PERIOD: Control unit senses detector in alarm and retards (delays) alarm signal. Fixed, 20 seconds.
B→C	POWER UP PERIOD: Power to the detector is reapplied and time is allowed for detector to become operational for alarm (detector restart). Time depends on the device type (detector maximum 3 seconds, Conventional Zone Module maximum 10 seconds).
A→C	RETARD-RESET-RESTART PERIOD: No alarm obtained from control unit. Not configurable, 30 seconds maximum.
C→D	CONFIRMATION PERIOD: Detector is operational for alarm at point C. If detector is still in alarm at point C, control unit will alarm. If detector is not in alarm, system returns to standby. If the detector re-alarms at any time during the confirmation period the control unit will alarm. Time depends on detector restart and overall alarm verification period.
A→D	ALARM VERIFICATION PERIOD: Consists of the retard-reset-restart and confirmation periods. Programmable 60 to 180 seconds.
D→E	OPTIONAL REGION: Either an alarm can occur at control unit or restart of the alarm verification cycle can occur.

- Alarm verification is applicable only to analog smoke or 2-wire smoke detectors of the Fire Automatic type. The alarm verification option is not applicable to Fire Alarm Manual and Waterflow point types.
- The alarm verification option is arranged on a per point basis.
- After the alarm verification period starts, any alarm from anywhere in the system that occurs during the alarm confirmation cycle immediately results in an alarm indication.
- The alarm verification timer is system wide; thus, only one timer applies for the whole system.
- The alarm verification timer is user programmable, ranging from 90 to 180 seconds. The default is 90 seconds. Refer to *Section 3.15 Programming Requirements According to UL 864 on Page 46*.
- A reset command is sent to reset the input point on SLCs for alarm verification.
- The global alarm verification zone is activated if the panel is in the verification period.
- The Alarm Verification feature is valid in a networked system.

**NOTICE!**

CSFM installations require the alarm verification Retard-Reset-Restart (A-C) time to be a maximum of 30 seconds. This time is not programmable and is always less than 30 seconds, by design. The programmable alarm verification time in this panel is the complete Retard-Reset-Restart-Confirmation (A-D) cycle.

**Waterflow Delay**

- The Waterflow delay is applicable only to point type “Waterflow with delay”.
- The Waterflow delay enable option is arranged on a per point basis.
- Each point configured with Waterflow delay has its own timer.
- The Waterflow delay timer is user programmable, ranging from 10 to 90 seconds. The default is 90 seconds.
- The input point must remain constantly in an active state for the complete time delay. Any interruption resets the timer.

**Latching**

If a point is “Latching”, after activation it can return to the normal state only by a reset operation.

- The latching enable option is arranged on a per point basis.
- Latching is programmable only for points of the supervisory type.
- For other types of points, the latching option is fixed:
  - “Latching” for Fire, Waterflow, Gas Alarm, and General Alarm point type
  - “Non-latching” for Generic, Trouble, AC Failure, Battery Failure, Reset, Silence, Drill, and Acknowledge point type.

**Pre-signal**

If an input point is configured as “Pre-signal enabled” and it becomes active, the activation of outputs (for example NACs) associated with that input point is delayed. Other responses, including message display update, LED indication, piezo mode change, central station reporting, and history log, are immediately generated.

- Pre-signal is applicable to points of the Fire type only.
- Pre-signal is arranged on a per point basis.
- If a second alarm occurs during the Pre-signal delay time, the second alarm is immediately processed and all outputs associated with both alarmed input points are activated.
- Any outputs assigned to a Pre-signal zone are activated immediately on initial alarm.
- The Pre-signal timer is system wide; thus, only one timer applies for the whole system.
- The Pre-signal timer is user programmable, ranging from 60 to 180 seconds. The default is 180 seconds.
- The Pre-signal delay feature can be enabled or disabled for each input device individually.
- The global Pre-signal zone is activated if the panel has a Pre-signal input active and is in the “waiting for reset” period.
- The Pre-signal feature, if enabled, is valid only under Day Mode. The panel can be in either PAS mode or Pre-signal mode, not both.
- The Pre-signal feature is valid in a networked system.

**NOTICE!**

In case the Pre-signal option is configured, install a pull station next to the FPA-1000 in order to activate the alarm manually.

### Positive Alarm Sequence (PAS)

The PAS feature is applicable only to automatic fire detection devices that are the Fire type (analog and 2-wire smoke or heat detectors).

- PAS is arranged on a per point basis.
- All system evacuation signals associated with the activated initiating device and any off-premises signaling activate immediately and automatically when:
  - a. The alarm signal from an automatic fire detection device is not acknowledged within 15 seconds of annunciation at the system's operator interface.
  - b. The system is not manually reset within the programmed PAS investigation time of the acknowledgment described in (a).
  - c. When a second automatic fire detector selected for positive alarm sequence actuates before the system is reset as described in (b); or when any other fire initiating device reporting to the system or control unit actuates.
- The PAS timer is system wide; thus only one timer applies for the whole system.
- The PAS timer is user programmable, ranging from 60 to 180 seconds. The default is 180 seconds.
- The PAS feature can be enabled or disabled for each input device individually.
- In addition, the panel provides a global option to enable or disable PAS.
- The panel can be in either PAS mode or Pre-signal mode, not both.
- The PAS feature, if enabled, is valid only under Day Mode.
- The PAS feature is valid in a networked system.



#### NOTICE!

For Positive Alarm Sequence details, refer to NFPA 72 and UL 864.

### 3.3.3

#### Events

All point and system events are classified by event groups.

Point events are generated as point status changes.

Each type of point event belongs to a group that is based on when the panel displays and reports the event in a prioritized style. *Table 3.5* on *Page 32* lists point events and the event groups to which they belong.

Point Event	Event Group
Point bypassed	Point trouble
Point unbypassed	Point trouble restore
Point event upon activation	Handled depending on the point type programmed (refer to <i>Table 3.6</i> )
Point event upon deactivation	
Point trouble	Point trouble
Point trouble restore	Point trouble restore
Point walk test activation	Test
Point walk test deactivation	Test

**Table 3.5** Mapping Point Events to Trouble Event Group

The event generated upon point activation or deactivation is determined by the point type.

*Table 3.6* lists possible point events derived from point activation and the group to which the event belongs.



Point Type	Event or Operation		Event Group	
	by Point Activation	by Point Deactivation	by Activation	by Deactivation
Fire Auto	Fire alarm	Fire alarm restore	Alarm	
Fire Alarm Manual	Fire alarm	Fire alarm restore	Alarm	
Waterflow	Waterflow alarm	Waterflow alarm restore	Alarm	
Supervisory Non-latching	Fire supervisory	Fire supervisory restore	Supervisory	Supervisory restore
Supervisory Latching	Fire supervisory	Fire supervisory restore	Supervisory	
Generic	Generic alarm	Generic alarm restore		
Trouble	Point trouble	Point trouble restore	Point trouble	Point trouble restore
AC Failure	Point AC failure	Point AC restore	Point trouble	Point trouble restore
Battery Failure	Point battery failure	Point battery restore	Point trouble	Point trouble restore
Reset	Reset operation			
Silence	Silence operation			
Drill	Drill operation			
Acknowledge	Acknowledge operation			
General Fire Alarm	Fire alarm		Alarm	

**Table 3.6** Point Activation Events

The events are classified as groups so that they are prioritized on the display and report by groups.

When a component, a part, a functional block, or any system elements supervised by the software is determined to be faulted or back to normal from a fault condition, an appropriate “System trouble” or “Restore event” is generated.

### 3.3.4

### Zones



**NOTICE!**

Before programming inputs and outputs, it is recommended that the zones be programmed first. Mapping inputs and outputs to a zone is then easier.

**Zone Mapping**

The control panel supports a flexible system to map input points to outputs. The system defaults so that all NAC outputs are activated by a fire alarm. By programming output zones, you can create almost any output activation scheme, such as "floor above and floor below" activation or conditional elevator recall.

Input points:	Smoke detectors, pull stations, and so on
Zone:	A group of input points (zones 1 to 225 are configurable, 226 to 234 are activated automatically)
Outputs:	Notification Appliance Circuits (NACs) such as bells, strobes, and relays

#### Zone mapping on a networked system:

- For each panel on the network there are 128 local zones (pp-001 to pp-128, where pp = the panel ID). Local zones are used to assign inputs and outputs specific to a device at that zone address and to that panel.
- Each network also has 97 grouped zones (129 to 225). Grouped zone addresses allow inputs and outputs to be assigned to multiple panels within a network so that the inputs and outputs of each panel in the grouped zone can be connected to any of the panels in the network.
- Each network also has 9 global zones (226 to 234). Global zones have preset inputs based on device types, but their outputs can be defined and apply to the entire network.
- For local zones and group zones, up to 5 zones per input and 5 zones per output can be mapped. More specifically, an input can be mapped to local zones on any panel within the network or to group zones. The outputs from a local zone (1-128) can be mapped only to the panel that zone is connected to, but the output from group zones (129-225) can be mapped to any panel within the network.

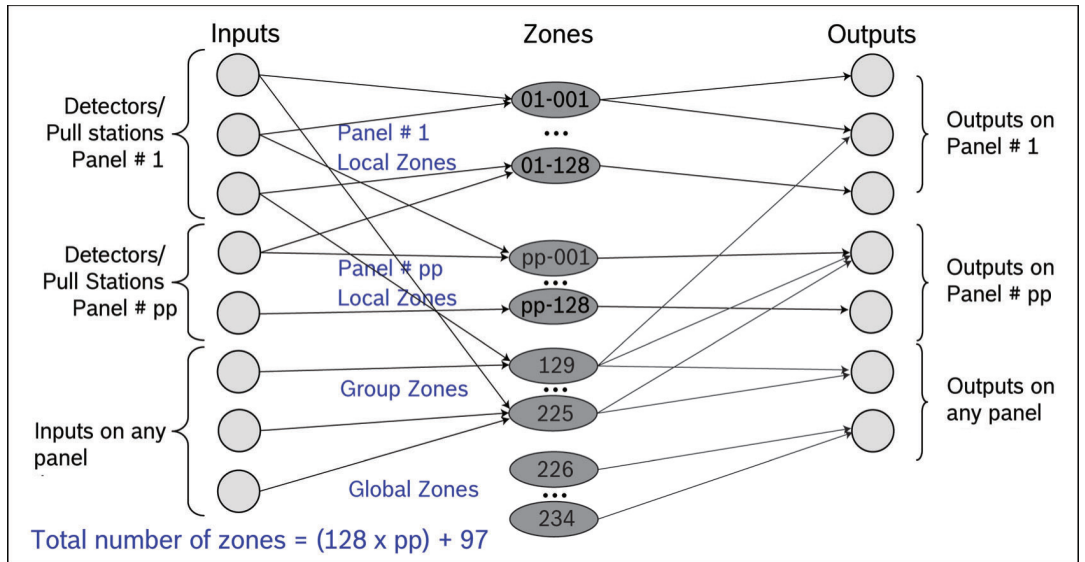
#### Mapping principles:

- Inputs activate zones, and zones activate outputs.
- Input points can be assigned to up to five local or group zones. Therefore, each input can activate up to five zones; however, any number of inputs can be mapped to the same zone.
- Up to five local, group, and/or global zones can be assigned to each output (except the FAA-325-B6S Analog Sounder Base which can be assigned to only one zone).
- Zones 1 to 225 are available for the installer to program.
- Zones 226 to 234 are global zones and are hard-coded to pre-assigned conditions. They are automatically activated by inputs if a special condition occurs or the panel is in a processing sequence (refer to *Table 3.7 on Page 36*). It is not possible to assign an input point to any global zone.

An output can be assigned to a global zone so that it will be activated upon the corresponding special condition.

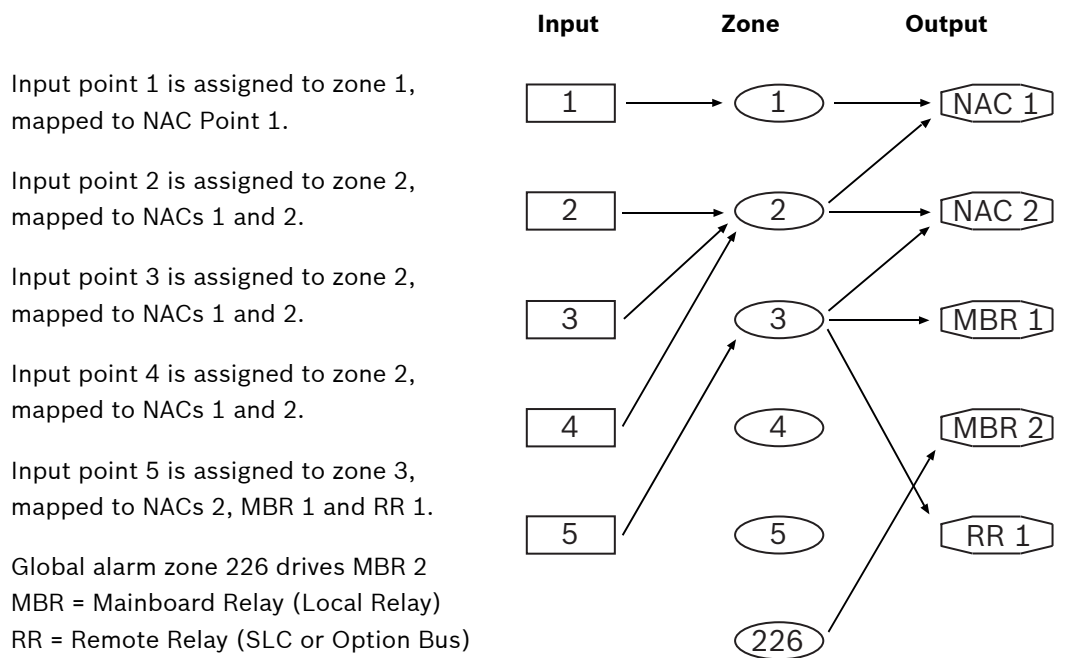
For example, any input that is configured as a "Fire Auto" type activates Zone 226 when it is alarmed. Any output driven by Zone 226 activates when any "Fire Auto" type point is alarmed.

*Figure 3.2* shows how inputs control zones and zones control outputs in a network.



**Figure 3.2** Zone Mapping in a Network

Figure 3.3 shows how inputs control zones and zones control outputs in a stand-alone panel.



**Figure 3.3** Zone Mapping on a Stand-alone Panel

Table 3.7 lists all global zones on the panel, each has a unique number.

Global Zone Number	Condition Activating Zone
226	Global fire alarm
227	Global trouble
228	Global supervisory
229	Alarm verification (verification period)
230	Pre-signal (waiting for reset)
231	Positive Alarm Sequence (waiting for ACK or reset)
232	Panel is resetting
233	Global gas alarm
234	Global waterflow

**Table 3.7** Pre-assigned Zones

In some cases if a relay output is assigned to a certain global zone, other assigned zones are ignored:

- Mainboard relay 1: If assigned to the global alarm zone, other assigned zones are ignored. The relay reacts only to the global alarm zone.
- Mainboard relay 2: If assigned to the global trouble zone, other assigned zones are ignored. The relay reacts only to the global trouble zone.
- Mainboard relay 3: If assigned to the global supervisory zone, other assigned zones are ignored. The relay reacts only to the global supervisory zone.

### Outputs

An output is active if any zone to which the output is assigned is activated. An output which is assigned to multiple zones can be considered as inactive only when all associated zones are inactive.

### NAC Pattern Assignment

Every zone is assigned to one NAC pattern. When the zone NAC pattern is set to default, the device NAC pattern is used. In case of a device activation by address, the device NAC pattern is used. When a device is activated by a zone activation command, the NAC activates with the assigned zone pattern (Steady, Pulsing, or Temporal Code 3, for global gas alarm also Temporal Code 4). Refer to *Table 3.8*.

Zone NAC Pattern Assignment	Activation	Used NAC Pattern
Default	By zone	Device NAC pattern
Any but default	By zone	Zone NAC pattern
Default or any other	By address	Device NAC pattern

**Table 3.8** NAC Pattern Assignment

### Counting Zones

All local or group zones have the "Counting Zones" option. If this option is enabled, a local or group zone becomes a counting zone.

Otherwise, it is a non-counting zone which is activated as soon as an input point assigned to this zone is activated. If multiple points (can be from different panels if networked) are assigned to a single zone, only when all the points are inactive is the zone considered as inactive; thus, associated outputs can be deactivated.

A counting zone is considered active only when two or more input points assigned to that zone are active. It is not allowed to assign an input point programmed with any delayed point

features (including PAS, Pre-signal, alarm verification, and PAS@day or alarmverification@night) to a counting zone.



#### **NOTICE!**

When implementing the counting zone feature, a minimum of two detectors is required in each protective space. Also all points on the ceiling shall have a detector within a distance equal to 0.7 times the listed spacing (0.7S).

#### **Bypassing Zones**

If a user bypasses a zone, all inputs and outputs assigned to this zone are bypassed. Bypassed elements are processed as trouble conditions. Events from bypassed elements are ignored until restored or unbypassed.

#### **Zone Status Display**

If a zone is activated, the corresponding zone LED on the remote LED annunciator is turned on. If the zone is deactivated, the corresponding LED is turned off.

### **3.3.5**

#### **Special Alarm Features**

Alternatively to the delay features alarm verification (AV), pre-signal and Positive Alarm Sequence (PAS), the panel offers the special delay features dual-zone alarm and sandwich alarm.

The user has to select globally whether the panel enables AV/Pre-signal/PAS or Sandwich/Dual-zone features (refer to the programming option **Global delay mode, 6-PROGRAMMING, 6-TIMERS AND SYSTEM, 4-ADVANCED FEATURES, 5-GLOBAL DELAY MODE**, or *Section 6.7.1 Site Data on Page 146*).

#### **Dual-zone Alarm**

The dual-zone alarm option allows for programming dual-zone dependency. If a detector, which is programmed as Fire Auto point type and allocated to a dual-zone, is activated, a history entry **Unverified trouble** is created. The zone is not activated upon the first detector's activation unless a second detector belonging to the dual-zone goes to alarm. After the second detector confirms the alarm, the fire alarm system performs all activations such as triggering the notification appliances, triggering the dialer, reporting, LED indication and so on.

- One panel can have up to 18 dual-zone pairs.
- In a networked system, two zones from two panels in the network can be paired.
- One zone can be allocated to four dual-zone pairs.
- The first alarm can be programmed as **First alarm latching** as a global option.
- If the first alarm is configured as **Not latching**, the time period between the activation of the dual-zone and the reset of the first alarm can be set by a global timer (default is 60 s).
- If more than one detector is activated within one zone, the second and any further activation receives a time stamp but does not influence the first alarm activation.
- A zone that belongs to a dual-zone cannot have other delay features, such as PAS, pre-signal and alarm verification.
- One zone can belong either to a counting zone or a dual-zone, but not both at the same time.
- It is possible to have sandwich and dual-zone features simultaneously enabled on one zone.
- Any alarm activated from a manual call point or a key switch is handled as an immediate alarm, disregarding any dual-zone dependency.

### **Sandwich Alarm**

The sandwich alarm feature allows for the time-triggered phased evacuation, floor by floor, in case of a fire alarm inside a building.

All NAC zones can be grouped by floor. This is achieved by assigning NACs to local or group zones, then assigning zones to floors. These floors are logically mapped to floors in a building, where adjacent floors are mapped to neighboring floor numbers.

The user can program rules that define which zones are activated after a Fire or Waterflow alarm occurred in a certain zone.

The sandwich alarm cannot be programmed as a global function. A “General” alarm from a key switch immediately activates all NACs and a set of associated control relays.

On one panel, sandwich alarm and delay features (i.e. PAS, Pre-signal or Alarm Verification) cannot be enabled simultaneously.

On one zone, sandwich alarm and counting zone features cannot be enabled simultaneously. The sandwich alarm programming allows for three evacuation phases with a delay time of 1 to 10 minutes per phase. The maximum delay time of all three phases is 30 minutes in total.

For example, the sandwich alarm procedure can be programmed as follows:

1. Evacuate the floor where the alarm occurs. All local indication is activated to initiate this.
2. After the programmed delay time expires, the neighboring floors are activated to evacuate the floors above and below, and any silenced outputs are reactivated.
3. After another programmed delay time expires, all floors are activated to evacuate the whole building, and any silenced outputs are reactivated.

If during phase 1) or 2) another alarm occurs, the same procedure starts for the affected floors. The second alarm has no impact on the running alarm procedure. For example, if phase 3) for the first alarm is reached, the complete building is evacuated.

A drill command during the sandwich procedure directly evacuates the whole building.

During a sandwich alarm procedure, the acknowledgement and the silence operation work as usual.

Reset operation stops all running sandwich timers and turns off all activated or silenced outputs.

In a networked system, floors are valid network wide. Thus, local zones on different panels or group zones can be assigned to any floor.

### **3.3.6**

#### **Sequential Reset**

To prevent high inrush to the electrical system, the sequential reset option can be programmed for each relay individually if needed.

If a sequential reset is enabled, pressing the reset button causes the relays to reset with a time delay between each relay deactivation. The relay deactivation starts from Mainboard, then Option Bus, and then SLC. Within a circuit, the relay deactivation is performed one by one, from lowest number to highest.

The delay time for the sequential reset is programmed globally, ranging from 4 to 10 seconds. The individual relay activation or deactivation under test mode is performed immediately, regardless of the sequential reset setting for the relay.

### **3.3.7**

#### **Multi-combined/multi-separated Alarm Modes**

Some Bosch Security Systems, Inc. detectors incorporate a thermal element and a high performance photoelectric smoke chamber. Additionally, some of these detectors also incorporate a carbon monoxide (CO) sensor. In detectors with CO sensors, the photoelectric sensitivity is modified by input from the CO sensor. These detectors have two alarm modes for making the fire decision: multi-combined mode or multi-separated mode.

In the multi-combined mode, the alarm is activated by either the smoke or heat sensor or by both. The detector essentially works as a photoelectric smoke detector, modified according to the temperature and the CO level, if a carbon monoxide sensor is included. The photoelectric sensitivity is modified by linking the smoke sensor and the heat sensor using an algorithm.

In the multi-separated mode, the fire alarm indication occurs only when the heat sensor is activated. Activation of the smoke sensor only creates a Supervisory or Generic event in the history file, and the sounder base holding the detector is activated (local alarm indication). You can select this mode only when a sounder base is attached and it is programmed as **Activated by host**. When the smoke activation is restored, the sounder base is deactivated while another history entry is created.

If the point type Supervisory is selected, the smoke point type is Generic by default and cannot be modified.

Diagnostic information is listed for the smoke sensor (SMOKE-M-S) and the heat sensor (SMOKE-M-H) individually.

### 3.3.8 External Signaling

Relays programmed with external signaling (Ext. signaling) will be deactivated upon silencing and, once deactivated, only reactivated by an additional signal from an activated zone.

## 3.4 Address Assignment

All circuits connected to the FPA-1000 are assigned to a fixed circuit address. The circuit address is used on the display, in reports and history files.

Circuit Address [C or CC]	Fixed Circuit Address Assignment
0	Web page
1	SLC 1
2	SLC 2
3	Mainboard (MB)
4	Option Bus (OB)

**Table 3.9** Fixed Circuit Address Assignment

### 3.4.1 Option Bus Address Assignment

Each Option Bus device must be set to a unique address ranging 1 to 23. Observe the address restrictions listed in *Table 3.10* on *Page 39*.

Address	Fixed Address Assignment
1 to 8	LED Annunciators (for model types, refer to <i>Table 2.5</i> on <i>Page 18</i> )
9 to 10	D7035/B Octal Relay Module or D7048/B Octal Driver Module
11 to 14	FPP-RNAC-8A-4C Remote Notification Appliance Circuit Power Supply
16 to 23	FMR-1000-RCMD Remote Command Center or FMR-1000-RA Remote Annunciator

**Table 3.10** Option Bus Address Restrictions

#### Zone LED Mapping

The panel supports up to eight pairs of D7030X/D7032, allowing a total of 128 (8 x 16) zone LED indications.

All D7030X/D7032 LEDs are mapped to either (not both) local (1-128) or group (129-225) zones. *Table 3.11* explains how to map the LEDs to zones.

Option Bus Address	Local Zones		Group Zones	
	D7030X	D7032	D7030X	D7032
1	1 - 8	9 - 16	129 - 136	137 - 144
2	17 - 24	25 - 32	145 - 152	153 - 160
3	33 - 40	41 - 48	161 - 168	169 - 176
4	49 - 56	57 - 64	177 - 184	185 - 192
5	65 - 72	73 - 80	193 - 200	201 - 208
6	81 - 88	89 - 96	209 - 216	217 - 224
7	97 - 104	105 - 112	225	
8	113 - 120	121 - 128		

**Table 3.11** Zone LED Mapping

Every Option Bus address is mapped to 16 zones, regardless of whether a D7030X exists or whether a D7032 is attached to the D7030X on that address.

If a D7030X-S2 is used instead of D7030X, the first two yellow LEDs (Supervisory) are mapped to the first two zones that are associated with the address. If a D7030X-S8 is used instead of D7030X, the first eight yellow LEDs (Supervisory) are automatically mapped to the first eight zones associated with the address. If either the D7030X-S2 or the D7030X-S8 is used instead of a D7030X on an address, the user is responsible to program the first two or eight zones for that address to Supervisory zones.

The Power and Trouble LEDs on a D7030X copy the status of the corresponding LEDs on the panel keypad.

### 3.4.2

#### SLC Address Assignment

The standard control panel supports one Signaling Line Circuit (SLC) for up to 254 detectors and modules, or up to 127 analog sounder bases in combination with a suitable detector, for a total of 254 addressable device capacity per SLC.

Table 3.12 lists the permitted address range for each SLC device.



Device Category	Device Group Type	Type Number	Address Range
Detector	SMOKE-M	FAP-440-T	1-254
		FAP-440-TC	1-254
		FAP-440-DT	1-254
		FAP-440-DTC	1-254
	SMOKE-P	FAP-325	1-127
		FAP-325-V2F	1-254
		FAP-440	1-254
		FAP-440-D	1-254
	HEAT	FAH-325	1-127
		FAH-440	1-254
	SMOKE-I	FAI-325	1-127
	SMOKE-D	FAD-325-DH	1-127
Contact Monitor Module	CONT-MOD	FLM-325-2I4	1-127
		FLM-325-IM	1-254
		FLM-325-I4	1-127
		FLM-325-I4-A	1-254
		FLM-325-I4-AI	1-254
Relay Module	RELAY-MOD	D328A	1-127
		FLM-325-2R4-2A	1-254
		FLM-325-2R4-2AI	1-254
		FLM-325-2R4-8A	1-254
		FLM-325-2R4-8AI	1-254
Supervised Output Module	NAC-MOD	FLM-325-N4	1-127
		FLM-325-NA4	1-254
		FLM-325-NAI4	1-254
Conventional Module	CONVZ-MOD	FLM-325-CZM	1-127

**Table 3.12** SLC Address Assignment

You can use addresses 1 to 127 for any combination of detectors and modules. Some SLC devices can use addresses 1 to 254.

Detectors connected to a sounder base can use only addresses 1 to 127.

Addresses 128 to 254 are reserved for analog sounder bases. The sounder bases are addressed automatically by the panel, depending on the detector's address (detector address +127).

The number of Conventional Zone Modules (FLM-325-CZM4) per SLC module is limited to 32. Each device on the SLC must have a unique address. A double address trouble is reported, but can be resolved only automatically by the panel.

For instructions on programming the address into each analog addressable device, refer to *Section 4.11.2 Addressing Devices on Page 73*.

### 3.4.3

#### Mainboard Address Assignment

The mainboard addresses are used for the event reporting (refer to *Section A.4 Reporting Codes on Page 179*).

Address	Device Description	Comment
1	Relay 1	Bypass
2	Relay 2	Bypass
3	Relay 3	Bypass
4	NAC1 Control	Open/Short/Overcurrent
7	NAC2 Control	Open/Short/Overcurrent
20	Battery Charger	Failure
21	Battery	Failure
26	IP reporting path 1	Disconnect
27	IP reporting path 2	Disconnect
28	Communication to primary account	Failure
29	Communication to secondary account	Failure
32	City Tie 1	Open/Short/Activated/Activated Fail
33	City Tie 2	Open/Short/Activated/Activated Fail
34	City Tie Board	Missing
35	Mainboard	Total NAC Overcurrent
36	Network Interface Card (NIC)	Missing
37	PORT 1	NIC Port 1 Disconnect
38	PORT 2	NIC Port 2 Disconnect
39	PORT 3	NIC Port 3 Disconnect
46	Wiring	Open loop of topology
47	New Panel	New panel (according to panel list)
48	Panel Reused ID	Panel ID used more than once
49	Group Configuration	Group configuration conflict
50	Global Configuration	Global configuration conflict
51	Control	Control command conflict
52	Panel Missing	Missing panel (according to panel list)
53	OutOfSync	indicates events on a panel or panels are not fully synchronized with events on another panel or panels

**Table 3.13** Mainboard Address Assignment

## 3.5 Reporting Requirements



### NOTICE!

For UL Listed Fire Installations, shared on premises communications equipment must be UL Listed for Information Technology Equipment.

The communicator can report to two phone numbers or IP addresses with full, single, double, and back-up reporting. Possible DACT communication formats are:

- SIA-DCS 300 no text
- Modem IIIa<sup>2</sup> no text
- Contact ID
- SIA-DCS 300 with text

- Modem IIIa<sup>2</sup> with text

**NOTICE!**

The communicator must be enabled and configured before it operates. The communicator and phone line monitors are disabled in the default factory configuration. The programming option “Monitor disabled” is not allowed by UL.

**Phone Line and Phone Number/IP Selection**

To ensure the delivery of critical reports, the fire panel has two phone lines and two phone numbers or IP addresses that can be used for reporting. Reports can be directed to one or both of two phone numbers or IP addresses using the Report Steering feature in the control panel programming.

For detailed programming instructions, refer to

► **6-PROGRAMMING, 7-DACT** in *Section 5.7.6 PROGRAMMING*, starting on *Page 112* or to *Section 6.7.5 Reporting* on *Page 153*.

Note that Account Number 1 is used with Phone Number/IP 1, and Account Number 2 is used with Phone Number/IP 2. Except for test reports, the control panel automatically selects the phone line or IP address to use. If the phone line monitor shows that a line is bad, when a report is sent, it automatically picks up the other line. If the report is not successful after the defined number of attempts on Line 1, the control panel automatically switches and uses Phone Line 2. The one exception is when test reports (manual or automatic) are sent. Auto test reports are sent every 4 hours to 28 days. Each time a test report is sent, the control panel alternates phone lines. If the user sends two manual test reports, both phone lines can be tested. With the default auto test interval of 24 hours, the automatic test uses a different line each day.

**NOTICE!**

If the central station receives the automatic test report only every other day, this indicates that one phone line at the protected premises is inoperative. Correct this condition immediately, because other critical reports can be delayed when the communicator is trying to send the test signal through the inoperative phone line (once each 48 hours).

Because the control panel automatically selects which line to use, both phone lines must use the same dialing sequences for sending reports. For example, a line that requires a "9" to be dialed for an outside line cannot be paired with a line that does not require a "9". PBX lines and ground start phone lines do not comply with NFPA requirements for digital communication.

While the communicator is idle, the FACP monitors the primary and alternate telephone lines by testing the line for trouble. The FACP sniffs each line every 12 seconds. When a trouble still exists after three samples (36 seconds), the FACP sends a trouble report and activates the yellow trouble LED and the trouble relay.

Although two independent phone lines are required for UL 864 Central Station service, the FACP can be configured with one phone line if the communicator is used only for supplemental reporting on a local, remote station or auxiliary system.

**NOTICE!**

Communicator reports can be delayed if the dialer outputs are not connected together on an installation where the control panel has only one phone line.

### Phone Line Attempt Matrix

The maximum number for panel reporting attempts is programmable (range 5 to 10 for eachline). When the programmed number of attempts is reached, the panel indicates a communication failure for the destination.

If both destinations (accounts) are programmed to PSTN, the attempts occur according to the table below.

Attempt Line/Number	Phone Line 1	Phone Line 2	Primary Account	Secondary Account
1	X		X	
2	X			X
3		X	X	
4		X		X
5	X		X	
6	X			X
7		X	X	
8		X		X
9	X		X	
10	X			X
11		X	X	
12		X		X
13	X		X	
14	X			X
15		X	X	
16		X		X
17	X		X	
18	X			X
19		X	X	
20		X		X

**Table 3.14** Phone Line Attempt Matrix

### Other Transmission Technologies (IP) in accordance with NFPA 72

The polling rate, Acknowledge wait time (Ack wait) and retries must be configured to indicate trouble within 200 seconds. This is calculated by:

Trouble indication time = (Ack wait [s] x Retries) + Polling rate <200 seconds.

Defaults are (30 s x 3) + 75 s = 165 s.

## 3.6

### UL 864 Standard-specific Requirements



#### NOTICE!

The system must be tested after installation and after any re-programming, including programming performed by downloading.

Initial Remote programming must be manually accepted at the panel.

**NOTICE!****To all 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, certain programming features or options must be limited to specific values or not used at all as indicated below.

Table 3.15 lists the required program entries and required accessories for UL Listed Commercial Fire Alarm installations (Central Station [DACT] and Local).

Program Feature or Option	Permitted in UL 864	Possible Settings	Settings Permitted in UL 864
Remote Programming	Yes	REMOTE PROG 1-CONFIRM AT PANEL 2-ENABLE 3-DISABLE	1-CONFIRM AT PANEL 3-DISABLE
Mainboard Relay	Yes	MB RELAY 1/2/3 NORMAL 1-ENERGIZED 2-NOT ENERGIZED	If programmed as Trouble: 1-ENERGIZED If programmed as Fire Alarm, Supervisory, Gas Alarm, or By Zones: 2-NOT ENERGIZED
FLM-325-I4/-IS/-IW Input type	Yes	L1 A007.0 INPUT TYPE 1-NORMAL OPEN EOL 2-NORMAL CLOSE EOL 3-NORMAL CLOSE NO EOL	1-NORMAL OPEN EOL
FLM-325-2I4 Input 1 and 2 Input type	Yes	L1 A010.1 INPUT TYPE/ L1 A010.2 INPUT TYPE 1-NORMAL OPEN EOL 2-NORMAL CLOSE EOL 3-NORMAL CLOSE NO EOL	1-NORMAL OPEN EOL
Alarm verification	Yes	90-180 s	90-120 s
AC Fail Delay Time	Yes	AC FAIL DELAY TIME 0 to 6 hours	1 to 3 hours
Primary/Secondary Account Auto Test Frequency	Yes	PRIMARY TEST FREQ/ SECOND TEST FREQ 1-Disabled 2-4 HOURS 3-12 HOURS 4-24 HOURS 5-7 DAYS 6-28 DAYS	2-4 HOURS 3-12 HOURS 4-24 HOURS
Maximum Communication Attempts	Yes	MAX ATTEMPTS 3 to 10 attempts (each line)	5 to 10 attempts total for both lines
Anti-replay option	No	ANTI-REPLAY 1-ENABLE 2-DISABLE	2-DISABLE

Program Feature or Option	Permitted in UL 864	Possible Settings	Settings Permitted in UL 864
Encryption option for IP reporting	No	ENCRYPTION ENABLE: 1-ENABLE 2-DISABLE	2-DISABLE
Line 1/Line 2 Monitor	Yes	LINE 1 MONITOR/ LINE 2 MONITOR 1-ON 2-OFF	1-ON
Line 1 Ring Count	Yes	0 to 10	0

**Table 3.15** Programming Requirements According to UL 864

#### Required Accessories

At least one Bosch Security Systems, Inc. Model FAP-325 Smoke Detector with a FAA-325-B4 or FAA-325-B6 Base; or another Listed compatible smoke detector is required. At least one horn strobe or bell listed in the NAC Compatibility List (P/N F.01U.075.636), providing 85 dB for UL985 and NFPA 72 requirements, is required for this application, and must be installed inside the protected area. Four-wire detectors must be used with Listed power supervision devices. All devices must be used with the End Of Line (EOL) resistor provided.

#### Configuration Requirements

If alarm verification is enabled, do not mix pull stations and conventional smoke detectors on the same Conventional Zone Module (FLM-325-CZM4).



#### NOTICE!

For mixed applications (pull stations and conventional smoke detectors connected to the same Conventional Zone Module FLM-325-CZM4) use point type “Fire Auto” and “No delay”.

#### Alarm Verification Requirement



#### WARNING!

This unit includes an alarm verification feature that will result in a delay of the system alarm signal from a smoke detector. The total delay (control unit plus detector) shall not exceed 60 seconds. No other detector type shall be connected to the circuits unless approved by the Authority Having Jurisdiction.

Use the delay (power-up/start-up) time marked on the label of the smoke detector or on the installed smoke detector(s).

Circuit (Zone)	Delay Time [Seconds]	Detector Module	Detector Delay [Seconds]

**Table 3.16** Detector Delay List

#### Remote Programming

Remote programming must be manually accepted at the panel onsite.

**Report Programming**

Program non-supervisory and supervisory reports for those points used.

Program trouble reports.

Program the AC failure report delay for 25% of estimated standby time battery capacity remaining.

Set automatic test report frequency to occur at least every 24 hours.

**Timer Programming**

Program Auto Silence Time for not less than five minutes, or to "0" to disable auto-silence operation.

**Point Programming**

For fire points: open = trouble, latching.

**Alarm Output Programming**

Program notification appliance circuits (NAC) to activate from the appropriate zone.

**Communications Programming (if Used for Central Station Service)**

Select a communication format that is compatible with the central station.

Enable monitoring of both phone lines.

**3.7****NFPA Standard-specific Requirements**

The FPA-1000 Analog Addressable Fire Panels are designed for use in commercial, industrial and institutional applications and meet the requirements for service under the National Fire Protection Association (NFPA 72) standards outlined in this section.

The minimum system components required for compliance with the appropriate NFPA 72 standard are listed below.

FPA-1000 Analog Addressable Fire Panel	Contains the mainboard, enclosure (back box with dead front door and door), main power supply transformer and power supply.
Batteries	Refer to <i>Section 3.1 Power Supply Calculations</i> on <i>Page 26</i> 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 through a control module.

The following additional equipment is needed for compliance with the NFPA 72 standards listed below.

**NFPA 72 Central Station Service (Protected Premises Unit) or Remote Station Service**

On-board Digital Alarm Communicator Transmitter (DACT) for connection to a compatible listed Central Station Digital Alarm Communicator Receiver (DACR) or Protected Premises Receiving Unit. This unit must be installed as outlined in *Section 4.14 Phone Line Connections (DACT)* on *Page 77*.

**NFPA 72 Auxiliary Fire Alarm System**

FPE-1000-CITY City Tie Plug-in Module for connection to a compatible listed Local Energy Municipal Box. This unit must be installed as illustrated in *Section 4.13 City Tie Connections* on *Page 75*.

**NFPA 72 Proprietary Fire Alarm System**

FPA-1000 alarm, trouble and supervisory relays connected to transmitter(s).

**NFPA 72 - 6.9.10.4.1. Survivability from Attack by Fire**

One or more of the following means might be considered acceptable to provide a level of survivability consistent with the intent of this requirement:

- Installing a fire alarm system in a fully sprinklered building in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems
- Routing Notification Appliance Circuits (NACs) separately
- Using short-circuit fault-tolerant Signaling Line Circuits (SLCs) for controlling evacuation signals.

## 3.8 Fire Safety Considerations

No fire detection device or system is 100% incapable of failure.

This fire alarm system can provide early warning of a developing fire. Such a system, however, does not ensure protection against property damage or loss of life resulting from a fire. Any fire alarm system can fail to warn for any number of reasons (such as smoke not reaching a detector that is behind a closed door).

**NOTICE!**

The fire alarm system must be tested regularly (when installed, when modified, and at least annually thereafter) to ensure continued performance.

When considering detectors for residential applications, refer to NFPA Standard 72, National Fire Alarm Code.

### 3.8.1 Smoke Detector Layout

For optimal fire protection, smoke detectors should be correctly positioned. The number of bedrooms and the house layout should determine the location and quantity of detectors.

Consider:

- Smoke detectors should not be installed in dead air spaces or close to ventilating or air conditioning outlets because smoke can circulate away from the detector. Locations near air inlets are favored.
- Avoid areas subject to normal smoke concentrations such as kitchens and garages, or near fireplaces and areas of high humidity and dust concentrations.
- Do not install smoke detectors where normal area temperatures are above 100 °F (38 °C) or below 32 °F (0 °C).
- Place the edge of ceiling mounted detectors no closer than 4 in. (10 cm) to any wall.
- Place the top edge of wall-mounted detectors between 4 and 12 in. (10 and 30 cm) from the ceiling.

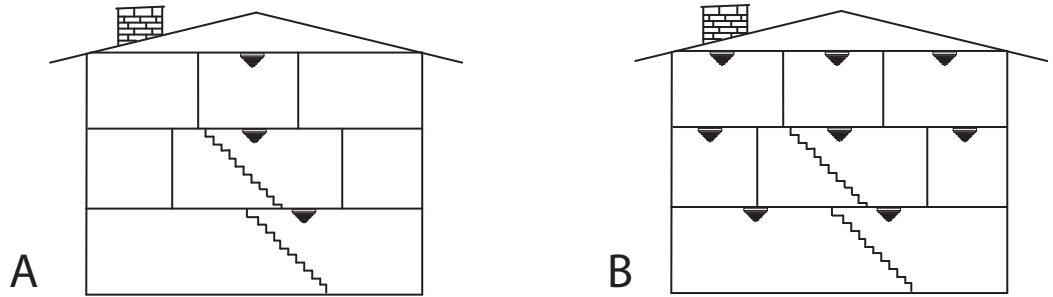
For exact mounting information, refer to the specific product documentation provided with the detectors or located on the internet.

### 3.8.2 Installing Family Residences

Most fire deaths occur in the home, especially during sleeping hours. The minimum level of protection requires smoke detectors to be installed outside of each separate sleeping area and on each additional story of the dwelling.

For added early warning protection, smoke detectors should be installed in all separate areas including the basement, bedrooms, dining room, utility room, furnace room, and hallways.





**Figure 3.4** Smoke Detector Locations in Residential Setting

Legend	
A	Minimum level of protection
B	Added early warning protection

### 3.8.3

#### Escape in the Event of Fire

People need to be able to escape quickly from a house that is on fire. For that reason, every household needs a home escape plan.

A complete home escape plan includes:

- A floor plan of your house, including walls, doors, windows and stairs.
- Two ways out of each room indicated on the floor plan, in case your first exit is blocked by smoke or fire.
- A meeting place outside of the building, such as a tree or a neighbor’s house.

Ensure that:

- Windows are large enough to allow escape.
- Windows are not nailed or painted shut and can be opened easily by everyone in your family.
- Bedroom door handles and locks can be released from the inside.
- More than one escape route from the house exists.
- One escape route does not go past the kitchen.

Consider:

- Practice your escape plan twice a year and discuss the roles and responsibilities of each family member in the event of a fire.
- Remind children never to re-enter a house that is on fire. Make sure that they know what a smoke alarm sounds like, so they will go outside immediately if they hear one.

## 4 Installation

### 4.1 Installation Precautions

To avoid incorrect installation and operation, strictly observe the following precautions:

**NOTICE!**

Follow all instructions in this manual. Do not deviate.

Comply with all codes and standards set forth by the Authority Having Jurisdiction (AHJ).

Do not assume any installation details not shown in this manual.

Do not alter any mechanical or electrical features of the equipment supplied.

**CAUTION!**

Electrostatic discharge - ground yourself using a wrist strap or take other suitable actions.

The FPA-1000 mainboard is static-sensitive, so electronic components could become

damaged. Run the ground wire to the enclosure before handling the mainboard. Touch ground

before unpacking and handling the mainboard. This discharges any static electricity in your

body. Continue touching the enclosure while installing the mainboard.

### 4.2 Installation Considerations for UL Listed Systems

Install the control panel according to NFPA 72 for Commercial Fire installations.

Failure to install and program the control panel according to the requirements in this section voids the listing mark of Underwriters Laboratories Inc..

- The standby battery capacity is
  - 18 Ah at 24 V DC with batteries within enclosure
  - 40 Ah at 24 V DC with batteries in separate battery box
  - above 40 Ah at 24 V DC with UL Listed external power supply.
- The total nominal system current must not exceed
  - 1.25 A in standby
  - or 4.0 A shared between NAC, Option Bus and AUX power when in alarm
  - or 5.0 A shared between NAC, Option Bus, AUX power, SLC and panel when in alarm.
- The control panel must be mounted dry indoors and within a protected area.
- Grounding must be according to Article 250 of the National Electrical Code (NEC) (NFPA 70).
- Points must be connected to UL Listed, compatible devices.
- The ground wire provided with the enclosure must be connected between the door and the enclosure, using the supplied nuts.

When used in UL Listed installations, the control panel must conform to certain programming requirements. Refer to *Section 3.6 UL 864 Standard-specific Requirements on Page 44*.

## 4.3 Parts List

Description
One Fire Alarm Control Panel (FACP): Mainboard with keypad, display and processor board
One enclosure with transformer
One FPE-1000-SLC Signaling Line Circuit Plug-in Module
Tabs with different language versions for LED and key text, one each in English, Spanish and Portuguese
One hardware pack with one enclosure lock and two keys
Wiring label (in English, Spanish and Portuguese)
Installation and Operation Guide (in English)
Operating Instruction Sheet (in English)
Program Record Sheet (in English)
Release Note (in English)
One CD with complete user documentation, including the Installation and Operation Guide in Spanish, Portuguese and Thai, Off-line Configuration Tool

**Table 4.1** Parts Included for the FPA-1000 Analog Addressable Fire Panels



### NOTICE!

Attach the wiring label according to your language onto the inside of the front door. The Operating Instruction Sheet must be framed and mounted in view adjacent to the FPA-1000 Analog Addressable Fire Panel.

A second Signaling Line Circuit (SLC), the City Tie Plug-in Module FPE-1000-CITY, and a Networking Card (FPE-1000-NE, FPE-1000-NF, or FPE-1000-NW) can be ordered separately if required.

The FPA-1000-LC Compact Fire Panel Less Enclosure includes the mainboard (-V2 model) with keypad, display and processor board, tabs with different language versions for LED and key text, one each in English, Spanish and Portuguese, Installation and Operation Guide in English, and one CD with complete user documentation, including the Installation and Operation Guide in Spanish and Portuguese.

## 4.4 Installing the Enclosure



### NOTICE!

Ensure that the environmental conditions of the mounting location comply with the technical specifications listed in *Section 9.3 Environmental* on *Page 166*.

Mount to a minimum of 3/8 in. plasterboard (Drywall) with stud spacing less than 24 in. on center. Wall anchors must be used that support at least 110 lbs (50 kg).

Ensure that there is sufficient room to open the cabinet door and dead front door fully, and to easily install, wire and maintain the panel.

The cabinet can be either semi-flush or surface mounted.

Depending on the configuration and the battery selection, the FPA-1000 can weigh more than 55 lbs. (25 kg). When attaching the enclosure to a surface, use mounting hardware (not supplied) capable of supporting this weight, and reinforce the wall as necessary.

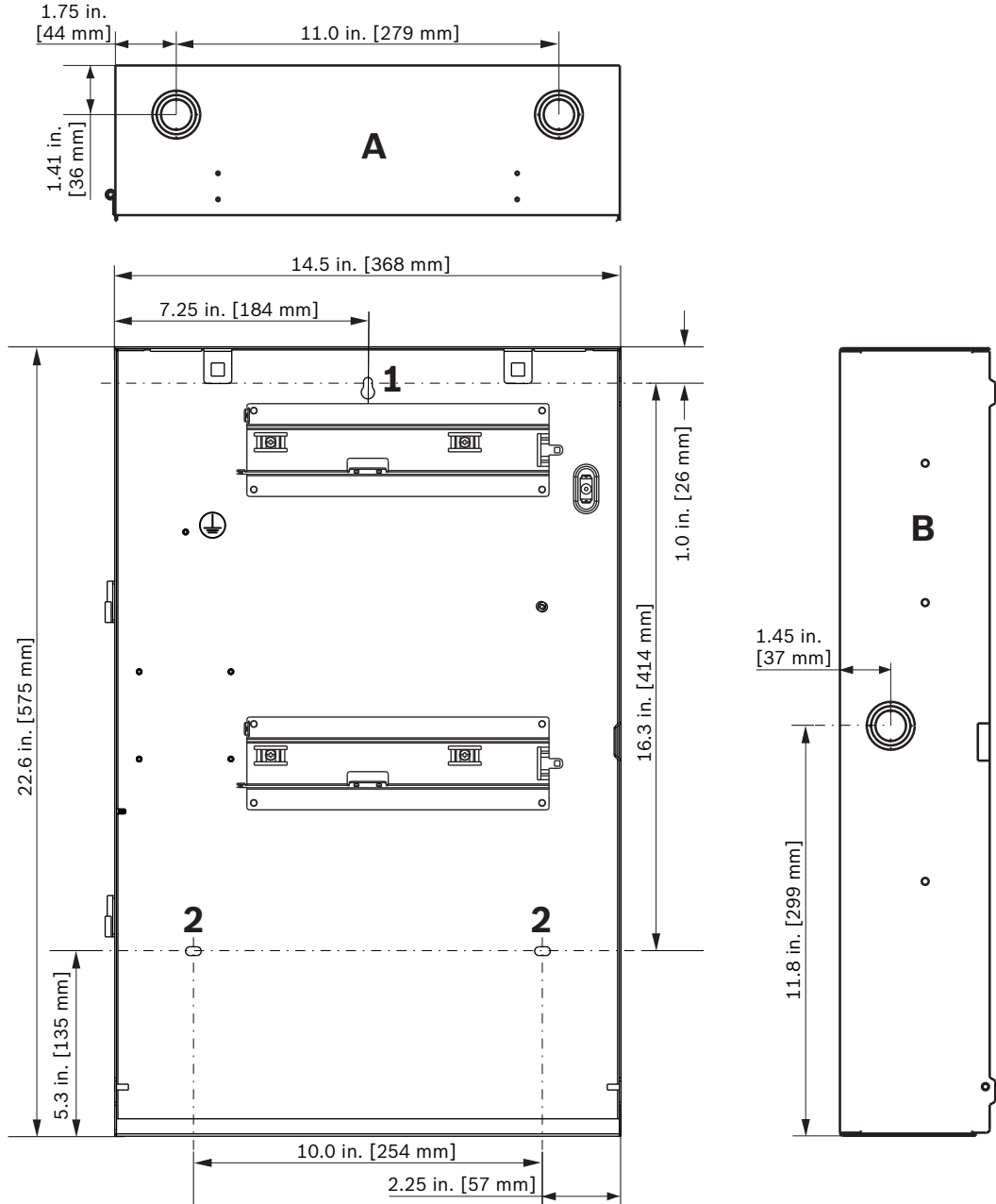
Observe position of knockouts for wire entrances:

- two knockouts on top
- one knockout on right side.



**NOTICE!**

To meet Class A wiring requirements for SLC circuits or network wiring, the outgoing loop and return loop cannot use the same knockout and must remain at least 1/4 in. (6.35 mm) from non-power-limited wiring.



**Figure 4.1** Enclosure Dimension Diagram (in inch and mm)

Legend	
A	Top view, with 2 knockouts
B	Right side view, with 1 knockout
1	Hole mounting
2	Securing holes

### Surface mounting

The enclosure mounts using one hole mounting located at the top of the back box (refer to *Figure 4.1*, Item 1), and two securing holes located in the lower section (refer to *Figure 4.1*, Item 2).

1. Using the enclosure as a template, mark the top mounting hole on the mounting surface (refer to *Figure 4.1*).
2. Start the mounting screw (not supplied) for this hole.
3. Slide the enclosure onto the screw so that the screw moves up into the thinner section of the hole.
4. Tighten the screw.
5. Tighten the two bottom screws.
6. Knock out the desired wire entrances on the enclosure (refer to *Figure 4.1* on Page 52).

### Semi-flush Mounting with Trim Ring

The FPM-1000-SFMK Semi-flush Mounting Kit includes a trim ring and mounting hardware.

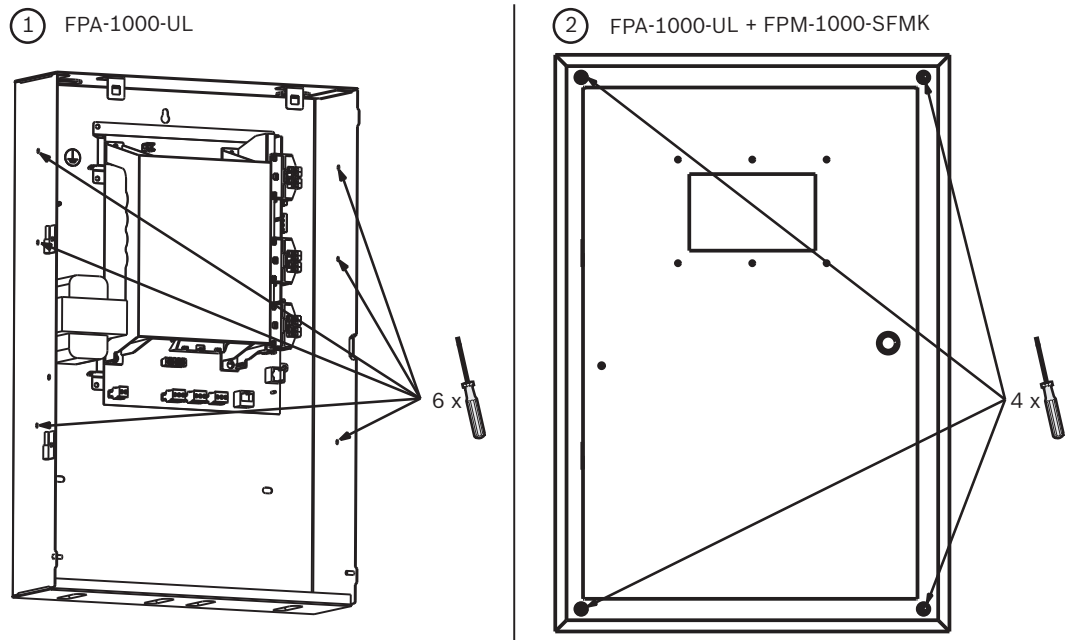
For semi-flush mounting between studs, use the three holes on each side of the enclosure for the screws (refer to *Figure 4.2*, Item 1).

Use four screws to fasten the trim ring (refer to *Figure 4.2*, Item 2).



#### NOTICE!

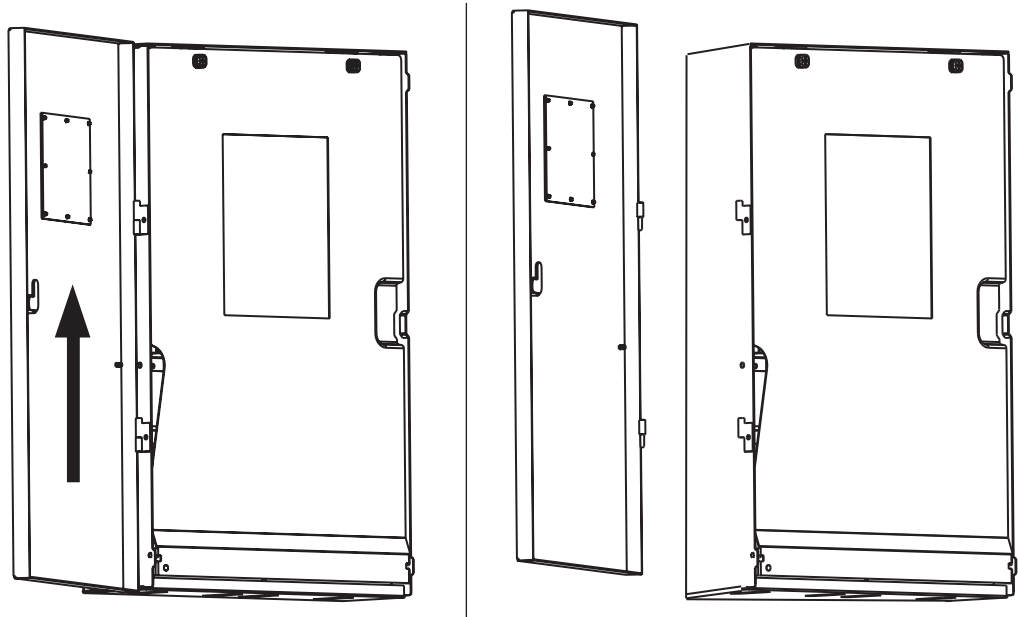
In a semi-flush mounting of the enclosure, if the screws are overtightened or the enclosure is set too deep, the trim ring might not fit properly. The sides of the enclosure might need shims to tighten the gap.



**Figure 4.2** Semi-flush Mounting with FPM-1000-SFMK Semi-flush Mounting Kit

### Hinging and Unhinging the Door

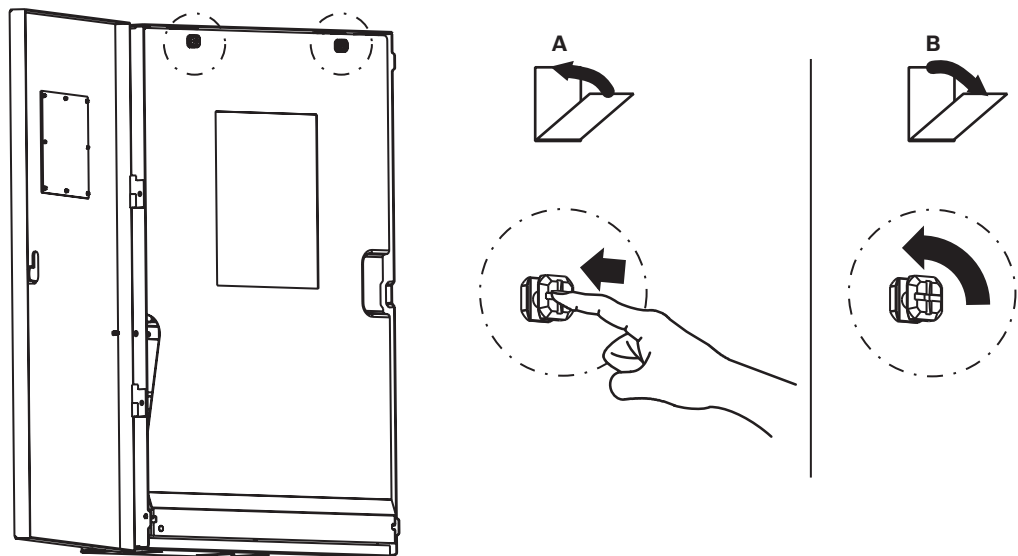
The control panel comes from the factory with the door attached. For easy wiring, you can unhinge the door (refer to *Figure 4.3*).



**Figure 4.3** Hinging and Unhinging the Door

### Dead Front Door

The dead front door covers the electronics and batteries. It can be opened and removed easily. The dead front door is attached at the bottom and secured at the top by fasteners (refer to *Figure 4.4*). The fasteners close by pushing the fastener head inward with finger pressure (refer to *Figure 4.4*, Item A) and open with a quarter-turn of the fastener head (refer to *Figure 4.4*, Item B).



**Figure 4.4** Dead Front Door

## 4.5 Installing the Mainboard



### CAUTION!

Electrostatic discharge - ground yourself using a wrist strap or take other suitable actions. The FPA-1000 mainboard and the plug-in modules have static-sensitive components that could become damaged. Run the ground wire to the enclosure before handling the mainboard or plug-in modules. Touch ground before unpacking and handling the mainboard or plug-in modules. This discharges any static electricity in your body. Continue touching the enclosure while installing the mainboard or plug-in modules. Refer to *Figure 4.31* on *Page 80*.

### Inserting the Language Tab

For different language versions of LED and key text, use the tabs provided with the control panel.

1. Insert the tab carefully in the slot at the top of the keypad.
2. Slide the tab carefully down until it is completely flush with the keypad.
3. For tab removal, carefully pull upwards at the strap.

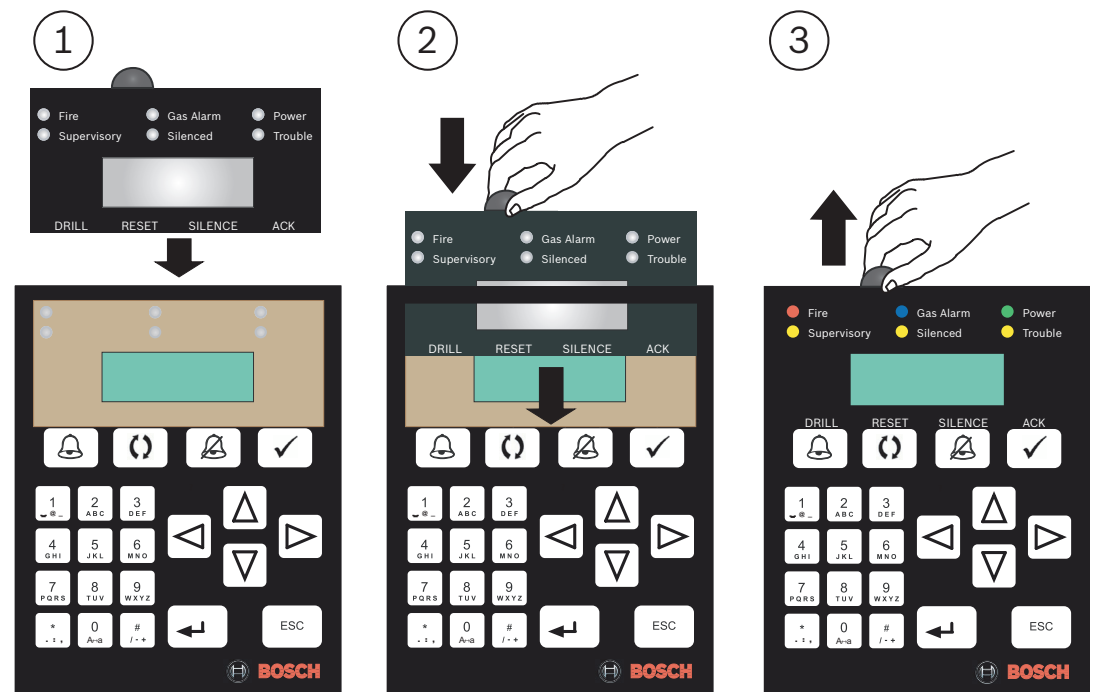
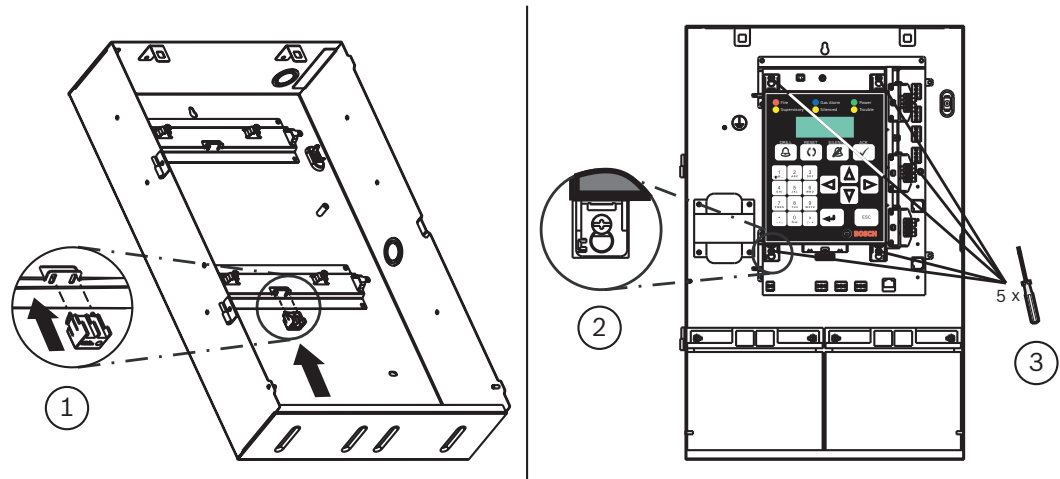


Figure 4.5 Inserting the Language Tab

### Mounting the Mainboard

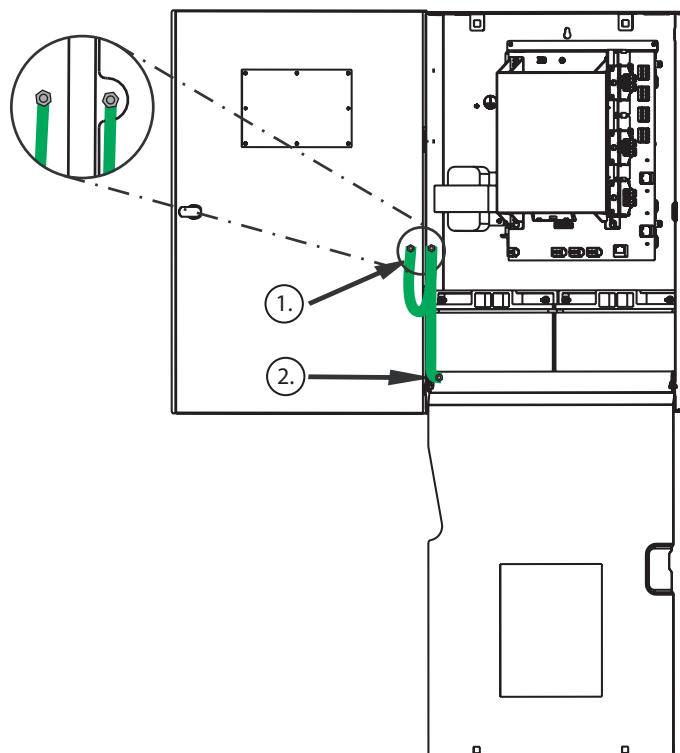
1. Take the mainboard support out of the accessory bag and place it onto the lower rail as shown in *Figure 4.6*, Item 1.
2. Unpack the mainboard including the keypad. Slide the four holes of the mainboard over the support posts (refer to *Figure 4.6*, Item 2).
3. Secure the mainboard by tightening the five screws (refer to *Figure 4.6*, Item 3).



**Figure 4.6** Mounting the Mainboard

### Ground Wire Connections

When the mainboard is installed, connect the supplied ground wire between the door and the enclosure using the supplied nuts (refer to *Figure 4.7*, item 1). A second ground wire is provided for connecting the ground to the dead front door (refer to *Figure 4.7*, item 2). Both grounds connect to the stud in the enclosure to the left of the mainboard. Refer to *Figure 4.31* on *Page 80*.



**Figure 4.7** Ground Wire Connections



## 4.6 Installing Optional Plug-in Modules

The mainboard allows for the installation of plug-in modules. The first FPE-1000-SLC Signaling Line Circuit is mandatory equipment at the top position on the mainboard (refer to *Figure 4.9*). A second FPE-1000-SLC plug-in module can be installed as an option in the position below the first SLC board.

The position below that for the second SLC module can be equipped with an optional FPE-1000-CITY City Tie Plug-in Module.

An optional Networking Card can be installed along the bottom of the mainboard.

To remove a plug-in module, press the snap-fit hook carefully from left to right and pull the board toward the panel front.

The plug-in modules connect directly to the mainboard, are enable by programming, and are supervised by the control panel.

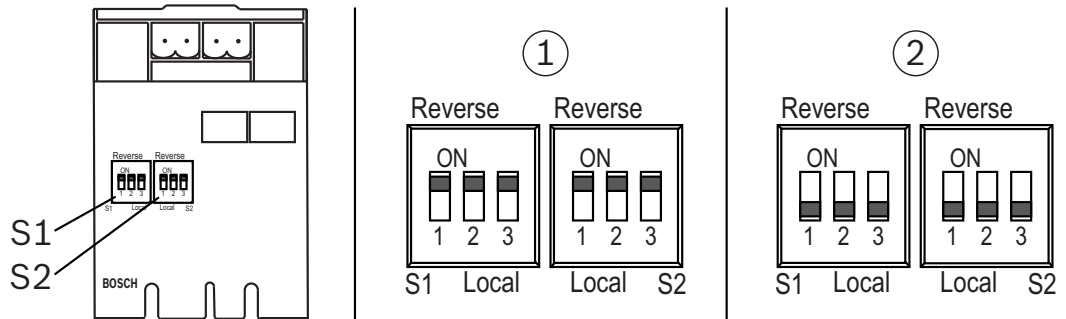
### FPE-1000-CITY DIP Switch Settings



#### NOTICE!

Before installing the FPE-1000-CITY, set the DIP switches on the module to obtain the desired operation mode (Local Energy or Reverse Polarity Mode).

Refer to *Figure 4.8* for the location and setting of DIP switches.



**Figure 4.8** DIP Switch Settings on FPE-1000-CITY City Tie Plug-in Module

Legend	
S1	Switch 1 Fire Alarm
S2	Switch 2 Supervisory
1	DIP switch setting for Reverse Polarity Mode
2	DIP switch setting for Local Energy Mode

FPE-1000-CITY DIP Switches	S1 = Fire Alarm			S2 = Supervisory		
	1	2	3	1	2	3
Reverse Polarity Mode	ON	ON	ON	ON	ON	ON
Local Energy	OFF	OFF	OFF	OFF	OFF	OFF

**Note:** You may use different operation modes for the circuits. The DIP switch settings 1 to 3 for each switch (S1 and S2) must be set to the same position.

**Table 4.2** DIP Switch Setting at FPE-1000-CITY City Tie Plug-in Module

## Mounting Plug-in Modules

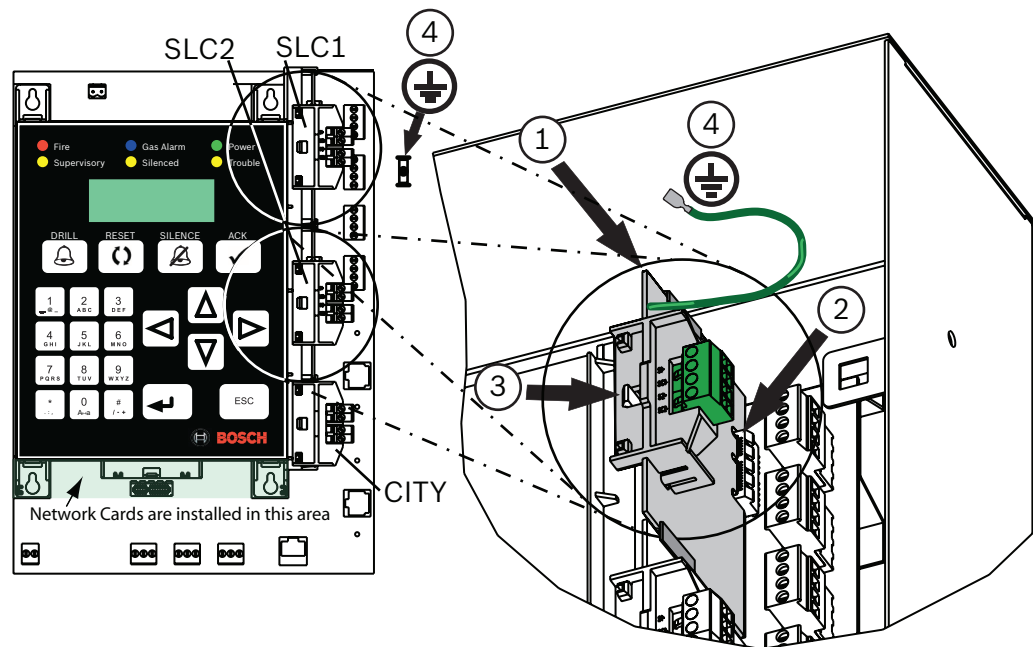


### CAUTION!

Electrostatic discharge - ground yourself using a wrist strap or take other suitable actions. The FPA-1000 mainboard and the plug-in modules have static-sensitive components that could become damaged. Run the ground wire to the enclosure before handling the mainboard or plug-in modules. Touch ground before unpacking and handling the mainboard or plug-in modules. This discharges any static electricity in your body. Continue touching the enclosure while installing the mainboard or plug-in modules.

All three types of plug-in modules are mounted in essentially the same manner. The procedure for mounting an SLC card is given as an example. Note that the City Tie Module and Networking Cards do not have ground wires.

1. Bring the plug-in module into position with the horizontal terminal lettering facing the front side of the control panel. Slide the plug-in module carefully into position (refer to *Figure 4.9*, Item 1)
2. Ensure that the connections seat into the slot properly (refer to *Figure 4.9*, Item 2).
3. Press down softly until the snap-fit hook locks into place (refer to *Figure 4.9*, Item 3).
4. Connect the earth ground wire to the ground stud on the right side of the mainboard (refer to *Figure 4.9*, Item 4).



**Figure 4.9** Installing Optional Plug-in Modules

Legend	
SLC1	One FPE-1000-SLC Signaling Line Circuit at top position
SLC2	One FPE-1000-SLC Signaling Line Circuit at middle position
CITY	One FPE-1000-CITY City Tie Plug-in Module at bottom position
NETWORK	One Networking Card (FPE-1000-NE, FPE-1000-NF, or FPE-1000-NW) along bottom of keypad

## 4.7 Wiring Requirements



**NOTICE!**

Shared cable is not recommended for the Option Bus, addressable points bus, telephone, or NAC wiring.

Avoid shielded or twisted-pair wire except for network connections and special applications where a reduced length of wiring (roughly 50%) is acceptable for tolerating a harsh electrical environment.



**NOTICE!**

All wiring except the battery terminal and primary AC power is power-limited.

Power-limited and non-power-limited circuit wiring must remain separated in the cabinet by at least 0.25 in. (64 mm). Primary AC and battery wires must be tied to prevent movement.

Power-limited and non-power-limited circuit wiring must enter and exit from the cabinet through different knockouts or conduits.

The length of wire allowed between the control panel and the last device on a wiring run depends on the current drawn on that wiring run. Reducing the number of devices on a wiring run allows the individual runs to be longer.

If not specified, use wire gauge AWG 12 to 18 (3.3 mm<sup>2</sup> to 0.8 mm<sup>2</sup>).

Circuit Type [Terminals]	Circuit Function	Power Rating / Wire Type / Limitations
AUX [FWR -   FWR+] Full Wave Rectified, non-switched, FWR	Connects to control modules, annunciators and accessories	<ul style="list-style-type: none"> <li>- 24 V FWR (17 to 31 V FWR), 500 mA</li> <li>- Refer to the manufacturer's installation instructions of the connected device for proper wiring and other limitations.</li> <li>- AUX power is non-supervised. For proper supervision, use an end-of-line (EOL) power supervision device such as a D275.</li> </ul>
AUX [RST-   RST+] Resettable, switched and filtered	Connects to 4-wire smoke detectors	<ul style="list-style-type: none"> <li>- 24 V DC (17 to 31 V DC), 500 mA</li> <li>- Refer to the manufacturer's installation instructions of the connected device for proper wiring and other limitations.</li> <li>- AUX power is non-supervised. For proper supervision, use an end-of-line (EOL) power supervision device such as a D275.</li> </ul>
OPTION BUS [Y   G   B   R ]	Connects to annunciators and modules	<ul style="list-style-type: none"> <li>- 12 V DC, 500 mA</li> <li>- Untwisted, unshielded pair; avoid twisted, shielded pair; for maximum wiring distance, refer to <i>Section 4.7.1 Option Bus Circuit Wiring Distance on Page 60</i></li> </ul>
NAC 1 [A1- B1- B1+ A1+] NAC 2 [A2- B2- B2+ A2+]	Connects to NAC devices	<ul style="list-style-type: none"> <li>- Nominal 24 VFWR (17 to 31 VRMS); non-synchronized: 2.5 A per NAC; synchronized: 2.75 A NAC 1+NAC 2 in total; limited to 4.0 A (shared by NAC, OB and AUX)</li> <li>- In alarm, the distance limitation is set by the maximum line drop (refer to <i>Section 4.7.2 SLC Wiring Distance and Styles on Page 61</i>).</li> <li>- Refer to the manufacturer's specifications for voltage range.</li> </ul>
SLC 1 SLC 2 (optional) [S1+ SC1- S2+ SC2-]	Connects to analog addressable SLC devices (as specified in <i>Section 2.7 , Page 19</i> )	<ul style="list-style-type: none"> <li>- Nominal 39 V DC (30 to 40 V DC), 260 mA per FPE-1000-SLC</li> <li>- Plain wire; avoid twisted, shielded pair; maximum line resistance 50 Ω; for maximum wiring distance, refer to <i>Section 4.7.2 SLC Wiring Distance and Styles on Page 61</i></li> </ul>

Circuit Type [Terminals]	Circuit Function	Power Rating / Wire Type / Limitations
City Tie (optional) [ALM -   ALM+ SUP -   SUP+]	Connects to a Master Box (Local Energy) or Central Station (Reverse Polarity)	<ul style="list-style-type: none"> <li>- Reverse polarity: refer to <i>Table 4.14</i> on <i>Page 76</i></li> <li>- Local Energy: refer to <i>Table 4.15</i> on <i>Page 76</i></li> <li>- Twisted, shielded pair or untwisted, unshielded pair; maximum line resistance 65 <math>\Omega</math></li> </ul>
RELAY 1/2/3 [NO   C   NC]	Connects to external devices activated or inactivated in defined condition	<ul style="list-style-type: none"> <li>- 30 V DC, 5 A / 120 V AC, 10 A</li> </ul>
LINE 1 / LINE 2	Connects to PSTN (2 lines), RJ45	
ETHERNET	Connects to Ethernet, RJ45	<ul style="list-style-type: none"> <li>- To connect a computer directly to the panel, use cross-over or straight CAT 5 cable. The FPA-1000-V2 panel supports "auto crossover detection."</li> </ul>
BATT [-   +]	Connects to backup batteries	<ul style="list-style-type: none"> <li>- 2 x 12 V DC in series</li> <li>- 12 AWG</li> <li>- 2 x 18 Ah maximum (within enclosure) <b>or</b></li> <li>- 2 x 40 Ah maximum (external to enclosure)</li> </ul>
FPE-1000-NW Wired Network Cards	Connects two network cards	Twisted pair (shielded or unshielded); maximum length 2952 ft (900 m) or CAT 5 cable or better; maximum length 3280 ft (1000 m)

**Table 4.3** Overview of Wiring Requirements

### 4.7.1 Option Bus Circuit Wiring Distance

Use four-conductor, 18 AWG (0.8 mm<sup>2</sup>) or larger wire to connect Option Bus devices to the FACP. The total length of wire connected to the Option Bus terminals must not exceed 4000 ft (1219 m), regardless of the wire gauge used.

Use the Microsoft Excel based *FPA-1000\_Battery\_Calculator.xls* spreadsheet or add up the total alarm load for Option Bus devices on the wire run, and use *Figure 4.10* on *Page 61* to determine the maximum allowed length for the run. For example, if the total load of Option Bus devices on a particular run is 400 mA, the maximum length of the run can be up to 500 ft (152 m).

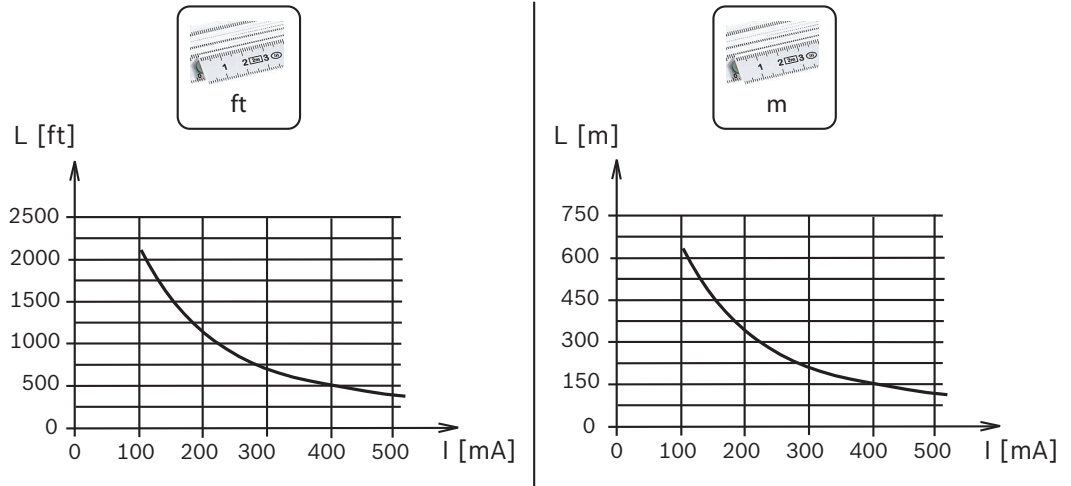


Figure 4.10 Option Bus Wire Length vs. Current Draw

4.7.2

SLC Wiring Distance and Styles

For the SLC wiring, the following maximum permissible values apply:

- Wiring resistance on the SLC must be less than 50 Ω
- Circuit capacitance must be less than 1 μF.
- Circuit inductance must be less than 1 mH.
- For Class B, the total wire length of all branches connected to one FPE-1000-SLC module (terminals S1+/SC1- and S2+/SC2-) must not exceed 30,000 feet (9140 m).

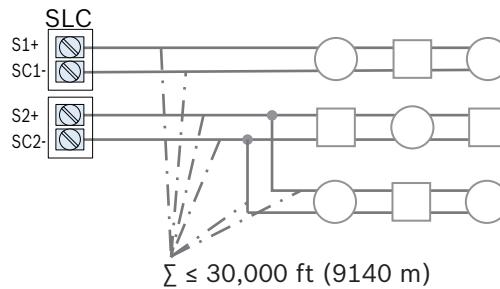


Figure 4.11 Total Wire Length for Class B

- The maximum distance an analog addressable detector or module is allowed to be located from the control panel (for Class A and Class B SLC) is limited depending on the wire gauge; refer to Table 4.4.

Wire Gauge	Maximum Wiring Distance (for Class A and Class B SLC)
12 AWG (3.3 mm <sup>2</sup> )	10,000 feet (3050 m)
14 AWG (2.1 mm <sup>2</sup> )	10,000 feet (3050 m)
16 AWG (1.3 mm <sup>2</sup> )	6200 feet (approx. 1890 m)
18 AWG (0.8 mm <sup>2</sup> )	3900 feet (approx. 1190 m)

Table 4.4 Maximum Wiring Distance for SLCs

Wiring Requirements SLCs Class A Style 6 and Style 7

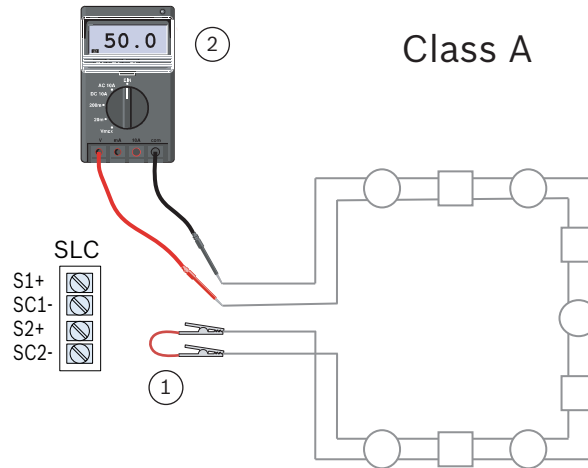
Additional notes regarding Class A Style 6 and Style 7:

- No T-taps are allowed on Class A Style 6 or 7 SLCs.
- The return side of the loop must be routed separately from the outgoing loop.

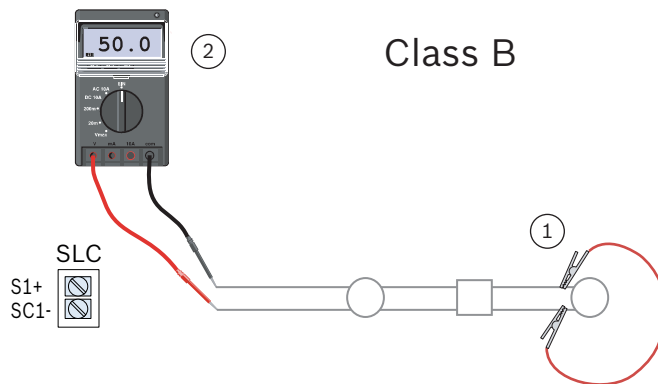
- The return side must not share the same conduit or cable as the outgoing side of the SLC.
- When using Class A Style 7 wiring, either Analog Isolator Bases (FAA-440-B4-ISO or FAA-440-B6-ISO) must be used for each analog addressable device on the SLC or the Short Circuit Isolator (FLM-325-ISO) must be installed before and after each analog addressable device on the SLC. The wiring from the control panel to the first FLM-325-ISO and from the last FLM-325-ISO back to the control panel must be in conduit. Refer to *Figure 4.21* on *Page 72* for more information on installing the FLM-325-ISO module and for the installation method to satisfy Style 7 criteria according to NFPA 72.
- Wiring of output modules must be Style 7. Use isolator modules.
- Refer to NFPA 72 for additional requirements of Class A circuits.

### Measuring SLC Circuit Resistance

1. Remove the field wiring from the SLC terminals and short either the return wire in Class A (refer to *Figure 4.12* on *Page 63*, Item 1) or short the end of the farthest device in Class B (refer to *Figure 4.13* on *Page 63*, Item 1) using clip leads.
2. Read the total resistance of all wires associated with the circuit. The maximum circuit resistance is 50  $\Omega$ .



**Figure 4.12** Measuring Circuit Resistance Class A



**Figure 4.13** Measuring Circuit Resistance Class B

### 4.7.3 Networking Card Interconnections - Distances and Styles

#### Networking Cards

Card Type Number	Description	Connector Type	Maximum Distance
FPE-1000-NE	3 Ethernet ports	CAT 5 minimum	328 ft (100 m)
FPE-1000-NF	1 Ethernet port, 2 fiber optic ports	LC connector, 62.5 $\mu$ m/125 $\mu$ m fiber size, 1270 nm to 1380 nm wavelength multi-mode fiberoptic	10 dB loss or 6560 ft (2000 m)
FPE-1000-NW	1 Ethernet port, 2 wired ports	Twisted pair wire (shielded or unshielded)  CAT 5 cable (shielded or unshielded)	2952 ft (900 m) maximum; actual length depends on wire quality  3280 ft (1000 m) maximum

#### Network Wiring Styles

Network connections can be wired as Class A Style 7 or Class B Style 4 circuits. Class A configuration is recommended because this allows the panels in a network to communicate with each other, ensuring circuit operation in the event of a single break in the wiring. The network circuit is supervised.

The following table lists the trouble conditions that result when a fault exists on the network (SLC according to UL 864).

Type of Fault	Class B Style 4	Class A Style 7
Single Open	Trouble	Alarm, Trouble
Single Ground	Alarm, Trouble (ground)	Alarm, Trouble (ground)
Short	Trouble	Alarm, Trouble
Short and open	Trouble	Trouble
Short and ground	Trouble	Alarm, Trouble
Open and ground	Trouble	Alarm, Trouble
<p>Trouble = The control panel will indicate a trouble condition for this type of fault.</p> <p>Alarm = The control panel must be able to process an alarm input signal in the presence of this type of fault.</p>		

**Table 4.5** Network Trouble Conditions

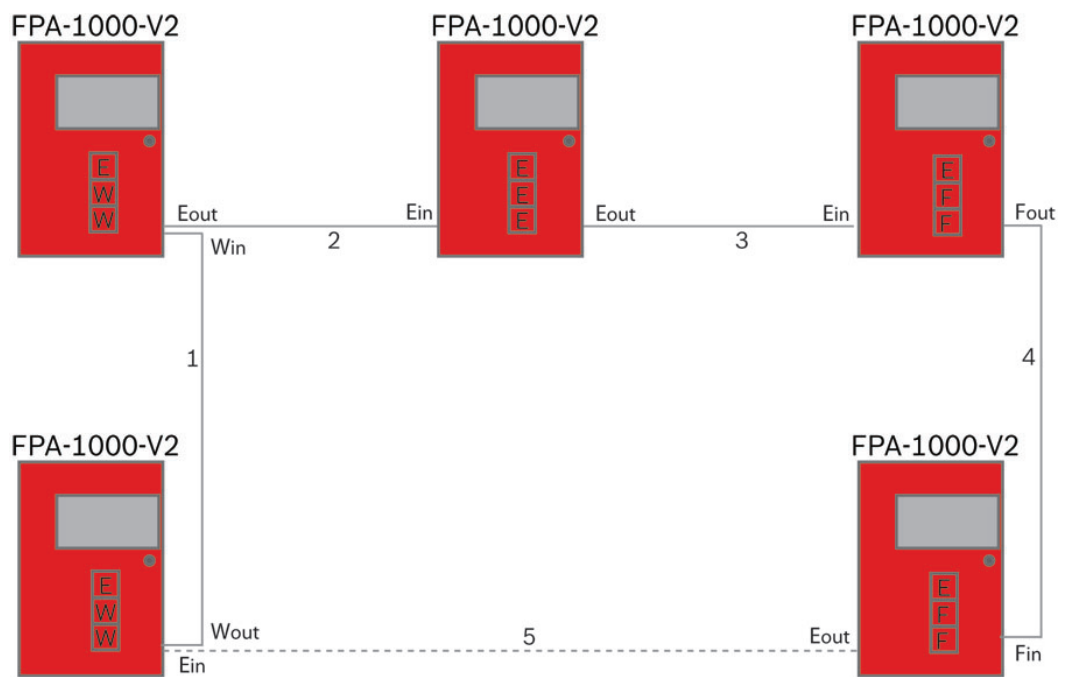


Terminal		Specifications Class A Style 7
FPE-1000-NW	Wired OUT+/-	Terminals used for outgoing loop
	Wired IN+/-	Terminals used for return loop

**Table 4.6** Specifications SLC Terminals Class A Style 7

Additional notes regarding Class A Style 7:

1. No T-taps allowed on Class A Style 7 network wiring.
2. The return side of the loop must be routed separately from the outgoing loop.
3. The return side must not share the same conduit or cable as the outgoing side of the loop.
4. Refer to NFPA 72 for additional requirements of Class A circuits.



**Figure 4.14** Network Connections Example

Legend	
1	Wire to wire connection
2	Ethernet on wired card to Ethernet connection
3	Ethernet to Ethernet on fiber optic card connection
4	Fiber optic to fiber optic connection
5	Class A connection (Ethernet to Ethernet in this example)



**NOTICE!**

The network does not require an EOL resistor.



**NOTICE!**

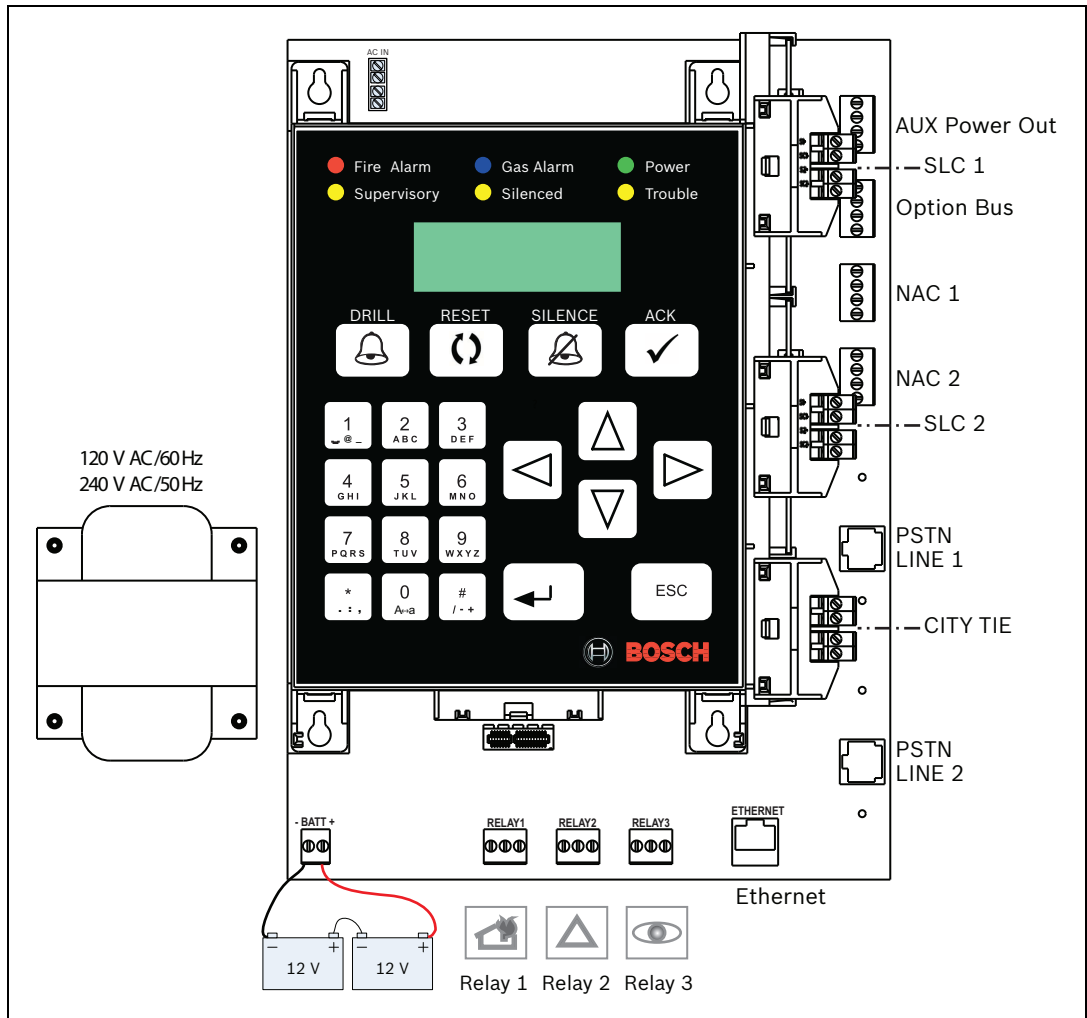
The Networking Cards have ground fault detection. This ground fault detection is at the Ethernet IN ports of all three cards and also on the WIRED IN port on the FPE-1000-NW. For proper detection, ground fault detection must be connected at only one end of a connection.

**4.8 Control Panel Terminal Connections**



**DANGER!**

Explosion and burn hazard. Do not short terminals. Incorrect connections can result in damage to the unit and personal injury. Before servicing this equipment, remove all power including AC, battery and phone lines.



**Figure 4.15** Mainboard

For maximum circuit wiring distance, refer to *Section 4.7.1 Option Bus Circuit Wiring Distance on Page 60* and *Section 4.7.2 SLC Wiring Distance and Styles on Page 61*.

### Wiring Road Map

Figure 4.16 shows the areas of non-power-limited (A, red) and power-limited (B, green) wiring.

The enclosure provides three knockouts: two at the top for power-limited and non-power-limited connections, and one on the right side for non-power-limited connections.

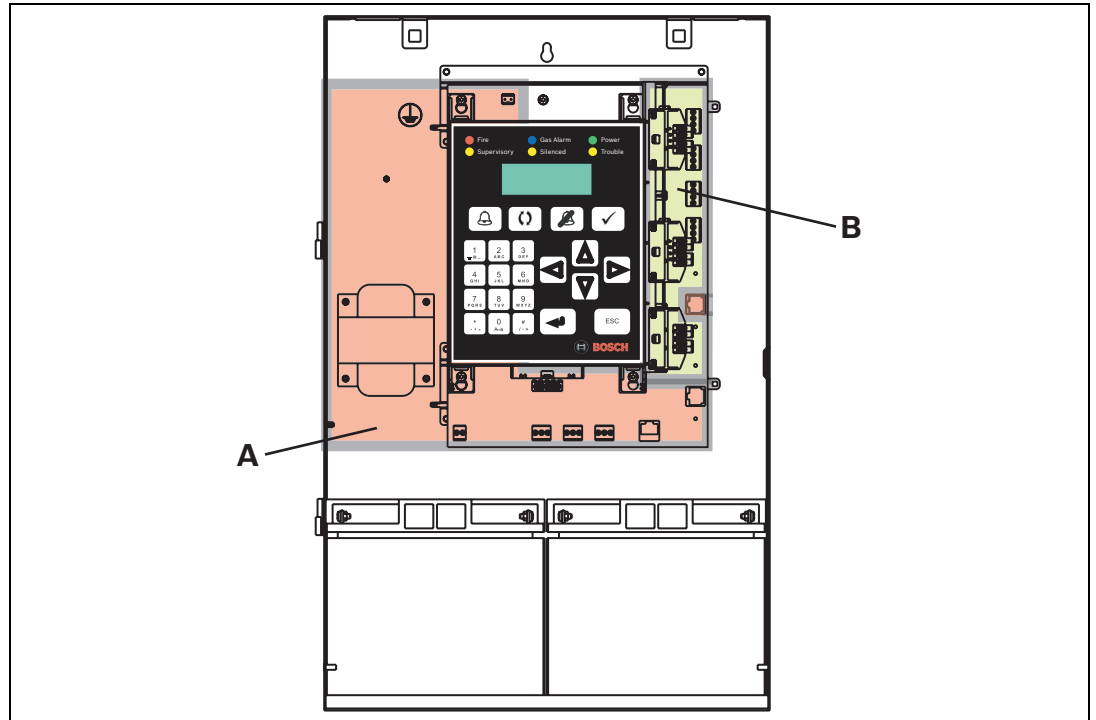


Figure 4.16 Wiring Road Map

## 4.9 Option Bus Wiring

Observe the limitations and recommendations in Section 4.7 Wiring Requirements on Page 59 and Section 4.7.1 Option Bus Circuit Wiring Distance on Page 60.

Observe the following specifications:

Terminal	Connection	Specifications
Y (yellow)	Data	Power-limited, supervised, Class B, Style 4, maximum 500 mA at 12 V DC
G (green)		
B (blue)	COM	
R (red)	+12 V	

Table 4.7 Option Bus Specifications

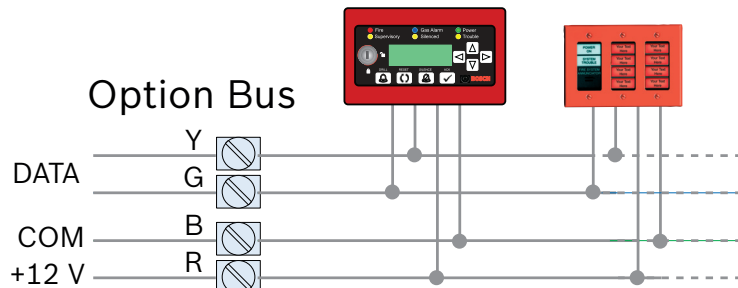


Figure 4.17 Option Bus Wiring

## 4.10 NAC Wiring

The control panel provides two Class A Style Z or two Class B Style Y Notification Appliance Circuits (NACs).

Refer to the *NAC Compatibility List* (P/N F.01U.075.636) for compatible notification appliances.

Consider requirements according *Section NFPA 72 - 6.9.10.4.1. Survivability from Attack by Fire* on *Page 48*.

*Table 4.8* lists the trouble conditions that result when a fault exists on the NAC (according to UL 864).

Type of Fault	Class B Style Y	Class A Style Z
Single open	Trouble	Alarm, Trouble
Single ground	Alarm, Trouble (ground)	Alarm, Trouble (ground)
Short	Trouble	Trouble
Trouble: The control panel indicates a trouble condition for this type of fault. Alarm: The control panel must be able to produce an alarm signal in the presence of this type of fault.		

**Table 4.8** Operation during Specified Fault Conditions

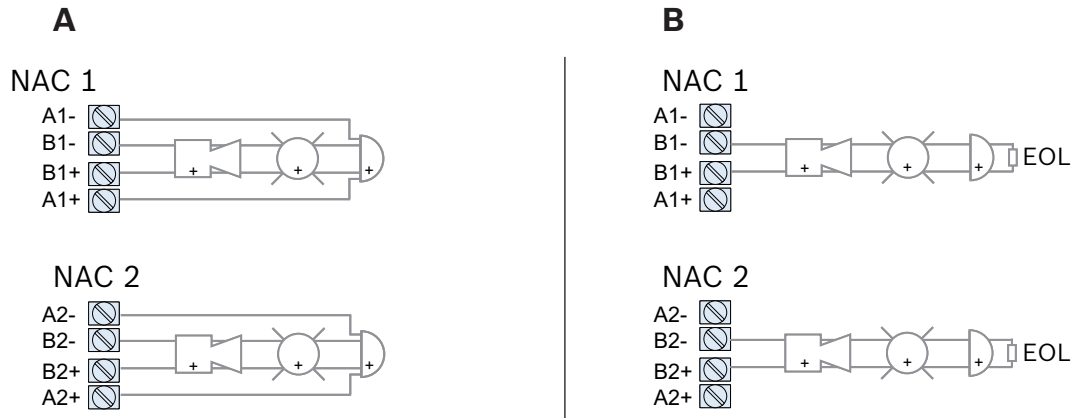
Observe the specifications in *Table 4.9*.

Terminal		Specifications (both NAC 1 and NAC 2)
NAC 1	A1- B1- B1+ A1+	Nominal 24 VFWR (17 to 31 VRMS), regulated, power-limited, supervised, maximum line impedance 1.45 $\Omega$
NAC 2	A2- B2- B2+ A2+	
Maximum load: <ul style="list-style-type: none"> <li>- Non-synchronized               <ul style="list-style-type: none"> <li>- NAC 1 = 2.5 A</li> <li>- NAC 2 = 2.5 A</li> </ul> </li> <li>- Synchronized               <ul style="list-style-type: none"> <li>- NAC 1 + NAC 2 in total = 2.75 A</li> </ul> </li> </ul> Maximum current limited by overall 4.0 A shared between AUX power, Option Bus, and NAC.		

**Table 4.9** Specifications NAC Terminals

*Figure 4.18* shows the configuration and wiring of Style Y and Style Z Notification Appliance Circuits (NACs) on the mainboard.

For Class B Style Y termination, use Bosch EOL 2.2k $\Omega$  (F.01U.034.504).



**Figure 4.18** NAC Wiring

Legend	
A	Class A Style Z
B	Class B Style Y

Additional NACs can be installed using the FPP-RNAC-8A-4C.  
 The two mainboard NACs are synchronized with one another.  
 The mainboard NACs and the SLC NACs are not synchronized together.



**NOTICE!**

To be UL 864 9th Edition compliant, use only the notification devices listed in the *NAC Compatibility List* (P/N F.01U.075.636).  
 When using synchronized Wheelock products, the maximum allowed is 27. With synchronized System Sensor products, the maximum allowed is 25. With synchronized Gentex products, the maximum allowed is 23. These are the maximum number of devices; high-current setting reduces this quantity.

## 4.11 SLC Installation

### 4.11.1 SLC Wiring

Signaling Line Circuits can be wired as Class A Style 6 or 7 or Class B Style 4 circuits. Class A configuration is recommended because this allows the system to poll the circuit in both directions, ensuring circuit operation in the event of a single break in the wiring.

In order to be compliant with UL 864, circuits for use with addressable notification appliances must be wired to comply with *Section 3.7 NFPA Standard-specific Requirements* on Page 47 of this document.

The Signaling Line Circuit is power-limited and supervised.

Table 4.10 lists the trouble conditions that result when a fault exists on the SLC (according to UL 864).

Type of Fault	Class B Style 4	Class A Style 6	Class A Style 7
Single open	Trouble <sup>1)</sup>	Alarm, Trouble	Alarm, Trouble
Single ground	Alarm, Trouble (ground)	Alarm, Trouble (ground)	Alarm, Trouble (ground)
Wire-to-wire short	Trouble	Trouble	Alarm, Trouble
Wire-to-wire short and open	Trouble	Trouble	Trouble
Wire-to-wire short and ground	Trouble	Trouble	Alarm, Trouble
Open and ground	Trouble	Alarm, Trouble	Alarm, Trouble
Communications loss	Indication <sup>2)</sup>	Indication <sup>2)</sup>	Indication <sup>2)</sup>
Trouble: The control panel will indicate a trouble condition for this type of fault.			
Alarm: The control panel must be able to process an alarm input signal in the presence of this type of fault.			
<sup>1)</sup> Trouble message missing device			
<sup>2)</sup> Indication in the loss counter			

**Table 4.10** Operation during Specified Fault Conditions

Refer to the listing of compatible devices in *Table 2.8* on *Page 23*.

Observe the specifications in *Section 4.7 Wiring Requirements* on *Page 59* and in *Section 4.7.2 SLC Wiring Distance and Styles* on *Page 61*.

Consider requirements according *Section NFPA 72 - 6.9.10.4.1. Survivability from Attack by Fire* on *Page 48*.



**NOTICE!**

The SLC does not require an EOL. Some modules that are connected to the SLC need EOLs. For proper wiring, refer to the manufacturer's installation instructions of the connected device.

Refer to *Section 2.7 Signaling Line Circuit Devices* on *Page 19*.

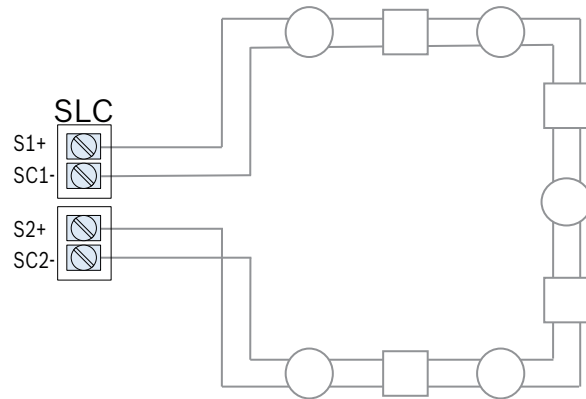
**SLC Wiring Class A Style 6 and 7**

Terminal	Specifications Class A Style 6 and 7
SLC 1/ SLC 2	S1+   SC1- S2+   SC2-
	Terminals used for outgoing loop Class A wiring
	Terminals used for return loop Class A wiring

**Table 4.11** Specifications SLC Terminals Class A Style 6 and 7

**SLC Wiring Class A Style 6**

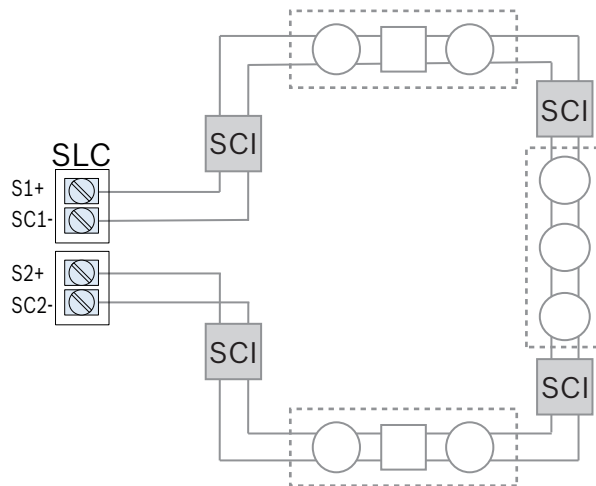
T-taps are not allowed in Style 6 configuration.



**Figure 4.19** SLC Wiring Class A Style 6

**SLC Wiring Class A Style 6 Using Isolators**

This variant of Class A Style 6 uses isolators to protect a section of a SLC. By using Analog Isolator Bases (FAA-440-B4-ISO or FAA-440-B6-ISO) or by placing Short Circuit Isolator modules (FLM-325-ISO) on both sides of each group of devices, each section is protected from faults that might occur in the other section. For example, a fault in any section (refer to *Figure 4.21* on *Page 72*) does not affect the other two sections because the isolators open the loop and the remaining sections continue to operate from power on the SLC out or return side.



**Figure 4.20** SLC Wiring Class A Style 6 Variant with Short Circuit Isolators (FLM-325-ISO)

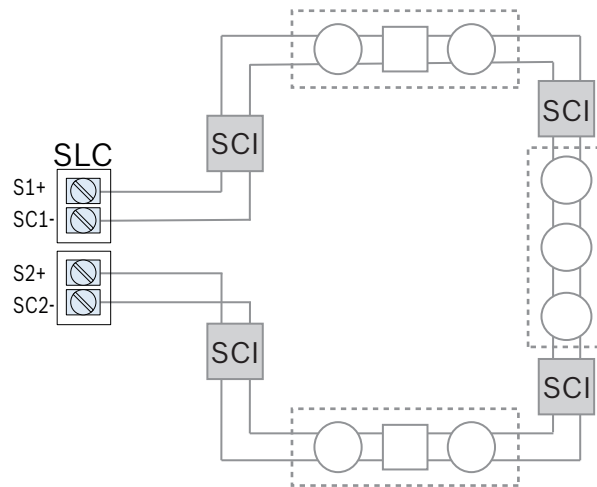
Legend	
SCI	Short Circuit Isolator (FLM-325-ISO)
Dotted frame	Protected section

**SLC Wiring Class A Style 7**

When using Class A Style 7 wiring, Either Analog Isolator Bases (FAA-440-B4-ISO or FAA-440-B6-ISO) must be installed before and after each analog addressable device on the SLC or the FLM-325-ISO Short Circuit Isolator must be installed before and after each analog addressable device on the SLC. Placing isolators on both sides of each device provides fault protection to all other devices on the circuit. Connections between isolator modules and the protected device must be close-nippled conduit, within 3 ft (91.5 cm).

The wiring from the control panel to the first FLM-325-ISO and from the last FLM-325-ISO back to the control panel must be in separated conduit runs and within 20 ft (6.1 m).

T-taps are not allowed in Style 7 configuration.



**Figure 4.21** SLC Wiring Class A Style 7

Legend	
SCI	Short Circuit Isolator (FLM-325-ISO)

#### SLC Wiring Class B Style 4

T-taps are permitted for Style 4 configuration.

Installing two Class B circuits does not double the number of addresses. Because the two circuits (stubs) are dependent from each other, there is no polling in parallel, and the addresses on each circuit are different. In case of a short circuit on one stub, the other one will be also shut off briefly until the SLC card detects which stub has the short failure.

Terminal		Specifications Class B Style 4
SLC1/ SLC2	S1+   SC1-	1 Class B wiring: Terminals used for circuit (stub) 2 Class B wiring: Terminals used for first circuit (stub)
	S2+   SC2-	2 Class B wiring: Terminals used for second circuit (stub)
For 1 Class B wiring, connect to S1+   SC1- and do not use S2+   SC2- terminals.		

**Table 4.12** Specifications for NAC Terminals Class B Style 4



#### NOTICE!

When using one Class B Style 4 connection, only the S1+/SC1- terminals are allowed. Do not use S2+/SC2- terminals.



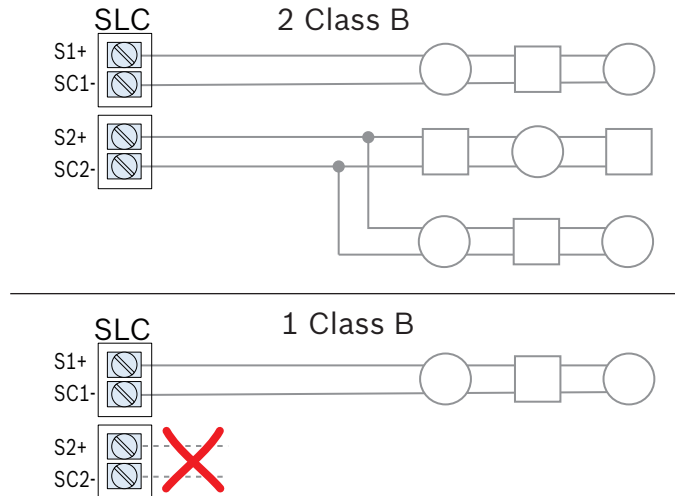


Figure 4.22 SLC Wiring two Class B Style 4

### 4.11.2

#### Addressing Devices

Before installation, all of the addressable devices installed on each of the SLCs must be programmed with a unique address (refer to *Section 3.4.2 SLC Address Assignment* on Page 40). The analog sounder bases derive their address automatically from the detector attached to them. The Analog Sounder Base address has the detector address plus 127.

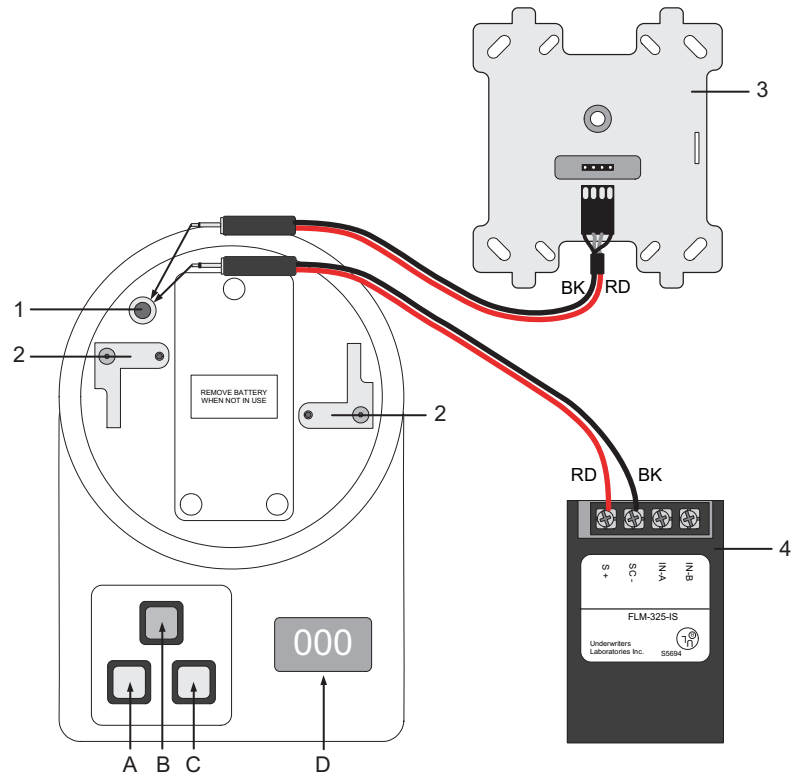
**Example:** The detector address is 36.  $36 + 127 = 163$ . The Analog Sounder Base has an address of 163.

This address is what the FPA-1000 control panel uses to identify each addressable device and control its functionality. All listed addressable devices come from the factory preset to address 127. This preset address can only be reprogrammed using the D5070 Analog Device Programmer.

Devices must not be powered when using the D5070 Analog Device Programmer to set addresses. The FLM-325-IM Contact Module should not be connected to the SLC when using the D5070 Analog Device Programmer to set addresses.

Follow these instructions to set or reprogram the address.

1. Identify each analog addressable device that will be installed on an SLC and label it with a unique address, ranging from 1 to 127 or 1 to 254 (refer to *Table 3.12* on Page 41).
2. Using the D5070 Analog Device Programmer as shown in *Figure 4.23* on Page 74, program the appropriate address into each analog addressable device.



**Figure 4.23** Addressing Devices with the D5070 Analog Device Programmer

Legend	
1	Remote programming jack
2	Programming base for detector heads
3	Addressable module 4-in back box type with module adapter, plug non-polarized
4	Addressable module single-gang back box type with module adapter
A	Power on / Display current address / Increase address by 10
B	Store displayed address into detector
C	Power off / Increase address by 1
D	Display of device's address (or the detector's analog value)
RD	Red
BK	Black

## 4.12

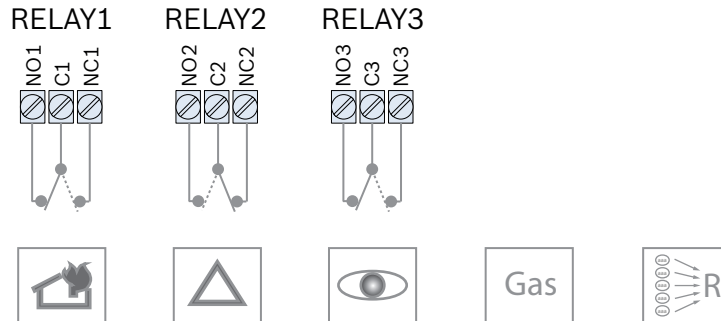
### Mainboard Relays

The three Form C relays are programmable.

The default selection for the relays is to indicate global alarm (zone 226), global system trouble (zone 227), and global system supervisory (zone 228). By programming them to up to five of the zone numbers described for point and zone mapping (refer to *Section 3.3.2 Advanced Point Features and Processing on Page 28* and *Section 3.3.4 Zones on Page 33*), they can activate on a variety of conditions. In addition, programming as gas alarm is selectable.

Terminal	Default Setting	Specifications
RELAY 1 NO1   C1   NC1	Alarm	Mainboard relays, individually programmable for alarm, trouble, supervisory, gas alarm; activation by zone and system events. Rated at 5 A at 30 V DC/10 A, 120 V AC, not power-limited
RELAY 2 NO2   C2   NC2	Trouble (energized)	
RELAY 3 NO3   C3   NC3	Supervisory	

**Table 4.13** Specifications for Mainboard Relays



**Figure 4.24** Mainboard Relays

**Relay Energization**

All relay outputs in the system have an “Energized on normal” option. This option provides fail-safe features so that a relay transition from energized to de-energized can be supervised. If the “Energized in normal” option is enabled, the relay is turned on for deactivation operation. Upon activation operation, the relay is turned off. If this option is programmed as “Not energized”, the relay is turned on for activation and turned off for deactivation. The default programming for Relay 2 is trouble and energized in normal.

**4.13 City Tie Connections**

Each circuit can be configured as either Local Energy or Reverse Polarity. Each circuit is individually bypassable and unbypassable. The following panel conditions, activated by the corresponding global zones, can be programmed to activate the City Tie circuit: Fire Alarm, Trouble, Supervisory or Gas Alarm. The panel supervises the presence of the City Tie board every 30 seconds. If the City Tie board appears to be missing for three consecutive detections, the panel creates a City Tie board missing trouble. Observe the maximum circuit resistance of 65 Ω.



**NOTICE!**

Use the appropriate DIP switch settings on the module to obtain the desired operation mode (refer to *Figure 4.8* on Page 57).

**4.13.1 Reverse Polarity Mode**

The FPE-1000-CITY City Tie Plug-in Module connects the FPA-1000 Fire Panel to either a single set or a pair of dual leased telephone company (telco) lines in NFPA 72 Remote Station applications. The FPE-1000-CITY City Tie Plug-in Module relays system alarm status information from the control panel to a monitoring station.

In normal conditions, the FPE-1000-CITY sends a steady current to a monitoring station. In an alarm condition, it reverses the polarity of the output current. The module signals a trouble condition by interrupting the output voltage and current.

The default setting is fire alarm for Circuit 1 and supervisory for Circuit 2.

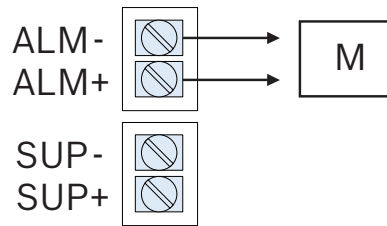


#### NOTICE!

Intended for connection to a polarity reversal circuit of a remote station receiving unit having compatible ratings.

Terminal	Specifications for Reverse Polarity Mode	
ALM - ALM+	Default setting: Fire Alarm	24 V DC nominal (26.4 V DC maximum), power-limited, supervised, output current: 33 mA maximum, supervisory/standby current: 5 mA maximum
SUP - SUP+	Default setting: Supervisory	

**Table 4.14** Specifications for City Tie Reverse Polarity Mode



**Figure 4.25** City Tie Wiring in Reverse Polarity Mode

Legend	
M	Monitoring Station

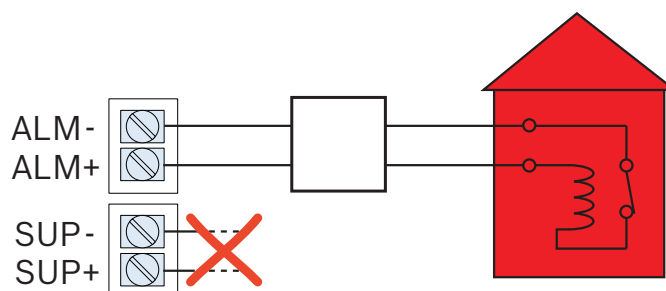
### 4.13.2

#### Local Energy Mode

The City Tie Plug-in Module connects local energy signaling devices to the FPA-1000 for auxiliary service operation. The devices are connected in series. Refer to *Table 2.3* on *Page 16* for listing of compatible Gamewell devices.

Terminal	Specifications for Local Energy Mode
ALM - ALM+	Alarm, trip coil: 24 V DC Alarm current: 250 mA DC (momentary)
SUP - SUP+	Supervisory/standby current: <50 mA DC Trip Coil resistance: 14.5 $\Omega$ Nominal Coil Voltage: 3.65 V DC

**Table 4.15** Specifications for City Tie Local Energy Mode



**Figure 4.26** City Tie Wiring in Local Energy Mode



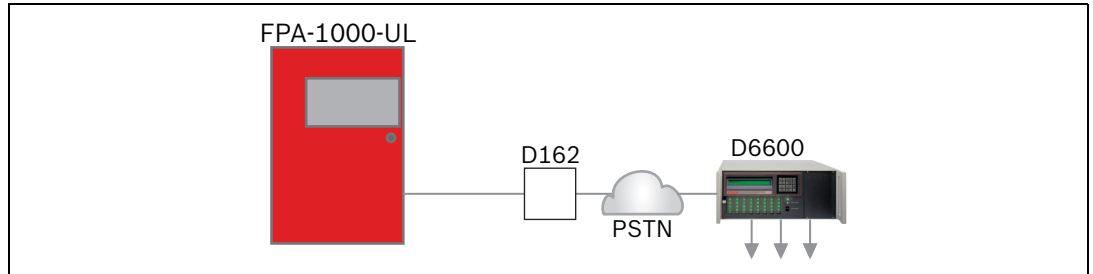
**NOTICE!**

The shunt connection is recognized only as a supplementary signaling unit as part of a local control unit and is not recognized as an auxiliary control unit connection per NFPA 2.

**4.14**

**Phone Line Connections (DACT)**

Phone lines are power-limited and can be programmed to be supervised (refer to **6-PROGRAMMING, 7-DACT, 6-LINE MONITOR** in *Section 5.7.6 PROGRAMMING* or in PSTN Communicator Settings in *Section 6.7.5 Reporting on Page 153*).



**Figure 4.27** PSTN Connection

**Telephone Cord Installation**

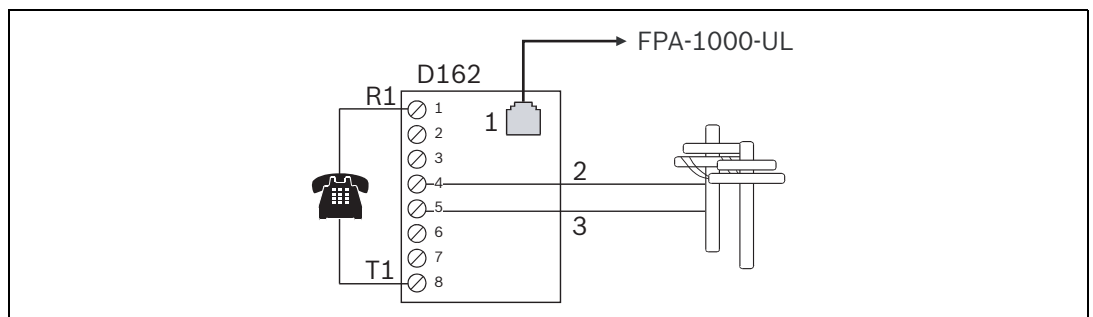
Use a telephone cord (for example D162 Modular Telephone Cord) to connect the primary phone line to the Line 1 RJ45 jack at the bottom of the FPA-1000 mainboard. Use another telephone cord to connect the secondary phone line to the Line 2 RJ45 jack.



**NOTICE!**

For all applications, connect separate primary and secondary phone lines to the FPA-1000.

To prevent jamming of alarm and other reports, wire and locate the RJ31X jack so that normal telephone use is temporarily interrupted while the FPA-1000 transmits data (*Figure 4.28*). After installation, verify that the FPA-1000 seizes the phone line.



**Figure 4.28** D162 Wiring

Legend	
1	Full modular phone jack, connects to panel
2	Ring (telco)
3	Tip (telco)
D162	Modular telephone cord
T1	House telephone tip
R1	House telephone ring

Do not connect registered equipment to party lines or coin-operated telephones. If the local telephone company requests notification before you connect the FPA-1000 to the telephone network, provide the following information:

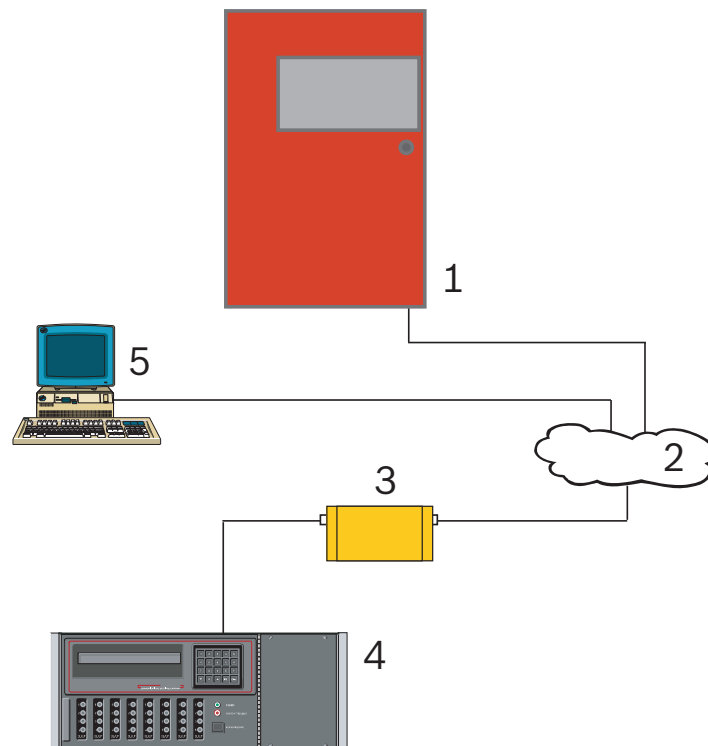
- Which line you are connecting to the Digital Alarm Communicator Transmitter (DACT).
- Make, model, and serial number of the device.
- FCC registration number (*US:ESVAL00BFPA1000*), and
- Ringer Equivalence Number (REN): 0.0B.

If the telephone company changes its communications facilities, equipment, operations, or procedures that can affect the performance of the FPA-1000, the telephone company is obligated to notify the user in writing.

## 4.15 Ethernet Connection

Ethernet connection is power-limited. Monitoring the Ethernet is programmable.

Figure 4.29 shows a general system connection of the fire panel to the D6600 Receiver through the D6680 Network Adapter and to a host PC.



**Figure 4.29** Ethernet Connection

Legend	
1	Fire panel
2	Ethernet/Internet
3	D6680 Network Adapter
4	D6600 Central Station Receiver
5	Host PC running a Web-browser
1-2-3	Ethernet network to the D6680 connection
3-4	D6680 to the D6600 COM4 port connection
2-5	Ethernet network to host PC Ethernet network interface card (NIC) connection

## 4.16 Power Supply Wiring

The FPA-1000 allows for charging up to 40 Ah of batteries with the provided transformer working with 120 V AC or 240 V AC.

For installations requiring battery capacity higher than 40 Ah, a regulated and UL 1481 Listed external power supply can be used. The external power supplies connect through the panel's battery terminals and are supervised for AC and battery fault by an Input Module (for example FLM-325-214) on the SLC.

### 4.16.1 AC Power Connection



**NOTICE!**

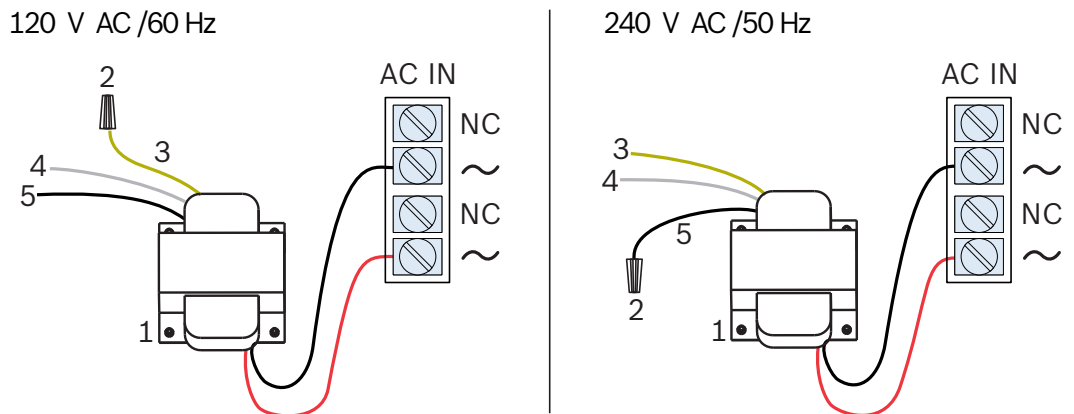
NFPA 72 requires that the AC connection is made from a mechanically protected dedicated branch circuit. The circuit must be marked in red and identified as a “FIRE ALARM CIRCUIT”. The location of the circuit and its disconnecting means must be permanently noted at the fire alarm control panel. The circuit breaker must be rated at 20 A maximum.

The main supply circuit is supervised for the presence of AC power.

Terminal	Connection	Specifications
-   +	black   white	Primary AC power, 120 V AC, 60 Hz, 1.1 A maximum
	yellow   white	Primary AC power, 240 V AC, 50 Hz, 0.6 A maximum

**Table 4.16** Primary AC Power Connection

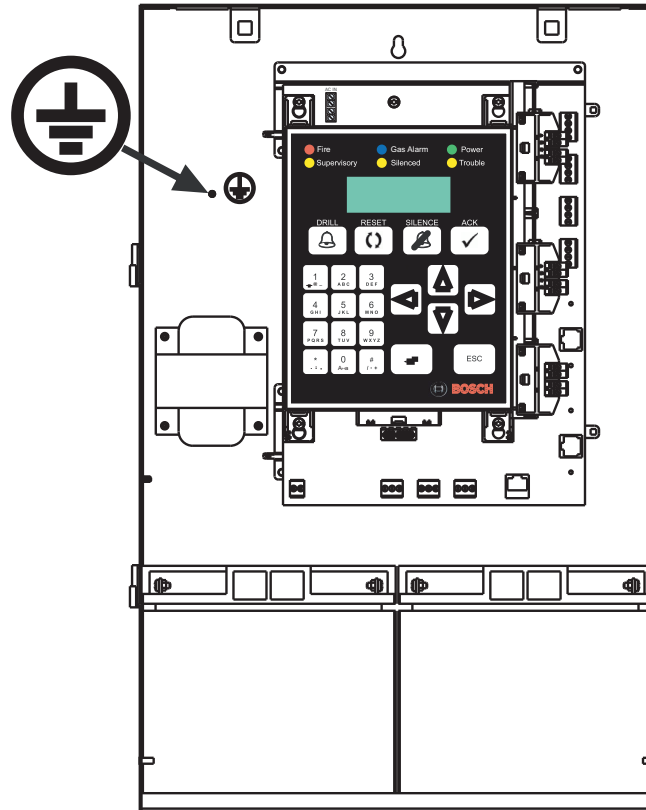
- Connect the primary side of the transformer (refer to *Figure 4.30*):
  - black and white wires to unswitched 120 V, 60 Hz **or**
  - yellow and white wires to unswitched 240 V, 50 Hz circuit
 Use wire nuts for connections. Leave the wire nut over the unused black or yellow wire.



**Figure 4.30** Connecting AC Power: Left side 120 V DC, right side 240 V DC

Legend	
1	Transformer
2	Wire nut
3	Yellow wire: 240 V AC line voltage
4	White wire: 120/240 V AC neutral voltage
5	Black wire: 120 V AC line voltage

- Connect the earth ground to the threaded ground stud on the left side of the enclosure (refer to *Figure 4.31*).



**Figure 4.31** Earth Ground Connection

## 4.16.2 Battery Connection



### CAUTION!

The battery contains sulfuric acid. It may cause damage of the skin and eyes and destroy fabrics. If contact is made, flush the affected area with water for 15 minutes, remove contaminated clothing, and seek medical attention.

This product requires two 12 V batteries in series for a combined voltage of 24 V. The rechargeable battery circuit is supervised for the presence of battery power. To select the proper battery size for your system, refer to *Section 3.1 Power Supply Calculations* on Page 26.

For recommended battery manufacturers, refer to *Section 8.1 Battery Maintenance* on Page 161.

Terminal	Specifications
BATT -   +	Battery 2 x 12 V DC (connected in series)

**Table 4.17** Battery Connection

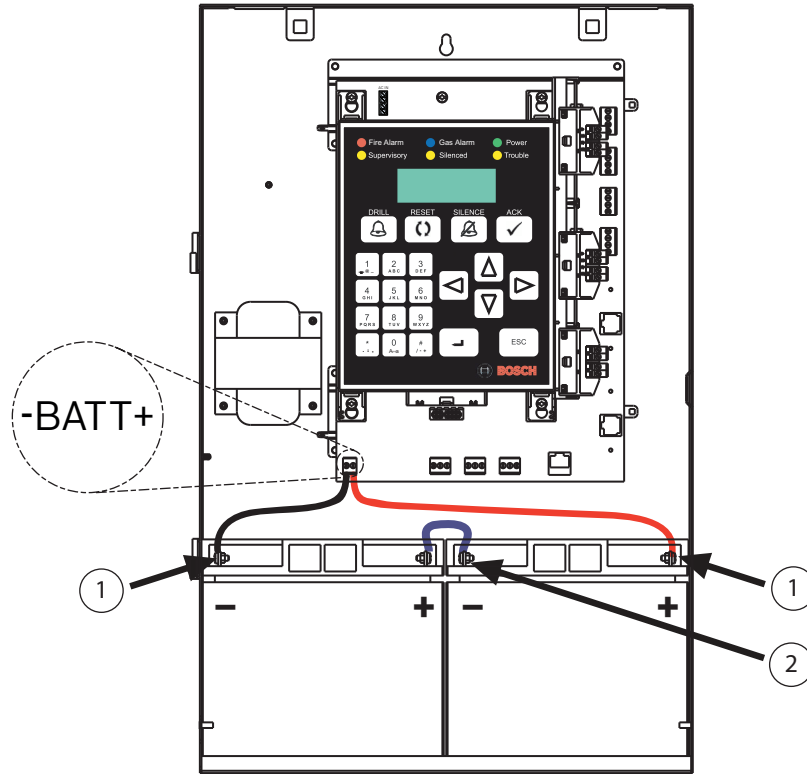


### WARNING!

Ensure that the interconnect cable between the two batteries is not connected before you connect the batteries to the FACP.

1. Observe the wiring polarity and connect the battery cables to the BATT terminals on the mainboard (*Figure 4.32*). Use only batteries of the same capacity rating (Ah). Connect the batteries in serial.
2. Do not connect the interconnect cable until the system is completely installed.

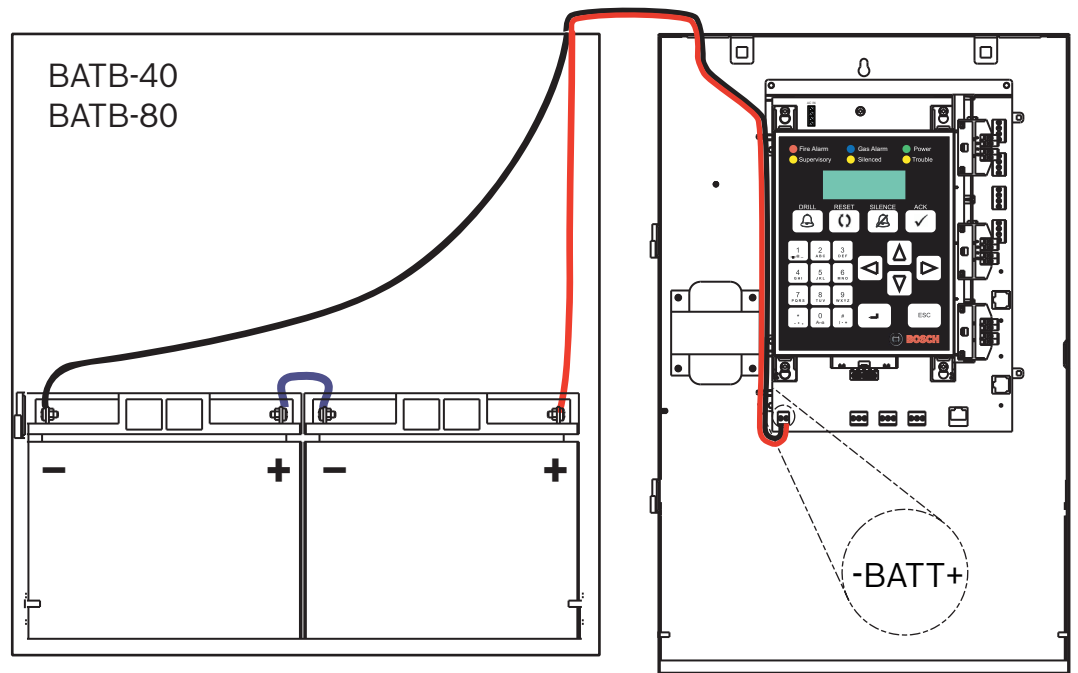




**Figure 4.32** Connecting Backup Batteries

**BATB-40/BATB-80 Battery Boxes**

Mount the BATB-40 or BATB-80 Battery Boxes on the left side of the FPA-1000. Refer to the BATB-40/BATB-80 *Installation Instructions* (P/N 47384C) for information on mounting the Battery Box houses. Connect the battery wires running from the batteries to the FPA-1000 battery terminals (refer to *Figure 4.33*).



**Figure 4.33** Connecting Backup Batteries from BATB-40 or BATB-80 Battery Box

### 4.16.3 Auxiliary Power Connection

On the mainboard, 24 V DC auxiliary power is available to run expansion boards or other low current auxiliary devices. Refer to *Table 4.18* and *Figure 4.34*.

Observe the following specifications:

Terminal		Specifications
AUX	FWR - FWR +	Auxiliary Power, power-limited, non-supervised, non-switched and Full Wave Rectified (special applications), 24 V FWR nominal (17 to 31 VRMS), 0.5 A maximum
	RST - RST +	Auxiliary Power, power-limited, non-supervised, Resettable, switched and filtered (special applications), 24 V DC nominal (17 to 31 V DC), 0.5 A maximum

**Table 4.18** Auxiliary Power Connection



**Figure 4.34** Auxiliary Power Connection

Any devices powered from the auxiliary power terminals should be considered when determining standby battery size. The devices connected must have a wider operating voltage range than 17 to 31 V. Please observe that one output is DC and the other is FWR. The AUX power outputs are power-limited.



#### NOTICE!

Auxiliary power is not supervised. Therefore, be sure to use a supervision module when connecting four-wire smokes or other devices without built-in supervision.

### 4.16.4 External Power Supply



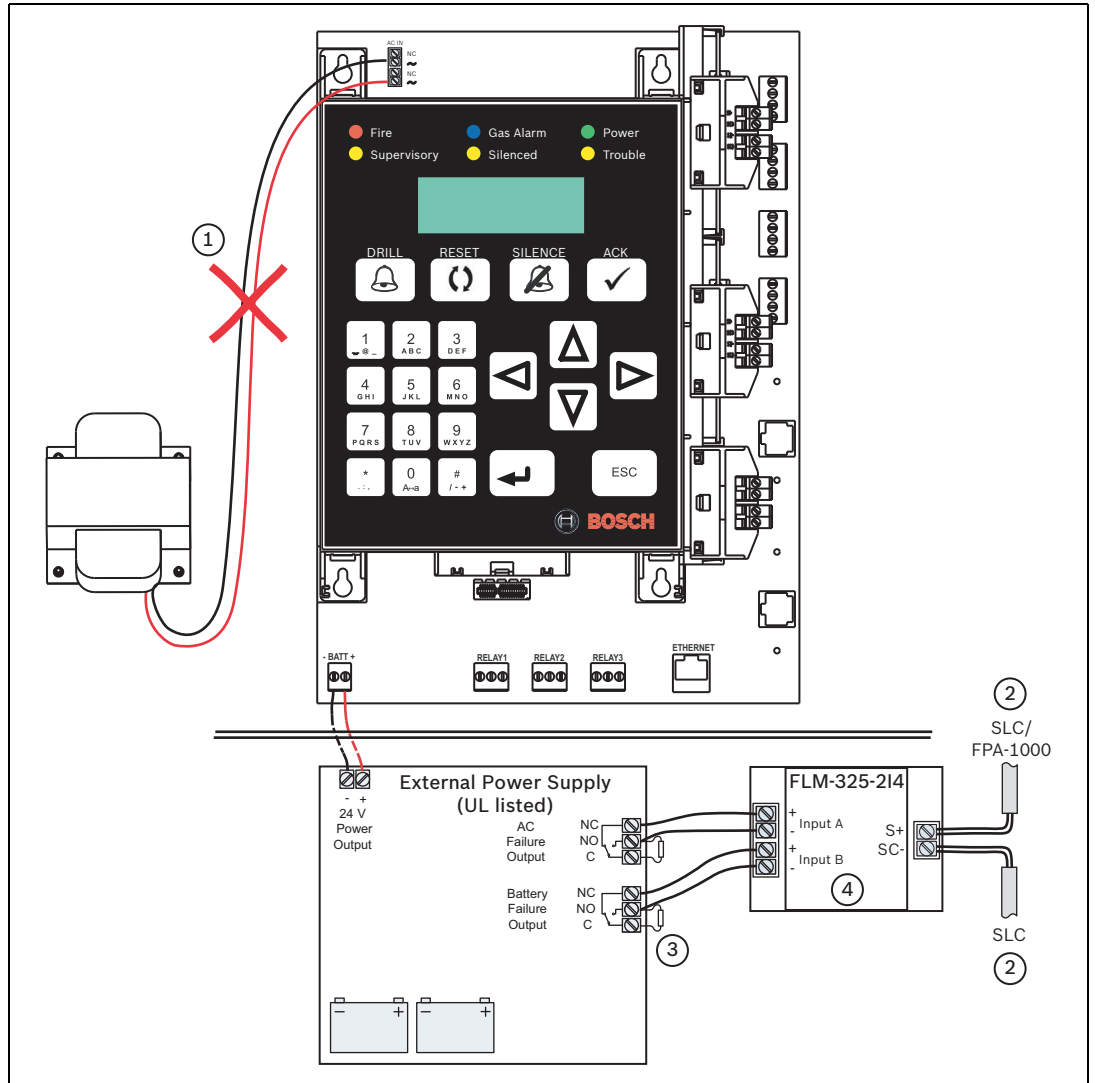
#### CAUTION!

Before connecting the External Power Supply, disconnect the transformer from the AC terminals.

For installations requiring battery capacity higher than 40 Ah, a regulated and UL 1481 Listed external power supply can be used. The external power supplies connect through the panel's battery terminals. Batteries and battery charger are not supervised. For supervision of AC and battery fault use an Input Module (for example FLM-325-214) on the SLC.

Terminal		Specifications
BATT	-   +	Connects to 24 V Power Output of External Power Supply (UL Listed)

**Table 4.19** External Power Supply Connection



**Figure 4.35** Connecting an External Power Supply and FLM-325-214 Dual Input Monitor

1. Disconnect the transformer from the AC terminals (refer to *Figure 4.35*, Item 1).
2. Connect S+/SC- terminals of the FLM-325-214 Dual Input Monitor to the SLC: Connect either side to the next device on the SLC, or one side to the FPE-1000-SLC Plug-In Module of the FPA-1000, and the other side to the next device on the SLC (refer to *Figure 4.35*, Item 2).
3. Install one UL Listed EOL device (Hochiki P/N 0400-01000, 22 kΩ) each between the NO and C terminals of the AC failure output and battery failure output of the External Power Supply (refer to *Figure 4.35*, Item 3).
4. Observe the FLM-325-214 programming rules (refer to *Figure 4.35*, Item 4):
  - Input A: AC failure N/C
  - Input B: Battery failure, N/C.
5. Enable the External Power Supply:
  - through browser-based programming: Refer to *Section 6.7.1 Site Data, Section Local Panel Settings* on Page 147
  - through the control panel menu: Refer to 6-PROGRAMMING, 6-TIMERS AND SYSTEM, 2-SYSTEM, 4-EXTERNAL POWER on page 108.

## 5 Keypad Operating and Programming



### CAUTION!

The panel controller can be operated only by trained personnel.

Message displays on the panel controller must be processed only by trained personnel.

The system walk test and detector configuration must be performed only by trained, authorized personnel.

When used in UL Listed installations, the control panel must conform to certain programming requirements. Refer to *Section 3.6 UL 864 Standard-specific Requirements on Page 44*.

### 5.1 Panel Access

The FPA-1000 Analog Addressable Fire Panels enable various approaches for monitoring, operating and programming:

- On-site at the front panel to program another panel, but not all parameters can be programmed
- On-site through a Web server using a laptop (connected to the panel with CAT5 cable)
- Remote, using a Web page and a dial-up connection
- Remote, using a Web page and an Ethernet connection.

The FMR-1000-RA Remote Annunciator allows for remote viewing and monitoring, including the acknowledge function. Additionally, the FMR-1000-RCMD Remote Command Center features operation keys for drill, reset and silence.

The browser-based user interface is described in detail in *Section 6 Browser-based Operating and Programming on Page 132*.

#### Networked System Monitoring, Operating, and Programming

Multiple FPA-1000-V2 Analog Addressable Fire Panels can be interconnected using Networking Cards installed in each panel to create a networked system. Panels within the networked system can be programmed into networked groups. Within such a networked system, certain programmable device settings can be defined as:

- Panel wide parameters - only apply to the specific panel to which the device is connected (i.e., local zones 1-128).
- Network wide parameters - apply to all panels in the network system (i.e., Global zones 226-234). All monitoring activities will report on every panel and all operating and programming activities can be performed from any panel.



### NOTICE!

In a networked system, some panel wide remote programming options are not available when programming one networked panel from another networked panel. These options are only programmable on the panel being used for programming.

#### Controlling Remote Login

The panel provides a programming function to treat remote login three ways:

- Remote login with required confirmation at the panel for programming operations
- Remote login without confirmation at the panel (refer to *Section 3.6 UL 864 Standard-specific Requirements, Table 3.15 on Page 46*)
- Remote login disabled.

Any remote connections through the dialer must first be confirmed at the panel.

#### Simultaneous Access

The system allows any number of users at a time for the viewing function and for controlling operations of the panel. For uploading or programming which requires the Level 3 PIN code,

the simultaneous panel access is limited to one user at a time. The user at the control panel always has the highest priority.

Table 5.1 shows the access priority and system response, if one user is operating the panel and a second user tries to access the panel.

First User	Second User	Access Priority and System Response
Local	Remote	Second (and any further) user is provided a message "Try again later". The local login cannot be terminated by a remote login.
Remote	Local	Local user can choose if he or she would like to terminate the first user or not. If the remote programming option is set to <b>1-CONFIRM AT PANEL</b> , the system prompts for confirmation at panel side. Web access is granted as soon as the correct PIN is entered at the panel. If an invalid PIN is entered, an error message appears on the web page and the access is denied. Observe access level time-out! After 25 min without any action, Access Level 2 or 3 become invalid. In Level 3, the user is notified one minute before the session expires. In Level 2, the user is notified when trying to perform a Level 2 action the next time. Access Level 1 does not time out.
Remote	Remote	Second (and any further) user is provided a message <b>Another request is in progress. Please try later.</b> The first remote login cannot be terminated by the following remote login.

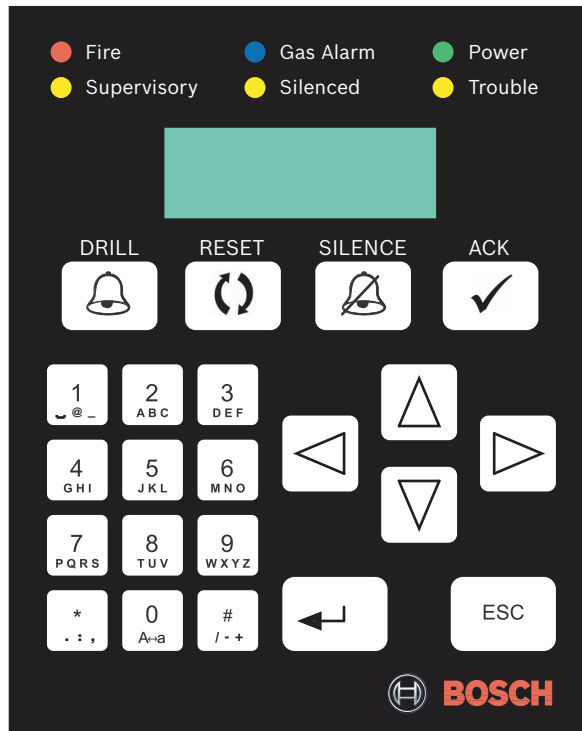
**Table 5.1** Access Priority and System Response

After denial of access, a second user can view the current panel display.

## 5.2 LCD Keypad

The LCD keypad is visible with the cabinet door closed.

Tabs with different language versions are provided to change the text for the LEDs and keys. On networked systems, all panels on the network or all panels within a defined group can be programmed by operated from any panel within the group or network. All signals activated by a panel within a group or within a network will be reported on every panel within the group or network.



LED indicators

LCD display, 4 x 20 characters

Operation keys for drill, reset, silence and acknowledge







Alphanumeric keys

Arrow keys for left/right/up/down

Enter and Escape keys

**LED Indicators**

The front panel and remote LCD annunciators have LEDs following the global system status.

LED		System Status
Fire  Red	On	Whenever the system registers a fire alarm and is not reset
	Off	<ul style="list-style-type: none"> <li>- If no alarm registered</li> <li>- After resetting</li> </ul>
Gas Alarm  Blue	On	When the system registers a gas alarm and is not reset
	Off	<ul style="list-style-type: none"> <li>- If no gas alarm registered</li> <li>- After resetting</li> </ul>
Power  Green	On	If AC power is applied to the panel
	Flashing	When AC power fails and the unit operates from battery power
	Off	When no power (AC or battery) is applied
Supervisory  Yellow	On	When the system registers a supervisory condition
	Off	When no supervisory condition is registered
Silenced  Yellow	On	<ul style="list-style-type: none"> <li>- When an alarm or trouble condition is silenced manually by the user</li> <li>- If the system auto-silence timer expires</li> </ul>
	Off	<ul style="list-style-type: none"> <li>- When no condition is silenced</li> <li>- When a silenced condition is corrected</li> </ul>
Trouble  Yellow	On	<ul style="list-style-type: none"> <li>- When the panel is initializing</li> <li>- When the panel registers a trouble condition from a point, or the panel</li> <li>- When inputs or outputs or other elements are bypassed</li> </ul>
	Flashing	<ul style="list-style-type: none"> <li>- When the panel is not operating</li> <li>- When walk test is in progress</li> </ul>
	Off	<ul style="list-style-type: none"> <li>- When no trouble condition exists</li> <li>- When the panel is resetting</li> </ul>
LED flash rate is 1 Hz (0.5 s on, 0.5 s off).		

**Table 5.2** LED Operation

All LEDs on the panel keypad and on remote LCD/LED annunciators light steadily during the lamp test operation.

On the remote LED annunciators, the LEDs indicate the status of software zones individually.

**Display**

The FPA-1000 panels use an 80-character (4 lines X 20 characters) wide viewing-angle LCD display. The display includes a long-life LED backlight. If AC power is lost and the system is not in alarm, the LED backlight is turned off to conserve the batteries. There is a blue potentiometer (POT) located at the left along the bottom edge of the mainboard. To adjust the keypad display, turn this POT clockwise to lower display contrast or counter-clockwise to increase display contrast.

## Keys

The keypad has 22 keys, including a 12-key alphanumeric pad similar to a telephone keypad with numbers 0 to 9, asterisk [\*] and pound sign [#], Escape [ESC], enter [↵] and arrow keys (left, right, up, down). The alphanumeric keys are used to enter text information similar to the way telephone keys are used to process information over the telephone lines. Each key represents up to five letters, numerals or symbols.

In input character mode, use the key codes for the characters as follows:

Single press	First character on key
Double press	Second character on key
Triple press	Third character on key
4-times press	Fourth character on key 7 and 9, or number on other keys
5-times press	Number on key 7 and 9, or like single press on other keys

Exception for [0] key:

Single press on [0]	Toggles lower/upper case setting
Double or further press on [0]	Enters "0"

Special function in time mode:

Single press on [2]	Enters "a" for AM at 5th digit in time setting
Single press on [7]	Enters "p" for PM at 5th digit in time setting

Special function in phone number mode:

Key codes	0 to 9
Single press on [*]	Enters "," in phone numbers, causes a two-second delay in dialing
Single press on [#]	Enters "/" in phone numbers, causes a 125 ms delay in dialing

Special function in IP address mode:

Key codes	0 to 9
Single press on [*]	Enters "." in between byte fields

Special function in PIN check mode:

Key codes	0 to 9, displays digits as "*"
-----------	--------------------------------

Special function in Date/Time mode:

Key codes	0 to 9; "/" and ":" are skipped automatically
Delete key [↵]	Invalid.

After a pause (key not pressed) for 2 seconds, the cursor moves to the next position. The character at the actual position is overwritten.

Special functions for the arrow keys:

Up	Delete
Down	(reserved)
Left	Move input position to the left
Right	Move input position to the right



### Piezo Sounder

Every keypad or annunciator has a piezo that provides audible indication of the system status. Refer to *Table 5.3* for piezo modes.

Piezo Operation	System Status
Silent	The panel is in a normal state (no alarm, supervisory or trouble condition). The panel was silenced or acknowledged after an off-normal condition.
Continuous beep	The panel is in fire alarm condition.
Periodic beep (0.5 s on every 2 s)	The panel is in gas alarm condition.
Periodic beep (0.5 s on every 4 s)	The panel is in supervisory condition.
Periodic beep (0.5 s on every 10 s)	The panel is in trouble condition. Indicates automatic logout within 1 minute if logged in at Level 1, 2 or 3.
Short beep	With every key press.
Triple beep	With invalid entries.

**Table 5.3** Piezo Operation

In case of multiple piezo activation, the system status with the highest priority is indicated.

## 5.3 Keypad Operations

### View Status

With no alarms or troubles in the system, the display message is "SYSTEM NORMAL" along with the current date and time.

During initialization by start-up or re-configuration, the screen indicates "System Initializing". The panel shows the "System Resetting" screen upon reset, until the system returns to the normal supervising condition.

If PAS or Pre-signal is turned on, the screen indicates "SYSTEM NORMAL DAY".

Any off-normal conditions are shown in groups classified as fire alarm, gas alarm, supervisory and trouble.

Use the arrow keys to view events or conditions in the same group. Up [^] and down [v] keys move the user to the previous or next event. The left and right keys switch to other groups.

### Acknowledge

During an alarm, pressing the acknowledge [ACK] key turns off the piezo that is sounding on a keypad or annunciator. All the ongoing events or conditions are marked as "Acknowledged".

The 24-hour trouble reminder timer starts. For that, any trouble event not cleared within 24 hours is sent again and the piezo begins to beep again.

If a fire input point configured as "PAS enabled" (with global PAS enabled) is activated, pressing the acknowledge [ACK] key within 15 seconds after a PAS activation starts the investigation timer. This allows the user to investigate the fire alarm or take other appropriate actions until the timer expires.

An acknowledgement operation can also be initiated by the activation of an input point configured as an acknowledge type.

To run a lamp test, press and hold the acknowledge [ACK] key for at least 3 seconds. All LEDs on the keypad are turned on and the keypad's LCD display is filled with black boxes. When the [ACK] key is released, the keypad displays the software revision number, the panel ID, and the panel's IP address for 3 seconds, then the LEDs and display return to normal working mode.

## Silence

When the silence operation is initiated, the following actions occur:

- The “Silenced” LED turns on. The panel goes into a “Silenced” status.
- The piezos on all keypads and annunciators turn off.
- All outputs are silenced if configured as “Silenceable”.
- NACs play the “silenced” pulse for the programmed pattern, or they fully de-energize, as defined by the global option “Silence Config”. Strobes continue flashing.
- All the ongoing events are marked as “Acknowledged” when the [SILENCE] key is pressed.
- Silence operations are logged into the history.
- If programmed, the panel transmits a silence report to the central station.
- The trouble reminder timer starts.

If the panel is already silenced, pressing the [SILENCE] causes an unsilence command in the panel.

Silence operation does not reset the alarm status and does not return the activated input to normal service.

Any new alarm reactivates any silenced outputs.

Silence operation can also be initiated by the activation of an input point that is configured as a silence type (refer to *Section 3.3.3 Events on Page 32*).

For individual silence programming of outputs, refer to:

- ▶ 6-PROGRAMMING, 1-SLCS, 1-SLC 1 or 2-SLC 2, 2-EDIT A DEVICE, 2-SILENCEABLE in *Section 5.7.6 PROGRAMMING*, starting on *Page 112*.

## Waterflow Silenceable

The panel provides a global option to control silencing of the panel when a waterflow type alarm activates. If the Waterflow Silenceable option is activated, silencing operation on the panel is allowed, regardless if there is any Waterflow alarm. Otherwise, the silence operation is not performed. Respectively, any silencing operations including the use of the silence key and automatic silencing are ignored.

## Automatic Silencing

The panel provides an automatic silencing feature as an optional configuration. The user can program an automatic silence time within the range from 5 to 60 minutes. If automatic silence is enabled, the first alarm in the system starts the automatic silence timer. When a time-out occurs, a silencing operation is executed. If a second alarm occurs within the automatic silence time, the auto-silence timer does not restart. After automatic silencing, any new alarm cancels the silence operation and starts the auto-silence timer again. Auto-silence is suppressed if the panel is programmed as Waterflow not Silenceable and there is at least one waterflow alarm.

## Trouble Reminder

If any events are not cleared within 24 hours after the [SILENCE] or [ACK] key was pressed, the panel re-sounds the piezo and events are transmitted to the central station again.

## Reset

When a reset operation is initiated, the following actions occur:

- The piezo and activated or silenced outputs turn off.
- All alarm, supervisory, and troubles caused by activation of SLC points are cleared. Then the panel tries to reset all points that are in off-normal status. Not all system trouble conditions are affected by a reset operation.

- The global resetting zone is activated for 5 seconds. This way users are able to assign some auxiliary outputs to indicate that the system is being reset and is not in normal operation condition.
- Auxiliary power AUX/RST is turned off for 5 seconds.
- Any input points remaining off-normal are indicated again after reset.
- Reset operations are logged into the history.
- If programmed, the panel transmits a reset report to the central station.

Reset operation can also be initiated by the activation of an input point configured as a reset type.

### **Drill**

To activate the drill operation, the [DRILL] key must be pressed twice to prevent accidental activation. Pressing the key once the system prompts for confirmation. Pressing the [DRILL] key again turns on all unbypassed NACs and drillable relay outputs.

Upon drill operation, the following actions occur:

- All unbypassed NACs turn on.
- At the beginning of a drill operation, a Drill Start Report is logged into the history and, if programmed, transmitted to the central station.
- Each NAC plays the pattern programmed for it.

Drill operation stops if the reset key is pressed, or is automatically cancelled if the operation was started for a programmed time.

When the drill operation stops, the following actions occur:

- All activated NACs turn off.
- A Drill Stop Report is logged into the history and, if programmed, transmitted to the central station.
- A system reset is automatically performed by stopping the drill so that the panel and all field devices restore to their normal operation.

Drill operation can also be initiated by activation of an input point configured as a drill type. After a user presses the drill key, the panel requests confirmation or, if necessary, entry of the PIN code.

## **5.4 Authority Level and PIN Codes**

The panel offers different authority levels. The front door key is required to enter the keypad for navigating menu functions and executing Level 1 operations (control). Authority Levels 2 and 3 each need a Personal Identification Number (PIN). A Level 2 or 3 PIN code is needed for further operation. The PIN is a four-digit code. Valid digits are numbers from 0 to 9.

The operations allowed for each authority level set by default can be changed by an authorized Level 3 user. For special applications, PIN assignment for reset, silence or drill operation (control) is optional.

In addition, you can access the FPA-1000 Web pages for viewing only with the Web operator PIN.

The default PIN codes for the different authority levels are listed in *Table 5.4 on Page 92*.

Change these codes to codes of your personal preference. Do not program PINs with common sequences such as 1111, 1234, or 2468 because they are easily violated. Do not share your Personal Identification Number (PIN) with another person.

At the panel, you need the front door key to access the acknowledge [ACK] key. At a Remote Annunciator or a Remote Command Center, the scrolling functions and the acknowledge [ACK] key are accessible without restriction. On the Remote Command Center, the keys for reset, silence or drill can be enabled and disabled by the device key.

Authority Level	Access	Default PIN	Description
Level 1	Key (no PIN)	-	Basic operation level
Level 1RSD <sup>1)</sup>	PIN	1111	Reset, silence and drill
Level 2	PIN	2222	Maintenance level
Level 3	PIN	3333	Programming level
Web Operator Level	PIN	0000	Login from Web browser (for viewing only)
<sup>1)</sup> For special applications, PIN assignment for reset, silence and drill is required (control).			

**Table 5.4** Overview of Authority Level and Default PINs

The operations assigned to the authority levels in default mode, and assignment that can be changed by programming are described in *Table 5.5*. For detailed information on changing the authority level assignment, refer to:

- ▶ 6-PROGRAMMING, 5-USER ACCESS, 1-USER PIN CODES on page 106 in *Section 5.7.6 PROGRAMMING*, starting on *Page 112* or to *Section 6.7.1 Site Data* on *Page 146*.

Authority Level	Operations						
	Reset, Silence, Drill	History	Walk Test	Test	Change Date/Time	Bypass/Unbypass	Programming
Level 1	D <sup>1)</sup>	D	P	P	D	P	-
Level 2	+	+ / -	D	D	P	D	-
Level 3	+	+	+	+	+	+	+
P	Operation can be enabled or disabled in this authority level by programming						
D	Operation is enabled by default and can be disabled in this authority level						
-	Operation is not allowed in this authority level						
+	Operation is always enabled in this authority level						
<sup>1)</sup>	PIN assignment is optional for reset/silence/drill (Level 1RSD)						

**Table 5.5** Overview of Authority Level and Assigned Operations (Default and Programmable)

After pressing the Enter key [↵], the main menu appears and the user can press any shortcut key (refer to *Section Shortcuts* on *Page 98*) to perform the operations available. If the selected operation requires access to a higher authority level, the user is asked to enter the PIN. The [ESC] key returns to upper level from the menu. As soon as the initial screen (normal or off-normal state) appears, the screen prompts the user for the PIN again if it is needed for the selected operation.

If no key is pressed within 25 minutes, the display returns to the start display indicating normal state or any off-normal condition.

When logged in at Level 3, an automatic logout is indicated 1 minute in advance. Pressing the Enter key [↵] terminates the automatic logout.

Any operation (except viewing and acknowledge) from local or remote access is logged with the access address (for example the IP address of the PC).

Some operations are logged into the history and, if programmed, reported to central stations. If an invalid PIN is entered, an error beep sounds and the operation is denied.

## 5.5 System Normal Display

With initialization of the system, the display shows:

```
Bosch Fire Systems
FPA-1000
System Initializing
[MM/DD/YY hh:mma]
```

As soon as the configuration is loaded or reloaded, the system asks for date and time. When no alarms or troubles exist in the system, the Power LED lights steadily, and no other LEDs are lit. The display shows:

```
Banner Line 1
Banner Line 2
SYSTEM NORMAL
[MM/DD/YY hh:mma]
```

If the panel is in Day Mode, the display shows:

```
Banner Line 1
Banner Line 2
SYSTEM NORMAL DAY
[MM/DD/YY hh:mma]
```

The user can program the banner lines.

For on-site programming, refer to

- ▶ 6-PROGRAMMING, 6-TIMERS AND SYSTEM, 2-SYSTEM, 9-BANNER LABEL in *Section 5.7.6 PROGRAMMING*, starting on *Page 112*.

The bottom line in the display indicates the current date and time in the format MM/DD/YY and hh:mma (with a for am or pm).

If the system is programmed to require a PIN, the screen shows **Please Enter PIN:**.

The control panel performs the following functions at regular intervals when the system operates normally:

- Polls all circuit devices and the four Notification Appliance Circuits (NACs), checking for valid replies, alarms, troubles, and so on.
- Checks for power supply troubles and batteries.
- Scans the keypad for system reset or Enter commands.
- Performs automatic tests on detectors.
- Tests the system memory.

### Display Placeholders

Refer to *Table 5.6* for placeholders used for normal, off-normal and menu display:

<b>D</b>	Appears in the right upper corner if the system is in Day Mode
<b>pp</b>	Panel number
<b>c or l</b>	Circuit number
<b>aaa</b>	Address
<b>s</b>	Subaddress
<b>MM/DD/YY</b>	Month, day, year
<b>hh:mma</b>	Hour, minute, am or pm
<b>yyy</b>	Number of the event in the list
<b>xxx</b>	Total number of events in the list
[Device Type]	Any text shown in brackets = relevant system information; for example Device Type or Point Type
<i>Label</i>	Any label text shown in Italics can be programmed by the user

**Table 5.6** Display Placeholders.

The displayed point types are listed in *Table 5.7*. For further information of point types, refer to *Section 3.3.1 Points on Page 27*.

<b>FPA-1000 Point Type</b>	<b>Point Type Display</b>
Fire Automatic	DETECTOR
Fire Alarm Manual	PULLSTAT
Waterflow	WATERFLOW
Waterflow with Delay	WATERFLOW
Gas Alarm	GAS ALARM
Supervisory	SUPERVSR
Generic	GENERIC
Trouble	TROUBLE
AC Failure	AC FAULT
Battery Failure	BATT FAULT
Reset	RESET
Silence	SILENCE
Drill	DRILL
Acknowledge	ACK
General Fire Alarm	FIRE ALARM GENERAL

**Table 5.7** Point Type Display

The abbreviations used in display texts are listed in *Section A.1 Abbreviations on the Control Panel Display on Page 168*.

## 5.6 Off-normal Display

If any off-normal condition exists, the panel shows the first highest-priority condition.

Conditions are classified in groups that include fire alarm, gas alarm, supervisory and trouble. For each group, the number of off-normal conditions is shown

The panel stores up to 255 events for each group at a time. Any restored event is deleted from the list. If more than 255 events exist, the newest events are discarded.

Left and right keys are used to switch between fire alarm, gas alarm, supervisory and trouble messages. The scroll down key is used to view individual messages. The [ESC] key returns the user to the upper level.

### Fire Alarm Screen

Fire Alarms:	10
Press v To View	
Press </> To View	
Troubles/Gas Alarms	

The example above shows ten fire alarm messages. Press [^] or [v] to view individual alarm screens.

<b>FIRE ALM</b> [pp - l - aaa.s]
[MMDDYY hh:mmayyy/xxx]
[Device Type]
<i>Point Label</i>

### PAS Acknowledge Screen

Fire Alarms:	1
Press v To View	
To Investigate	
ACK Within 15 Seconds	

The time is counted down until time-out. Without acknowledging, the system switches back to the general Fire Alarm screen. If [ACK] is pressed within the acknowledge time, the system shows the PAS Reset screen.

### PAS Reset Screen

Fire Alarms:	1
Press v To View	
Investigating	
RESET Within 180 Seconds	

The example shows a programmed PAS investigation time of 180 seconds (= default). The time is counted down until time-out. Without reset, the system switches back to the general Fire Alarm screen. If [RESET] is pressed within delay time, the system shows the PAS Reset screen. If the point is not in alarm, it will then go to normal screen. If the point is still in alarm, it will display investigating again.

### Gas Alarm Screen

Gas Alarms:	3
Press v To View	
Press </> To View	
Fire Alarms/Supervsr	

The example above shows three gas alarm messages. Press [^] or [v] to view individual gas alarm screens.

```

GAS ALM [pp - l - aaa.s]
[MM/DD/YY hh:mmayyy/xxx]
[Device Type]
Point Label

```

### Supervisory Screen

```

Supervisories:           5
Press v To View
Press </> To View
Gas Alarms/Troubles

```

The example above shows five supervisory messages. Press [^] or [v] to view individual supervisory screens.

```

SUPERVSR [pp - l - aaa.s]
[MM/DD/YY hh:mmayyy/xxx]
[Device Type]
Point Label

```

### Trouble Screen

```

Troubles:                100
Press v To View
Press </> To View
Supervsr/Fire Alarms

```

The example above shows 100 trouble messages. Press [^] or [v] to view individual trouble screens.

```

TROUBLE [pp - l - aaa.s]
[MM/DD/YY hh:mmayyy/xxx]
[Device Type] [Trouble Type]
Point Label

```

### Walk Test Screen

When the walk test starts, the screen shows:

```

TROUBLE [pp - l - aaa.s]           100
[MM/DD/YY hh:mmayyy/xxx]
[User Level] Walk Test
[Inputs to test]

```

[Inputs to test] = selected range of operation

When walk test ends, the screen shows:

```

TRB RST [pp - l - aaa.s]           100
[MM/DD/YY hh:mmayyy/xxx]
[User Level] Walk Test
[Inputs to test]

```



If the walk test is stopped by a reset input point on the SLC, this device type is shown instead of the user level.

### History Screen for Controls

Viewing controls, the screen shows:

```
hCONTROL [pp - l - aaa.s]      100
[MM/DD/YY hh:mmayyy/xxx]
[Device Type] [Control Cat.]
Point Label
```

[Control Cat.] = Control Category: Reset, Silence or Drill, Generic, Unverified or Comm Test  
Generic controls, unverified activation event from input points programmed as Alarm Verification type and communicator test (either automatically by the panel or manually by the user) are listed in Controls category.

### Screen for Remote Programming Dialer Trouble

```
TROUBLE [pp - l - aaa.s]      100
[MM/DD/YY hh:mmayyy/xxx]
Dialer Answering
#####
```

The bottom line shows the phone number if no longer than 20 digits, or number signs if longer than 20 digits, or “Unknown” if no caller ID is detected.

## 5.7 Menu Navigation and Structure

As soon as a user presses a valid key and starts an operation, a user timer starts and the panel monitors for further key press activities. If no key is pressed within 25 minutes, the panel automatically returns to the normal state or off-normal state. When the Enter key [↵] is pressed, the main menu appears and the user can press any shortcut key to perform the operations available, if allowed. The user might be asked to enter a PIN code if needed for the requested operation. The [ESC] key is for the user to return to the upper level from the menu. As soon as the user returns to the normal or off-normal state, he or she must enter the PIN code again if needed for the operation. Some operations are logged into the history and, if programmed, reported to the central station(s).

Every menu has its description, which can be abbreviated, on the first line of display. The submenus, options, or actions under this menu are listed on the second to the fourth line, each item on one line. If there are more than three items, items other than 1 to 3 can be viewed with the [v] key. Every [v] key press switches the screen to next three items, and so on. The [^] key can be used to view the previous items with every key press to the previous three items.

Every item starts with a number, which represents the corresponding shortcut number key to select the item (refer to *Section Shortcuts* below). The shortcut key is also valid even when the item is not currently displayed.

If there are more than nine items under a menu, the items are organized as two pages. The [9] key is used to switch in between pages.

The [^] key is not valid on the first three items, the [v] key is not valid on the last three items. For configuration items, the currently selected choice is indicated with an equal sign (=) while others have a space between the shortcut number and the description.

On a menu with on/off actions, for example output testing menus, the panel indicates the last action performed using an equal sign (=) instead of an arrow (->).

### Shortcuts

Shortcuts can reduce repetition and provide speedy instructions for operating and programming the control panel.

The first level in the system is the main menu including six menu items. For example, HISTORY is menu item 1, PROGRAMMING is menu item 6. Therefore, the first number in the shortcut is "1" for HISTORY and "6" for PROGRAMMING.

The second level options are listed in the Level 2 column in the tables in *Section Menu Structure* on *Page 99*. For example, there are three options for menu item HISTORY and nine options for menu item PROGRAMMING.

The second number in the shortcut enters the Level 2 option and allows access to Level 3. For example, use shortcut 6-9 for the Auto Learn option in the PROGRAMMING menu. Level 3 provides the third set of options that branch from Level 2 (refer to the Level 3 column in the tables in *Section Menu Structure* on *Page 99*). The third number in the shortcut represents the option chosen in Level 3. For example, use shortcut 6-9-2 for the Auto Learn option for the SLC 1.

The shortcut is simply a list of the keys you press to get to the required level option. A shortcut key is valid even when the item is not currently displayed. After you enter the shortcut, follow the procedure that appears on the screen of the specific function you are operating or programming.

Throughout this chapter, the text that indicates shortcut keys appear different from the rest of the text as follows:

► **6-PROGRAMMING, 9-AUTO LEARN, 2-SLC 1**

### Menu Highlighting

The choices of a submenu are listed with number and menu item, divided by a hyphen.

A currently selected menu item is highlighted with "=" while others have a space between the number and the menu item.

For menus with on and off actions as items, the last performed action is highlighted using a "=" instead of a "→".

**Menu Structure**

Level 1 (Main Menu)	Level 2	Level 3	Level 4
<b>1-HISTORY</b>	1-VIEW HISTORY	1-ALL 2-FIRE ALARMS 3-GAS ALARMS 4-SUPERVISORIES 5-TROUBLES 6-CONTROLS 7-COMM RETRIES	
	2-PRINT HISTORY	1-ALL 2-FIRE ALARMS 3-GAS ALARMS 4-SUPERVISORIES 5-TROUBLES 6-CONTROLS 7-COMM RETRIES	
	3-WALK TEST LOG		
	4-PRT WALK TEST LOG		
<b>2-WALK TEST</b>	1-INPUTS TO TEST (single panel - no network)	1-PANEL WIDE 2-SLC 1 3-SLC 2 4-SELECT ZONES	
	1-INPUTS TO TEST (network enabled)	1-NETWORK WIDE 2-SELECT PANEL 3-SELECT ZONES	
	2-AUDIBLE	1-SILENT 2-SHORT ACTIVATION 3-LONG ACTIVATION	
	3-START WALK TEST		
	4-PRT WALK TEST LOG		
Depending on whether or not a network is enabled, either the single panel or network 1-INPUTS TO TEST screen will be displayed.			

Level 1 (Main Menu)	Level 2	Level 3	Level 4	
<b>3-TEST MENU</b>	1-COMM TEST	1-PRIMARY/LINE 1 2-PRIMARY/LINE 2 3-SECONDARY/LINE 1 4-SECONDARY/LINE 2 5-PRIMARY IP 6-SECONDARY IP 7-CITY TIE 1 8-CITY TIE 2		
	2-SLCS	1-SLC 1 DIAGNOSTICS 2-SLC 2 DIAGNOSTICS 3-PRINT SLC 1 DIAG 4-PRINT SLC 2 DIAG		
	3-POWER AND BATT	1-VOLTAGE LEVELS 2-TEST BATTERY/NACS		
	4-OUTPUTS	1-MB/OB RELAYS		1-MB RELAY 1 2-MB RELAY 2 3-MB RELAY 3 4-RELAY MODULE 1@9 5-RELAY MODULE 2@10
		2-MB/OB NACS		1-MB NAC 1 2-MB NAC 2 3-REMOTE NAC 1@11 4-REMOTE NAC 2@12 5-REMOTE NAC 3@13 6-REMOTE NAC 4@14
		3-SLC 1 RELAYS		
		4-SLC 1 LEDS/RLEDs		
		5-SLC 1 NACS		
		6-SLC 2 RELAYS		
		7-SLC 2 LEDS/RLEDs		
		8-SLC 2 NACS		
	5-LAMP TEST			
	6-VIEW OPTION BUS			
	7-VIEW SYSTEM INFO	1-SYSTEM REVISIONS 2-NETWORK INFO 3-MODULE REVISIONS 4-PANEL ID		
8-Reserved for future use.				
<b>4-CHANGE DATE/TIME</b>	Current Date/Time [MM/DD/YY hh:mm]			

Level 1 (Main Menu)	Level 2	Level 3	Level 4
<b>5-BYPASS/UNBYPASS</b>	1-GLOBAL	1-ALL INPUT POINTS 2-ALL OUTPUTS 3-ALL SLCS 4-ALL ZONES 5-UNBYPASS ALL	
	2-SLCS	1-SLC 1	1-THE WHOLE SLC 2-ALL INPUT POINTS 3-SELECT ADDRESS
		2-SLC 2	1-THE WHOLE SLC 2-ALL INPUT POINTS 3-SELECT ADDRESS
	3-ZONES	1-BYPASS ZONES	1-BYPASS 2-UNBYPASS
	4-MB/OB OUTPUTS	1-RELAYS	1-MB RELAY 1 2-MB RELAY 2 3-MB RELAY 3 4-RELAY MODULE 1@9 5-RELAY MODULE 2@10
		2-NACS	1-MAINBOARD NAC 1 2-MAINBOARD NAC 2 3-REMOTE NAC 1@11 4-REMOTE NAC 2@12 5-REMOTE NAC 3@13 6-REMOTE NAC 4@14
		3-CITY TIES	1-CITY TIE 1 2-CITY TIE 2
	5-DAY MODE	1-NO DELAY 2-PAS 3-PRE-SIGNAL	
6-LIST OF BYPASSED	1-BYPASSED ZONES 2-BYPASSED I/O		

Level 1 (Main Menu)	Level 2	Level 3	Level 4
<b>6-PROGRAMMING</b>	1-SLC DEVICES	1-SLC 1	1-ADD A DEVICE 2-EDIT A DEVICE 3-DELETE DEVICES 4-COPY DEVICES 5-SLC WIRING 6-SLC LABEL 7-RECONFIG A DEVICE
		2-SLC 2	1 to 7 same as 1-SLC 1 8-INSTALLED
	2-OUTPUTS/OPTION BUS	1-RELAYS/OUTPUTS	1-MAINBOARD RELAYS 2-REMOTE MODULE 1@9 3-REMOTE MODULE 2@10
		2-NACS	1-MAINBOARD NACS 2-RNAC MODULE 1@11 3-RNAC MODULE 2@12 4-RNAC MODULE 3@13 5-RNAC MODULE 4@14
		3-SILENCE CONFIG	1-AUDIBLE ONLY 2-AUDIBLE/VISIBLE
		4-ZONE LED RANGE	1-ZONES 1-128 2-ZONES 129-255
		5-CITY TIES	1-CITY TIE 1 2-CITY TIE 2 3-BOARD INSTALLED 4-EVENT RANGE
	3-ZONES/FLOORS	1- DUAL-ZONES	1-PAIRS 1-3 2-PAIRS 4-6 3-PAIRS 7-9 3-PAIRS 10-12 3-PAIRS 13-15 3-PAIRS 16-18
		2- SW OR GLOBAL ZONES	SELECT ZONE: ??
		3- FLOORS	SELECT FLOOR: ??
	4-DATE/TIME	1-TIME FORMAT	1-12 HOURS 2-24 HOURS
		2-DAY SENSITIVITIES	1-DAY SENSI ENABLE 2-DAY SENSI START 3-DAY SENSI END
		3-DAYLIGHT SAVINGS	1-ENABLE/DISABLE 2-START END

The grayed sections indicate parameters that can be programmed remotely.  
 In 3-ZONES/FLOORS, 2-SW OR GLOBAL ZONES, only local zones (1-128) can be programmed remotely; group zones (129-255) and global zones (256-234) are not available for remote programming.

Level 1 (Main Menu)	Level 2	Level 3	Level 4
<b>6-PROGRAMMING</b>	5-USER ACCESS	1-USER PIN CODES	1-PIN FOR CONTROL 2-LEVEL 2 PIN CODE 3-LEVEL 3 PIN CODE 4-WEB OPERATOR PIN
		2-OPERATIONS/LEVEL	1-CONTROLS 2-VIEW/PRT HISTORY 3-WALK TEST 4-TEST MENU 5-CHANGE DATE/TIME 6-BYPASS/UNBYPASS
		3-REMOTE PROG	1-CONFIRM AT PANEL 2-ENABLE 3-DISABLE
		4-SILENCE ENABLE	1-ENABLE 2-DISABLE
		5-DRILL ENABLE	1-ENABLE 2-DISABLE
	6-TIMERS AND SYSTEM	1-TIMERS	1-AC FAIL DELAY 2-AUTO SILENCE 3-WATERFLOW DELAY 4-VERIFICATION 5-SILENCE INHIBIT 6-INVESTIGATION 7-SANDWICH DELAY 8-DUAL-ZONE 1ST ALM 9-SEQUENTIAL RESET
		2-SYSTEM	1-WATERFLOW SILENCE 2-AUTO SILENCE 3-SUPERVSR LATCH
			4-EXTERNAL POWER
			5-PANEL IP AND ID
			6-PRINTER
			7-PANEL LANGUAGE
			8-UNIT FORMAT
		9-BANNER LABEL	
		3-ERASE HISTORY	
4-ADVANCED FEATURES	1-AUX POWER RESET 2-D-ZONE 1st ALARM		
	3-SANDWICH ALARM		
	4-EVENT PRINTING 5-GLOBAL DELAY MODE		
The grayed sections indicate parameters that can be programmed remotely.			

Level 1 (Main Menu)	Level 2	Level 3	Level 4	
<b>6-PROGRAMMING</b>	7-DACT	1-PRIMARY ACCOUNT	1-ACCOUNT NUMBER 2-REPORTING FORMAT 3-REPORTING PATH 4-PHONE NUMBER 5-IP REPORTING 6-AUTO TEST TIME 7-AUTO TEST FREQ 8-MAXIMUM ATTEMPTS	
		2-SECONDARY ACCOUNT	Same as 1-PRIMARY ACC.	
		3-REPORT STEERING	1-ALARMS 2- SUPERVISORIES 3-ALARM RESTORALS 4-SUPERVISORY RST 5-TROUBLE/RESTORE 6-TESTINGS 7-SILENCE 8-RESET 9-DRILL	
		4-REDIAL INTERVAL		
		5-DIALING TYPE	1-TONE DIALING 2-PULSE DIALING	
		6-LINE MONITOR	1-LINE 1 MONITOR 2-LINE 2 MONITOR	
		7-LINE 1 RING COUNT		
		8-REPORT RANGE	1-PANEL WIDE 2-RESERVED 3-NETWORK WIDE	
		9-RESERVED		
	8-NETWORKING	1-NETWORK CARD	1-INSTALLED 2-PORT SUPERVISION	
		2-NETWORK WIRING	1-CLASS A 2-CLASS B	
		3-PANEL MANAGEMENT	1-ADD A PANEL 2-EDIT A PANEL 3-DELETE A PANEL	
	9-AUTO LEARN	1-ALL 2-SLC 1 3-SLC 2 4-ALL SLCS 5-UPDATE OPTION BUS 6-ALL DIFFERENCES 7-RETURN TO DEFAULT		
	The grayed sections indicate parameters that can be programmed remotely.			



Level 1 (Main Menu)	Level 2	Level 3	Level 4
<b>7-RESET LEVEL 3 PIN</b>	1-GET BUILDING CODE 2-ENTER CHECK CODE		

Level 1 (Main Menu)	Level 2	Level 3	Level 4
---------------------	---------	---------	---------

This menu will display only if NETWORK CARD INSTALLED (6-8-1-1) is selected.			
<b>8-REMOTE PROGRAM</b>	1-SELECT PANEL 2-PANEL ID		

### 5.7.1

#### HISTORY

This feature allows you to view and print the system history. The panel has storage capacity for up to 1000 history events. The events are stored in a queue which is organized in a first-in-first-out style. The panel always shows the newest stored event in a group at first.

##### ► 1-HISTORY, 1-VIEW HISTORY

Select the scope you want to view:

- 1-ALL
- 2-FIRE ALARMS
- 3-GAS ALARMS
- 4-SUPERVISORIES
- 5-TROUBLES
- 6-CONTROLS
- 7-COMM RETRIES

Example for a history screen (marked with “h” in front of the event):

```

hFIRE ALM [pp - l - aaa.s]
[MMDDYY hh:mmayyy/xxx]
[Device Type]
(Point) Label
    
```

Any screen information is arranged in a similar order. For examples and details, refer to *Section 5.6 Off-normal Display on Page 94* and *Section Display Placeholders on Page 94*. Press [v] or [^] to viewing the next or latest event. If no events are stored in the selected group, the display shows “No history records!”.

##### ► 1-HISTORY, 2-PRINT HISTORY

The submenu options for 2-PRINT HISTORY are the same as for 1-VIEW HISTORY. The display states “Printing ...” when printing is in process, “Printing Finished” after completion, or “Printing Error” if printing fails.

##### ► 1-HISTORY, 3-WALK TEST LOG

If no events are stored in the walk test log, the display shows “No Walk Test Log!”. For viewing activation in the walk test log, refer to *Section Walk Test Screen on Page 96* and *Section Display Placeholders on Page 94*.

► **1-HISTORY, 4-PRT WALK TEST LOG**

The display states “Printing ...” when printing is in process, “Printing Finished” after completion, or “Printing Error” if printing fails.

## 5.7.2

### WALK TEST

This feature allows you to perform a walk test.

The walk test allows an individual to test the fire alarm system without the necessity to reset the control panel after each device. The menu options allows the person to select the options for testing inputs, select the audibility options, start the walk test and print the walk test log. To stop a walk test operation manually, press the Enter key [↵].

► **2-WALK TEST, 1-INPUTS TO TEST**

One of the following two screens will display depending on whether or not a network is enabled.

Input options for single panel (no network):

- 1-PANEL WIDE
- 2-SLC 1
- 3-SLC 2
- 4-SELECT ZONES

Input options for a group (network enabled):

- 1-NETWORK WIDE
- 2-SELECT PANEL Choose a panel ID using the [v] or [^] key
- 3-SELECT ZONES

► **2-WALK TEST, 2-AUDIBLE**

Options are:

- 1-SILENT
- 2-SHORT ACTIVATION Activates for 5 seconds
- 3-LONG ACTIVATION Activates for 10 seconds

► **2-WALK TEST, 3-START WALK TEST**

When you enter this shortcut, the selected scope and audible mode are shown on the screen. The settings are panel wide and long activation. When testing a 440 series detector, the panel will show a WALK TEST STARTING screen which times out after 72 seconds. The panel then shows the WALK TEST IN PROGRESS screen. When the walk test is in progress, the activated point type shows on the second line and the remaining time shows on the third line. As each new point is activated, the timer reverts to 25 minutes. When the walk test ends, the log is automatically saved. The message “Log is saved” appears for 3 seconds. To stop the walk test, press the Enter key [↵]. To exit without stopping the walk test, press the [ESC] key. The panel exits automatically if a new alarm occurs.

► **2-WALK TEST, 4-PRT WALK TEST LOG**

This option is the same as 1-HISTORY, 4-PRT WALK TEST LOG.

## 5.7.3

### TEST MENU

The test menu allows an authorized user to test all communication paths, the SLCs, power and battery condition, and the outputs (mainboard relays, relay modules, NACs). It also allows the user to view option bus accessories and system information and to switch between day and night mode.

► **3-TEST MENU, 1-COMM TEST**

This feature allows you to test PSTN lines, IP connections and City Tie circuits.

- 1-PRIMARY/LINE 1
- 2-PRIMARY/LINE 2
- 3-SECONDARY/LINE 1
- 4-SECONDARY/LINE 2
- 5-PRIMARY IP
- 6-SECONDARY IP
- 7-CITY TIE 1
- 8-CITY TIE 2

► **3-TEST MENU, 1-COMM TEST, 1-PRIMARY/LINE 1 or 2-PRIMARY/LINE 2 or 3-SECONDARY/LINE 1 or 4-SECONDARY/LINE 2**

Depending on configuration and status the following screens appear:

Sending Test Report	If the system is configured as PSTN.
Press Esc To Cancel	
Test Successful	If the test was successful.
Test Failed	If the communicator test failed.
Account Disabled!	If the account is disabled.
Communicator Busy!	If the test can not be performed because communicator is busy.
Primary Is IP / Secondary Is IP	If the primary or secondary account is configured as IP.

Press the [ESC] key to cancel.

► **3-TEST MENU, 1-COMM TEST, 5-PRIMARY IP or 6-SECONDARY IP**

Depending on configuration and status, the following screens appear:

Sending Test Report.	If the system is configured as IP.
Press Esc To Cancel.	
Test Successful	If the test was successful.
Test Failed	If the communicator test failed.
Primary Is PSTN / Secondary Is PSTN	If the primary or secondary account is configured as PSTN.

Press the [ESC] key to cancel.

► **3-TEST MENU, 1-COMM TEST, 7-CITY TIE 1 or 8-CITY TIE 2**

Depending on configuration and status, the following screens are displayed:

Testing. Verifying...	When testing (only for Local Energy Mode).
Press Esc To Cancel	
Test Successful	If the test was successful (no need to wait for feedback if programmed as Reverse Polarity Mode).
Test Failed	If the communicator test failed (not possible for Reverse Polarity Mode).
City Tie Bypassed!	If the City Tie Module is configured as bypassed.

City Tie Disabled!	If the City Tie Module is configured as disabled.
No City Tie To Test!	If no City Tie Module is configured.
Module Not Installed	If the City Tie is configured but no module installed.

Use [ESC] key to cancel.

### ► 3-TEST MENU, 2-SLC CIRCUITS

This feature allows you to recall and print SLC 1 and SLC 2 diagnostics:

- 1-SLC 1 DIAGNOSTICS
- 2-SLC 2 DIAGNOSTICS
- 3-PRINT SLC 1 DIAG
- 4-PRINT SLC 2 DIAG

For menu items 1 and 2: Enter the address and, if needed, the subaddress of the SLC device to be tested.

The diagnostic screen shows the following information:

aaa	[Device Type]	Dirt
Device specific information		
Value	Set	Loss
[Device specific information]		

The following placeholders are used:

aaa	Device's physical address
Dirt	Compensation value of clean air in percentage
Value	Current analog value or status (Normal, Alarm or Trouble)
Set	Set device configuration value (for example, analog value) or detailed trouble information (Internal, Missing, New Device, Wrong Type, Dirty, Calibration, Initialize, Bypassed, and so on, depending on the device type)
Loss	Communication package loss, maximum 255

### ► 3-TEST MENU, 3-POWER AND BATT

The power and battery test can be done only if the system is not in external power supply mode. The display shows "Panel in external power supply mode!" and the battery load test is blocked.

This feature allows you to display the AC, auxiliary and battery power, and to test the battery voltage of your system.

- 1-VOLTAGE LEVELS

The system displays:

AC: Good or AC: Bad  
 AUX1: [xx.xx V]  
 BATTERY: [xx.xx V] or  
 BATT Faulted [xx.xx V] or  
 BATTERY Disconnected.  
 Turns on NACs to measure  
 battery voltage

- 2-TEST BATTERY/NACS

Depending on whether the test was successful or not, the message "Passed" or "Failed" appears on the screen.

If the battery is faulted or disconnected, the test is not performed and the display shows “Battery Faulted, Test Not Allowed!” or “Battery Disconnected”.

▶ **3-TEST MENU, 4-OUTPUTS**

This feature allows you to test the relays, NACs, SLC relays and SLC LEDs on your system.

Select the output to be tested according the submenu Level 3 as follows. For activating or deactivating, enter:

- 1-TURN ON
- 2-TURN OFF

The display shows “No Devices To Test” if device is not configured.

▶ **3-TEST MENU, 4-OUTPUTS, 1-MB/OB RELAYS**

This feature allows you to test the mainboard relays and relay modules connected to the Option Bus on your system. You can also turn each of the eight relays on each relay module on or off.

- 1-MB RELAY 1
- 2-MB RELAY 2
- 3-MB RELAY 3
- 4-RELAY MODULE 1@9
- 5-RELAY MODULE 2@10

▶ **3-TEST MENU, 4-OUTPUTS, 2-MB/OB NACS**

This feature allows you to test the mainboard NACS and all NACS connected to the Option Bus on your system.

- 1-MAINBOARD NAC 1
- 2-MAINBOARD NAC 1
- 3-REMOTE NAC 1@11
- 4-REMOTE NAC 2@12
- 5-REMOTE NAC 3@13
- 6-REMOTE NAC 4@14

▶ **3-TEST MENU, 4-OUTPUTS, 3-SLC1 RELAYS, and  
3-TEST MENU, 4-OUTPUTS, 6-SLC2 RELAYS**

This feature allows you to test the relay modules connected to the SLC 1 and SLC 2 on your system. Enter the address and, if needed, the subaddress of the relay to be tested. Select 1-TURN ON and 2-TURN OFF to start and stop the test.

▶ **3-TEST MENU, 4-OUTPUTS, 4-SLC1 LEDS/RLEDS  
3-TEST MENU, 4-OUTPUTS, 7-SLC2 LEDS/RLEDS**

This feature allows you to test the LEDs on devices connected to the SLC 1 and SLC 2. Select a device by entering the appropriate address and, if needed, the subaddress. Select 1-LED ON and 2-LED OFF or 3-RLED ON and 4-RLED OFF to start and stop the test.

▶ **3-TEST MENU, 4-OUTPUTS, 5-SLC1 NACS  
3-TEST MENU, 4-OUTPUTS, 8-SLC2 NACS**

This feature allows you to test the NACS connected to the SLCs. Select NAC device by entering the appropriate address. Select 1-TURN ON and 2-TURN OFF to start and stop the test.

▶ **3-TEST MENU, 5-LAMP TEST**

Enter this shortcut to perform a lamp test. If no LED annunciators are configured, the system displays “No LED Annunciators”. To start the lamp test, press the [¿] key. All LEDs including the Power and Trouble and Zone LEDs are turned on for approximately 5 seconds. The screen shows “Lamp Test In Process”. Press the [ESC] key to stop a lamp test manually. If the test is not stopped by the user, “Lamp Test Finished” appears for 3 seconds when all LEDs are tested.

► **3-TEST MENU, 6-VIEW OPTION BUS**

Enter this shortcut to view a list of Option Bus accessories with the number of devices according to the configuration.

► **3-TEST MENU, 7-VIEW SYSTEM INFO**

Enter this shortcut to view system information such as software version, configuration version, last programming, and service information.

► **3-TEST MENU, 7-VIEW SYSTEM INFO, 1-SYSTEM REVISIONS**

Enter this shortcut to view the current software version, configuration version, and last programming date.

► **3-TEST MENU, 7-VIEW SYSTEM INFO, 2-NETWORK INFO**

Enter this shortcut to view the panel’s gateway, IP address, and netmask.

► **3-TEST MENU, 7-VIEW SYSTEM INFO, 3-MODULE REVISIONS**

Enter this shortcut to view the device’s version of the keypad, the SLC 1 and SLC 2 (if applied).

► **3-TEST MENU, 7-VIEW SYSTEM INFO, 4-PANEL/GROUP ID**

Enter this shortcut to view the device’s version of the Panel ID and Group ID.

## 5.7.4 CHANGE DATE/TIME

► **4-CHANGE DATE/TIME**

Use this menu item to enter the current date and time.

## 5.7.5 BYPASS/UNBYPASS

Use this menu item to bypass or unbypass global commands, SLCs, zones or outputs.

► **5-BYPASS/UNBYPASS, 1-GLOBAL**

This feature allows you to bypass or unbypass globally by selecting:

- 1-ALL INPUT POINTS
- 2-ALL OUTPUTS
- 3-ALL SLCS
- 4-ALL ZONES
- 5-UNBYPASS ALL

► **5-BYPASS/UNBYPASS, 2-SLCS**

This feature allows you to select the SLC for bypassing or unbypassing. Further selection is possible in submenu.

- |         |                       |
|---------|-----------------------|
| 1-SLC 1 | 1-THE WHOLE SLC       |
|         | 2-ALL INPUT POINTS    |
|         | 3-SELECT ADDRESS      |
| 2-SLC 2 | Same submenu as SLC 1 |

Select 1-BYPASS or 2-UNBYPASS.

When choosing 3-SELECT ADDRESS, depending on the device type, the system offers a subaddress selection.

► **5-BYPASS/UNBYPASS, 3-ZONES**

Use this feature to select a zone by inserting the zone number and choose to bypass or unby pass it.

► **5-BYPASS/UNBYPASS, 4-MB/OB OUTPUTS**

This feature allows you to bypass or unby pass the relays and NACs on your system.

► **5-BYPASS/UNBYPASS, 4-MB/OB OUTPUTS, 1-RELAYS**

This feature allows you to bypass or unby pass the mainboard relays 1, 2 or 3 and also the relay module 1@9 and 2@10. You can bypass or unby pass each mainboard relay and also each of the eight relays on the relay module 1@9 and 2@10 individually.

► **5-BYPASS/UNBYPASS, 4-MB/OB OUTPUTS, 2-NACS**

This feature allows you to bypass or unby pass the mainboard NAC 1 and NAC 2 and also the four remote NAC modules. You can bypass or unby pass each mainboard NAC and also each of the four NACs on any of the remote NAC modules (1@11, 2@11, 3@11, 4@11, accordingly 1@12 to 4@12, 1@13 to 4@13 and 1@14 to 4@14).

► **5-BYPASS/UNBYPASS, 4-MB/OB OUTPUTS, 3-CITY TIES**

This feature allows you to bypass or unby pass each City Tie circuit individually. Select 1-CITY TIE 1 or 2-CITY TIE 2 and choose 1-BYPASS or 2-UNBYPASS.

► **5-BYPASS/UNBYPASS, 5-DAY MODE**

This feature allows you to select no delay, PAS, Pre-signal, or Sandwich alarm in Day Mode:

- 1-NO DELAY
- 2-PAS
- 3-PRE-SIGNAL
- 4-SANDWICH

► **5-BYPASS/UNBYPASS, 6-LIST OF BYPASSED**

Use this shortcut to get a list of bypassed zones or inputs and outputs.

The items are listed in the order of zone number or address.

Press the [v] or [^] key to go to the next or previous bypassed zone. The display stops at the first or last zone. Use the Enter key [↵] to unby pass the selected zone.

► **5-BYPASS/UNBYPASS, 6-LIST OF BYPASSED, 1-BYPASSED ZONES**

If any zone is bypassed, the screen shows:

BYPASSED ZONES	5.6.1
Zone pp-z-xxx	
Zone Label	
Enter - Unby pass	

Press the [v] or [^] key to go to the next or previous bypassed zone. The display stops at the first or last zone. Use the Enter key [↵] to unby pass the selected zone.

► **5-BYPASS/UNBYPASS, 6-LIST OF BYPASSED, 2-BYPASSED I/O**

If any input or output is bypassed, the screen shows:

BYPASSED I/O	5.6.2
[Device Type] pp-z-xxx	
<i>Point or Loop Label</i>	
Enter - Unbypass	

Press the [v] or [^] key to go to the next or previous bypassed point. The display stops at the first or last point. Use the Enter key [↵] to unbypass the selected point.

## 5.7.6

### PROGRAMMING



**NOTICE!**

Before programming inputs and outputs, it is recommended that the zones be programmed first. Mapping inputs and outputs to a zone is then easier.

► **6-PROGRAMMING, 1-SLC DEVICES**

This feature allows you to program devices on the SLC 1 and SLC 2. For each circuit you have the following options:

- 1-ADD A DEVICE
- 2-EDIT A DEVICE
- 3-DELETE DEVICES
- 4-COPY DEVICES
- 5-SLC WIRING
- 6-SLC LABEL
- 7-RECONFIG A DEVICE
- 8-INSTALLED (only for SLC 2)

For example, you can use the following shortcuts for programming devices on either SLC 1 or SLC 2:

► **6-PROGRAMMING, 1-SLC DEVICES, 1-SLC 1, 1-ADD A DEVICE**

► **6-PROGRAMMING, 1-SLC DEVICES, 2-SLC 2, 1-ADD A DEVICE**

This feature allows you to add a device on the circuit. The system displays the next available address on the circuit. Press the Enter key [↵] to accept the address or enter another address. If the selected address has a device, the screen displays the type number.

Otherwise, the screen shows “No Device”. Use the [v] or [^] key to select or change the device type. Then press the Enter key [↵]. The editing screen appears according to the device type (refer to *Section Edit a Device* below).

**Edit a Device**

► **6-PROGRAMMING, 1-SLC DEVICES, 1-SLC 1, 2-EDIT A DEVICE** or

► **6-PROGRAMMING, 1-SLC DEVICES, 2-SLC 2, 2-EDIT A DEVICE**

This feature allows you to edit an input or an output device on the circuit. Select the device by its address to edit it. Upon entering the device type, the editing screen is displayed according to the device type (refer to *Section Edit a Device* below).

The option “No Device” can be selected to delete a device.

When programming the SLC devices, first select the device group type and then specify the type number (refer to the type designations in brackets in the following tables, or refer to *Table 2.8 on Page 23*).

The programming options depend on the device type.





**NOTICE!**

Delay mode is valid only if the point type is Fire Automatic.  
 For prioritization of day mode and SLC input delay options, refer to *Table 3.4 on Page 29*.

**Device Group Type SMOKE-M**

**FAP-325-T Analog Multisensor Smoke Detector [SMOKE-M]**

**FAP-440-T Analog Multisensor Smoke Detector [SMOKE-M]**

**FAP-440-TC Analog Multicriteria Smoke Detector [SMOKE-M]**

**FAP-440-DT Analog Multisensor Smoke Detector Dual-Photo/Heat [SMOKE-M]**

**FAP-440-DTC Analog Multicriteria Smoke Detector Dual-Photo/Heat/CO [SMOKE-M]**

- 1-POINT TYPE Options are (for detailed information about selectable point types refer to *Section 3.3.1 Points on Page 27*):
  - 1-FIRE AUTOMATIC
  - 2-SUPERVISORY
- 2-NORMAL MODE Options are:
  - 1-ALARM MODE Select (for detailed information about alarm modes, refer to *Section 3.3.7 Multi-combined/multi-separated Alarm Modes on Page 38*):
    - 1-MULTI-COMBINED
    - 2-MULTI-SEPARATED
  - 2-SMOKE SET POINT This option allows you to adjust the sensitivity threshold. The system offers a list of available set points. Use the [v] or [^] key to select.
- 3-DAY MODE
  - 1-ALARM MODE Select (for detailed information about alarm modes, refer to *Section 3.3.7 Multi-combined/multi-separated Alarm Modes on Page 38*):
    - 1-MULTI COMBINED
    - 2-MULTI SEPARATED
  - 2-SMOKE DAY SENSI. This option allows you to adjust a second threshold for day sensitivity. The system offers a list of available set points. Use the [?] or [^] key to select.
- 4-DELAY MODE The delay mode has the following options:
  - 1-NO DELAY
  - 2-ALARM VERIFICATION
  - 3-PAS/PRE-SIGNAL
  - 4-PAS/AV

For detailed information about alarm features, refer to *Section 3.3.2 Advanced Point Features and Processing on Page 28*.
- 5-ZONES Assign the selected input device to up to five zones. For detailed information about zone mapping, refer to *Section 3.3.4 Zones on Page 33*.
- 6-POINT LABEL Enter a point label with up to 20 characters.
- 7-LED FLASH
  - 1-YES WHEN POLLING
  - 2-NO WHEN POLLING

8-SMOKE SENSOR	This option only applies when the selected Alarm Mode is 2-Multi-Separated. Options are:
1-SMOKE LABEL	Enter an individual label for the smoke sensor with up to 20 characters.
2-SMOKE POINT TYPE	Options are (for detailed information about selectable point types refer to <i>Section 3.3.1 Points on Page 27</i> ): 1-GENERIC 2-SUPERVISORY

### Device Group Types SMOKE-P and SMOKE-I

**FAP-325 Analog Photoelectric Smoke Detector** [SMOKE-P]

**FAP-325-V2F Analog Photoelectric Smoke Detector Flat** [SMOKE-P]

**FAP-440 Analog Photoelectric Detector** [SMOKE-P]

**FAP-440-D Analog Dual-Photoelectric Detector** [SMOKE-P]

**FAI-325 Analog Ionization Smoke Detector** [SMOKE-I]

1-POINT TYPE	Options are (for detailed information about selectable point types refer to <i>Section 3.3.1 Points on Page 27</i> ): 1-FIRE AUTOMATIC 2-SUPERVISORY
2-SET POINT 3-DAY SENSITIVITY	Options 2 and 3 allow you to adjust a general sensitivity threshold and a second threshold for day sensitivity. The system offers a list of available set points, depending on the device type. Use the [v] or [?] key to select.
4-DELAY MODE	The delay mode has the following options: 1-NO DELAY 2-ALARM VERIFICATION 3-PAS/PRE-SIGNAL 4-PAS/AV For detailed information about alarm features, refer to <i>Section 3.3.1 Points on Page 27</i> .
5-ZONES	Assign the selected input device to up to five zones. For detailed information about zone mapping, refer to <i>Section 3.3.4 Zones on Page 33</i> .
6-POINT LABEL	Enter a point label with up to 20 characters.
7-LED FLASH	1-YES WHEN POLLING 2-NO WHEN POLLING This option does not apply for the device types FAP-325 and FAI-325.

### Device Group Type HEAT

**FAH-325 Analog Heat Detector** [HEAT]

**FAH-440 Analog Heat Detector** [HEAT]

1-POINT TYPE	Options are (for detailed information about selectable point types refer to <i>Section 3.3.1 Points on Page 27</i> ): 1-FIRE AUTOMATIC 2-SUPERVISORY
--------------	------------------------------------------------------------------------------------------------------------------------------------------------------------

- 2-SET POINT  
3-DAY SENSITIVITY
- Options 2 and 3 allow you to adjust a general sensitivity threshold and a second threshold for day sensitivity. The system offers a list of available set points, depending on the device type. Use the [?] or [?] key to select.
- 4-DELAY MODE
- The delay mode has the following options:  
1-NO DELAY  
2-PAS/PRE-SIGNAL
- For detailed information about alarm features, refer to *Section 3.3.1 Points on Page 27.*
- 5-ZONES
- Assign the selected input device to up to five zones. For detailed information about zone mapping, refer to *Section 3.3.4 Zones on Page 33.*
- 6-POINT LABEL
- Enter a point label with up to 20 characters.

**Device Group Type SMOKE-D**

**FAD-325 Analog Duct Smoke Detector** [SMOKE-D]

**FAD-325-R Analog Duct Smoke Detector with Relay** [SMOKE-D]

**FAD-325-DH Analog Duct Smoke Detector Replacement Head** [SMOKE-D]

- 1 to 6
- Refer to *Section Device Group Types SMOKE-P and SMOKE-I* (Photo Smoke Detector)

- 7-DUCT RELAY
- The duct relay has the following options:  
1-INSTALLED: Select 1-YES or 2-NO.  
2-POINT LABEL: Individual label text for duct relay  
3-ZONES: Assign the duct relay to up to five zones, with Zone 1 as global alarm zone (226) by default. For detailed information about zone mapping, refer to *Section 3.3.4 Zones on Page 33.*

**Device Group Type CONT-MOD**

**FLM-325-I4-AI/ FLM-325-I4-A Contact Monitor Class A;**

**FLM-325-I4/FLM-325-IM Contact Monitor** [CONT-MOD] (Fast Response)

- 1-POINT TYPE
- Options are:  
1-FIRE AUTOMATIC  
2-FIRE ALARM MANUAL  
3-WATERFLOW  
4-WATERFLOW DELAY  
5-GAS ALARM  
6-SUPERVISORY  
7-GENERIC  
8-TROUBLE  
9-MORE CHOICES
- If [9] is pressed:  
1-AC FAILURE  
2-BATTERY FAILURE  
3-RESET  
4-SILENCE  
5-DRILL  
6-ACKNOWLEDGE  
7-GENERAL ALARM  
8-MORE CHOICES (back to basic choices screen)

2-INPUT TYPE	Options (When wiring type is Class A, input type is exclusively Normal Open EOL. The Normal Close EOL cannot be selected for Class B of the fast response contact modules): 1-NORMAL OPEN EOL 2-NORMAL CLOSE EOL * 3-NORMAL CLOSE NOEOL *
3-ZONES	Assign the selected input device to up to five zones. For details, refer to <i>Section 3.3.4 Zones on Page 33</i> .
4-POINT LABEL	Enter a point label with up to 20 characters.
5-WIRING TYPE	The wiring type option applies only to the Class A types FLM-325-I4-AI, FLM-325-I4-A, FLM-325-IW-AI and FLM-325-IW-A which allow the input switches to be connected as Class A: 1-CLASS A 2-CLASS B
6-DELAY MODE	This option applies only if the Point Type 1-FIRE AUTOMATIC is selected. The delay mode has the following options: 1-NO DELAY 2-ALARM VERIFICATION 3-PAS/PRE-SIGNAL 4-PAS/AV For detailed information about alarm features, refer to <i>Section 3.3.1 Points on Page 27</i> .

\* Refer to *Table 3.15 on Page 46*.

### Device Group Type CONVZ-MOD

#### FLM-325-CZM4 Conventional Zone Module [CONVZ-MOD]

1-POINT TYPE	Options are (restrictions depending on the device type connected): 1-FIRE AUTOMATIC 2-FIRE ALARM MANUAL 3-WATERFLOW 4-WATERFLOW DELAY 5-GAS ALARM 6-SUPERVISORY 7-GENERIC 8-TROUBLE 9-MORE CHOICES If [9] is pressed: 1-AC FAILURE 2-BATTERY FAILURE 3-RESET 4-SILENCE 5-DRILL 6-ACKNOWLEDGE 7-GENERAL ALARM 8-MORE CHOICES (back to basic choices screen)
--------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

- 2-DELAY MODE This option applies only if the Point Type 1-FIRE AUTOMATIC is selected. The delay mode has the following options:  
 1-NO DELAY  
 2-ALARM VERIFICATION  
 3-PAS/PRE-SIGNAL  
 4-PAS/AV  
 For detailed information about alarm features, refer to *Section 3.3.1 Points on Page 27.*
- 3-ZONES Assign the selected input device to up to five zones. For details, refer to *Section 3.3.4 Zones on Page 33.*
- 4-POINT LABEL Enter a point label with up to 20 characters.

**Device Group Type CONT-MOD**

**FLM-325-2I4 Dual Input Monitor [CONT-MOD] (Dual Input)**

- 1-DEVICE LABEL Enter a device label with up to 20 characters.
- 2-INPUT 1 Options:  
 1-POINT TYPE Options are:  
 1-FIRE AUTOMATIC  
 2-FIRE ALARM MANUAL  
 3-WATERFLOW  
 4-WATERFLOW DELAY  
 5-GAS ALARM  
 6-SUPERVISORY  
 7-GENERIC  
 8-TROUBLE  
 9-MORE CHOICES  
 If [9] is pressed:  
 1-AC FAILURE  
 2-BATTERY FAILURE  
 3-RESET  
 4-SILENCE  
 5-DRILL  
 6-ACKNOWLEDGE  
 7-GENERAL ALARM  
 8-MORE CHOICES (back to basic choices screen)
- 2-INPUT TYPE Options:  
 1-NORMAL OPEN EOL  
 2-NORMAL CLOSE EOL \*  
 3-NORMAL CLOSE NOEOL \*
- 3-ZONES Assign the selected input device to up to five zones. For details, refer to *Section 3.3.4 Zones on Page 33.*
- 4-POINT LABEL Enter a point label with up to 20 characters.

5-DELAY MODE This option applies only if the Point Type 1-FIRE AUTOMATIC is selected. The delay mode has the following options:

- 1-NO DELAY
- 2-ALARM VERIFICATION
- 3-PAS/PRE-SIGNAL
- 4-PAS/AV

For detailed information about alarm features, refer to *Section 3.3.1 Points* on *Page 27*.

3-INPUT 2 Options are the same as 2-INPUT 1.

\* Refer to *Table 3.15* on *Page 46*.

### Device Group Type RELAY-MOD

#### FLM-325-2R4 Dual Relay Module [RELAY-MOD]

1-DEVICE LABEL

Enter a device label with up to 20 characters.

2-RELAY 1

Options:

1-ZONES

Assign the selected input device to up to five zones, with Zone 1 as global alarm zone (226) by default. For details, refer to *Section 3.3.4 Zones* on *Page 33*. Select 1-YES or 2-NO.

2-DRILLABLE

3-LABEL

Enter a label for the relay with up to 20 characters.

4-SEQUENTIAL RESET

Select 1-YES or 2-NO. For details, refer to

*Section 3.3.6 Sequential Reset* on *Page 38*.

3-RELAY 2

Options are similar to 2-RELAY 1.

#### D328A Relay Module [RELAY-MOD]

1-ZONES

Assign the selected input device to up to five zones, with Zone 1 as global alarm zone (226) by default. For details, refer to *Section 3.3.4 Zones* on *Page 33*.

2-DRILLABLE

Select 1-YES or 2-NO.

3-DEVICE LABEL

Enter a device label with up to 20 characters.

4-SEQUENTIAL RESET

Select 1-YES or 2-NO.

For details, refer to *Section 3.3.6 Sequential Reset* on *Page 38*.

### Device Group Type NAC-MOD

#### FLM-325-N4 Supervised Output Module [NAC-MOD]

#### FLM-325-NA4 Supervised Output Module [NAC-MOD]

#### FLM-325-NAI4 Supervised Output Module [NAC-MOD]

1-ZONES

Assign the selected output device to up to five zones, with Zone 1 as global alarm zone (226) by default. For details, refer to *Section 3.3.4 Zones* on *Page 33*.

2-SILENCEABLE

Select 1-YES or 2-NO.

3-PATTERN

Options:

1-STEADY

2-PULSING

- |                |                                                                     |
|----------------|---------------------------------------------------------------------|
| 4-DEVICE LABEL | 3-TEMPORAL CODE 3<br>Enter a device label with up to 20 characters. |
|----------------|---------------------------------------------------------------------|

#### Device Group Type SND-BASE

##### FAA-325-B6S Analog Sounder Base [BASE-SND]

- |                       |                                                                                                                                                          |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-ZONES *             | Assign the selected output device to one zone, with global alarm zone (226) as the default. For details, refer to <i>Section 3.3.4 Zones on Page 33.</i> |
| 2-SILENCEABLE         | Select 1-YES or 2-NO.                                                                                                                                    |
| 3-PATTERN             | Options:<br>1-STEADY<br>2-PULSING<br>3-TEMPORAL CODE 3                                                                                                   |
| 4-DEVICE LABEL        | Enter a point label with up to 20 characters.                                                                                                            |
| 5-ACTIVATED BY HOST * | Select 1-YES or 2-NO. If enabled, the sounder base is activated by the detector connected to the sounder base.                                           |

\* The sounder base can be activated by zone, by the host detector, or both.

#### Additional SLC Devices Programming Options

- ▶ **6-PROGRAMMING, 1-SLC DEVICES, 1-SLC 1, 3-DELETE DEVICES**  
**6-PROGRAMMING, 1-SLC DEVICES, 2-SLC 2, 3-DELETE DEVICES**

This feature allows you to delete devices on the circuit.

- |                  |                                                      |
|------------------|------------------------------------------------------|
| 1-START ADDRESS  | Enter the address of the first device to be deleted. |
| 2-END ADDRESS    | Enter the address of the last device to be deleted.  |
| 3-CONFIRM DELETE |                                                      |

- ▶ **6-PROGRAMMING, 1-SLC DEVICES, 1-SLC 1, 4-COPY DEVICES**  
**6-PROGRAMMING, 1-SLC DEVICES, 2-SLC 2, 4-COPY DEVICES**

This feature allows you to copy devices on the circuit.

- |                |                                               |
|----------------|-----------------------------------------------|
| 1-FROM ADDRESS | Enter the address of the device to be copied. |
| 2-TO ADDR      | Enter the target address range where to copy. |
| 3-CONFIRM COPY |                                               |

- ▶ **6-PROGRAMMING, 1-SLC DEVICES, 1-SLC 1, 5-SLC WIRING**  
**6-PROGRAMMING, 1-SLC DEVICES, 2-SLC 2, 5-SLC WIRING**

This feature allows you to program the SLC wiring. Options:

- |               |  |
|---------------|--|
| 1-CLASS A     |  |
| 2-ONE CLASS B |  |
| 3-TWO CLASS B |  |

- ▶ **6-PROGRAMMING, 1-SLC DEVICES, 1-SLC 1, 6-SLC LABEL**  
**6-PROGRAMMING, 1-SLC DEVICES, 2-SLC 2, 6-SLC LABEL**

This feature allows you to enter a circuit label (maximum 20 characters).

- ▶ **6-PROGRAMMING, 1-SLC DEVICES, 1-SLC 1, 7-RECONFIG A DEVICE**  
**6-PROGRAMMING, 1-SLC DEVICES, 2-SLC 2, 7-RECONFIG A DEVICE**

This feature allows you to select an address and change the device accordingly.

- ▶ **6-PROGRAMMING, 1-SLC DEVICES, 2-SLC 2, 8-INSTALLED**

Select 1-YES if a second FPE-1000-SLC is installed. Default setting is 2-NO (basic configuration with one SLC). The system indicates a trouble message if programming does not match the hardware configuration.

Note that this option is only provided for SLC 2.

### ► 6-PROGRAMMING, 2-OUTPUTS/OPTIONS

This feature allows you to program relays, NACs, silence configuration, zone LEDs 65 to 128, and City Ties.

### ► 6-PROGRAMMING, 2-OUTPUTS/OPTIONS, 1-RELAYS/OUTPUTS

The options are:

1-MAINBOARD RELAYS	Options: 1-MB RELAY 1 2-MB RELAY 2 3-MB RELAY 3
2-REMOTE MODULE 1@9	Note: Only visible if module is configured
3-REMOTE MODULE 2@10	Note: Only visible if module is configured

Programming Options for Mainboard Relays:

1-ACTIVATION TYPE	Options: 1-GLOBAL FIRE ALARM 2-GLOBALTROUBLE 3-GLOBAL SUPERVSR 4-GLOBAL GAS ALARM 5-BY ZONES
2-ZONES	Assign the selected output device to one zone, with global alarm zone (226) as default. For details, refer to <i>Section 3.3.4 Zones on Page 33</i>
3-DRILLABLE	Select 1-YES or 2-NO.
4-NORMAL ENERGIZED *	Options: 1-ENERGIZED 2-NOT ENERGIZED
5-POINT LABEL	Enter a point label with up to 20 characters.
6-SEQUENTIAL RESET	Select 1-YES or 2-NO. For details, refer to <i>Section 3.3.5 Special Alarm Features on Page 37</i> .
7-SILENCEABLE	Select 1-YES or 2-NO.

\* Refer to *Table 3.15 on Page 46*.

### ► 6-PROGRAMMING, 2-OUTPUTS/OPTIONS, 2-REMOTE MODULE 1@9

### 6-PROGRAMMING, 2-OUTPUTS/OPTIONS, 3-REMOTE MODULE 2@10

The following programming options apply to the Remote Module 1@9 and 2@10 accordingly.

1-REMOTE RELAY 9.1	1-REMOTE RELAY 10.1
2-REMOTE RELAY 9.2	2-REMOTE RELAY 10.2
3-REMOTE RELAY 9.3	3-REMOTE RELAY 10.3
4-REMOTE RELAY 9.4	4-REMOTE RELAY 10.4
5-REMOTE RELAY 9.5	5-REMOTE RELAY 10.5
6-REMOTE RELAY 9.6	6-REMOTE RELAY 10.6
7-REMOTE RELAY 9.7	7-REMOTE RELAY 10.7
8-REMOTE RELAY 9.8	8-REMOTE RELAY 10.8
9-DEVICE LABEL	9-DEVICE LABEL



Programming Options for each single relay:

- 1-ZONES Assign the selected relay to up to five zones, with Zone 1 as global alarm zone (226) by default. For details, refer to *Section 3.3.4 Zones on Page 33.*
- 2-DRILLABLE Select 1-YES or 2-NO.
- 3-NORMAL ENERGIZED \* Options:  
1-ENERGIZED  
2-NOT ENERGIZED
- 4-POINT LABEL Enter a point label with up to 20 characters.
- 5-SEQUENTIAL RESET Select 1-YES or 2-NO. For details, refer to *Section 3.3.5 Special Alarm Features on Page 37.*
- 6-SILENCEABLE Select 1-YES or 2-NO.

\* Refer to *Table 3.15 on Page 46.*

► **6-PROGRAMMING, 2-OUTPUTS/OPTIONS, 2-NACS**

Options are:

- 1-MAINBOARD NACS Options:  
1-MAINBOARD NAC 1  
2-MAINBOARD NAC 2
- 2-RNAC MODULE 1@11 Programming option for up to four FPP-RNAC-8A-4C Remote Notification Appliance Circuit Power Supplies. Visible only if the module is configured.
- 3-RNAC MODULE 2@12
- 4-RNAC MODULE 3@13
- 5-RNAC MODULE 4@14

Submenu for each Remote NAC line (example shows 1@11, applies accordingly for 2@12, 3@13 and 4@14):

- 1-REMOTE NAC 11.1
- 2-REMOTE NAC 11.2
- 3-REMOTE NAC 11.3
- 4-REMOTE NAC 11.4
- 5-DEVICE LABEL Enter a device label with up to 20 characters.

Programming options for each single mainboard NAC:

- 1-ZONES Assign the selected NAC to up to five zones, with Zone 1 as global alarm zone (226) by default. For details, refer to *Section 3.3.4 Zones on Page 33*
- 2-SILENCEABLE Select 1-YES or 2-NO.
- 3-PATTERN Options:  
1-STEADY  
2-PULSING  
3-TEMPORAL CODE 3  
4-TEMPORAL CODE 4  
5-WHEELOCK  
6-GENTEX  
7-SYSTEM SENSOR  
8-POWER SUPPLY MODE
- 4-POINT LABEL Enter a point label with up to 20 characters.

Programming options for each single Remote NAC:

- 1-ZONES Assign the selected NAC to up to five zones, with Zone 1 as global alarm zone (226) by default. For details, refer to *Section 3.3.4 Zones on Page 33*
- 2-SILENCEABLE Select 1-YES or 2-NO.
- 3-PATTERN Options:  
1-STEADY

	2-PULSING
	3-TEMPORAL CODE 3
	4-WHEELLOCK
	5-GENTEX
	6-SYSTEM SENSOR
4-POINT LABEL	Enter a point label with up to 20 characters.

► **6-PROGRAMMING, 2-OUTPUTS/OPTIONS, 3-SILENCE CONFIG**

Global silenceable programming options:

- 1-AUDIBLE ONLY
- 2-AUDIBLE/VISIBLE

**Notice**

Any output configured as "SILENCEABLE" is silenced upon silence operation. All NACs and sounders are silenceable by default. You can define "AUDIBLE ONLY" or "AUDIBLE/VISIBLE" by the global option "SILENCE CONFIG". Only Wheelock, Gentex, and System Sensor NAC patterns support both audible mode and audible/visual mode. Other patterns always apply audible and visual mode regardless of the silence mode setting.

A relay is completely turned off if silenced.

► **6-PROGRAMMING, 2-OUTPUTS/OPTIONS, 4-ZONE LEDS RANG**

Zone LEDs option (for details refer to *Section 3.4.1 Option Bus Address Assignment* on Page 39):

- 1-ZONES 1-128
- 2-ZONES 129-225

► **6-PROGRAMMING, 2-OUTPUTS/OPTIONS, 5-CITY TIES**

This feature allows you to program the City Tie circuits.

1-CITY TIE 1	Options:	Options:
	1-MODE	1-ENABLED
		2-DISABLED
	2-ACTIVATION TYPE	Options:
		1-GLOBAL FIRE ALARM
		2-GLOBAL TROUBLE
		3-GLOBAL SUPERVSR
		4-GLOBAL GAS ALARM
	3-LABEL	Enter a circuit label with up to 20 characters.
	4-SILENCEABLE	Select 1-YES or 2-NO to enable or disable the deactivation of the City Tie by the silence operation.
2-CITY TIE 2	Similar options as 1-CITY TIE 1.	
3-BOARD INSTALLED	Select 1-YES or 2-NO according to your configuration.	
4-EVENT RANGE	1-PANEL WIDE	
	2-RESERVED	
	3-NETWORK WIDE	

► **6-PROGRAMMING, 3-ZONES/FLOORS**

This feature allows you to program zones. Upon zone number entry, the options are:

1-DUAL-ZONES	Options: 1-PAIRS 1-3 2-PAIRS 4-6 3-PAIRS 7-9	Assign up to six pairs of dual-zones for each group. For details, refer to <i>Section 3.3.5 Special Alarm Features on Page 37.</i>
2-SW OR GLOBAL ZONES	3-PAIRS 10-12 3-PAIRS 13-15 3-PAIRS 16-18 Enter a zone number (001 to 225). For zone 001 to 128, define a <b>local zone</b> . For zone 129 to 225, define a <b>grouped zone</b> . 1-NAC PATTERN	Options: 1-DEFAULT 2-STEADY 3-PULSING 4-TEMPORAL CODE 3 5-TEMPORAL CODE 4 Selectable only for gas alarm. Define the counting zone.
	2-COUNTING 3-(Reserved) 4-ZONE LABEL	Enter a zone label with up to 20 characters.
	5-FLOOR For zone 226 to 234, define a <b>global zone</b> : 1-NAC PATTERN	Assign zones to up to 64 floors. Options: 1-DEFAULT 2-STEADY 3-PULSING 4-TEMPORAL CODE 3 5-TEMPORAL CODE 4 Selectable only for the global zone 233 (global gas alarm).
	2-(Reserved) 3-ZONE LABEL	Enter a zone label with up to 20 characters. Global zone labels are read only.
3-FLOORS	Select floor by number (1 to 32, refer to 6-3-2-5-FLOOR above). Options are: 1-SANDWICH 2-FLOOR LABEL	Select 1-YES or 2-NO. Enter a floor label with up to 20 characters.

► **6-PROGRAMMING, 4-DATE/TIME**

This feature allows you to program the time format and to schedule the day sensitivities and the Daylight Saving Time.

1-TIME FORMAT	Options: 1-12 HOURS 2-24 HOURS
---------------	--------------------------------------

2-DAY SENSITIVITIES	Options: 1-DAY SENSI ENABLE	Select day of the week: 1=MON 2=TUE 3=WED 4=THU 5=FRI 6=SAT 7=SUN
	2-DAY SENSI START 3-DAY SENSI END	Enter start time (tt:tta) Enter end time (tt:ttp)
3-DAYLIGHT SAVINGS	Options: 1-ENABLE/DISABLE	Select: 1-ENABLE 2-DISABLE Presetting is March, 1st Sunday. Enter 1 to change month. Enter 2 to change day. Use [v] or [^] to select.
	2-START	Presetting is October, 3rd Sunday. Enter 1 to change month. Enter 2 to change day. Use [v] or [^] to select.
	3-END	

► **6-PROGRAMMING, 5-USER ACCESS**

► **6-PROGRAMMING, 5-USER ACCESS, 1-USER PIN CODES**

This feature allows you to change the factory-set PIN codes (4-digit number) for Level 1, Control, Level 2, Level 3 and Web operator. For detailed information about default setting and change of authority levels, refer to *Section 5.4 Authority Level and PIN Codes on Page 91*.

1-PIN FOR CONTROL	Applies to reset, silence and drill. Default setting is Level 1 (no PIN code required). If programmed to PIN for Control, the user must enter the PIN for these operations on-site at the front panel keypad.
2-LEVEL 2 PIN CODE	Applies to Walk Test, Test Menu and Bypass/Unbypass. The default setting is Level 2 PIN code needed. Can be programmed to Level 1 or 3.
3-LEVEL 3 PIN CODE	Applies to Programming and History erasing. Level 3 PIN code is always needed and is not programmable.
4-WEB OPERATOR PIN	Allows a login from the Web browser. It is the minimum requirement for opening the FPA-1000 Web pages for viewing only; Level 2 or 3 PIN required for operation.

► **6-PROGRAMMING, 5-USER ACCESS, 2-OPERATIONS/LEVEL**

This feature allows you to program the authority level needed for different operations. Programming operations need a Level 3 PIN code without the possibility of changing the PIN.

1-CONTROLS	Define PIN code level needed for control: 1-LEVEL 1 (no PIN required) 2-PIN FOR CONTROL
2-VIEW/PRT HISTORY	Define PIN code level needed for history: 1-LEVEL 1 (no PIN required) 2-LEVEL 2 3-LEVEL 3
3-WALK TEST	Define PIN code level needed for a walk test:

	1-LEVEL 1 (no PIN required)
	2-LEVEL 2
	3-LEVEL 3
4-TEST MENU	Define PIN code level needed for the test menu: 1-LEVEL 1 (no PIN required) 2-PIN FOR CONTROL 3-LEVEL 3
5-CHANGE DATE/TIME	Define PIN code level needed for date and time: 1-LEVEL 1 (no PIN required) 2-LEVEL 2 3-LEVEL 3
6-BYPASS/UNBYPASS	Define PIN code level needed for bypass or unbypass: 1-LEVEL 1 (no PIN required) 2-LEVEL 2 3-LEVEL 3

► **6-PROGRAMMING, 5-USER ACCESS, 3-REMOTE PROG**

This feature allows you to enable or disable remote programming:

- 1-CONFIRM AT PANEL Remote Programming requires confirmation at the panel.
- 2-ENABLE No restrictions for remote programming \*.
- 3-DISABLE No remote programming allowed.

\* Refer to *Table 3.15 on Page 46*.

If remote programming needs local confirmation when a Web login is received, the panel asks for PIN at the local keypad. If the PIN is valid, the message “Web Login Granted!” appears for 3 seconds, then returns to the idle screen. If the PIN is invalid, the panel rejects the Web login and displays “Invalid PIN!” for 3 seconds.



**NOTICE!**

According to UL 864, remote programming must be accepted manually at the panel on-site. To meet UL requirements, select option 1 or 3.

► **6-PROGRAMMING, 5-USER ACCESS, 4-SILENCE ENABLE**

This feature allows you to enable or disable silence operation:

- 1-ENABLE
- 2-DISABLE

► **6-PROGRAMMING, 5-USER ACCESS, 5-DRILL ENABLE**

This feature allows you to enable or disable drill operation:

- 1-ENABLE
- 2-DISABLE

► **6-PROGRAMMING, 6-TIMERS AND SYSTEM**

► **6-PROGRAMMING, 6-TIMERS AND SYSTEM, 1-TIMERS**

This feature allows you to program timers. The timers can be set for the following options:

- 1-AC FAIL DELAY 0 - 6 hours, default 3 hours \*
- 2-AUTO SILENCE 5 - 60 minutes, default 10 minutes
- 3-WATERFLOW DELAY 10 - 90 seconds, default 90 seconds
- 4-VERIFICATION 60 - 180 seconds, default 60 seconds
- 5-SILENCE INHIBIT 0 - 5 minutes, default 1 minute
- 6-INVESTIGATION PAS/Pre-signal: 60 - 180 seconds, default 180 seconds
- 7-SANDWICH DELAY 1 - 10 minutes, default 5 minutes
- 8-DUAL-ZONE 1ST ALM 60 - 180 seconds, default 60 seconds

9-SEQUENTIAL RESET 0 - 10 seconds, default 5 seconds

\* Refer to *Table 3.15 on Page 46*.

A setting of "0" disables the AC fail delay and silences inhibit features.

PAS/Pre-signal delay and alarm verification delay can be enabled or disabled for each input device individually. Refer to *Section Edit a Device on Page 112*.

Refer to the next programming option for global enable options for PAS, Automatic Silence, and Waterflow Silenceable.

For detailed information about sandwich alarm, dual-zone alarm and sequential reset, refer to *Section 3.3.4 Zones on Page 33*.

### ► 6-PROGRAMMING, 6-TIMERS AND SYSTEM, 2-SYSTEM

This feature offers global enable options for waterflow silencing, automatic silencing and supervisory latching, and allows you to program system options such as panel IP address, panel language, and banner label.

1-WATERFLOW SILENCE	Global enable option: Select 1-YES or 2-NO.
2-AUTO SILENCE	Global enable option: Select 1-YES or 2-NO.
3-SUPERVSR LATCH	Global enable option: Select 1-YES or 2-NO.
4-EXTERNAL POWER	Enable option for external power supply: 1-YES or 2-NO.
5-PANEL IP AND ID	Input option for: 1-PANEL IP ADDRESS 2-PANEL GATEWAY 3-PANEL SUBNET MASK 4-PANEL ID 5-FIRE NETWORK ID Observe standard IP address format and 2-digit ID between 01 and 64. If ID exceeds range, Invalid Input! is displayed. Press [ESC] to continue. Option 5 is only available if a Networking Card is installed. Changing the Fire Network ID restarts the panel.
6-PRINTER	Input option for: 1-PRINTER IP ADDRESS (observe standard IP address format) 2-PRINTER IP PORT (5-digit port number) 3-FTP USER (up to 20 characters) 4-FTP PASSWORD (up to 20 characters)
7-PANEL LANGUAGE	Select 1-ENGLISH, 2-ESPANOL, or 3-PORTUGUES
8-UNIT FORMAT	Select 1-Fahrenheit/ft or 2-Celsius/m
9-BANNER LABEL	Appears in the first and second line of the display (up to 40 characters, 20 per line).

### ► 6-PROGRAMMING, 6-TIMERS AND SYSTEM, 3-ERASE HISTORY

For erasing the history (both Event History and Walk Test Log), the system requires the programming level PIN code (refer to 6-PROGRAMMING, 5-USER ACCESS, 1-USER PIN CODES). Enter your PIN code and follow the procedure on the screen.

History files are not deleted when the panel software is updated or the panel is powered off. History logs are only deleted when the maximum memory size is reached or when the complete file is deleted by the user.

### ► 6-PROGRAMMING, 6-TIMERS AND SYSTEM, 4-ADVANCED FEATURES

This feature allows you to program timers. The timers can be set for the following options:

- 1-AUX POWER RESET Global enable option: Select 1-YES or 2-NO.
- 2-D-ZONE 1ST ALARM Options \*:
  - 1-LATCHING
  - 2-NON LATCHING
- 3-SANDWICH Global enable option \*\*: Select 1-YES or 2-NO.
- 4-EVENT PRINTING Global enable option for real-time event printing and timer setting:
  - 1-PRINT ENABLE: Select 1-YES or 2-NO.
  - 2-EVENT PRINT DELAY: 5-60 seconds, default 5 seconds
  - 3-PRINT RANGE: Select 1-PANEL WIDE or 3-NETWORK WIDE.
 Option 2 is reserved for future use.
- 5-GLOBAL DELAY MODE Global enable option for either of the delay modes:
  - 1-AV/PAS/PRE-SIGNAL
  - 2-SANDWICH/D-ZONE
 The default setting is 1-AV/PAS/PRE-SIGNAL.
- 6-NTP TIME SYNC Options:
  - 1-SYNC ENABLE: Select 1-YES or 2-NO.
  - 2-NTP SERVER IP: Observe standard IP address format.
  - 3-NTP SERVER PORT: Enter 5-digit port number.

\* Refer to Section *Dual-zone Alarm* on Page 37.

\*\* Refer to Section *Sandwich Alarm* on Page 38.

► **6-PROGRAMMING, 7-DACT**

► **6-PROGRAMMING, 7-DACT, 1-PRIMARY ACCOUNT**

The following programming options also apply for 6-PROGRAMMING, 7-DACT, 2-SECONDARY ACCOUNT.

This feature allows you to program the primary and the secondary account with the following options:

- 1-ACCOUNT NUMBER Define Account 1 or 2 for this line.
- 2-REPORTING FORMAT Select the appropriate reporting format. Options 1 and 2 exclude and options 4 and 5 include the text information in the communication packet.
  - 1-SIA-DCS 300 NO TXT
  - 2-MODEM IIIA2 NO TXT
  - 3-CONTACT ID
  - 4-SIA-DCS 300 W TXT
  - 5-MODEM IIIA2 W TXT
- 3-REPORTING PATH Options:
  - 1-PSTN
  - 2-IP
  - 3-DISABLED
- 4-PHONE NUMBER Define PSTN number used for this account (20 digits maximum)
- 5-IP REPORTING
  - 1-IP ADDRESS Insert receiver IP address. Observe standard IP address format.
  - 2-PORT NUMBER Define alternate port number (5 digit), if necessary.

	3-POLLING INTERVAL	Interval for the Heartbeat Polling feature which supervises the integrity of an IP reporting path to the central station(s). From 30 to 255 seconds, default is 75 seconds.
	4-ACK WAIT TIME	Maximum time for IP Conettix reporting to wait for acknowledgement from the destination central station receiver. From 15 to 255 seconds, default is 15 seconds.
	5-ANTI-REPLAY	Select *: 1-ENABLED or 2-DISABLED.
	6-ENCRYPTION OPTION	This options allows you to define the use of the Advanced Encryption Standard (AES) for each IP reporting account *: 1-ENCRYPTION ENABLE: Select 1-ENABLED or 2-DISABLED. 2-KEY STRING: Enter a 16-byte encryption key, up to 32 characters in total (0-9, A-F). Select 1- and enter 16 characters, then select 2- and enter 16 additional characters.
6-AUTO TEST TIME		Define the time for an automatic test. Input format is XX:XXa.
7-AUTO TEST FREQ		Select sub menu 1 to 6: Disable PSTN automatic test or enable test by defining test frequency every 4, 12 or 24 hours or 7 or 28 days *.
8-MAXIMUM ATTEMPTS		Define 1 to 15, default is 10. *

\* Refer to *Table 3.15 on Page 46.*

### ► 6-PROGRAMMING, 7-DACT, 3-REPORT STEERING

This feature allows you to program report steering individually for each of the following report groups:

- 1-ALARMS
- 2-SUPERVISORIES
- 3-ALARM RESTORALS
- 4-SUPERVISORY RST
- 5-TROUBLE/RESTORE
- 6-TESTINGS
- 7-SILENCE
- 8-RESET
- 9-DRILL

Select one of the following options for any of these report steering groups:

- 1-PRIMARY ONLY                      Use primary account only.
- 2-SECONDARY ONLY                  Use secondary account only.
- 3-BOTH                                  Use both accounts.
- 4-SECOND AS BACKUP                Use primary account with secondary account as backup.
- 5-NO REPORT                          Switch off reporting for selected report steering option.

The default setting is "SECOND AS BACKUP" for all report steering groups.





### ► 6-PROGRAMMING, 8-NETWORKING, 3-PANEL MANAGEMENT

This feature allows you to add panels to, edit panels in, or delete panels from a network.

1-ADD A PANEL	1-PANEL ID	Enter a panel ID between 1 and 64.*
2-EDIT A PANEL	1-PANEL ID	Enter a panel ID between 1 and 64.*
3-DELETE A PANEL	Enter a panel ID.	

\* if the panel or group number is out of range (not between 1 and 64) or if the panel ID is already assigned, the screen will show "Invalid Input". Press the [ESC] key to continue.

### ► 6-PROGRAMMING, 9-AUTO LEARN

Options:

1-ALL	Deletes complete configuration and provides a list of all devices connected to the SLCs and Option Bus, including default parameters.
2-SLC 1	SLC 1 circuit only.
3-SLC 2	SLC 2 circuit only.
4-ALL SLCS	All SLCs.
5-UPDATE OPTION BUS	Option Bus only.
6-ALL DIFFERENCES	Applies to all new, wrong type or missing devices in the trouble state. The new and wrong type devices will be auto-learned. Missing devices are deleted from the configuration file. Configuration of all other devices (in normal, active, or any other trouble state) will not be changed.
7-RETURN TO DEFAULT	Resets all parameters of input points and outputs connected to the SLCs and Option Bus to default. For confirmation, follow the procedure on the screen.

When Auto Learn is enabled, the system scans the selected SLCs and/or the Option Bus for connected devices. Auto Learn loads default parameters for all the input points and outputs, then prepares and sends the necessary field parameters (thresholds for analog detectors and current monitors and so on) to SLC devices. The Option Bus outputs, including relay or Open Collector (OC) outputs and NAC circuits, are also configured with default parameters. The display shows "AUTO LEARN IN PROCESS" and the number of devices already scanned (listed for SLC 1, SLC 2 and Option Bus, depending on the selected option). Finally, all inputs are mapped to all outputs in default mode and the display shows "AUTO LEARN COMPLETE". Auto Learn process can be cancelled by pressing the [ESC] key. In this case, all results from this Auto Learn process are dropped.

## 5.7.7

### RESET LEVEL 3 PIN

#### ► 7-RESET LEVEL 3 PIN

This feature allows you to reset the Level 3 PIN to default "3333" if necessary (for example, if a user lost his or her Level 3 PIN).

1-GET BUILDING CODE	The system generates and displays a random building code which is valid for the next 24 hours. This code must be passed to the service center by any means. The service center provides a check code to the user.
2-ENTER CHECK CODE	The user needs to enter the check code provided by the service center (see above). If the check code is valid, the Level 3 PIN of the panel is reset to default.

To avoid unauthorized access, change the default PIN to a code of your personal preference!

### 5.7.8

#### REMOTE PROGRAM

##### ► 8-REMOTE PROGRAM

If a network card is installed, these choices will be displayed. After these choices are made, the programming menu will be displayed. Since the selected panel is a remote panel, a lowercase letter “r” will prefix the menu level digits. For example, r6 will be displayed instead of 6.

1-SELECT PANEL .  
2-PANEL ID .



#### NOTICE!

Remote programming is only possible for panel wide configuration data; no network wide parameters can be programmed. If you attempt to program a network wide parameter, the system will display, "Not Allowed To Operate Remotely!"

For indication of remotely programmable configuration data, see **6-PROGRAMMING** in the Menu Structure (*Page 99*).

## 6 Browser-based Operating and Programming

The FPA-1000 hosts a Web server and a set of Web pages for conveniently operating and programming the system.



### CAUTION!

The system walk test and detector configuration must be performed only by trained, authorized personnel.

When used in UL Listed installations, the control panel must conform to certain programming requirements. Refer to *Section 3.6 UL 864 Standard-specific Requirements on Page 44*.

The browser-based operating and programming allows downloading of the entire program, history file, walk test data, current status, system voltages, time and date, or uploading of the entire programming.

After successfully downloading a program, or executing any programming in the system configuration, perform the following steps:

- Check all programmed data on a printout, or manually view programmed entries and compare them to intended program data.
- Test all affected panel operations and immediately correct any problems found.

### 6.1 On-site and Off-site Access

Monitoring, operating, and programming of the control panel can be done by browser-based user interface in several different ways:

- On-site through a Web server using a laptop connected to the panel (see below)
- Remote through a Web page and an Ethernet connection
- Remote through a Web page and dial-up connection (DACT)

Online programming supports Microsoft Windows Internet Explorer 6.0 tested through 8.0 and Mozilla Firefox 2.0 tested through 3.6 running on operating systems Microsoft Windows XP and Microsoft Windows Vista, or a Unix/Linux based operating system. Therefore, no software installation is required.

The panel programming is downloadable to PC. The off-line version of the Web pages allows for off-line processing of configuration and settings and uploading of the new configuration file through a DACT or Ethernet link or a local PC connection. The Off-line Configuration Tool is provided on the product CD.

Full features of Web pages are provided with an Ethernet connection. With dialer connection, only the uploading or downloading of history and configuration files is supported.

To connect a computer directly to the panel, use a crossover cable or a straight CAT 5 cable. The FPA-1000-V2 supports "automatic crossover detection".

#### Simultaneous Access

The system allows any number of users at a time for the viewing function and for controlling operations of the panel. For uploading or programming which requires the Level 3 PIN code, the simultaneous panel access is limited to one user at a time. The user at the control panel always has the highest priority.

For details of access priority and system response, refer to *Section Simultaneous Access on Page 84*.

## 6.2 Connecting FPA-1000 and the User's PC

There are three choices for connecting the FPA-1000 and the user's PC:

- Network connection (connect FPA-1000 and user's PC to one network)
- Direct connection (directly connect FPA-1000 to user's PC)
- Dial-up connection (connect FPA-1000 and user's PC through phone line and modem).

### 6.2.1 Network connection

For proper operation:

- The FPA-1000 and the user's PC must be connected to one IP network.
- The IP address at the FPA-1000 must be set to a valid value, which is visible from the user's PC (refer to *Section 5 Keypad Operating and Programming, 6-PROGRAMMING, 6-TIMERS AND SYSTEM, 2-SYSTEM, 5-PANEL IP AND ID.*

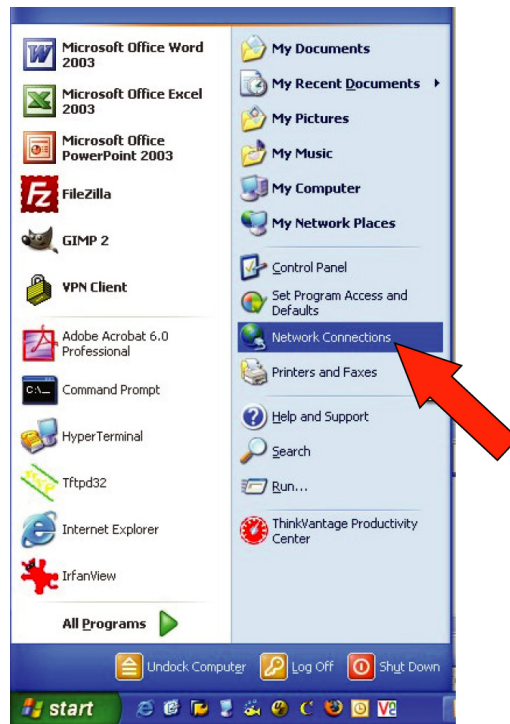
Please contact your system or network administrator for details.

#### Using the FPA-1000 in a LAN, Corporate Network or VPN

If the user's PC and the FPA-1000 are connected to one LAN, corporate network or VPN, the FPA-1000 must have a static assigned IP address because the FPA-1000 functions as the server. The client, which is the user's PC, must reference the IP address to contact the server. For operation in a corporate network, ask your system administrator to assign a static IP address.

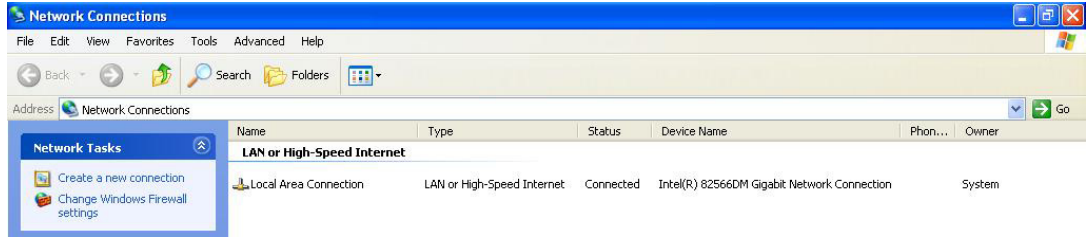
### 6.2.2 Direct Connection

To establish a direct connection from the FPA-1000 to the user's PC, the two devices must be connected using a crossover or straight Ethernet cable (CAT 5) with RJ45 connectors. The FPA-1000-V2 panel supports "auto crossover detection".



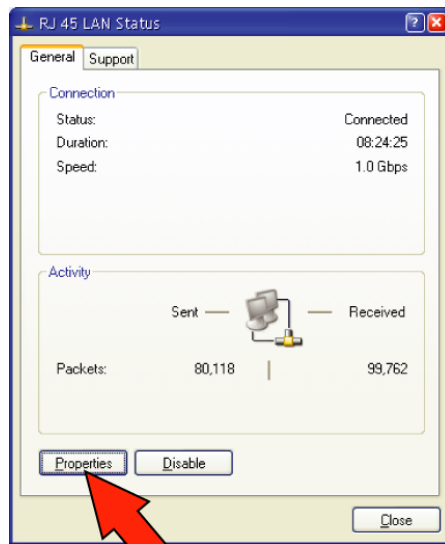
Open **Network Connections** from start menu or from control panel.

Figure 6.1 Start Menu



**Figure 6.2** Network Connections Window

Open the **LAN connection** which is assigned to your Ethernet adapter: Double click or choose **Status** from the context menu. It is “Local Area Connection” in this example, but the name can be different on your computer.

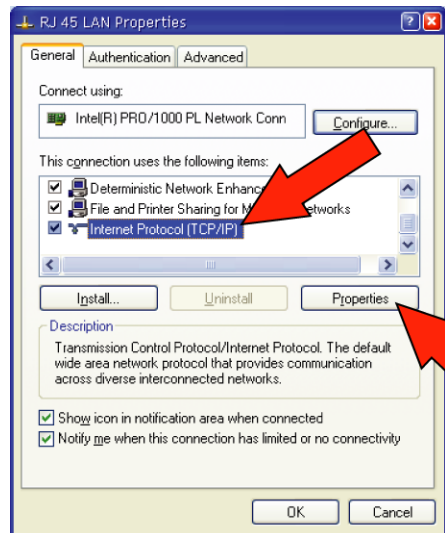


**Figure 6.3** LAN Status Window

From the Status window, click **Properties** (refer to *Figure 6.3*).

In the Properties window make sure that **Internet Protocol TCP/IP** is installed. If you cannot find it in the list:

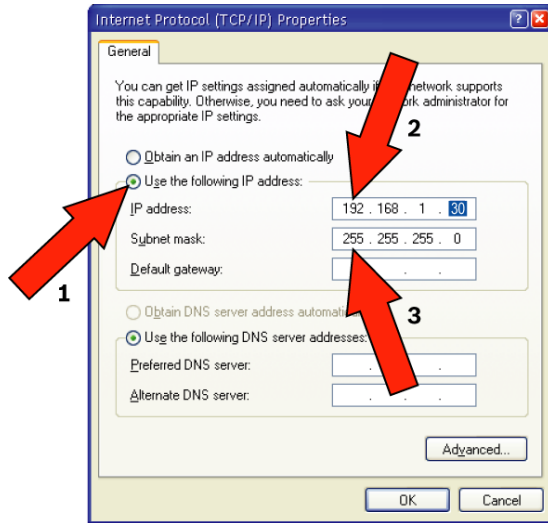
- Click **Install** and choose **Protocol** from the list.
- Click **Add...** and choose **Internet Protocol TCP/IP** from the list.
- Click **OK**.



**Figure 6.4** Network Adapter’s Properties

When you have **Internet Protocol (TCP/IP)** in the list of your network adapter’s properties (refer to *Figure 6.4*), select this protocol from the list (marked as shown in the figure) and click **Properties**.

All other protocols or services in the list are not relevant for this purpose.



**Figure 6.5** Internet Protocol (TCP/IP) Properties

In the Internet Protocol Properties window (refer to *Figure 6.5*), make the following settings:

- Choose **Use the following IP address** (see arrow 1)
  - Choose a proper IP address (four numbers between 0 and 254, **with the first three being identical to the setting at the FPA-1000 and the fourth one different from the setting at the panel**). You can use the value from this example if the IP address at the FPA-1000 is the default value (192.168.1.30, see arrow 2).
  - The subnet mask must be set to 255.255.255.0 (see arrow 3)
- All other settings are not relevant. Click **OK** to confirm the settings.

Click **OK** again in the Network Adapter's Properties window (refer to *Figure 6.4*). Close the LAN Status Window (refer to *Figure 6.3*) and the Network Connections Window (refer to *Figure 6.2*). Continue with *Section 6.3 Access the FPA-1000's Web Server from the Web Browser on the User's PC*.

### 6.2.3

#### Dial-up Connection

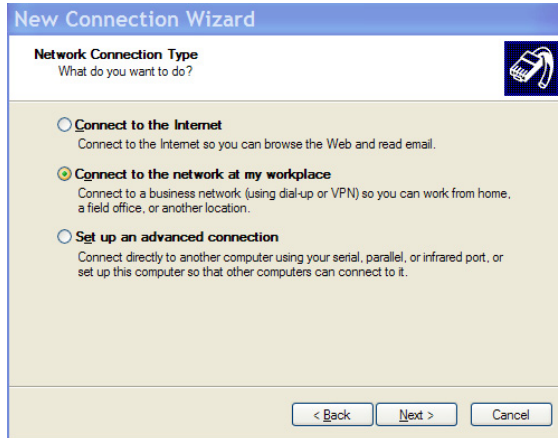
To establish a dial-up connection from the FPA-1000 to the user's PC through a phone line connection (DACT), the two devices need to be connected according *Section 4.14 Phone Line Connections (DACT)* on *Page 77*. Therefore, you need a standard modem that supports 2400 baud rate. Most recent computer models have a built-in modem which needs to be connected directly into a phone jack. If an external modem is required, follow the connection instructions that come with the modem.

#### Accessing Dial-up Connections



**Figure 6.6** New Connection Wizard

- Click on the **Start** button.
- Click on **All Programs**.
- Click on **Accessories**.
- Click on **Communications**.
- Choose **New Connection Wizard** from the menu.



**Figure 6.7** Network Connection Type

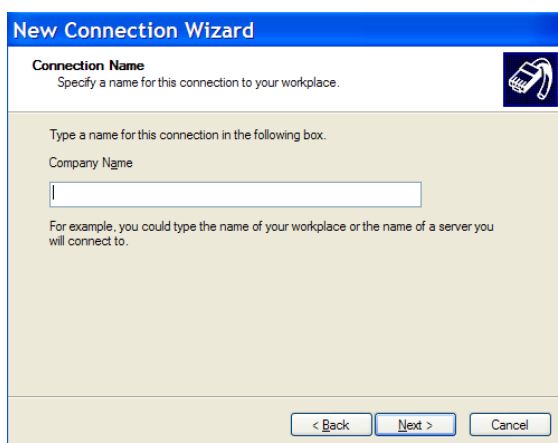
From the **Network Connection Type** window, choose **Connect to the network at my workplace** from the menu, then click **Next**.



**Figure 6.8** Network Connection

From the **Network Connection** window, choose **Dial-up connection** from the menu, then click **Next**.

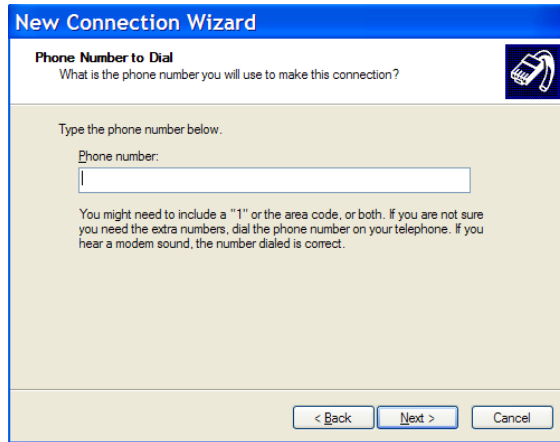
If you have more than one dial-up device on your computer, the system asks for selecting the device to use for the connection.



**Figure 6.9** Connection Name

Type a name for your connection, then click **Next**.





Enter the phone number you've chosen to connect with, then click **Next**.

Figure 6.10 Phone Number to Dial

### Dial-up Connection Properties



Open **Network Connections** from start menu or from control panel.

- Open the Dial-up connection which is assigned to your DACT connection.
- Click once in the **User name** field and type your user name. The default user name is ppp (refer to *Figure 6.11*).
- Click once in the **Password** field and type your password. The default password is ppp.

Click **Properties**.

Figure 6.11 Dial-up Window

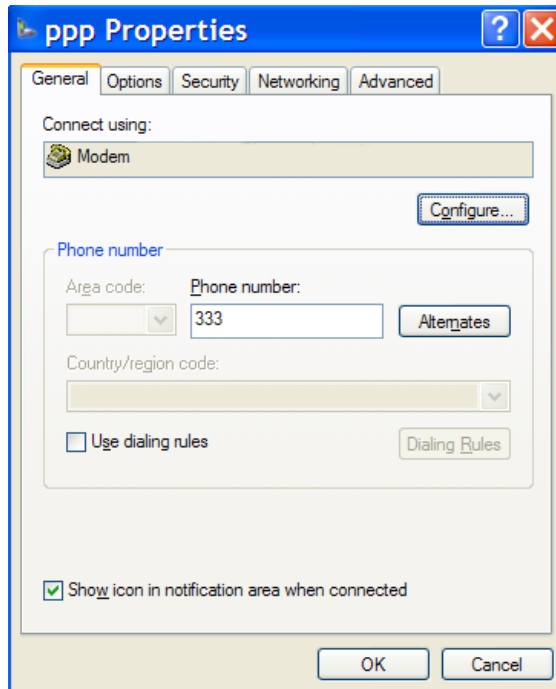


Figure 6.12 LAN Status Window

The **Properties** window offers five tabs to select the appropriate use for this connection.

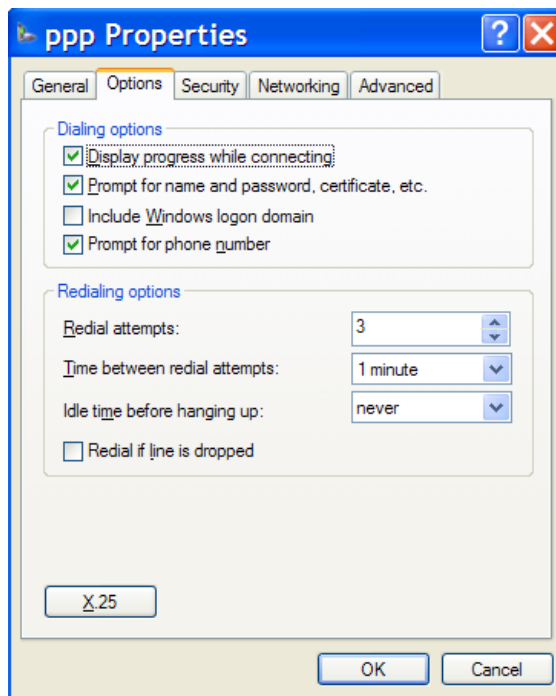


Figure 6.13 LAN Status Window

In the **Options** tab (refer to *Figure 6.13*), select the appropriate **Dialing options** and **Redialing Options**. Use the **Security** tab to check the Security setting. The recommended setting is **Typical**.

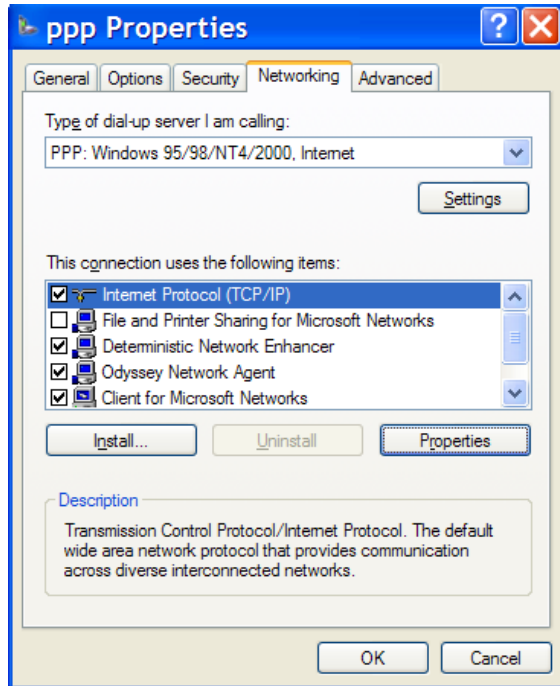


Figure 6.14 LAN Status Window

In the **Networking** tab (refer to Figure 6.14), select **Internet Protocol(TCP/IP)**.

- Click **Properties**.
- In the properties window, select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.

After successful dial-up, you can check the IP information:

(Start->Run->cmd->ipconfig).

- Click **Start**.
- Click **Run**.
- Type **cmd** and press **Enter**.
- Type **ipconfig/all** and press **Enter**.

The default client IP address (for PC) is the IP address of the PC (ie, 192.168.99.2).

The IP address of the panel to enter into the address field of the web browser in order to visit the panel’s web page after PPP conection is established is 192.168.99.1.

### 6.3 Access the FPA-1000's Web Server from the Web Browser on the User's PC

First start your Web browser on the PC. This can be Mozilla Firefox (recommended) or Microsoft Internet Explorer.

#### 6.3.1 Browser Settings

The operation of the Web pages is based on JavaScript and cookies. Please double-check the following settings.

##### Browser Settings for Mozilla Firefox

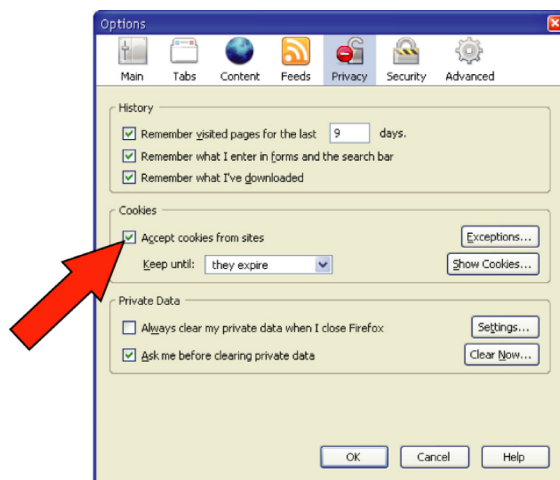
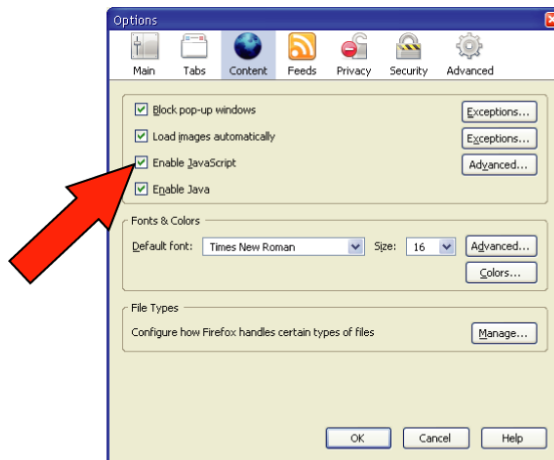


Figure 6.15 Setting to Accept Cookies

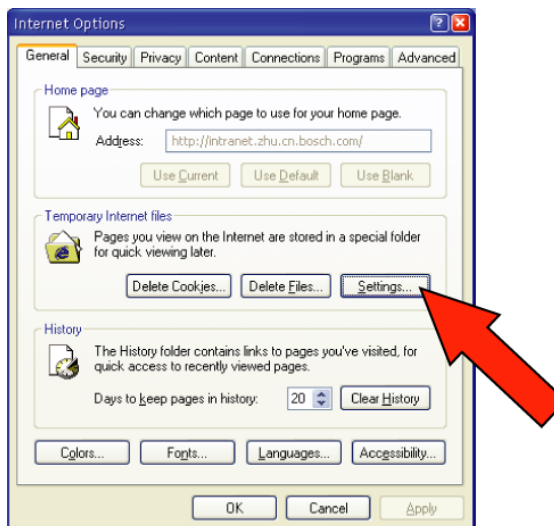
To accept cookies from sites, select the **Accept cookies from sites** checkbox in the Cookies field.



Select the **Content** tab.  
Select the **Enable JavaScript** check box.

Figure 6.16 Setting to Enable Java

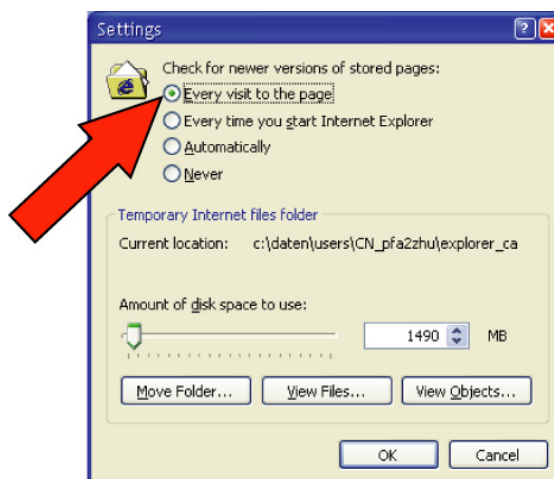
### Browser settings for Microsoft Internet Explorer



To show the latest information from the FPA-1000 in Internet Explorer, change the setting for **Temporary Internet files** stored by Internet Explorer (IE). Do the following:

- In the **Tools** menu, select **Internet Options**
- Select the **General** tab.
- Under **Temporary Internet files**, click **Settings** (see the arrow in Figure 6.17).

Figure 6.17 Setting for Temporary Internet Files



Select the **Every visit to the page** option to update the temporary file (refer to Figure 6.18).

Figure 6.18 Option to Update Temporary File

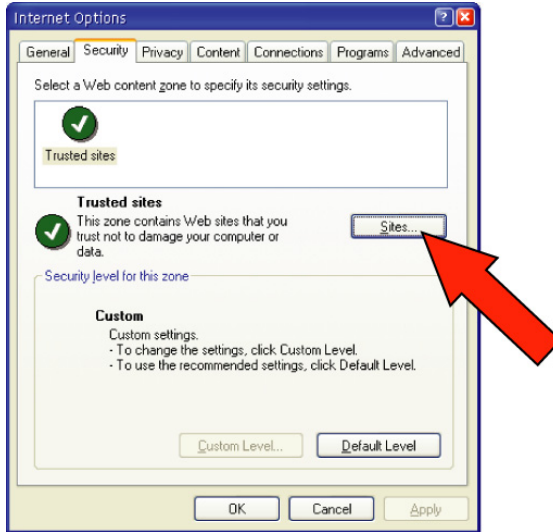


Figure 6.19 Security Tab for Trusted Sites

- To enable JavaScript and cookies in Internet Explorer, add the FPA-1000 IP addresses to the list of **Trusted Sites**:
- In the **Tools** menu, select **Internet Options**.
  - Select the **Security** tab.
  - In the settings for **Trusted sites**, click **Sites...** (see arrow in *Figure 6.19*).

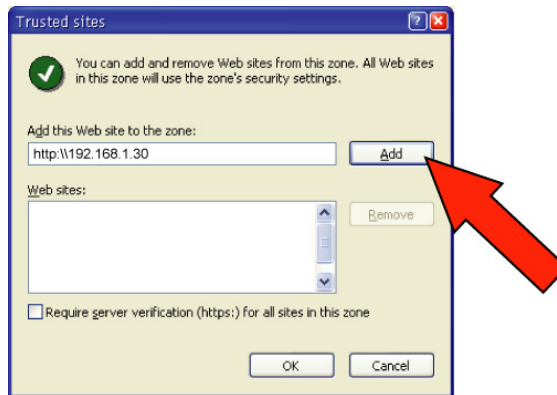


Figure 6.20 Security Tab with Address List

**Add** the FPA-1000 IP address to the list of trusted sites (refer to *Figure 6.20*).

### Microsoft Internet Explorer Settings for the Off-line Configuration Tool

When using the FPA-1000 Off-line Configuration Tool, Bosch Security Systems, Inc. recommends a screen resolution of 1024x768 or higher.

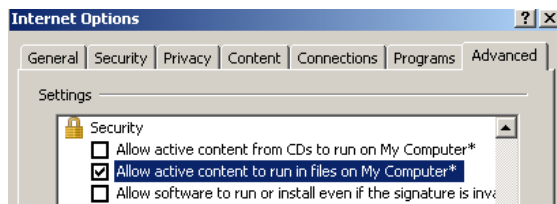
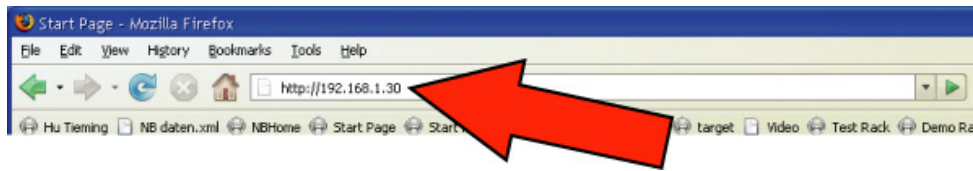


Figure 6.21 Setting for Off-line Configuration Tool

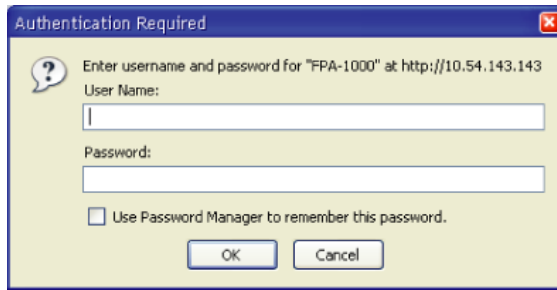
- In order to use the FPA-1000 Off-line Configuration Tool, you must modify Internet Explorer 7's security settings:
- Open Internet Explorer 7.
  - in the **Tools** menu, select **Internet Options**
  - Select the **Advanced** tab.
  - Scroll to the **Security** settings.
  - Place a check mark in the **Allow active content to run in files on My Computer** option.
  - Click **OK**.
  - Restart Internet Explorer 7.

## 6.3.2 Working with Web Pages



**Figure 6.22** Web Browser Window

Enter the FPA-1000 IP address in the address line of the Web browser window (see *Figure 6.22*) and press the [Enter] key.



**Figure 6.23** Authentication Prompt

The Web server on the FPA-1000 asks for an authentication (refer to *Figure 6.23*). Enter the following default text in the fields on the **Authentication Required** window:

- Default **User Name**: operator
- Default **Password** (PIN for Web operator access): 0000.

After successful authentication, the FPA-1000 Web server transmits the start page, which the user can see in the browser window (refer to *Section 6.6 Start Page on Page 145*).

At this point, the user has only viewing access rights.

Refer to the following section for access level settings for testing and programming.

## 6.4 Setting the Access Level for Testing and Programming

### 6.4.1 General Remarks

After successful authentication, the user has Level 1 access, which means viewing only.

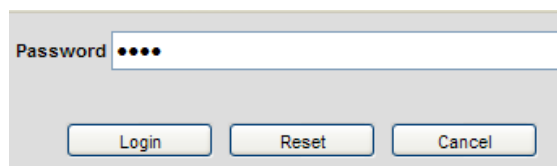
To obtain further access to the system, the user must switch to higher access levels such as:

- Level 2: Controlling outputs for testing and performing walk test
- Level 3: Changing the panel program in the programming section.

Level 3 is exclusive. Only one user can be in Level 3 at a time. In this case, a second user who tries to switch to Level 3 from a Web page receives a message showing "A level3 user is already logged in" and remains in his current access level.

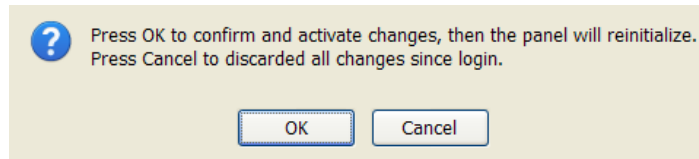
Only a user at the local FPA-1000 keypad has higher access rights. That user can overrule a user who is in Access Level 3 from a Web page by logging in. In this case the Access Level 3 of the user at the Web page becomes invalid and this user is notified when trying to perform a Level 3 or Level 2 action (such as saving data to the FPA-1000) the next time.

### 6.4.2 Switching Access Levels



**Figure 6.24** Dialogue for Access Level Change

To switch from one access level to another access level, you must press the Login button on the Web page. You can switch from Web Operator Level or Level 1 to a higher level (Level 2 or Level 3) by entering the correct PIN number into the dialogue which appears after pressing the Login button (refer to *Figure 6.24*).



**Figure 6.25** Dialogue for Access Level Change 3 to 1

From Level 2 or 3 you can switch to Level 1 without having to re-enter your PIN. In order to switch from Level 2 to Level 3, you need to go to Level 1 first and then to Level 3 (press **Logout** and then **Login** and enter PIN).

The system asks whether to activate or discard changes (refer to *Figure 6.25*).

### 6.4.3

#### **Make Programming Changes Effective on the FPA-1000**

Changes to the FPA-1000 programming can be made in Access Level 3 only. In lower access levels the FPA-1000 Web server does not accept the **Save to panel** action.

In order to make the changes effective for the FPA-1000 operation, the user can press the **Implement configuration** button or directly leave Access Level 3.

When leaving Access Level 3, the user is prompted to select if the recent changes that were already saved to the FPA-1000 should become effective or if they should be discarded. This is the last chance for the user to keep the currently effective configuration before the recent changes become effective. If the user presses the **Implement configuration** button or confirms the recent changes by leaving Access Level 3 (refer to *Figure 6.25*), the FPA-1000 resets and initializes with the new configuration.

System progress and status information are listed on the white sections of the browser window.

### 6.4.4

#### **Access Level Time-out**

After 25 min without any action, Access Level 2 or 3 become invalid. In Level 3, the user is notified one minute before the session expires. In Level 2, the user is notified when trying to perform a Level 2 action the next time.

Access Level 1 does not time out.

## 6.5 Overview of Graphical User Interface

The Web user interface allows for convenient processing of the tasks listed in *Table 6.1*. The system prompts for authorization if needed for the requested operation.

Page	Options	Refer to
Start Page	Upload and download panel configuration; compare configuration files; download history and walk test history; display current panel time; synchronize panel with selected time zone; enter online configuration.	6.6 , Page 145
<b>Programming</b>		
Site Data	Set up banner label, IP and ID; assign local panel settings; change PIN codes and assign operations to authority levels; schedule daylight saving time and detector day sensitivity time; enable network wide time synchronization and identify NTP server; set other timers; select language , time format, and units for panel menu; select latching, silence, and drill function settings; assign printer address and select event printing options.	6.7.1 , Page 146
SLC 1	Set up configuration data for SLC 1.	6.7.2 , Page 149
SLC 2	Set up configuration data for SLC 2.	6.7.2 , Page 149
Mainboard	Configure mainboard outputs (relays, NAC and City Tie).	6.7.3 , Page 151
Option Bus	Configure option bus devices (LED and LCD annunciators, LCD keypads, output modules, and Remote Notification Appliance Circuit Power Supplies).	6.7.4 , Page 151
Reporting	Configure primary and secondary account; specify PSTN and IP settings including IP encryption; and define report steering.	6.7.5 , Page 153
Zones / Floors	Configure global zones, group zones, local zones, dual-zones, and floors for sandwich alarm.	6.7.6 , Page 154
Networking	Indicate network card installation and port supervision; specify network wide wiring topology (Class A or Class B); synchronize network wide settings; list networked panels	6.7.7 , Page 155
<b>Maintenance</b>		
Control	Individually control all outputs: Mainboard (relays, NACs and City Tie), Option Bus (LED annunciator test), SLC 1 and SLC 2 outputs.	6.8.1 , Page 155
Testing	System Information, Walk Test, SLC 1 and SLC 2 Test, Software Update, and Communicator Test.	6.8.2 , Page 156
<b>Monitoring</b>		
View Status	Show current panel status listing fire alarms, gas alarms, supervisory alarms, and troubles; allow for drill, reset, silence and acknowledge.	6.9.1 , Page 156
History	Show history and walk test history with downloading option.	6.9.2 , Page 157
<b>Utilities</b>		
Help	Offers the complete Online Help content, one tab for each page.	6.10 , Page 157

**Table 6.1** Overview Graphic User Interface



### Authorization PIN Codes

The user might be asked to enter a PIN code if one is needed for the requested operation on the Web page. Without valid authorization, the operation cannot be performed. In the top left corner of each Web page, the actual authority level appears. The window shows “Level ?” as long as no login has been performed. Click the login button to open the window for entering the appropriate PIN code.

### Label Text

The user can set up labels for different applications; for example, to document the location of a device. The label text is generally limited to a maximum of 20 characters.

### Invalid Entries

Whenever the user enters an invalid value, the system provides information about the correct range. The user cannot leave the input field without entering a correct value.

### Default Settings

The screens shown in the following sections indicate the default settings. Refer to *Section A.2 Default Programming on Page 170* for a summary of default settings.



### NOTICE!

Before programming inputs and outputs, it is recommended that the zones be programmed first. Mapping inputs and outputs to a zone is then easier.

---

## 6.6

### Start Page

#### Configuration

After the user logs in, the start page offers the following options:

**Upload configuration (PC -> FPA-1000):** Click **Browse** to look up and select an already existing FPA-1000 configuration file (.xml). Click **Upload** to load the selected configuration from your PC to the FPA-1000 panel.

**Download configuration (FPA-1000 -> PC):** Click to download an xml file with the current configuration parameters of the FPA-1000 panel.

**Printing Friendly View:** Click to open the configuration file in a Print Preview dialog in a separate window on the web browser. Click the **print** button to print the file. Click the **back** button to return to the FPA-1000 configuration start page.

**Preview Saved Changes:** Click to open the configuration file in a separate window on the web browser. Click the **print** button to print the file. Click the **back** button to return to the FPA-1000 configuration start page.

**Compare Configuration:** You can compare either two different FPA-1000 configuration files or compare one configuration file with the current configuration of the FPA-1000.

To compare configurations:

1. Click the **Browse** button next to **Source File** to select the source configuration file.
2. Click the **Browse** button next to **Target File** to select the target configuration file.
3. Click **Compare source with target** to start the comparison.

The result is shown as a list in a separate window of your Web Browser. Click the **print** button to print the resultant list. Click the **back** button to return to the FPA-1000 configuration start page.

#### History

**Download walk test history (FPA-1000 -> PC):** Click to display a table containing the event type, the address of the respective element, date/time, the device type, details and the point text in a separate window of your Web browser. Click the browser's **Back** button to return to the FPA-1000 configuration start page.

**Download history (FPA-1000 -> PC):** Click to display a table containing the event type, the address of the respective element, date/time, the device type, details and the point text in a separate window of your Web browser. Click the browser's **Back** button to return to the FPA-1000 configuration start page.

#### Panel Time

**Current panel time:** Displays the current panel time.

**Select time zone:** Choose the correct time zone from the drop down list. To do so you must be logged in at least as Level 2.

**Synchronize panel with selected time zone:** Click to synchronize the time of the FPA-1000 panel with the selected time zone.

**Enter online configuration:** Click the button to jump to the Site Data window (the first window of the **Programming** section).



#### NOTICE!

Ensure that the online connection is capable of transferring the data volume. A broadband connection is recommended.

## 6.7

### Programming

The Web pages allow for complete panel programming.

The user must be checked in with a certain level to perform special operations or make changes.

The system offers three options for system updating on each page, affecting the settings of the corresponding page:

- To reset to default programming, click **Reset to default** (for a listing of the default settings, refer to *Section A.2 Default Programming on Page 170*).
- To reset to the latest stored configuration, click **Restore from panel**.
- To submit changed site data, click **Save to panel**; otherwise all changes are lost. The changes will be transmitted to the panel (after logout). Refer to *Section 6.4.3 Make Programming Changes Effective on the FPA-1000 on Page 143*.

In order to make the changes effective for the FPA-1000 operation, the user can press the **Implement configuration** button or directly leave Access Level 3 (refer to *Section 6.4.3 Make Programming Changes Effective on the FPA-1000 on Page 143*).

To download actual data settings from the control panel to a PC, refer to *Section 6.6 Start Page on Page 145*.

System messages of progress and status information are displayed on the white sections of the browser window.

History files are not deleted when the panel software is updated or the panel is powered off. History logs are only deleted when the maximum memory size is reached or when the complete file is deleted by the user (refer to **6-PROGRAMMING, 6-TIMERS AND SYSTEM, 3-ERASE HISTORY** in *Section 5 Keypad Operating and Programming*).

A panel software update does not delete the configuration file either.

#### 6.7.1

#### Site Data

The **Site Data** page offers the following options:

##### Banner, IP And ID

- Set up the **Banner** label for the first and second lines of display (up to 20 characters per line).
- Assign and display **Panel ID** (1-64).

- Assign and display **Panel IP address, Gateway** and **Netmask** (observe the standard IP address format).
- Assign and display **Fire Network ID.** (1-254)

#### **Local Panel Settings**

- Enable option for **AUX power reset** and **External power supply**

#### **PIN Codes**

All PINcodes must be different, otherwise the highest level counts. A PIN code must be a four digit number. PIN codes can only be set and changed in user Level 3.

- Enter a **Level 3 PIN** to replace the default PIN. This PIN will be required for programming and is network wide.
- Enter codes for **Level 2 PIN** which will be required for maintenance functions, **Web Operator PIN** which allows access to the web browser, and **PIN for reset/silence/drill** which allows panel resetting or silencing and performing fire drills. These PIN codes are network wide.

#### **Authority Levels**

- Assign and display PIN codes and operations allowed depending on the authority level for Levels 1, 2, or 3.

#### **Time Schedule**

- Set **Time Schedule** for daylight saving and select **Enable daylight saving;**
- Set **Time Schedule** for detector day sensitivity time; select **Detector day sensitivity enabled,** individually for each day of the week.

#### **Time Synchronization**

- Assign and display **NTP server IP** and **NTP server port** (observe the standard IP address format).
- Click the **Enable** button to synchronize the network via the NTP server.

### Timer Settings

- Timer settings and enable options for
  - **Global Delay Mode:** Global selection for **AV/Pre-signal/PAS** or **Sandwich/Dual-zone**
  - **Day mode:** No delay, PAS or Pre-signal, default is “No delay”. For prioritization of day mode and SLC input delay options, refer to *Table 3.4* on *Page 29*.
  - **Silence inhibit:** 0 - 5 minutes, default 0 minute
  - **Investigation time:** 60 - 180 seconds, default 180 seconds
  - **Alarm verification delay:** 60 - 180 seconds, default 60 seconds
  - **Sequential reset delay:** Program the time for the sequential reset ranging from 0 to 10 seconds. For details see *Section 3.3.6 Sequential Reset* on *Page 38*.
  - **AC failure delay:** 0 - 6 hours, default 3 hours (refer to *Table 3.15* on *Page 46*)
  - **Waterflow delay:** 10 - 90 seconds, default 90 seconds, including global option for **Waterflow silenceable**
  - **Auto silence delay:** 5 - 60 minutes, default 10 minutes, including global **Enable** option
  - **Sandwich alarm delay:** Program the delay time (1-10 minutes) between the evacuation phases in case of a sandwich alarm. Activate the **Enable** checkbox to enable the sandwich alarm feature.
  - **Dual-zone first alarm reset:** Define the time period (60 - 180 seconds, default 60 seconds) between the activation of the dual-zone and the reset of the first alarm, if the the **First alarm latching** check box is **not** activated.
  - **First alarm latching:** Activate the check box if the first alarm of a dual-zone alarm shall be latched.
- Set delay setting to “0” to disable the features **AC failure delay** and **Silence inhibit**.



### NOTICE!

With invalid entries, the system rejects the input and responds with an error beep.

The user can enable or disable PAS, Pre-signal delay and alarm verification delay for each input device individually (refer to *Section 6.7.2 SLC 1 and SLC 2* on *Page 149*).

For reset, restore and save options, refer to *Section 6.7 Programming* on *Page 146*.

### Language, Time Format And Units

- Select a **Language** for the panel menu: English, Spanish or Portuguese;
- Select a **Time Format** for 12 hour or 24 hour format;
- Select **Units** for English-system or metric-system units.

### Function Settings

- Enable option **Supervisory latching**
- Program basic settings for **Time format** and **Units**.
- Program basic settings for **Silence**, including a global **Enable silence** option.
- Program a global **Enable drill** option.

### Printer Settings

- Assign and display **Panel IP address, Gateway** and **Netmask** (observe the standard IP address format).
- Assign and display **Printer IP address** for a printer on which reports (for example, History reports) will print.
- Assign and display **Printer FTP user, Printer IP port, and Printer FTP password**.
- **Event printing enable:** Activate the check box to enable real-time printing of events like fire alarms, gas alarms, supervisories and supervisory restores, troubles, trouble

restores, and controls as defined in the history section, refer to *Section 5.7.1 HISTORY* on *Page 105*

- **Event printing delay:** Enter a time schedule of 5 to 60 seconds to define a certain delay for event printing.

## 6.7.2

### SLC 1 and SLC 2

The **SLC 1** and **SLC 2** pages offer the following options:

- **Add** devices to the circuit configuration by clicking the device group type. The configuration window opens for individual programming options. The device is automatically added to the lowest available address.
- Remove devices from circuit configuration by clicking the **Remove** button.
- Configure devices by clicking the **Edit** button (refer to *Section Configuring SLC Devices*).
- Use the **Add more devices** function to add multiple devices with the same configuration. Select the device group type from the pull down menu, click the **Edit** button and select the configuration (see below), choose the quantity, and finally click the **Add** button. The **Add more devices** function also allows for fixing the address. When inserting multiple devices, they are added to the selected address and the next higher available addresses. If the selected address is not available, the system automatically chooses the next higher available address.
- Use the **Copy device** function to add multiple devices with the same configuration. Select the device group type from the pull down menu, click the **Edit** button and select the configuration (see below), choose the quantity, and finally click the **Add** button.
- For all configuration windows, the following options apply:
  - **Reset** or **Reset to default** undoes the changes and returns settings to default.
  - **Apply** accepts the changes and leaves window open.
  - **OK** accepts the changes and closes the window.
  - **Cancel** closes the window without accepting the changes.
- The system displays at the top of the **Device list** the **Number of devices** and the **Loop current** of the actual configured devices.
- Click the **Edit** button next to the device type **SLC** for configuring the SLC. Settings for the SLCs are:
  - Click **Installed** to enable the SLC 2. This option is only valid for the SLC 2. The setting for the SLC 1 is installed by default and cannot be changed.
  - Select circuit **Topology** (Class A, 1 x Class B, 2 x Class B).
  - Enter text for a **Label** with a maximum of 20 characters.
  - Enable option for **Bypassed**.

#### Configuring SLC Devices

- Click the **Edit** button next to each device for configuring the SLC devices individually:
  - Select **Device type** from the drop down list.
  - Assign, change or delete the **Zones** assignment.
  - Enable option for **Bypassed**.
  - Enter text for a **Label** with a maximum of 20 characters.
  - Set additional parameters depending on the device type (refer to *Table 6.2* on *Page 150*).

The table lists the setting options, which vary depending on the device type. In addition, the common settings for each device apply as described above (zone assignment, bypassed option, and text for label).

For prioritization of day mode and SLC input delay options, refer to *Table 3.4* on *Page 29*.

Device Group Type	Device	Individual Device Configuration Options
SMOKE-P	FAP-325, D323A FAP-325-V2 FAP-440 FAP-440-D	Point type, sensitivity set point, day sensitivity, delay mode
SMOKE-I	FAI-325, D324A	Point type, sensitivity set point, day sensitivity, delay mode
SMOKE-M	FAP-325-T FAP-440-T FAP-440-TC FAP-440-DT FAP-440-DTC	Point type, alarm mode and day alarm mode, sensitivity set point (smoke), day sensitivity (smoke), delay mode If multi-separated smoke sensor is selected, additional options are smoke label and smoke point type
HEAT	FAH-325, D322A FAH-440	Point type, sensitivity set point, day sensitivity, delay mode
SMOKE-D	FAD-325, D331A	Point type, sensitivity set point, day sensitivity, delay mode, relay options (incl. zone assignment)
SND-BASE	FAA-325-B6S	Pattern, silenceable option
CONT-MOD	FLM-325-I4 <sup>1)</sup> , D326A FLM-325-I4-A FLM-325-I4-AI FLM-325-2I4 FLM-325-IM <sup>1)</sup>	Point type, input type <sup>2)</sup> Wiring type (Class A types only)
CONVZ-MOD	FLM-325-CZM4	Point type, delay mode Note: Select <b>No delay</b> if manual call point is connected.
RELAY-MOD	FLM-325-2R4 FLM-325-2R4-2A FLM-325-2R4-2AI FLM-325-2R4-8A FLM-325-2R4-8AI D328A	Drillable option (FLM-325-2R4: for each relay)
NAC-MOD	FLM-325-N4, D327A FLM-325-NA4 FLM-325-NAI4	Pattern, silenceable option
	<sup>1)</sup> Applies to FLM-325-I4 and FLM-325-IM. <sup>2)</sup> Refer to <i>Table 3.15 on Page 46</i> . An Analog Manual Station FMM-325A/FMM-325A-D communicates with the FACP polling circuit through its addressable FLM-325-IM Contact Monitor.	

**Table 6.2** Individual Device Configuration Options

The individual FLM-325-N4 and FAA-325-B6S sounder pattern can be overwritten by the global zone configuration assigned pattern (refer to *Section 6.7.6 Zones/Floors on Page 154*). For reset, restore and save options refer to *Section 6.7 Programming on Page 146*.

### 6.7.3

#### Mainboard

The Mainboard page offers the following options:

- Configure the three **Mainboard Relays**:
  - Program **Relays** for Alarm, Trouble, Supervisory, Gas alarm or By zone.
  - Assign up to five **Zones**.
  - Enable option for **Drillable**.
  - Enable option for **Ext. signaling**.
  - Enable option for **Bypassed**.
  - **Enable option for ENormal** = Normally energized (default setting for the trouble relay); refer to *Table 3.15 on Page 46*.
  - Enable option for **Sequential** = Sequential reset; refer to *Section 3.3.6 Sequential Reset on Page 38*.
  - Enter text on a **Label** with a maximum of 20 characters.
- Configure the **Mainboard NACs**:
  - Define NAC **Pattern** (default: Steady).
  - Assign up to five **Zones** each, with a global alarm zone (129) assigned to the first zone by default.
  - Enable option for **Silenceable**.
  - Enable option for **Bypassed**
  - Enter text on a **Label** with a maximum of 20 characters.
- Configure the **City Tie** (if installed):
  - Click **City Tie board installed** to enable the City Tie board.
  - Select **Activated be events from** as **Panel wide**, **Group wide**, or **Network wide**.
  - Select activation mode for **City Tie 1** and **City Tie 2** individually: **Alarm**, **Trouble**, **Supervisory**, or **Gas alarm**.
  - Note:** For selecting Reverse Polarity or Local Energy mode, the DIP switches must be set at the FPE-1000-CITY module.
  - Click the check box **Silenceable** for **City Tie 1** and **City Tie 2** to enable or disable the deactivation of the City Tie circuits individually by the silence operation.
  - Click the check box **Disabled** for **City Tie 1** and **City Tie 2** to deactivate the City Tie circuits individually (deactivation without trouble indication).
  - Click the check box **Bypassed** for **City Tie 1** and **City Tie 2** to by bypass the City Tie circuits individually (deactivation with trouble indication).
  - Enter text on **Label** for **City Tie 1** and **City Tie 2** individually with a maximum of 20 characters.

For reset, restore, and save options, refer to *Section 6.7 Programming on Page 146*.

### 6.7.4

#### Option Bus

Use the Option Bus page to configure the devices connected to the Option Bus.

The first two sections of the Option Bus page offer the following options:

- Assign the zones of the **LED Annunciators** D7030X and D7032.
- Assign the **LCD Annunciators/Command Centers** FMR-1000-RA and/or FMR-1000-RCMD to address 16 to 23.

Sections 3 and 4 of the Option Bus page offer the following options:

- Configure up to two output modules assigned to Addresses 9 and 10 (**D7035/B Octal Relay Modules** and/or **D7048/B Octal Driver Modules**):
  - Click **Installed** to enable each output module globally.
  - Assign up to five **Zones** individually for each of the eight outputs, each with the global alarm zone (129) assigned to the first zone by default.
  - Enable individual **Drillable** options for each of the eight outputs.
  - Enable individual **Ext. signaling** options for each of the eight outputs.
  - Select **Bypassed** for each of the eight outputs individually.
  - **Select ENormal** = Normally energized individually for each of the eight outputs (refer to *Table 3.15 on Page 46*).
  - Enable individual **Sequential** = Sequential reset options for each of the eight outputs; refer to *Section 3.3.6 Sequential Reset on Page 38*.
  - Enter text on a **Label** individually for each of the eight outputs, with a maximum of 20 characters.

Sections 5 to 8 of the Option Bus page offer the following options:

- Configure up to four **FPP-RNAC-8A-4C Remote NAC Power Supplies**:
  - Click **Installed** to enable each FPP-RNAC-8A-4C globally.
  - Enter text on a **Label** individually (Address 11 to Address 14) for each of the four FPP-RNAC-8A-4C Remote NAC Power Supplies, with a maximum of 20 characters.
  - Assign each of the four NAC lines to up to five **Zones** individually, each with the global alarm zone (129) assigned to the first zone by default. This applies to each of the four Remote NAC Power Supplies FPP-RNAC-8A-4C (RNAC 1, Address 11 to RNAC 4, Address 14).
  - Select the NAC **Pattern** individually for each of the NAC lines.
  - Enable individual **Silenceable** options for each of the NAC lines.
  - Select **Bypassed** for each of the NAC lines individually.
  - Enter text on a **Label** individually for each of the NAC lines, with a maximum of 20 characters.

For reset, restore, and save options, refer to *Section 6.7 Programming on Page 146*.



## 6.7.5

### Reporting

#### Primary Account and Secondary Account

This first two sections of the Reporting page offer the following options:

- Configure up to two phone lines (with identical options for **Primary Account** and **Secondary Account**):
  - Assign the **Account number** to the primary or secondary account.
  - Select the required **Reporting format**.
  - Define the **Auto test time**.
  - Define the **Auto test interval**:  
Disable the PSTN auto test, or  
enable the test by defining the test frequency for every 4, 12 or 24 hours or 7 or 28 days <sup>1)</sup>.
  - Define the number of **Max. attempts** (3 to 10)<sup>1)</sup>.
  - Choose the **PSTN, IP** or **Disable** option (for configuration notes, refer to *Section 7.1 Phone Monitor Troubleshooting on Page 158*).
  - For a PSTN connection, insert a **Phone number** (up to 20 characters).
  - For Conettix IP reporting, insert the **Receiver IP address** and, if necessary, an alternate **Port number** (up to 5 digits).
  - Define the **Polling interval** (30 seconds to 255 seconds) for Conettix IP reporting.
  - Define the **Ack. wait time** = Acknowledge wait time (15 seconds to 255 seconds). This is the maximum time for Conettix IP reporting to wait for acknowledgement from the destination central station receiver and to determine if a polling result or report needs to be sent again.
  - Select the **Anti-replay** option, if requested.
  - Select **Encryption option**, if desired, and enter an encryption key string (0-9, A-F, 32 characters).

<sup>1)</sup> Refer to *Table 3.15 on Page 46*.

#### PSTN Communicator Settings

Section 3 of the Reporting page offers the following options:

- Select the **Dialing type** (DTMF or Pulse).
- Select **Monitor line 1** or **Monitor line 2** if required (refer to *Table 3.15 on Page 46*).
- Select a **Line 1 Ring Count** (00 to 10).
- Select the **Redial interval** (1 to 60 seconds, default is 10 seconds).

#### Steering

Section 4 of the Reporting page offers the following options:

- Program report steering individually for each of the reporting groups with the following options:
  - Primary only
  - Secondary only
  - Primary and secondary
  - Secondary as backup
  - No report
- Select **Report events/operations from:** as **Panel wide** or **Network wide**.

If one panel is responsible for reporting for the whole network, program the accounts of the other panels in the network as valid for the reporting formats programmed for the responsible panel. For reset, restore, and save options, refer to *Section 6.7 Programming on Page 146*.

## 6.7.6 Zones/Floors

### Global Zones

The Global Zones tab offers the following options:

- Select a **NAC pattern** for each global zone (226-234) individually.  
Default pattern means the device pattern. If a zone pattern is chosen, the device pattern is overruled.

### Group Zones

The **Group Zones** tab offers the following options:

- Configure each zone (129-225) individually:
  - Enter text on a zone **Label**, with a maximum of 20 characters.
  - Select a **Pattern**.
  - Enable options for **Bypassed**.
  - Assign to **Counting** zone 1 to 5.
  - Select a **Floor** (0-64).
- Reset to default option (**Set default**) for each zone individually.



### NOTICE!

For networked systems, the settings for Group Zones apply to all panels in the network.

---

### Local Zones

The **Local Zones** tab offers the following options:

- Configure each zone (1-128) individually:
  - Enter text on a zone **Label**, with a maximum of 20 characters.
  - Select a **Pattern**.
  - Enable options for **Bypassed**.
  - Assign to **Counting** zone 1 to 5.
  - Select a **Floor** (0-64).
- Reset to default option (**Set default**) for each zone individually.

### Dual-zones

The Dual-zones tab offers the following options:

- Program a dual-zone dependency for the dual-zone alarm option by assigning zones to dual-zone pairs.

### Floors

The Floors tab offers the following options:

- Assign floors for the **Sandwich alarm** option.
- **Label:** Enter text with a maximum of 20 characters.
- **Sandwich:** Activate the checkbox to assign the floor to the sandwich alarm option.

For reset, restore, and save options, refer to *Section 6.7 Programming on Page 146*.

## 6.7.7 Networking

### Panel Networking Settings

The **Panel Networking Settings** tab offers the following options:

- Click **Networking card installed** to indicate that the panel is networked.
- Click one of the checkboxes under **Ports Supervision** to indicate which port on the networking card is supervised.

### Topology

- Choose **Class A** or **Class B**.

### Synchronize Network/Group Wide Settings

- Click **Synchronize network wide settings** to synchronize all panels on the network or **Synchronize group wide settings** to synchronize all panels in a network group.

### Panel List

- Enter a **Panel ID** (0-64) and optionally a **Group ID**, then click **Add** to add the panel to the network and/or group.
- Remove a panel from the list by clicking **Remove**.

## 6.8 Maintenance

### 6.8.1 Control

The control function requires authority Level 2 or 3. Switch to Level 1 to leave control mode.

#### Mainboard Tab

The **Mainboard** tab on the Control window offers a list of all outputs connected to the mainboard and allows the outputs to be individually operated.

To control an output, select it from the list and choose **activate** for activation and **deactivate** for deactivation.

The output test (relay/NAC) is not possible through a dial-up connection.

An output activation in control mode causes a system trouble because the system behavior is overruled manually. This trouble latches until a manual system reset.

#### Option Bus Tab

The **Option Bus** tab offers a list of all devices connected to the Option Bus and allows the annunciator lamps to be tested individually by the **activate** and **deactivate** buttons.

To perform a lamp test, select the device from the list. To start the lamp test, click **LED Annunciator lamp test on**. To stop the lamp test, click **LED Annunciator lamp test off**.

#### SLC 1 and SLC 2 Tabs

The **SLC 1** and **SLC 2** tabs offer a list of all devices connected to the SLC 1 and SLC 2 (if applied). The buttons allow for LED control of devices connected to the SLC 1 and SLC 2, such as input modules FLM-325-2R4 or FLM-325-2I4. In addition, the tab allows the outputs to be operated individually.

To control an output or activate an LED, select it from the list and choose **on** for activation and **off** for deactivation.

When an output or LED is activated or deactivated, the panel reports a latching trouble "output control" or "LED control". A reset is required to clear this trouble and bring the system back to normal.

## 6.8.2 Testing

### System Information Tab

The **System Information** tab on the Testing page summarizes version information of the panel's hardware and software and provides the panel's MAC address.

### Walk Test Tab

The **Walk Test** tab offers the following options:

- Set into walk test mode: Group wide, provide Panel ID for Panel wide, or up to 3 Zones to be defined.
- Select **Audible** options: Audible short (5 seconds), Audible long (10 seconds), or Silent.
- Click **Start walk test** to start the test.
- The walk test progress is automatically listed in the **Walk test history** log and the remaining time is shown in the window. To stop the walk test click **Stop walk test**.

### SLC 1 Test and SLC 2 Test Tabs

The **SLC 1 Test** and **SLC 2 Test** tabs allow for loading the SLC 1 and SLC 2 diagnostics. Click **Read diagnostics data** to obtain the actual device status data from the panel. Clicking **Stop refresh** cancels reloading the diagnostics file. For details on SLC device diagnostics, refer to *Section 7.2 Diagnostics Data and System Information on Page 159*.

The **Reset loss counter** button sets the loss counter for each device back to "0" and the diagnostics file is cleared. For details on LED operation and loss counter, refer to *Section 7.3 FPE-1000-SLC LED Operation on Page 160*.

Activate the link for downloading the test results from panel to PC.

### Software Update

The **SW Update** tab allows for updating control panel software files.

Insert a valid path or click **Browse** and choose a path. Click **Upload SW to panel** to start uploading. For confirmation at the FPA-1000 keypad, refer to

- ▶ 6 - PROGRAMMING, 5 - USER ACCESS, 3 - REMOTE PROG on page 107.

### Communicator Test Tab

The **Communicator Test** tab allows for individual testing of **Phone line 1**, **Phone line 2**, **IP**, **City Tie 1**, or **City Tie 2** reporting. If applicable (not needed for City Tie tests), select **Primary account** or **Secondary account**. Click **Start test** to start the test. To stop the communicator test at any time, click **Stop test**. The communicator test progress is listed automatically in the history log.

## 6.9 Monitoring

### 6.9.1 View Status

The **View Status** page offers the following options:

- View all fire alarms, gas alarms, supervisory alarms, and trouble events.
- **Refresh** the status display.
- **Start auto refresh** and **Stop auto refresh**. Alternatively, press the [F5] key on the PC to stop the process.
- Perform the **Drill**, **Reset**, **Silence**, and Acknowledge [**Ack**] operations.

This page does not time out.

If any fire alarm, gas alarm, supervisory alarm, or trouble exists, the following information shows (the example below shows a fire alarm):

n. FIRE ALM pp-c-aaa.s MM/DD/YY hh:mm [Device type] [Point text]

The following placeholders are used:

n	Number of alarm or event messages
pp	Panel number
c	Circuit number
aaa.s	Device's physical address and subaddresses
MM/DD/YY	Date: Month, day and year
hh:mm	Time: Hour, minute, am or pm
[Device type]	Programmed device type
[Point text]	System information

**Table 6.3** Placeholders Used in Message Examples

The abbreviations used in the event texts are listed in *Section A.1 Abbreviations on the Control Panel Display* on Page 168.

## 6.9.2

### History

#### History Data Tab

The **History Data** tab shows the history log and allows for downloading.

Refer to *Table 6.3* on *Page 157* for placeholders used in the message examples.

#### Walk Test History Data

The **Walk Test History Data** tab shows the walk test history log and allows for downloading.

Refer to *Table 6.3* on *Page 157* for placeholders used in the message examples.

## 6.10

### Utilities

#### Help

There are two ways to access the Online Help. One way is to click on the **Help** button on the tool bar below **Utilities**. The other way is to click on the **Quick Help** buttons placed on top of each page of the Programming section.

The complete Online Help accessed via the Utilities section offers general system information such as warnings, access options, browser settings, and entry rules, as well as detailed information related to each web page. For each **Programming** page, you can view descriptions of all settings, entries and functions.

# 7 Diagnostics and Troubleshooting

## 7.1 Phone Monitor Troubleshooting

### Comm Fail/DATA LOST

A common cause of this fault condition is failing to program Phone/IP Number 2 or Account Number 2. If report steering is directed to use Phone/IP 2 as Backup, reports made to an unprogrammed Phone/IP Number 2 or Account Number 2 warn the installer that Phone/IP Number 2 is not available.

Other communications problems that can cause this condition include:

- Events occurring faster than the dialer can send them, which causes the 32 event buffer to overflow, or
- Other problems contacting a receiver.

Check the dialing type, format selection, phone numbers, account codes, phone line condition and tone programming (if tone burst formats are used). Refer to *Section 3.5 Reporting Requirements* on Page 42 for more information.

### Trouble Phone

Some troubleshooting tips for phone monitor problems are listed below:

1. Use a voltmeter to measure the voltage present across each phone line (Tip to Ring) while the phone line is idle.  
The voltage present during ringing for an incoming call can be more than 100 V AC.  
The standby telco battery voltage is typically in the range of 30 V DC to 50 V DC, but any voltage above 5 V DC is accepted by the control panel.  
The polarity of the voltage does not matter.
2. Check for other devices that might use the phone line, such as fax machines, credit card verifiers or PBX systems.  
If the devices cannot be removed, ensure that they are wired so that the control panel's line seizure relay disconnects them when necessary.  
Measure the line voltage while these devices are in use. Ensure that it remains above 5 V.
3. Check for intermittent faults in the phone line.  
Make a test call and confirm that the line is free of distortion and noise.  
Temporarily exchange Lines 1 and 2 on the control panel and check if the problem indication moves to the control panel's other phone line channel. If so, the phone line is causing the problem rather than the line monitor.
4. Confirm that the fault message is **LINE 1 Disconnect** (or **LINE 2 Disconnect**) and not **Pri Acct Comm Fail** (or **Sec Acct Comm Fail**).  
If only one phone number is available for reporting, disable Line 2 monitor.  
A Comm Fail can also occur if one of the phone lines has telco battery voltage, but does not complete a call. Make test calls to the receiver(s) on both phone lines, listening for the receiver ACK tone.
5. Ensure that two phone lines are available.  
In accordance with NFPA requirements, the Auto-test report is sent on a different phone line each time it is sent. If only one phone line is connected to the control panel, a Comm Fail is generated on every other test call. Refer to *Section Phone Line and Phone Number/IP Selection* on Page 43.

## 7.2 Diagnostics Data and System Information

The panel offers multiple diagnostic data and system information accessible at the panel LCD display or through the browser-based user interface (refer to the list below). For detailed information, refer to the corresponding section either in *Section 5 Keypad Operating and Programming on Page 84* or in *Section 6 Browser-based Operating and Programming on Page 132*.

### On-site Diagnostic at Panel Keypad

Task	Menu Shortcut
View history data	1-HISTORY, 1-VIEW HISTORY
Print history data	1-HISTORY, 2-PRINT HISTORY
Perform communicator test	3-TEST MENU, 1-COMM TEST
View/print SLC diagnostics	3-TEST MENU, 2-SLCS
View voltage level and perform battery load test	3-TEST MENU, 3-POWER AND BATT
Test relays, NACs and SLC outputs	3-TEST MENU, 4-OUTPUTS
Perform annunciator lamp test	3-TEST MENU, 5-LAMP TEST
View Option Bus devices	3-TEST MENU, 6-VIEW OPTION BUS
General HW and SW information	3-TEST MENU, 7-VIEW SYSTEM INFO
View network status	3-TEST MENU, 8-NETWORK STATUS

For details, refer to *Section 5.7.3 TEST MENU on Page 106*.

### Off-site Diagnostic via Browser-based User Interface

Task	Web page
Individual operation of Mainboard outputs	Maintenance - Control - Mainboard
Individual operation of Option Bus outputs	Maintenance - Control - Option Bus
Individual operation of circuit outputs	Maintenance - Control - SLC 1/SLC 2
General HW and SW information	Testing - System Information
Configure and perform walk test	Testing - Walk Test
Perform communicator test	Testing - Communicator Test
Read out dynamic data of circuit devices	Testing - SLC 1/SLC 2 Test
Upload of new panel software	Testing - Software Update
View current panel status	Monitoring - View Status
View/download history data	History - History Data
View/download walk test history	History - Walk Test History Data

With a dialer connection, only the uploading and downloading of history and diagnostic files is supported. Full features of Web pages are offered through an Ethernet connection.

### Auto/Manual Test Report

Any user authorized to enter test menu (Level 2 by default) can initiate transmission of manual test reports to central station accounts. The Report Steering option allows for programming to which central station manual and auto test reports are sent. For a manual test report, the user selects either phone line or IP address to send the test report. The panel provides options for all possible combinations of phone lines and destinations and all IP paths to send the manual test report. Every communication failure is logged in the history.

### 7.3 FPE-1000-SLC LED Operation

Two LED indicators on the FPE-1000-SLC Plug-in Module give some simple diagnostic information and show that the module is communicating with the fire panel. The LED indicators can be seen only when the dead front door of the panel is removed.

LED	Description
Green	Bus Communication
Yellow	Failed Bus Communication (Loss Counter increase)

If a parity error occurs, or a checksum error occurs, or a time-out error occurs, the communication is tried again for three times consecutively. Every error increases the loss communication counter.

For information about resetting loss counter, refer to *Section SLC 1 and SLC 2 Tabs* on *Page 155*.

### 7.4 Power and Battery Test

The system displays voltage levels for AC, AUX power and battery using the following shortcut:

- ▶ 3-TEST MENU, 3-POWER AND BATTERY, 1-VOLTAGE LEVELS

Battery testing can be performed automatically using the following shortcut:

- ▶ 3-TEST MENU, 3-POWER AND BATTERY, 2-BATTERY LOAD TEST

The system turns on NACs to measure battery voltage. Depending on whether the test was successful or not, the message “Passed” or “Failed” appears on the screen.



# 8 Maintenance

## 8.1 Battery Maintenance

This product requires two 12 V batteries in series for a combined voltage of 24 V. Maximum capacity is 40 Ah. Installable in cabinet: 7 Ah or 18 Ah. In additional battery box: 24 Ah or 38 Ah. Replace the batteries every 3 to 5 years.

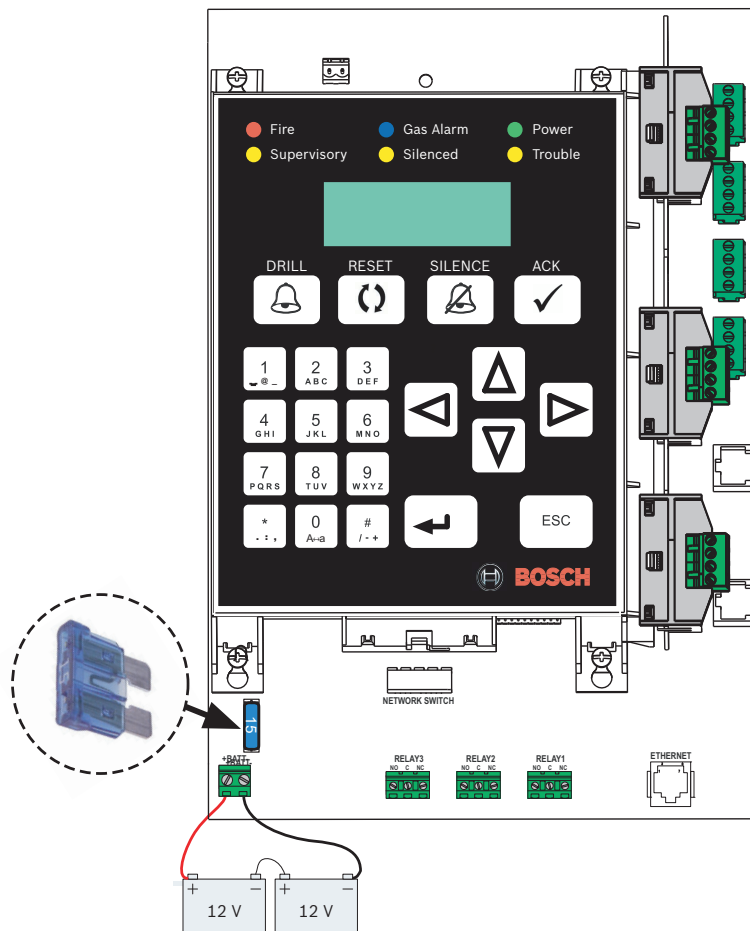
### Recommended Battery Manufacturers

POWER SONIC	PS-1270, PS-12170, PS-12180
YUASA	NP7-12, NPG18-12

For voltage level display and battery testing, refer to *Section 7.4 Power and Battery Test* on *Page 160*.

## 8.2 Fuse Replacement

The fuse is located at the lower left of the mainboard (refer to *Figure 8.1*). Replace with a 15 A blade type fuse only.



**Figure 8.1** Fuse Replacement

---

## 8.3 Network Communication Reset

---

**NOTICE!**

This action is intended to be performed only by trained, authorized personnel when network communication has been disrupted or is not responding and needs to be reset.

---

Each network card has a small blue button on the top surface of the card. Press this button to reset the networking card.

## 8.4 System Reset

There is a small blue button to the right of the potentiometer along the bottom edge of the mainboard that acts as a system reset button. To momentarily remove power from the panel, press this button. When the button is released, the panel re-initializes. If the panel is part of a networked system, re-initializing the panel re-initializes the entire networked system.

## 9 Specifications

### 9.1 Electrical

<b>Mains power supply (primary)</b>	
– Supervision	Supervised for the presence of AC power
– Voltage	– 120 V AC, 60 Hz, 1.1 A maximum, or – 240 V AC, 50 Hz, 0.6 A maximum
<b>Power supply (secondary) with Battery Back-up</b>	
– Voltage	24 V DC
– Supervision	Supervised for the presence of battery power
– Current consumption in standby	1.25 A maximum
– Current consumption in alarm	5 A maximum
– 1.0 A maximum shared between panel and SLC(s)	– Panel < 0.240 A – SLC 1 = 0.63 A maximum – SLC 2 = 0.63 A maximum
– 4.0 A maximum shared between NACs, Option Bus and AUX power	– NACs non-synchronized – NAC 1 = 2.5 A max. – NAC 2 = 2.5 A max. – NACs synchronized – NAC 1 + NAC 2 in total = 2.75 A max. – Option Bus = 0.5 A maximum – AUX/FWR = 0.5 A maximum – AUX/RST = 0.5 A maximum
– Battery capacity	7.0 Ah minimum, 40 Ah maximum
– Charge current	2.0 A maximum
– Fuse	15 A blade type
– Type of suitable battery	Two 12 V DC in series – Installable in cabinet: 7 Ah or 18 Ah – In additional battery box: 24 Ah or 38 Ah Recommended manufacturers: – POWER SONIC: PS-1270, PS-12170, PS-12180 – YUASA: NP7-12, NPG18-12
– Maintenance	Replace batteries every 3 to 5 years.
<b>Auxiliary power supply (AUX)</b>	
– AUX/FWR Full Wave Rectified	500 mA at 24 V FWR (17 to 31 VRMS), non-switched, power-limited, unfiltered, non-supervised
– AUX/RST Resettable	500 mA at 24 V DC (17 to 31 V DC), switched, power-limited, filtered, non-supervised
Line impedance for ground fault detection (Option Bus, SLC, NAC, secondary power circuit, City Tie/Local Energy, AUX)	15 kΩ
<b>Option Bus (OB)</b>	

Voltage	Nominal 12 V DC, power-limited, supervised
Current	500 mA maximum
Configuration	1 Class B, Style 4
Circuit wiring distance	4000 ft (1219 m) maximum, depending on cable gauge and connected devices
<b>Notification Appliance Circuits (NACs)</b>	
Mainboard NACs	2 (NAC1/NAC2)
NAC power from panel	Nominal 24 V FWR (17 to 31 VRMS), regulated, power-limited, supervised 2.5 A per NAC circuit, maximum current limited by overall 4.0 A shared between AUX power, Option Bus, and NAC
Line impedance	1.45 $\Omega$ maximum
Configuration	2 Class B Style Y or 2 Class A Style Z
<b>Signaling Line Circuits (SLC)</b>	
Voltage	Nominal 39 V DC (29 V DC to 40 V DC), power-limited, supervised
Current	204 mA (per FPE-1000-SLC)
Circuit resistance	< 50 $\Omega$
Circuit capacitance	< 1 $\mu$ F
Circuit inductance	< 1 mH
Configuration	1 or 2 Class B Style 4 or 1 Class A Style 6 or 7
<b>City Tie</b>	
Circuit resistance	65 $\Omega$ maximum
Wire gauge	12 AWG to 18 AWG (3.3 mm <sup>2</sup> to 0.8 mm <sup>2</sup> )
City Tie - Local Energy Mode	
Type of connection	In series
Alarm, trip coil	24 V DC
Alarm current	250 mA DC (momentary)
Supervisory/standby current	<50 mA DC
Trip coil resistance	14.5 $\Omega$
Nominal coil voltage	3.65 V DC, power-limited, supervised
City Tie - Reverse Polarity Mode	
Nominal voltage	24 V DC nominal (26.4 V DC maximum), power-limited, supervised
Output current	33 mA maximum
Supervisory/standby current	5 mA
<b>Networking Cards</b>	
Current (per card)	<ul style="list-style-type: none"> <li>- FPE-1000-NE: 100 mA</li> <li>- FPE-1000-NF: 170 mA</li> <li>- FPE-1000-NW: 330 mA</li> </ul>
Circuit wiring distance (actual length depends on connector quality)	<ul style="list-style-type: none"> <li>- FPE-1000-NE: 328 ft (100 m)</li> <li>- FPE-1000-NF: 6560 ft (2000 m)/10 db loss</li> <li>- FPE-1000-NW: 3280 ft (1000 m) maximum</li> </ul>

## 9.2 Mechanical

<b>Operating elements</b>	
– Six LEDs	Fire, Gas Alarm, Power, Supervisory, Silenced and Trouble
– LCD	4-line x 20 character LCD display, backlit
– Operation keys	Drill, Reset, Silence, and Acknowledge
– Alphanumeric keypad	12 alphanumeric keys, escape, enter and navigation buttons (left, right, up, down)
<b>Interfaces</b>	
– PSTN/DACT	2 lines, RJ45
– Ethernet	1 x RJ45,
<b>Physical Characteristics</b>	
Mounting holes	3, on back
Cable entries	Triple knockouts (1/2, 3/4 and 1 in)
Connections	Pluggable terminal blocks for AUX, Option Bus, SLC, NAC, Mainboard Relays, and City Tie
Wire gauge	AWG 12 to 18 (3.25 mm <sup>2</sup> to 0.75 mm <sup>2</sup> )
Material	Cold rolled steel, 19 gauge (1.2 mm)
Color	Red
Dimensions (W x H x D)	14.5 in. x 4.3 in. x 22.7 in. (36.8 cm x 10.9 cm x 57.7 cm)
Dimensions with trim ring (W x D) Semi-flush mounted (H recessed / H flush)	17.5 in. x 25.6 in. (44.5 cm x 65.0 cm) 3.25 in. / 1.05 in. (8.25 cm / 2.7 cm)
<b>Weight</b>	
– Enclosure	18.1 lb (8.2 kg)
– Keypad with support	9.9 oz (280 g)
– Complete panel (with one FPE-1000-SLC and FPE-1000-CITY each, without batteries)	25.8 lb (11.7 kg)
Gross weight (including packaging and manuals, without batteries)	34.9 lb (14.8 kg)
<b>Notification Appliance Circuits (NACs)</b>	
Mainboard NACs	2 (NAC1/NAC2)
Selectable patterns	<ul style="list-style-type: none"> <li>– Steady</li> <li>– Pulsing</li> <li>– Temporal Code 3</li> <li>– Temporal Code 4</li> <li>– Wheelock</li> <li>– System Sensor</li> <li>– Gentex</li> </ul>
Optional	Up to 4 FPP-RNAC-8A-4C, providing 16 NAC lines
<b>Signaling Line Circuits (SLC)</b>	

<b>Relays</b>	
Mainboard relays	3 Form C relays, programmable as alarm, trouble, supervisory, gas alarm or activation by zone, rated at 5 A, 30 V DC/10 A, 120 V AC, not power-limited, resistive loads only
Optional	D7035/B Octal Relay Module, two units maximum with 8 relays each
<b>Communication Circuits</b>	
Communication circuits	<ul style="list-style-type: none"> <li>– Phone line/IP connections (Primary and Secondary path) via central station receiver (2 x RJ45)</li> <li>– Ethernet connections (1 x RJ45)</li> </ul>
Reporting formats	ContactID, SIA300 and Modem IIIa <sup>2</sup> Conettix IP reporting
Baud rate	2400 bits/s
PSTN dialing types	Pulse only, tone and pulse, or tone only
PSTN test call frequency	4, 12, 24 hour, 7 or 28 days interval, individually programmable for each account
Ringer Equivalence Number (REN).	0.0B
FCC registration number	US:ESVAL00BFPA1000
Compatible Devices for the PSTN/DACT Circuit and Ethernet Connection	D6600 Central Station Receiver
<b>Networking Cards</b>	
FPE-1000-NE connector	CAT 5 minimum
FPE-1000-NF connector	Multi-mode fiber optic with LC connector; 62.5 μm/125 μm fiber size; 1270 nm to 1380 nm wavelength
FPE-1000-NW connector	Twisted pair wire or CAT 5 cable (shielded or unshielded)

### 9.3

## Environmental

Environment	Indoor, dry
Operating temperature	32 °F to 120 °F (0 °C to 49 °C)
Storage temperature	14 °F to 131 °F (-10 °C to 55 °C)
Relative humidity	Up to 95%, non-condensing
Protection class as per IEC 60529	IP 30
<b>City Tie</b>	
Operating temperature	32 °F to 120 °F (0 °C to 49 °C)
Storage temperature	-4 °F to 140 °F (-20 °C to 60 °C)
Relative humidity	Up to 93%, non-condensing

## 9.4 Panel Address Data

Default panel IP address	192.168.1.30 / 192.168.99.1
Default client IP address	192.168.99.2
Gateway	192.168.1.1
Subnet mask	255.255.255.0
Default user name for DACT connection	ppp
Default password for DACT connection	ppp

## 9.5 Trademarks

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Mozilla Firefox is a registered trademark of the Mozilla Corporation.

Java is a registered Trademark of Sun Microsystems, Inc.

CYCOLOY is a registered trademark of General Electric Company.

POLYLAC is a registered trademark of CHI MEI Industrial Corporation, LTD.

Chamber Check is a registered trademark of Bosch Security Systems, Inc. in the United States.

CleanMe is a registered trademark of GE Interlogix in the United States and/or other countries.

Gentex is a trademark of Gentex Corporation.

System Sensor is a registered trademark of Pittway International, Ltd. in the United States and other countries.

Wheelock is a trademark of Wheelock, Inc.

Power-Sonic is a registered trademark of Power-Sonic Corporation in the United States and/or other countries.

YUASA is a registered trademark of YUASA Batteries Inc.

# A Appendices

## A.1 Abbreviations on the Control Panel Display

Abbreviation	Description
a / p	am (ante meridiem) / pm (post meridiem)
ACCNT	Account
ACK / Ack	Acknowledge, or Acknowledgement
Act.	Activation
Act. Fail	Activation Failure
ADDR / ADDRS	Address / Addresses
ALM	Alarm
Annuns	Annunciators
AUTO	Automatic
AUX / Aux	Auxiliary
AV	Alarm Verification
BATT / Batt	Battery
Calib.	Calibration
COMM	Communicator, or Communication
CONFIG	Configuration
Curr.	Current
D	Day Mode
DACT	Digital Alarm Communicator Transmitter
DAY SENS	Day Sensitivities
Deact.	Deactivation
Dev.	Device
DIAG	Diagnostics
Dirt	Dirty
DRL	Drill
D-ZONE	Dual-zone
EOL	End Of Line Resistor
ERR	Error
ESC	Escape
Ext.	External
Fail	Failure
FREQ	Frequency
FRI	Friday
h	History Log
I/O	Input/output
INFO	Information
IP	Internet Protocol, or Internet Protocol address
Last prog	Last programmed date
MAX / Max	Maximum



<b>Abbreviation</b>	<b>Description</b>
MB	Mainboard
MIN	Minimum
Mins	Minutes
MOD	Module
MON	Monday
NAC	Notification Appliance Circuit
NC	Normally Closed
nEOL	no EOL
NO	Normally Open
OB	Option Bus
OC	Open Collector output
Overcurr.	Overcurrent
Overvolt.	Overvoltage
PAS	Positive Alarm Sequence
PIN	Personal Identification Number
Pls	Please
PNT LABEL	Point Label
Pri Acct	Primary Account
Proc Fail	Process Failure
PROG / Prog	Programming, or Programmed
PRT	Print
PSTN	Public Switched Telephone Network
PULLSTAT	Pull Station
RECONFIG	Reconfigure
RLY	Relay
RMT	Remote
RNAC	Remote NAC, or Option Bus NAC
RSD	Reset, Silence, Drill
RST	Restore
SAV	Saving
SAT	Saturday
Sec Acct	Secondary Account
SECOND	Secondary
SIL	Silenceable
SLC	Signaling Line Circuit
SPVR, SUPERVSR	Supervisory
SUN	Sunday
SW	Software
SYS	System
Temp. 3	Temporal Code 3
THU	Thursday
TUE	Tuesday

Abbreviation	Description
TRB	Trouble
Ver.	Version
VERIFY	Verification
Volt.	Voltage
w	Walk Test Log
WED	Wednesday
WT	Walk Test

## A.2 Default Programming

### Site Data

Banner, Language, IP and Printer	
Banner (1. line)	BOSCH
Banner (2. line)	Fire System
Panel ID	[empty]
Panel IP address	192.168.1.30
Gateway	192.168.1.1
Netmask	255.255.255.0
Fire Network ID	1

Local Panel Settings	
AUX power reset	Enabled
External power supply	Disabled

PIN Codes and Authority Levels	
Level 1	No PIN (History, Date/time)
Level 2 PIN (maintenance)	2222 (Walk test, Test, Bypass)
Level 3 PIN (programming)	3333
PIN for reset/silence/drill	1111, disabled
Web operator Pin	0000 (user name: "operator", case sensitive)

Time Schedule	
Enable daylight saving	Disabled (Start 1st Sunday in March, End 3rd Sunday in October)
Detector day sensitivity enabled	Disabled Mo/Tu/We/Th/Fr/Sa/Su From 7:00 am, To 5:30 pm

Timer Settings	
Global delay mode	AV/PAS/Pre-signal
Day mode	No delay
Silence inhibit	0 min
Investigation time	180 s
Alarm verification delay	60 s

Sequential reset delay	5 s
AC failure delay	3 h
Waterflow delay	90 s/ Waterflow silenceable: disabled
Auto silence delay	10 min/ Enable: disabled
Sandwich alarm delay	5 min/ Enable: disabled
Dual zone first alarm reset	60 s/ First alarm latching: enabled

#### Language, Time Format and Units

Language	English
Timer format	12 h
Units	°F, ft

#### Function Settings

Silence	Audible only
Supervisory latching	Enabled
Enable silence	Enabled
Enable drill	Enabled

#### Printer Settings

Printer IP address	[empty]
Printer IP port	21
Printer FTP user	[empty]
Printer FTP password	[empty]
Event printing enable	Disabled
Event print delay	5 s

#### SLC Configuration

Device Type	Programming Option	Default Setting
SLC 1	Installed	Installed: enabled
	Address	0 (fixed)
	Topology	2 x class B
	Label	[empty]
	Bypassed	Disabled
SLC 2	Installed	Installed: disabled
	Address	0 (fixed)
	Topology	2 x class B
	Label	[empty]
	Bypassed	Disabled

Device Type	Programming Option	Default Setting
FAP-440-T FAP-440-TC FAP-440-DT FAP-440-DTC [SMOKE-M]	Zones Delay mode Device LED flashing Bypassed Point type Alarm mode Set point (Smoke) Set point (Heat) RoR Label Day alarm mode Day sensitivity (Smoke) Day sensitivity (Heat) RoR	No zone assigned No delay Enabled (flashing when polling) Disabled Fire automatic Multi-combined 2.50 %/ft (8.20 %/m) 135°F (57°C) Enabled [empty] Multi-combined 2.50 %/ft (8.20 %/m) 135°F (57°C) Enabled
	Smoke sensor (Multi-separated):	
	– Smoke label	[empty]
	– Smoke point type	Generic
FAP-325-V2F FAP-440 FAP-440-D [SMOKE-P]	Zones Delay mode Device LED flashing Point type Set point Label Day sensitivity Bypassed	No zone assigned No delay Enabled (flashing when polling) Fire automatic 2.50 %/ft (8.20 %/m) [empty] 2.50 %/ft (8.20 %/m) Disabled
FAP-325 [SMOKE-P]	Zones Delay mode Point type Set point Label Day sensitivity Bypassed	No zone assigned No delay Fire automatic 2.50 %/ft (8.20 %/m) [empty] 2.50 %/ft (8.20 %/m) Disabled
FAH-325 [HEAT]	Zones Delay mode Point type Set point Label Day sensitivity Bypassed	No zone assigned No delay Fire automatic 135°F (57°C) [empty] 135°F (57°C) Disabled

Device Type	Programming Option	Default Setting
FAH-440 [HEAT]	Zones Delay mode Device LED flashing Point type Set point RoR Label Day sensitivity RoR Bypassed RTI rating	No zone assigned No delay Enabled (flashing when polling) Fire automatic 135°F (57°C) Enabled [empty] 135°F (57°C) Enabled Disabled Standard
FAI-325 [SMOKE-I]	Zones Delay mode Point type Set point Label Day sensitivity Bypassed	No zone assigned No delay Fire automatic 0.85 %/ft (2.80 %/m) [empty] 0.85 %/ft (2.80 %/m) Disabled
FAA-325-B6S [SND-BASE]	Zones Label NAC pattern Bypassed Silenceable Activated by host	Global alarm zone (226) assigned [empty] Temporal Code 3 Disabled Enabled Disabled
FAD-325-DH [SMOKE-D]	Zones Delay mode Point type Set point Label Day sensitivity Detector bypassed FAD-RLY Duct relay: – FAD-RLY Installed – Zones – FAD-RLY label – FAD-RLY bypassed	No zone assigned No delay Fire automatic 2.00 %/ft (6.55 %/m) [empty] 2.00 %/ft (6.55 %/m) Disabled Disabled Global alarm zone (226) assigned [empty] Disabled
FLM-325-I4 [CONT-MOD]	Delay mode Device label Point type Input type Zones Bypassed	No delay [empty] Fire alarm manual NO with EOL No zone assigned Disabled

Device Type	Programming Option	Default Setting
FLM-325-I4-A FLM-325-I4-AI [CONT-MOD]	Wiring type – Class B – Class A Delay mode Device label Point type Input type Zones Bypassed	Enabled Disabled No delay [empty] Fire alarm manual NO with EOL No zone assigned Disabled
FLM-325-2I4 [CONT-MOD]	Input 1/Input 2 each: – Delay mode – Device label – Point type – Input type – Zones – Label – Bypassed	No delay [empty] Fire alarm manual NO EOL No zone assigned [empty] Disabled
FLM-325-CZM4 [CONVZ-MOD]	Zones Delay mode Point type Label Bypassed	No zone assigned No delay Fire automatic [empty] Disabled
FLM-325-2R4 FLM-325-2R4-2A FLM-325-2R4-2AI FLM-325-2R4-8A FLM-325-2R4-8AI [RELAY-MOD]	Device label Relay 1/Relay 2 each: – Relay label – Zones – Bypassed – Sequential reset – Drillable	[empty] [empty] Global alarm zone (226) assigned Disabled Disabled Disabled
D328A [RELAY-MOD]	Label Zones Bypassed Sequential reset Drillable	[empty] Global alarm zone (226) assigned Disabled Disabled Disabled
FLM-325-N4 FLM-325-NA4 FLM-325-NAI4 [NAC-MOD]	Zones Label NAC pattern Bypassed Silenceable	Global alarm zone (226) assigned [empty] Steady Disabled Enabled

**Mainboard**

<b>Relays</b>		
Relay 1	Relay type	Alarm
	Zones	Global alarm zone (226) assigned
	Drillable	Disabled
	Ext. signaling	Disabled
	Bypassed	Disabled
	Energized in normal	Disabled
	Sequential reset	Disabled
	Label	Mainboard relay 1
Relay 2	Relay type	Trouble
	Zones	Global trouble zone (227) assigned
	Drillable	Disabled
	Ext. signaling	Disabled
	Bypassed	Disabled
	Energized in normal	Enabled
	Sequential reset	Disabled
	Label	Mainboard relay 2
Relay 3	Relay type	Supervisory
	Zones	Global supervisory zone (228) assigned
	Drillable	Disabled
	Ext. signaling	Disabled
	Bypassed	Disabled
	Energized in normal	Disabled
	Sequential reset	Disabled
	Label	Mainboard relay 3

<b>NACs</b>		
NAC 1/ NAC 2	NAC pattern	Steady
	Zones	Global alarm zone (226) assigned
	Silenceable	Enabled
	Bypassed	Disabled
	Label	Mainboard NAC 1 / Mainboard NAC 2

<b>City Tie</b>		
	City Tie board installed	Disabled
	Activated by events from	Panel wide
City Tie 1	Configuration	Alarm
	Silenceable	Disabled
	Disabled	Disabled
	Bypassed	Disabled
	Label	City Tie 1 ALM

City Tie 2	Configuration	Supervisory
	Silenceable	Disabled
	Disabled	Disabled
	Bypassed	Disabled
	Label	City Tie 2 SUP

### Option Bus

<b>LED Annunciators</b>		
	Zone 1-128	Enabled
<b>LCD Annunciators/Command Centers</b>		
	No presettings	
<b>D7035 Octal Relay Modules, D7048 Octal Driver Modules</b>		
	Installed	Disabled
	Device label	[empty]
	Zones	Global Alarm Zone (226) assigned
	Drillable	Disabled
	Ext.signaling	Disabled
	Bypassed	Disabled
	Energized in normal	Disabled
	Sequential reset	Disabled
	Label	[empty]
<b>FPP-RNAC-8A-4C Remote NAC Power Supplies</b>		
RNAC 1/	Installed	Disabled
RNAC 2/	Device label	[empty]
RNAC 3/	Zones	Global Alarm Zone (226) assigned
RNAC 4	NAC pattern	Steady
	Silenceable	Enabled
	Bypassed	Disabled
	Label	[empty]

### Reporting

<b>Primary/Secondary Account</b>	
Account number	[empty]
Reporting format	SIA-DCS 300 no Text
Auto test time	2:00 am
Auto test interval	24 hours
Maximum attempts	10
Selection PSTN/IP/Disable	PSTN
<b>PSTN</b>	
Phone number	[empty]
<b>IP Reporting</b> Conettix	
Receiver IP address	[empty]
Port number	7700



<b>Primary/Secondary Account</b>	
Polling interval	240 s
Acknowledge wait time	10 s
Anti-replay	Enabled
Encryption	Disabled
Key string (0-9, A-F, 32 characters)	11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11

<b>PSTN Communicator Settings</b>	
Dialing type	DTMF
Monitor line 1	Disabled
Monitor line 2	Disabled
Redial interval	10 s

<b>Steering</b>	
For all report steering groups	Secondary as backup
Report events/operations from:	Panel wide

<b>E-mail Settings</b>	
	No presettings

## Zones

<b>Global Zones</b>	
<b>Zone number</b>	<b>Zone text</b>
226	Global Fire Alarm
227	Global Trouble
228	Global Supervisory
229	Global Alarm Verification
230	Global Pre-signal
231	Global PAS
232	Global Reset
233	Global Gas Alarm
234	Waterflow
All global zones are assigned to a default NAC pattern. The networked option is enabled for all global zones.	

<b>Software Zones (Programmable Local 1-128; Programmable Group 129-225)</b>	
Zone No.	Local: 1 - 128; Group: 129-225
Label	[empty]
NAC Pattern	Default
Bypassed	Disabled
Counting	1
Floor	0
Set Default	Reset

Dual-zones		
Group 1/ Group 2/ Group 3	Dual-zone pair 1	No zones assigned
	Dual-zone pair 2	No zones assigned
	Dual-zone pair 3	No zones assigned
	Dual-zone pair 4	No zones assigned

Floors		
Floor 1 to 32	Label	[empty]
	Sandwich alarm	Disabled

Networking	
	No presettings

### A.3

### Compatible SLC Devices for Retrofit Projects

The system allows for programming the following devices for retrofit projects:

Type Number	Device Group Type	Description
D322A	HEAT	Analog Heat Detector Head
D323A	SMOKE-P	Analog Photoelectric Smoke Detector Head
D324A	SMOKE-I	Analog Ionization Detector Head
D326A	CONT-MOD	Analog Point Contact Module
D327A	NAC-MOD	Analog NAC Module
D331A	SMOKE-D	Analog Duct Smoke Detector

## A.4 Reporting Codes

Contact ID Reporting Codes Layout and Abbreviations		
Position	Placeholder	Designation
1	####	Account Number
2	Q	Event qualifier - 1 = new event - 3 = restore - 6 = previously reported condition still present (status report)
3	XYZ	Event code
4	CC	Circuit or Ou for user level
5	AAA	Address number

Figure 1.1 Contact ID Layout (Example in the Bottom Row)

**Table 1.1** Contact ID Reporting Codes Layout and Abbreviations

SIA-DCS Reporting Codes Layout and Abbreviations		
Position	Placeholder	Designation
1	TT	Data type code
2	CAAA	Address number (circuit and address for point event, or 000u for user level)

Figure 1.2 SIA-DCS Layout (Example in the Bottom Row)

**Table 1.2** SIA-DCS Reporting Codes Layout and Abbreviations

Modem IIIa <sup>2</sup> Receiver Output Explanation	
When the Modem IIIa <sup>2</sup> reporting format is used with a Bosch Security Systems, Inc. receiver, the receiver output is in accordance with the following report layout:	
<b>Placeholder</b>	<b>Designation</b>
dd/dd	Date
tt:tt	Time
Lxx	Line number (receiver)
ACCT ####	Account number
AREA=C	Circuit
EEEEEEEEEE	Event
POINT=AAA	Address

Figure 1.3 Modem IIIa<sup>2</sup> Layout

**Table 1.3** Modem IIIa2 Receiver Output Explanation

**NOTICE!**

For further address information, refer to *Section 3.4 Address Assignment on Page 39* and *Section 3.4.3 Mainboard Address Assignment on Page 41* .

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### List of Reporting Codes

Refer to *Figure 1.1*, *Figure 1.2* and *Figure 1.3* for complete reporting layout and explanation.

For Modem IIIa<sup>2</sup> reporting codes the following chart only lists the event text.

Report	Index	Contact ID	SIA-DCS	Modem IIIa <sup>2</sup> (Event)
Fire Alarm General	1	#### 1 110 CC AAA	FA CAAA	FIRE ALARM
Fire Alarm Smoke	2	#### 1 111 CC AAA	FA CAAA	FIRE ALAR SMOKE DETCTOR
Fire Alarm Duct	3	#### 1 116 CC AAA	FA CAAA	FIRE ALARM SMOKE DETCTOR
Fire Alarm Heat	4	#### 1 114 CC AAA	FA CAAA	FIRE ALARM HIGH TEMP. SENSOR
Fire Alarm Manual	5	#### 1 115 CC AAA	FA CAAA	FIRE ALARM
Fire Alarm Waterflow	6	#### 1 113 CC AAA	SA CAAA	FIRE ALARM WATERFLOW POINT
Fire Supervisory	7	#### 1 200 CC AAA	SS CAAA	FIRE SUPERVISION
Gas Alarm	8	#### 1 151 CC AAA	GA CAAA	FIRE SUPERVISION
Fire Alarm Restore General	17	#### 3 110 CC AAA	FH CAAA	FIRE ALARM REST
Fire Alarm Restore Smoke	18	#### 3 111 CC AAA	FH CAAA	FIRE ALM RESTOR SMOKE DETCTOR
Fire Alarm Restore Duct	19	#### 3 116 CC AAA	FH CAAA	FIRE ALM RESTOR SMOKE DETCTOR
Fire Alarm Restore Heat	20	#### 3 114 CC AAA	FH CAAA	FIRE ALARM RESTOR HIGH TEMP. SENSOR
Fire Alarm Restore Manual	21	#### 3 115 CC AAA	FH CAAA	FIRE ALM RESTOR
Fire Alarm Restore Waterflow	22	#### 3 113 CC AAA	SH CAAA	FIRE ALM RESTOR WATERFLOW POINT
Fire Supervisory Restore	23	#### 3 200 CC AAA	SR CAAA	FIRE SUPRV REST
Gas Alarm Restore	24	#### 3 151 CC AAA	GH CAAA	FIRE SUPRV REST
Fire Bypassed	32	#### 1 571 CC AAA	FB CAAA	POINT BYPASS FIRE POINT
Waterflow Bypassed	33	#### 1 571 CC AAA	WB CAAA	POINT BYPASS WATERFLOW POINT
Supervisory Bypassed	34	#### 1 571 CC AAA	FB CAAA	POINT BYPASS SUPERVISORY POINT
Gas Bypassed	35	#### 1 570 CC AAA	GB CAAA	POINT BYPASS
General Bypassed	36	#### 1 570 CC AAA	FB CAAA	POINT BYPASS
Fire Unbypassed	48	#### 3 571 CC AAA	FU CAAA	BYPASS RESTORE FIRE POIN
Waterflow Unbypassed	49	#### 1 571 CC AAA	WU CAAA	BYPASS RESTORE WATERFL. POINT
Supervisory Unbypassed	50	#### 1 571 CC AAA	FU CAAA	BYPASS RESTORE SUPERVISORY
Gas Unbypassed	51	#### 1 570 CC AAA	GU CAAA	BYPASS RESTORE
General Unbypassed	52	#### 1 570 CC AAA	FU CAAA	BYPASS RESTORE
General Trouble	64	#### 1 373 CC AAA	ET CAAA	FIRE TROUBLE
AC Power Failure [Mainboard]	65	#### 1 301 00 000	AT 0000	AC FAILURE
AC Power Failure [Point]	65	#### 1 342 CC AAA	AT CAAA	AC FAILURE
AUX Power Failure	66	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
Battery Charger Failure	67	#### 1 302 00 000	ET 0000	EQUIPMENT FAIL
Battery Failure	68	#### 1 302 CC AAA	YT CAAA	BATTERY LOW
Battery Relay Failure	69	#### 1 320 00 000	ET 0000	EQUIPMENT FAIL
Earth Ground Failure	70	#### 1 310 00 000	ET 0000	TROUBLE REPORT GROUND FAULT

Report	Index	Contact ID	SIA-DCS	Modem IIIa <sup>2</sup> (Event)
EOL Open	71	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
EOL Short	72	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
NAC Over Current	73	#### 1 300 CC AAA	YI CAAA	EQUIPMENT FAIL
Dialer Trouble	74	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
Phone Line Trouble [Line 1]	75	#### 1 351 00 000	LT 0000	PHONE LINE FAIL PHONE LINE=1
Phone Line Trouble [Line 2]	75	#### 1 352 00 000	LT 0000	PHONE LINE FAIL PHONE LINE=2
IP Reporting Path Failure	76	#### 1 356 CC AAA	ET CAAA	NETWORK FAIL
Communication to Primary Account Failure	77	#### 1 350 CC AAA	YC CAAA	COMM FAI
Communication to Secondary Account Failure	78	#### 1 350 CC AAA	YC CAAA	COMM FAI
Short on OUT Connections (for Class B)	79	#### 1 372 CC 000	ET CAAA	PT BUS TROUBLE
Short on IN Connections (for Class B)	80	#### 1 372 CC 000	ET CAAA	PT BUS TROUBLE
Short	81	#### 1 372 CC AAA	ET CAAA	FIRE TROUBLE
Open	82	#### 1 371 CC AAA	ET CAAA	FIRE TROUBLE
Circuit Open	83	#### 1 371 CC 000	ET CAAA	PT BUS TROUBLE
Low Voltage	84	#### 1 370 CC 000	ET CAAA	PT BUS TROUBLE
High Current	85	#### 1 370 CC 000	YI CAAA	PT BUS TROUBLE
External Power	86	#### 1 300 CC 000	ET CAAA	FIRE TROUBLE
Circuit Type Mismatch	87	#### 1 300 CC 000	ET CAAA	PT BUS TROUBLE
Device Internal	88	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Heat Sensor Problems	89	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Smoke Sensor Problems	90	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Multi Sensor Problems	91	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Device Missing	92	#### 1 380 CC AAA	EM CAAA	MISSING FIRE
New Device	93	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Wrong Device Type	94	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Sensor Dirty	95	#### 1 393 CC AAA	AS CAAA	ANALOG SERVICE SENSOR DIRTY
Sensor Calibration Failed	96	#### 1 392 CC AAA	AS CAAA	FIRE TROUBLE
Device Initialization Failed	97	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Reserve Polarization (Wrong Connection)	98	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Short Circuit Isolator	99	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Double Address	100	#### 1 380 CC AAA	ET CAAA	FIRE TROUBLE
Local Energy Activated	101	#### 1 300 CC AAA	ET CAAA	FIRE TROUBLE
Local Energy Activation Failed	102	#### 1 300 CC AAA	ET CAAA	FIRE TROUBLE
Unverified	103	#### 1 378 CC AAA	FG CAAA	UNVRFD EVT-FIR CROSS POINT
Switch Board Missing	104	#### 1 330 CC AAA	EM CAAA	EQUIPMENT FAIL
NIC Port Disconnect	105	#### 1 330 CC AAA	ET CAAA	EQUIPMENT FAIL
Wiring Loop Open	106	#### 1 371 CC AAA	ET CAAA	EQUIPMENT FAIL

Report	Index	Contact ID	SIA-DCS	Modem IIIa <sup>2</sup> (Event)
Network Panel Missing	107	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
Double Panel Address	108	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
Network Configuration Conflict	109	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
Network Panel New	110	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
Wrong Address Trouble (for 440)	111	#### 1 380 CC AAA	ET CAAA	EQUIPMENT FAIL
CO Lifetime Trouble (for 440)	112	#### 1 380 CC AAA	ET CAAA	EQUIPMENT FAIL
CO Fail Trouble (for 440)	113	#### 1 380 CC AAA	ET CAAA	EQUIPMENT FAIL
Device Internal Trouble (for 440)	114	#### 1 380 CC AAA	ET CAAA	EQUIPMENT FAIL
Switch Board New	115	#### 1 330 CC AAA	ET CAAA	EQUIPMENT FAIL
Wiring Loop Type	116	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
Control Conflict	117	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
Panel Event Synch	118	#### 1 300 CC AAA	ET CAAA	EQUIPMENT FAIL
General Trouble Restore	128	#### 3 373 CC AAA	ER CAAA	FIRE TBL RESTOR
AC Power Restore [Mainboard]	129	#### 3 301 00 000	AR 0000	AC RESTORAL
AC Power Restore [Point]	129	#### 3 342 CC AAA	AR CAAA	AC RESTORAL
AUX Power Restore	130	#### 3 300 CC AAA	ER CAAA	EQUIP RESTORAL
Battery Charger Restore	131	#### 3 302 00 000	ER 0000	EQUIP RESTORAL
Battery Restore	132	#### 3 302 CC AAA	YR CAAA	BATTERY RESTORAL
Battery Relay Restore	133	#### 3 320 00 000	ER 0000	EQUIP RESTORAL
Earth Ground Restore	134	#### 3 310 00 000	ER 0000	RESTORAL REPORT GROUND FAULT
EOL Open Restore	135	#### 3 300 CC AAA	ER CAAA	EQUIP RESTORAL
EOL Short Restore	136	#### 3 300 CC AAA	YJ CAAA	EQUIP RESTORAL
NAC Over Current Restore	137	#### 3 300 CC AAA	ER CAAA	EQUIP RESTORAL
Dialer Restore	138	#### 3 300 CC AAA	ER CAAA	EQUIP RESTORAL
Phone Line Restore [Line 1]	139	#### 3 351 00 000	LR 0000	PHONE RESTORAL PHONE LINE=1
Phone Line Restore [Line 2]	139	#### 3 352 00 000	LR 0000	PHONE RESTORAL PHONE LINE=2
IP Reporting Path Restore	140	#### 3 356 CC AAA	ER CAAA	NETWORK RESTORE
Communication to Primary Account Restore	141	#### 3 350 CC AAA	YK CAAA	COMM FAIL RESTR
Communication to Secondary Account Restore	142	#### 3 350 CC AAA	YK CAAA	COMM FAIL RESTR
Short on OUT Connections (for Class B) Restore	143	#### 3 372 CC 000	ER CAAA	PT BUS RESTORAL
Short on IN Connections (for Class B) Restore	144	#### 3 372 CC 000	ER CAAA	PT BUS RESTORAL
Short Restore	145	#### 3 372 CC AAA	ER CAAA	FIRE TBL RESTOR
Open Restore	146	#### 3 371 CC AAA	ER CAAA	FIRE TBL RESTOR
Circuit Open Restore	147	#### 3 371 CC 000	ER CAAA	PT BUS RESTORAL
Low Voltage Restore	148	#### 3 370 CC 000	ER CAAA	PT BUS RESTORAL
High Current Restore	149	#### 3 370 CC 000	YJ CAAA	PT BUS RESTORAL
External Power Restore	150	#### 3 300 CC 000	ER CAAA	FIRE TBL RESTOR
Circuit Type Mismatch Restore	151	#### 3 300 CC 000	ER CAAA	PT BUS RESTORAL

Report	Index	Contact ID	SIA-DCS	Modem IIIa <sup>2</sup> (Event)
Device Internal Restore	152	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Heat Sensor Restore	153	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Smoke Sensor Restore	154	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Multi Sensor Restore	155	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Device Missing Restore	156	#### 3 380 CC AAA	EN CAAA	FIRE TBL RESTOR
New Device Restore	157	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Wrong Device Type Restore	158	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Sensor Dirty Restore	159	#### 3 393 CC AAA	AN CAAA	ANALOG RESTORE SENSOR DIRTY
Sensor Calibration Restore	160	#### 3 392 CC AAA	AN CAAA	FIRE TBL RESTOR
Device Initialization Restore	161	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Reserve Polarization (Wrong connection) Restore	162	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Short Circuit Isolator Restore	163	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Double Address Restore	164	#### 3 380 CC AAA	ER CAAA	FIRE TBL RESTOR
Switch Board Missing Restore	165	#### 3 330 CC AAA	EN CAAA	EQUIPMENT RESTORAL
NIC Port Disconnect Restore	166	#### 3 330 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Wiring Loop Open Restore	167	#### 3 371 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Network Panel Missing Restore	168	#### 3 300 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Double Panel Address Restore	169	#### 3 300 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Network Configuration Conflict Restore	170	#### 3 300 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Panel New Restore	171	#### 3 300 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Wrong Address Restore (for 440)	172	#### 3 380 CC AAA	ER CAAA	EQUIPMENT RESTORAL
CO Lifetime Restore (for 440)	173	#### 3 380 CC AAA	ER CAAA	EQUIPMENT RESTORAL
CO Fail Restore (for 440)	174	#### 3 380 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Switch Board New Restore	176	#### 3 330 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Wiring Loop Type Restore	177	#### 3 300 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Control Conflict Restore	178	#### 3 300 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Panel Event Synch Restore	179	#### 3 300 CC AAA	ER CAAA	EQUIPMENT RESTORAL
Reset	192	#### 1 305 CC 000	OR 000u	SENSOR RESET
Silence	193	#### 1 912 0u 000	FL 000u	ALARM SILENCED
Drill Start	194	#### 1 604 0u 000	FI 000u	FIRE WALK START
Test Start	195	#### 1 607 0u 000	TS 000u	WALK TEST START
Manual Communicator Test	196	#### 1 601 CC AAA	RX CAAA	TEST REPORT
Normal Auto Test	197	#### 1 602 CC AAA	RP CAAA	TEST REPORT
Off-normal Auto Test	198	#### 1 608 CC AAA	YX CAAA	TEST OFF-NORMAL
Remote Programming Successful	199	#### 1 412 0u 000	RS 000u	RAM ACCESS OK
Local Programming Start	200	#### 1 607 0u 000	LB 000u	WALK TEST START
Remote Programming Unsuccessful	201	#### 1 413 0u 000	RU 000u	RAM ACCESS FAIL
Drill End	226	#### 1 604 0u 000	FK 000u	FIRE WALK END
Test End	227	#### 1 607 0u 000	TE 000u	WALK TEST END



## A.5 FPA-1000-UL Operating Instructions Sheet

This section is a copy of the *Operating Instruction Sheet* (P/N F.01U.075.632) supplied with the FPA-1000-UL Fire Panel. The original document must be framed and mounted in view adjacent to the FACP.

<b>Local Service Representative:</b>
Address:
Phone:

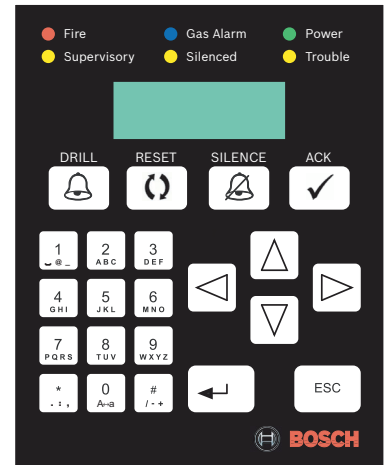
### Understanding the Built-in Keypad

Six light-emitting diodes (LEDs) show fire alarm, gas alarm, power, supervisory, silence and trouble conditions. The built-in keypad can be used for total system control and programming. The alphanumeric keys are used to enter text information. The escape, enter and arrow keys (left, right, up, down) for menu navigation. The 4-line x 20 character alphanumeric LCD display shows programmed device point information. Four keys enable:

- [DRILL]: Turns on all unbypassed NACs and drillable relay outputs.
- [RESET]: Turns off the piezo; resets all input points and outputs to normal status.
- [SILENCE]: Quiets the bells/sirens for an alarm or trouble condition.
- Acknowledge [ACK]: Turns off the piezo and starts the investigation timer after a PAS activation or the trouble reminder for trouble events, if configured.

A built-in piezo provides an audible indication of the system status.

The panel offers three different programmable authority levels. The PIN needed for authority levels 2 and 3 (and restricted Level 1 if programmed) is a four-digit code. After pressing the enter key, the user is prompted with the main menu and is able to press any shortcut key to perform the operations available. If the selected operation needs access to a higher authority level, the user is asked to enter the PIN.



LED Operation		Piezo Operation <sup>1)</sup>	System Status <sup>2)</sup>
<b>Power</b> Green	On	Silent	If AC power is applied to the panel
	Flashing	Periodic beep (0.5 s on, 9.5 s off)	When AC power fails and the unit operates from the battery power
	Off	Silent	When no power (AC or battery) is applied
<b>Fire</b> Red LED	On	Continuous beep	Whenever the system registers a fire alarm and is not reset <sup>3)</sup>
	Off	Silent	If no alarm is registered, and after resetting
<b>Gas Alarm</b> Blue	On	Periodic beep (0.5 s on, 1.5 s off)	Whenever the system registers a gas alarm and is not reset <sup>3)</sup>
	Off	Silent	If no gas alarm is registered, and after resetting
<b>Supervisory</b> Yellow	On	Periodic beep (0.5 s on, 3.5 s off)	When the system registers a supervisory condition
	Off	Silent	When no supervisory condition is registered
<b>Silenced</b> Yellow	On	Silent	When an alarm or trouble condition is silenced manually by the user, or if the system auto-silence timer expires
	Off	Silent	When no condition is silenced, or when the silenced condition is corrected
<b>Trouble</b> Yellow	On	Periodic beep (0.5 s on, 9.5 s off)	When the panel is initializing, or when the panel registers a trouble condition from a point or the panel, or when inputs or outputs or other elements are bypassed
	Flashing	Silent	When the panel is not operating, or when a walk test is in progress
	Off	Silent	When no trouble condition exists, or when the panel is resetting

<sup>1)</sup> Short beep upon every key press.

LED Operation	Piezo Operation <sup>1)</sup>	System Status <sup>2)</sup>
<sup>2)</sup> When the panel is in the normal state (no alarm, supervisory or trouble condition), the display message is "System Normal" along with the current date and time. If PAS or Pre-signal is turned on, the screen indicates "SYSTEM NORMAL DAY".		
<sup>3)</sup> Any off-normal conditions appear in groups classified as fire alarm, gas alarm, supervisory and trouble. Use the arrow keys to view events or conditions in the same group. Up and down keys move the user to the previous or next event, while left and right keys switch to other groups. The individual message display includes information about the point and the specific event or condition. The initial highest priority event always appears on top.		

## A.6 FPA-1000-V2 Operating Instructions Sheet

This section is a copy of the *Operating Instruction Sheet* (P/N F.01U.173.612) supplied with the FPA-1000-V2 Fire Panel. The original document must be framed and mounted in view adjacent to the FACP.

<b>Local Service Representative:</b>
Address:
Phone:

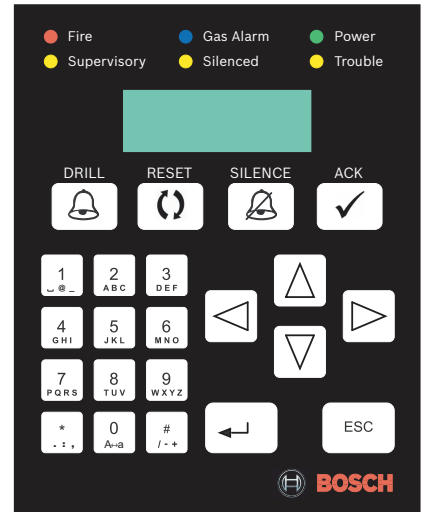
### Understanding the Built-in Keypad

Six light-emitting diodes (LEDs) show fire alarm, gas alarm, power, supervisory, silence and trouble conditions. The built-in keypad can be used for total system control and programming. The alphanumeric keys are used to enter text information. The escape, enter and arrow keys (left, right, up, down) for menu navigation. The 4-line x 20 character alphanumeric LCD display shows programmed device point information. Four keys enable:

- [DRILL]: Turns on all unbypassed NACs and drillable relay outputs.
- [RESET]: Turns off the piezo; resets all input points and outputs to normal status.
- [SILENCE]: Quiets the bells/sirens for an alarm or trouble condition.
- Acknowledge [ACK]: Turns off the piezo and starts the investigation timer after a PAS activation or the trouble reminder for trouble events, if configured.

A built-in piezo provides an audible indication of the system status.

The panel offers different programmable authority levels. The PIN needed for authority Levels 2 and 3 (and restricted Level 1 if programmed) is a four-digit code. After pressing the enter key, the user is prompted with the main menu and is able to press any shortcut key to perform the operations available. If the selected operation needs access to a higher authority level, the user is asked to enter the PIN.



If networked, this panel can control or be controlled by other panels in the same network group.

LED Operation		Piezo Operation <sup>1)</sup>	System Status <sup>2)</sup>
<b>Power</b> Green	On	Silent	If AC power is applied to the panel
	Flashing	Periodic beep (0.5 s on, 9.5 s off)	When AC power fails and the unit operates from the battery power
	Off	Silent	When no power (AC or battery) is applied
<b>Fire</b> Red LED	On	Continuous beep	Whenever the system registers a fire alarm and is not reset <sup>3)</sup>
	Off	Silent	If no alarm is registered, and after resetting
<b>Gas Alarm</b> Blue	On	Periodic beep (0.5 s on, 1.5 s off)	Whenever the system registers a gas alarm and is not reset <sup>3)</sup>
	Off	Silent	If no gas alarm is registered, and after resetting
<b>Supervisory</b> Yellow	On	Periodic beep (0.5 s on, 3.5 s off)	When the system registers a supervisory condition
	Off	Silent	When no supervisory condition is registered
<b>Silenced</b> Yellow	On	Silent	When an alarm or trouble condition is silenced manually by the user, or if the system auto-silence timer expires
	Off	Silent	When no condition is silenced, or when the silenced condition is corrected
<b>Trouble</b> Yellow	On	Periodic beep (0.5 s on, 9.5 s off)	When the panel is initializing, or when the panel registers a trouble condition from a point or the panel, or when inputs or outputs or other elements are bypassed
	Flashing	Silent	When the panel is not operating, or when a walk test is in progress
	Off	Silent	When no trouble condition exists, or when the panel is resetting

<sup>1)</sup> Short beep upon every key press.

LED Operation	Piezo Operation <sup>1)</sup>	System Status <sup>2)</sup>
<sup>2)</sup> When the panel is in the normal state (no alarm, supervisory or trouble condition), the display message is "System Normal" along with the current date and time. If PAS or Pre-signal is turned on, the screen indicates "SYSTEM NORMAL DAY".		
<sup>3)</sup> Any off-normal conditions appear in groups classified as fire alarm, gas alarm, supervisory and trouble. Use the arrow keys to view events or conditions in the same group. Up and down keys move the user to the previous or next event, while left and right keys switch to other groups. The individual message display includes information about the point and the specific event or condition. The initial highest priority event always appears on top.		

## Glossary

### A

Acknowledge	Action taken to confirm that a message or signal has been received, such as pressing a key.
Address	A number programmed in the device differentiating this device from another. Each keypad wired into the control panel must have a unique address. A device can have several subaddresses, (for example, Dual Relay Module); one address for the module itself, one subaddress for each relay.
Addressable device	A fire alarm system component with discrete identification that can have its status individually identified or that is used to individually control other functions.
Alarm	Event that is configured as an alarm. This is a particular situation (motion detected, doorbell rung, signal lost, etc.) that requires immediate attention. An alarm can include live video, playback video, an action plan, or a map.
Alarm verification	A feature of automatic fire detection and alarm systems to reduce unwanted alarms wherein smoke detectors report alarm conditions for a minimum period of time, or confirm alarm conditions within a given time period after being reset, in order to be accepted as a valid alarm initiation signal.
Annunciator	A unit containing one or more indicator lamps, alphanumeric displays, or other equivalent means in which each indication provides status information about a circuit, condition, or location.

### C

Comm error	Any condition which interrupts communication between protected premises and the supervising station.
Conventional device	An initiating device or notification appliance that cannot be individually identified or selected for control by the fire alarm system.

### D

DACT	Abbreviation for digital alarm communicator transmitter. A system component at the protected premises to which initiating devices or groups of devices are connected. The DACT seizes the connected telephone line, dials a preselected number to connect to a DACR, and transmits signals indicating a status change of the initiating device.
Detector	A device suitable for connection to a circuit that has a sensor that responds to a physical stimulus such as heat, smoke or gas.

### E

Exit plan	A plan for the emergency evacuation of the premises.
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### F

FACP	Abbreviation for Fire Alarm Control Panel. A system component that receives inputs from automatic and manual fire alarm devices and might supply power to detection devices and to a transponder(s) or off-premises transmitter(s). The control unit might also provide transfer
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of power to the notification appliances and transfer of condition to relays or devices connected to the control unit. The fire alarm control unit can be a local fire alarm control unit or a master control unit.

**Fire Network ID** A panel wide configuration item ranging from 1 - 254 which identifies all panels within a panel network with the same ID.

## G

**Ground fault** A circuit impedance to ground sufficient to result in the annunciation of a trouble condition.

## I

**Initiating device** A manually- or automatically-operated device, whose normal intended operation results in a fire alarm or supervisory signal indication from the control unit. Examples of alarm-initiating devices are heat detectors, manual boxes, smoke detectors, water-flow switches, and gas sensors. Examples of supervisory signal-initiating devices are water-level indicators, sprinkler-system valve-position signals, pressure supervisory transmitters, water-temperature switches and duct detectors. An Initiating Device Circuit is a circuit to which automatic or manual initiating devices are connected where the signal received does not identify the individual device operated. A system component that originates transmission of a change-of-state condition, such as in a smoke detector, manual fire alarm box, or supervisory switch.

**Initiating Device Circuit**

Circuit to which automatic or manual initiating devices are connected where the signal received does not identify the individual device operated.

## K

**Keypad** A means of manually controlling the product. Provided with a visual-indicating device containing identified targets or indicator lamps, alphanumeric displays, or other equivalent means, in which each indication provides status information about a circuit, condition, and/or location.

## N

**NAC** Abbreviation for Notification Appliance Circuit. A circuit or path directly connected to a notification appliance.

**Notification appliance**

Any audible or visible signal or any combination thereof employed to indicate a fire, supervisory, or trouble condition.

## O

**Open fault** A significantly high circuit impedance or open that prevents normal operation.

## P

**PAS** Abbreviation for Positive Alarm Sequence. An automatic sequence that results in an alarm signal, even when manually delayed for investigation, unless the system is reset.

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Point	An individual device or address. Each point in the system is individually identified by the control panel and can be programmed with specific functions or responses.
Power supply	A source of electrical operating power including the circuits and terminations connecting it to the dependent product/system components.
Pre-signal alarm	An arrangement where the operation of an automatic detector or initial operation of a manual station actuates only a selected indicating-device or devices for the purpose of notifying key personnel who then have the option of initiating a general alarm.

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## R

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Reset	A control function that attempts to return a system or device to its normal non-alarm state.
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## S

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Short circuit	A short circuit (wire-to-wire) fault is determined to be a resistance low enough to cause the panel to enter into a fault condition.
SLC	Abbreviation for Signaling Line Circuit. A circuit or path between any combination of circuit interfaces, control units, or transmitters over which multiple system input signals or output signals, or both, are carried.
Supervisory signal	A signal indicating the need of action in connection with the supervision of HVAC, sprinkler and other extinguishing systems or equipment, or with the maintenance features of other protective systems.

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## T

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Trouble signal	An audible or visible signal indicating a fault condition of any nature, such as a circuit break or ground or other trouble condition occurring in the device or wiring associated with a protective signaling system.
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## Z

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Zone	A defined area within the protected premises. A zone defines an area from which a status indication can be received or an area in which a form of control can be executed.
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