Fire·Lite® Alarms

The Sensiscan 200

Installation, Operation, and Programming Manual

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

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

CAUTION - *System Reacceptance Test after Software Changes:* To ensure proper system operation, this product must be tested in accordance with NFPA 72-1993 Chapter 7 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49° C/32-120° F and at a relative humidity of 85% RH (non-condensing) at 30° C/86° F. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a nominal room temperature of 15-27° C/60-80° F.

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

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

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

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

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

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

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

Fire Alarm System Limitations
While installing a fire alarm system may make lower insurance rates possible, it is not a substitute for fire insurance!

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

Any fire alarm system may fail for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in walls, or roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second floor detector, for example, may not sense a first floor or basement fire. Further-more, all types of smoke detectors - both ionization and photoelectric types, have sensing limitations. No type of smoke detector can sense every kind of fire caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson.

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

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time.

Rate-of-Rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist.

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

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled.

The most common cause of fire alarm malfunctions, however, is inadequate maintenance. All devices and system wiring should be tested and maintained by professional fire alarm installers following written procedures supplied with each device. System inspection and testing should be scheduled monthly or as required by National and/or local fire codes. Adequate written records of all inspections should be kept.

FCC Warning

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

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

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

Table of Contents

Section One:
General Information

Introduction

The Sensiscan 200 is an expandable multi-zone Fire Alarm Control Panel based on a modular design for maximum flexibility. The heart of the system is the Central Processor Unit (CPU) module which monitors and directs the actions of all other modules in the system. Up to two other modules may be installed in various configurations. Internal communications are accomplished over a high-speed serial bus.

The CPU-2000 is provided with the BE-200 Basic Equipment package. This module provides two Style Z and/or Style Y Notification Appliance Circuits, Form-C alarm and trouble contacts, Remote Station alarm and trouble outputs, and a Municipal Master Box output.

An initiating zone module (IZ-4F or IZ-8F) and a CAB-200 cabinet must be added to make the basic system functional.

The basic system can be expanded using one or more of the following optional modules or boards:

- IZ-8F Initiating Zone Module
- IZ-4F Initiating Zone Module
- IZ-4AF Initiating Zone Module
- IZE-AF Initiating Zone Expander
- IC-4F Indicating Circuit Module
- ICR-4LF Combination Output Module
- ICE-4F Indicating Circuit Expander

- AVPS-24F Audio-Visual Power Supply
- CR-4F Control Relay Module
- CR-4LF Control Relay Module
- CRE-4F Control Relay Expander
- TC-2F Time Control Module
- TC-4F Time Control Module
- UDACT-F Universal Digital Alarm Communicator Transmitter

System expansion must comply with:
- The physical limitations of the cabinet configuration.
- The electrical limitations of the system power supply (see Appendix A).
- The capacity of the standby batteries (see Appendix A).

Key Features
- Distributed microprocessor electronics.
- Field programmable in nonvolatile memory.
- Manual Disable control for all Notification Appliance Circuits and control relays.
- Alarm verification, with device type discrimination.
- Walk Test, with zone change indication.
- Serial annunciators, including LCD and custom annunciators.
- Multiple hazard release control modules.
- Programmable software timers including positive alarm sequence.

Before proceeding, the installer should be familiar with the following documents and standards (as appropriate):

NFPA Standards:
NFPA 13 Sprinkler System.
NFPA 72-1993 Installation, Maintenance, and Use of Central Station Signaling Systems.
NFPA 72-1993 National Fire Alarm Code for Local, Auxiliary, Remote Station and Proprietary Fire Alarm Systems, Automatic Fire Detectors, Notification Appliances for Fire Alarm Systems, and Testing Procedures for Signaling Systems.

Underwriters Laboratories Documents:
UL 38 Manually Actuated Signaling Boxes
UL 217 Smoke Detectors, Single and Multiple Station
UL 228 Door Closers - Holders for Fire Protective Signaling Systems
UL 268 Smoke Detectors for Fire Protective Signaling Systems
UL 268A Smoke Detectors for Duct Applications
UL 346 Waterflow Indicators for Fire Protective Signaling Systems
UL 464 Audible Signaling Appliances
UL 521 Heat Detectors for Fire Protective Signaling Systems
UL 864 Standard for Control Units for Fire Protective Signaling Systems
UL 1481 Power Supplies for Fire Protective Signaling Systems
UL 1638 Visual Signaling Appliances

Underwriters Laboratories of Canada (ULC) listed
Standard CAN/ULC-S527-M87

Other:
EIA-485 Serial Interface Standards
NEC Article 300 Wiring Methods
NEC Article 760 Fire Protective Signaling Systems
Applicable Local and State Building Codes
Requirements of the Local Authority Having Jurisdiction

Minimum System Configurations

At a minimum, the following components are required for compliance with NFPA standards 12, 12A, 12B, and 72-1993. **Supervisory listing is for local systems only.**

1. **BE-200 Basic Equipment Package** which includes:
   Central Processor Module (CPU-2000), Main Power Supply (MPS-24BPCC), transformer (4000TA), interconnecting cables, mounting hardware and an instruction manual.

2. **An IZ-4F, IZ-4AF or IZ-8F Initiating Zone Module** for up to eight Style B Initiating Device Circuits.

3. **Standby Batteries** - refer to Standby Power Requirements, Appendix A.

4. **Cabinet (CAB-200).**

In addition, the following equipment is required for the specific NFPA standards listed below:

An NFPA 72-1993 Central Station Protected Premises Control Unit requires:

5. **Fire-Lite UDACT-F, Noti•Fire 911A Digital Communicator or the Fire•Lite MS-5012 Control Communicator.**

An NFPA-12 Minimum Carbon Dioxide Extinguishing Control Unit, NFPA-12A Halon 1301 Fire Extinguishing Control Unit, NFPA-12B Halon 1211 Fire Extinguishing Control Unit or NFPA - 13 requires:

5. **TC-2F or TC-4F Time Control Module.**

For wiring diagrams and more information on these applications, refer to Section 6.

Section Two:
Inventory
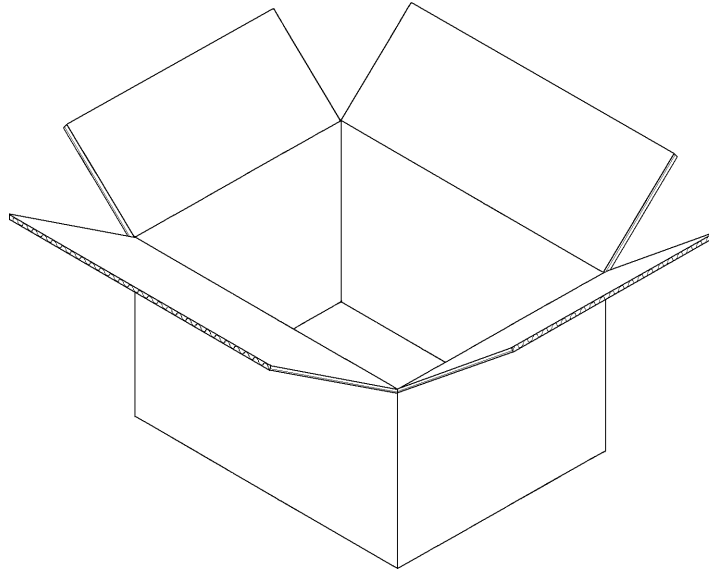
The Sensiscan 200 is offered under a **Basic Equipment (BE-200)** package which provides the CPU module, Main Power Supply, interconnecting cables and an instruction manual.

Components include modules and devices not provided in the Basic Equipment package. These components also include several items necessary to complete a basic system, such as an initiating module and cabinet. See Section One for Minimum System Requirements.

This installation manual covers system basics. For information on special applications, refer to the following installation manuals:

Document Number	Document Name
15390	The AFM-X Series Annunciator Modules
15970	The Annunciator Fixed Module
15971	The TC-2F Time Control Module
15972	The TC-4F Time Control Module
50362	The ACM-8RF Annunciator Control Module
15210	The AFM-16AF Annunciator Control Module
15384	Fire-Lite Device Compatibility Document
50055	The LDM-32F Series Lamp Driver Module
50049	UDACT-F Universal Digital Alarm Communicator Transmitter
74-06200-005A	Noti-Fire 911A Communicator
50519	RS-1459 Product Installation Drawing
50056	Canadian Requirements for Supervisory Signals

The Basic Equipment Package
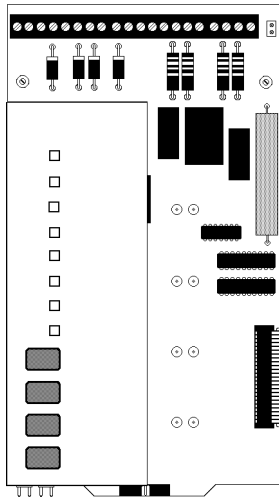
CPU-2000 Central Processor Module

This module is the heart of the system. It controls and monitors the system modules and provides a full accounting of system status. In addition, the CPU contains two Notification Appliance Circuits, a Remote Signaling Municipal Tie Circuit, and Form-C alarm and trouble contacts. Field programming of the system is accomplished from this module via the use of the Programming Key. Includes End-of-Line and Dummy Load resistors.

End-of-Line Resistor
4.7K, 1/2 watt (71252)

Dummy Load Resistor
4.7K, 1/2 watt (71245)

KEY #___ PWD#___
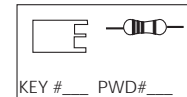
Programming Key
(PKB)
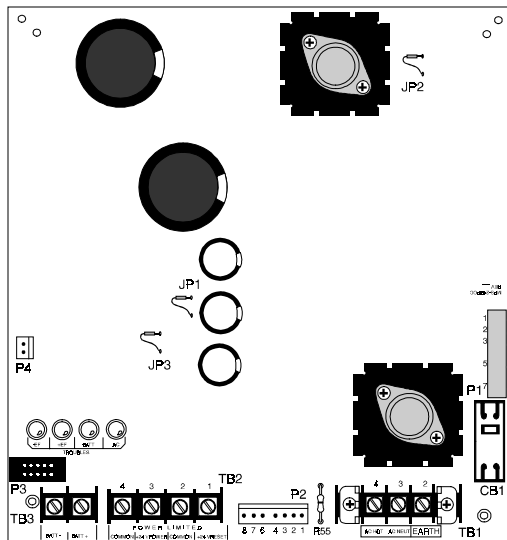
MPS-24BPCC

The MPS-24BPCC supplies the regulated power needed to run the system modules. It also supplies up to 2.0 amps of regulated notification appliance power, permitting the use of a variety of standard UL listed 24 VDC notification appliances (see the Device Compatibility Document for a complete listing). Up to 200 mA of resettable power is available for four wire smoke detectors. The MPS-24BPCC contains an integral battery charger capable of charging batteries in the 6.5 to 17 amp-hour range (Note: 15-17AH batteries require a separate battery cabinet). Includes two sets of battery cables, one for large battery terminals and one for small terminals. **Note:** For reorders, specify an "MPS-24BRB" (for *Replacement Board*).
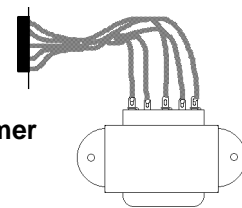
4000TA Transformer

Module Ribbon Cable
(75171)

Main Bell Power Harness
(75169)

Positive Battery Cable (red)
(71071)

Power Ribbon
(75170)

Power Harness
(75168)

Negative Battery Cable (black)
(71072)

Series Interconnect
(71070)

Modules

IZ-8F Initiating Zone Module

This module provides eight Style B Initiating Device Circuits. Circuits are power limited and can be programmed by the user for standard fire, Waterflow Alarm, Supervisory service, Non Alarm or Command Inputs. Also provided are eight End-of-Line and eight Dummy Load Resistors.
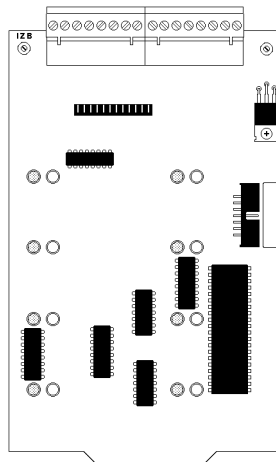
IZ-4F Initiating Zone Module

This module provides four Style B Initiating Device Circuits. Circuits are power limited and are user programmable for standard fire, Waterflow Alarm, Supervisory service, Non Alarm or Command Inputs. Also provided are End-of-Line Resistors and Dummy Load Resistors.

Note: This module will not support the IZE-AF Initiating Zone Expander module.

IZE-AF Initiating Zone Expander

Converts the eight Initiating Device Circuits on the Initiating Zone Module (IZ-8F) to Style D operation. The expander plugs into the bottom of the IZ-8F.

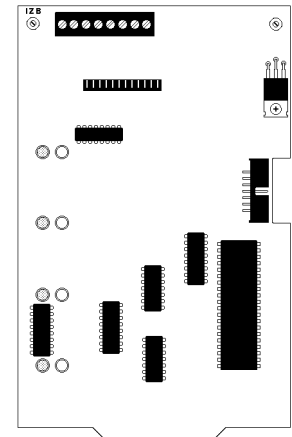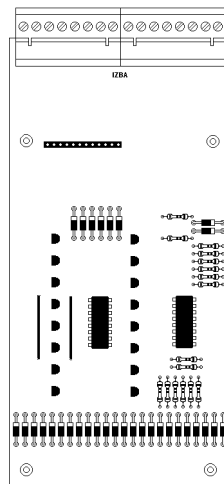### IZ-4AF Initiating Zone Module

This module provides four Style D Initiating Device Circuits. Circuits are power limited and user programmable for standard fire, Waterflow Alarm, Supervisory service, Non-Alarm or Command inputs.
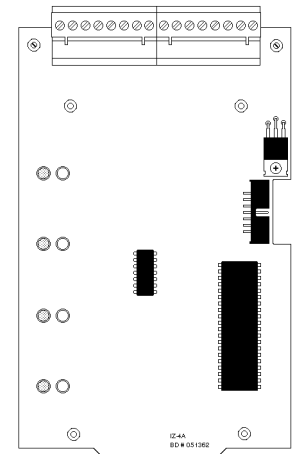
Note: This module will not support an IZE-AF Initiating Zone Expander module.

End-of-Line Resistors

Dummy Load Resistors

Modules

TC-2F/TC-4F Time Control Module

The TC-2F module is intended for single-hazard release and can be configured for standard release service triple coded release, or IRI release. It includes abort and manual release circuits and an adjustable timer and display. For more information refer to the TC-2F Manual.

The TC-4F can provide either four releasing circuits or four two-stage evacuation circuits. Each circuit includes a cross-zone option and delay timer option. For more information refer to the TC–4F Manual.
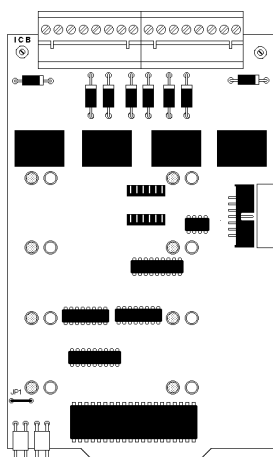
CR-4LF Control Relay Module

Provides four standard dry Form-C alarm contacts rated for 5 amps @ 120 VAC or 28 VDC (resistive). Each relay is field programmable to respond to a single Initiating Device Circuit, a group of circuits, or all Initiating Device Circuits.

ICR-4LF Combination Output Module

Provides two standard dry Form-C alarm contacts rated for 5 amps @ 120 VAC or 28 VDC (resistive) and two Style Y Notification Appliance Circuits. All relays and circuits are field programmable. Also provided are: End-Of-Line Resistors, Dummy Load Resistors, and Auxiliary Bell Power Harness.

One Auxiliary Bell Power Harness

Two End-of-Line Resistors
4.7K, 1/2 watt (71252)

Two Dummy Load Resistors
4.7K, 1/2 watt (71245)

RS-1459 Module

The RS-1459 module is used in conjunction with the Remote Station or Municipal Box Output. When the RS-1459 is employed, an AVPS-24F audio visual power supply cannot be installed. The RS-1459 is NOT required for the Municipal Box Circuit if wiring remains in conduit, wire length is less than 1000 meters, or wiring does not cross any power lines. All conditions must be met according to Figure 4-1. Refer to **Figures 3-1** and **4-1**. For more information on the RS-1459 module, refer to the RS-1459 Product Installation Drawing.

Modules

IC-4F Indicating Circuit Module

Provides four Notification Appliance Circuits for Style Y or Style Z operation. Maximum signaling current is 3.0 amps (3 amps max per circuit). Circuits are field programmable to respond to a single initiating zone, a group of zones, or all initiating zones. ELRs, Dummy Load Resistors, and an Auxiliary Bell Power Harness (shown below) are provided with each module. For California Code programming, consult the factory.
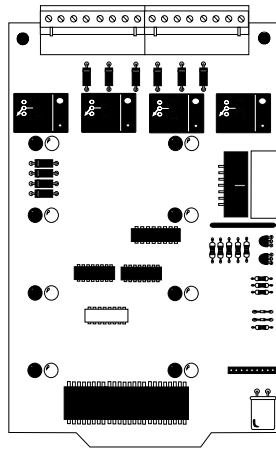
ICE-4F Indicating Circuit Expander

Expands the IC-4F to a total of eight Notification Appliance Circuits (either Style Y or Style Z). Circuit ratings are identical to those of the IC-4F. An Auxiliary Bell Power Harness is provided with each expander. The expander plugs into the back of the IC-4F.
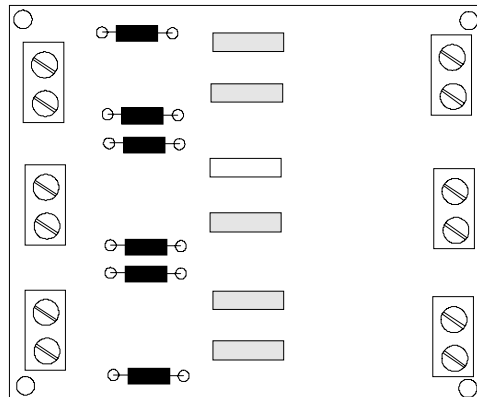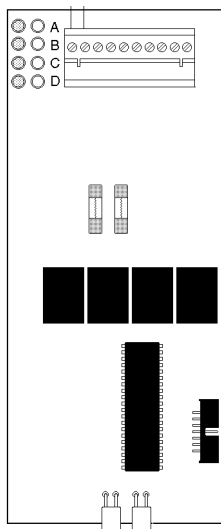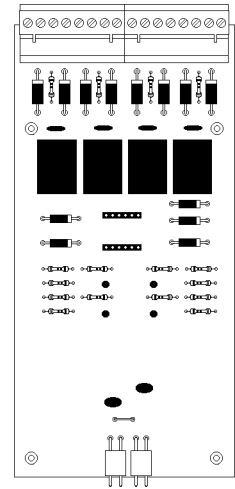
Auxiliary Bell Power Harness

CR-4F Control Relay Module

Provides four standard dry Form-C alarm contacts rated for 5 amps @ 120 VAC or 30 VDC (resistive). Each relay is field programmable to respond to a single Initiating Device Circuit, a group of circuits, or all Initiating Device Circuits.
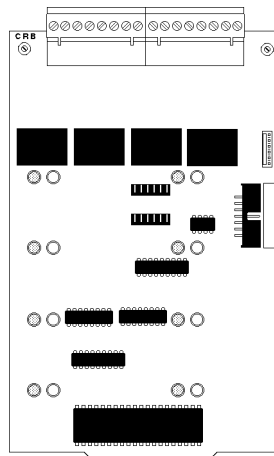
CRE-4F Control Relay Expander

Expands the capacity of the Control Relay Module (CR-4F) to eight Form-C alarm relays. Relays are identical to those on the CR-4F. The expander plugs into the back of the CR–4F, IC-4F, TC-2F or TC-4F.
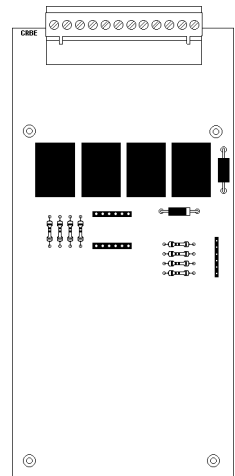
Communicators

UDACT-F Universal Digital Alarm Communicator Transmitter

Transmits system status to UL Listed Central Station Receivers via the public switched telephone network.
It is capable of reporting up to 56 software zones.
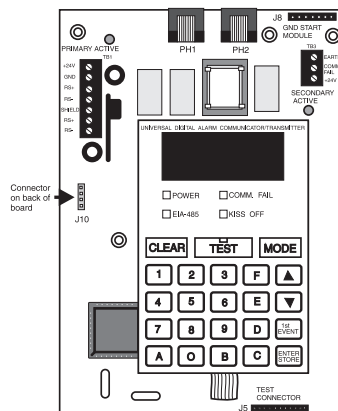
911A Digital Communicator Transmitter

Is a three-zone module designed to provide for off-premises monitoring of this fire alarm control panel. For stand-alone installations, use the 911AC kit that includes a transformer and an enclosure(s) for both the 911A and the transformer. Refer to the Notifire 911A manual, Document #74-06200-005-A.
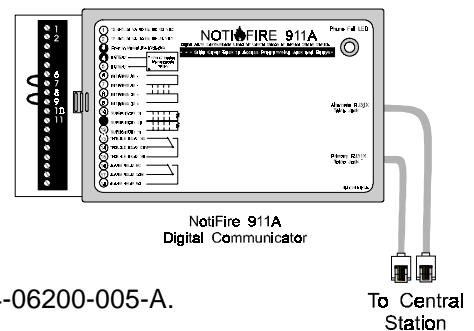
Optional Components
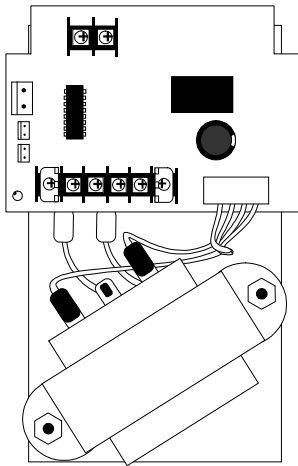
AVPS-24F Audio-Visual Power Supply
Supplies power to Notification Appliance Circuits only. Special Purpose power (unfiltered, unregulated) rated for 3.0 amps maximum. Provided with a Trouble Cable (below) for connection to the Main Power Supply.

Trouble Cable
(P/N 71033)
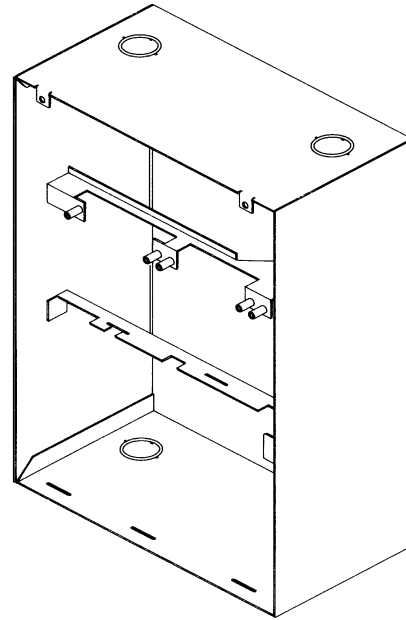
CAB-200 Cabinet
The cabinet is 17" high by 14-1/2" wide for recessed mounting between wall studs. Includes a backbox (illustrated) and door.
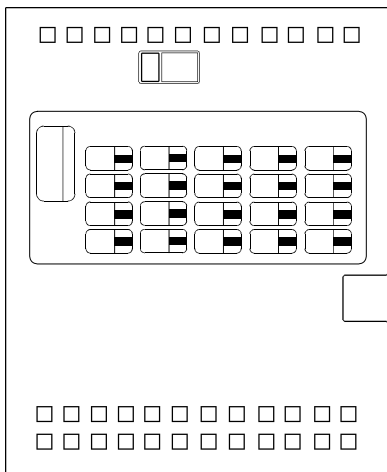
DP-200 Dress Panel
Mounts to the cabinet to cover system components.
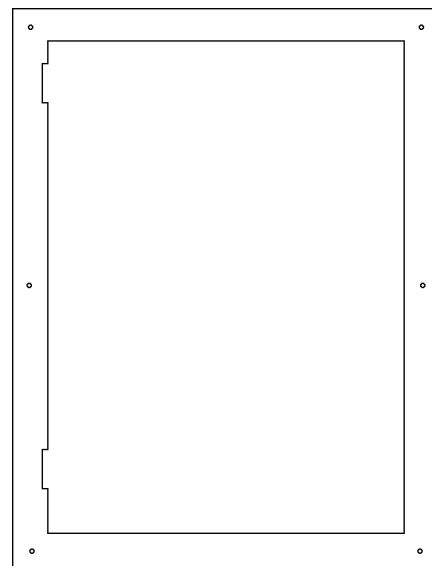
TR-200 Trim Ring
For semi-flush mounting of the cabinet.

Section Three:
Installation
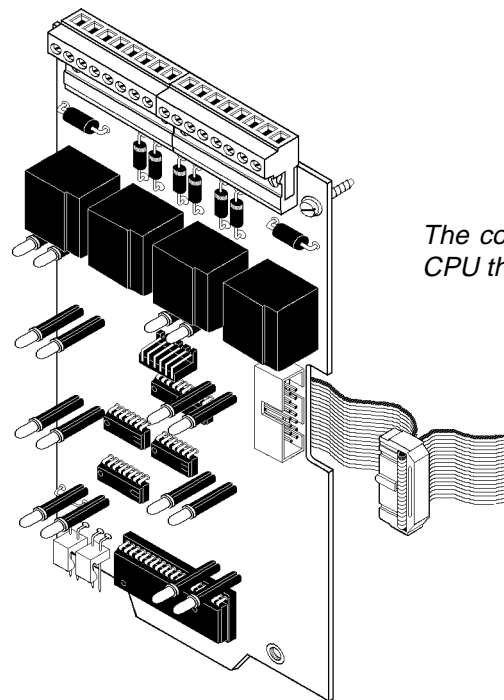
The control panel's modules communicate with the CPU through a common ribbon cable connection.

Installation Outline

The following procedures, diagrams, and instructions must be followed precisely to avoid damage to the control panel and its associated equipment. Reliability depends to a great extent upon proper installation and maintenance.

☐ **Cabinet -** Mount the cabinet and draw all field wiring through the knockouts provided. NOTE: Use only one of the two knockouts provided on the bottom of the cabinet. The batteries will cover the other knockout.

☐ **Main Power Supply -** Mount the Main Power Supply to the cabinet as illustrated in Figure 3-1. *Do not wire anything at this time!*

☐ **Transformer -** Mount the Transformer to the cabinet as illustrated in Figure 3-1.

☐ **Audio Visual Supplies -** If an optional AVPS-24F is to be employed, mount it to the cabinet (see Figure 3-1).

☐ **Audio Visual Cables -** If employing an AVPS-24F, connect the AVPS Trouble Cable. Connect the Auxiliary Bell Power Harness to the AVPS–24F. Refer to Section Five to connect these cables.

☐ **Preliminary System Wiring -** The Main Power Supply (and AVPS-24F, if employed) should be wired at this time while their terminals are readily accessible. Refer to Section Five.

☐ **Module Ribbon Cables -** Connect the Module Ribbon Cable to the CPU as illustrated in Figure 3-2.

☐ **CPU -** Install the CPU module in the top left cabinet position as illustrated in Figure 3-3. Connect the Power Ribbon and Power Harness between the CPU and the Main Power Supply as illustrated in the respective figure in Section Five.

☐ **Module Expander Boards** - If expander boards are to be used with a Sensiscan 200 modules, install as illustrated in Figure 3-4.

☐ **Modules -** Mount each module in its respective chassis position as illustrated in Figure 3-5. Connect the CPU Row Ribbon to each module. Field-wire each module, using the following figures for reference:

CPU	Figure 4-1, 4-2 and 4-3
IZ-8F/IZ-4F	Figure 4-4 and 4-5
IZ-4AF	Figure 4-6
IC-4F/ICE-4F	Figure 4-7
CR-4F/CRE-4F	Figure 4-8
CR-4LF	Figure 4-9
ICR-4LF	Figure 4-10

For the following devices, refer to their respective installation manual: TC-2F, TC-4F, ACM-8RF, LDM Series, AFMX Series, 911A Communicator, and UDACT-F.

☐ **Power-on-check -** Apply AC power to the system. *Do not connect the batteries at this time!* To silence the audible trouble sounder, push the ACKNOWLEDGE switch on the CPU. The system should reflect the following status:

On the CPU
✓ Green AC POWER indicator should be on.

✓ SYSTEM TROUBLE and POWER FAILURE indicators should be on due to the absence of batteries.

✓ MODULE FAILURE indicator may light shortly after AC power is applied (applies only to a system that has not been previously configured).

On each module
✓ The yellow trouble indicators may come on approximately 10 seconds after AC power is applied (applies only to a system that has not previously been configured).

On each AVPS-24F
✓ The yellow trouble indicators will light due to the absence of batteries.

On the Main Power Supply
✓ The BATTERY FAIL indicator will be on due to the absence of batteries.

Failure of the AC POWER indicator, or the presence of indications not mentioned above may suggest an installation problem. Carefully review the installation instructions to isolate the source.

☐ **Programming -** Refer to Section Seven.

☐ **Batteries -** Once the system has been programmed and is functional, connect the batteries. Ensure that all indicators except AC POWER are extinguished.

☐ **Testing -** Fully field test the system by conducting the test procedure in Section Nine.

☐ **Dress Panels -** Complete installation of the system by installing the cabinet door and the optional dress panel.

Mounting Configuration
Mount the **AVPS-24F Audio Visual Power Supply** here with nuts and lock washers provided.

Mount the **Main Power Supply** here with the screws provided.

Mount the **Transformer** here with nuts and lock washers provided.

Optional Mounting Configuration
When using the Remote Station or Municipal Box Output, the RS-1459 interface board must be used (refer to Figure 4-1).

Mount the **RS-1459** here with standoffs, nuts and lock washers provided.
Note: The AVPS-24F cannot be installed when the RS-1459 is being used.

Figure 3-1: Mounting Power Supplies

CPU Row Ribbon
Plug into uppermost
connector on CPU. ⟹

L-Series Row Ribbon ⟹
Plug into second connec-
tor on CPU. *Assigns mod-*
ules to positions 6 and 7.
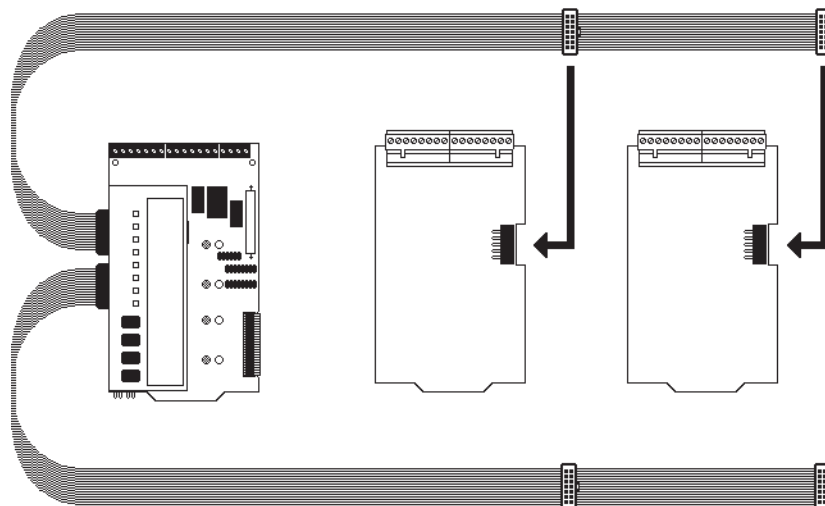
Figure 3-2: Connecting Row Ribbon Cables to the CPU

(Cables to be connected to modules later)

L-Series modules
(IC-4RLF, CR-4LF)

Module
Position 6
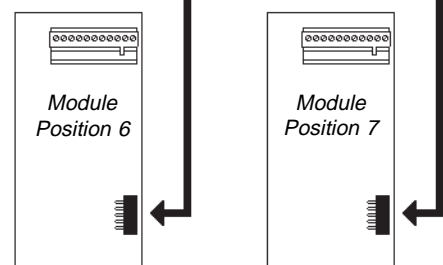
Module
Position 7

Figure 3-3: Mounting the CPU

Step 1:
Insert the CPU Module into the left-most cabinet slot, angling the front end of the module into position as shown.
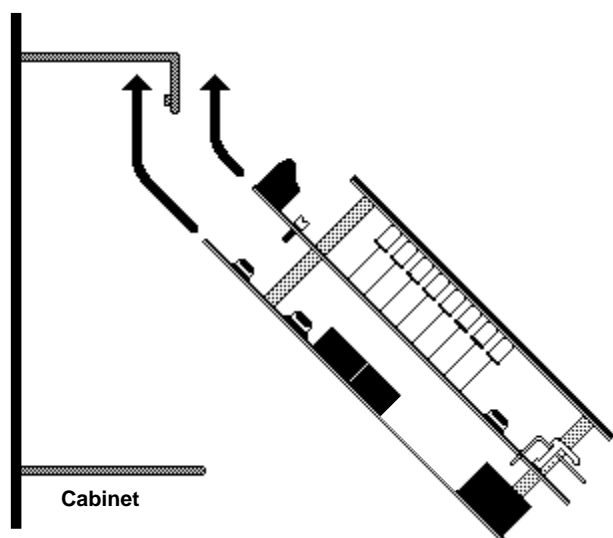
Step 2:
Push the back end of the module down into the cabinet and pull down until the upper board engages the slot on the chassis as shown.

Cabinet

Cabinet
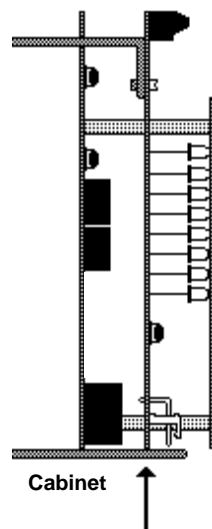
Step 3:
Align the supplied module screws with the thread-holes on the chassis and secure in place.

Figure 3-4: Mounting Module Expanders

Module

Expander Module
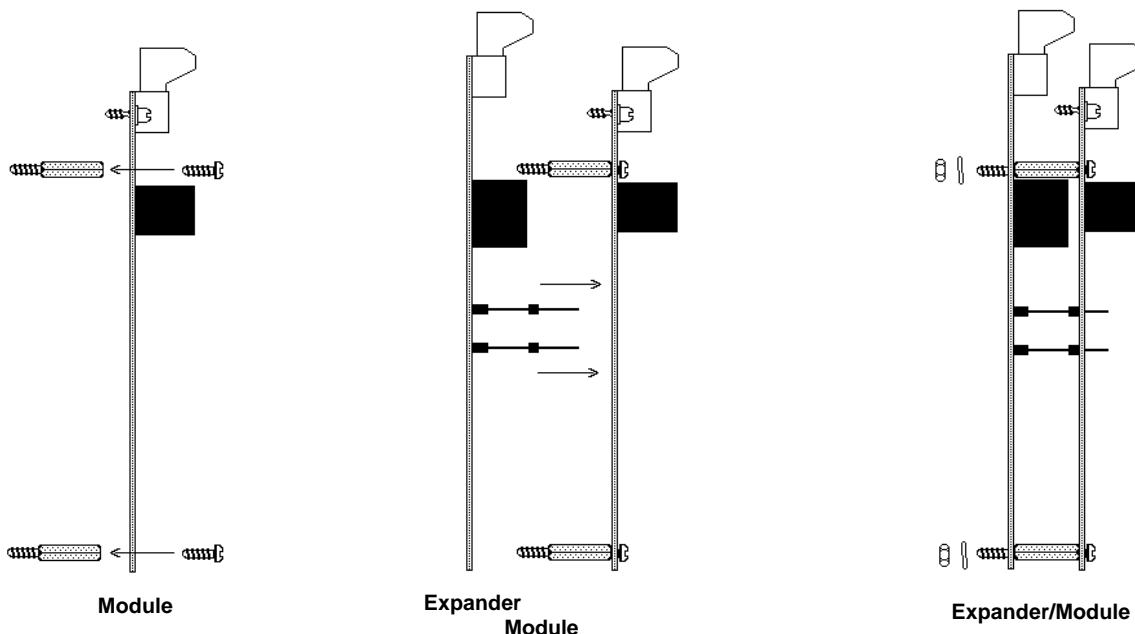
Expander/Module

Step 1:
Attach four standoffs to the module using the four screws provided.

Step 2:
Insert the pins on the expander board into the connector on the module and press the two boards together, ensuring that the pins are properly aligned.

Step 3:
Secure the module/expander assembly with four nuts and lock washers provided.

Figure 3-5: Mounting L-Series Expansion Modules

L-Series Module   Module

L-Series Module   Expander/Module

This arrangement will fit in the right most position only. *Note:* L-Series modules should not be mounted behind other L-Series modules.
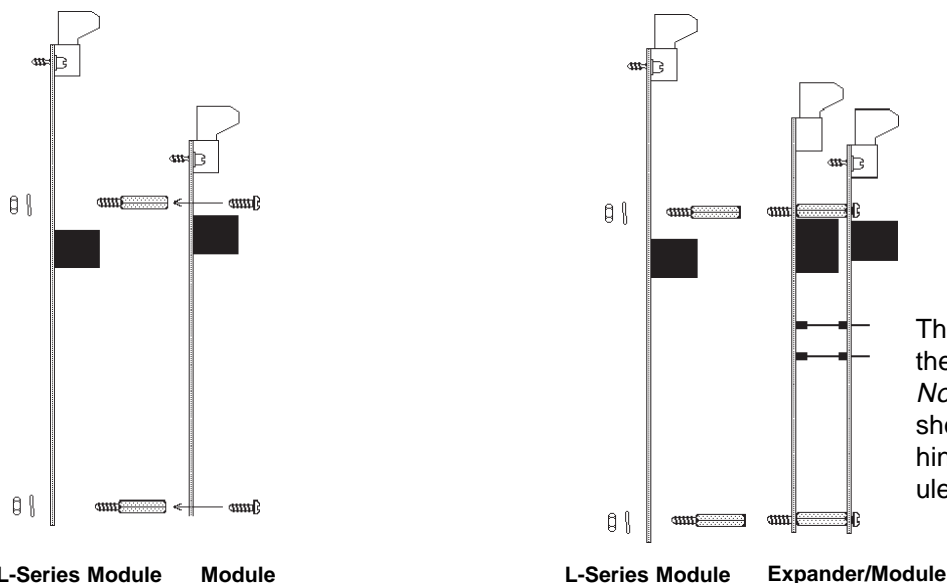
For Module Installation:
Attach four standoffs to the module using the four screws provided. Attach L-Series Module to standoffs using mounting holes. Secure the assembly with four nuts and lock washers.

For Expander/Module Combination:
Attach the L-Series Module to the Expander/Module combination using the four standoffs provided. Secure the entire assembly with the four nuts and lock washers.

Figure 3-6: Mounting Modules in the Cabinet

Step 1:
Angle the module into the cabinet so that the upper board edge slips into the cabinet slot as shown.
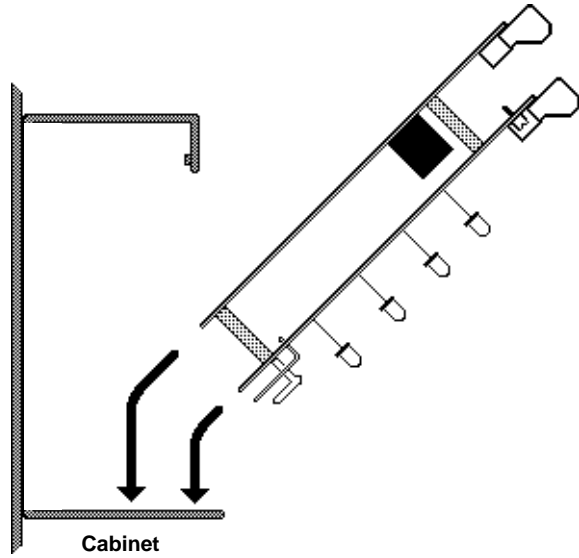
Step 2:
Push the upper end of the module into the cabinet and secure with the two module screws provided. Straighten LEDs so that they extend from the board at a 90 degree angle.

Cabinet

Cabinet

Sensiscan 200 15032 Rev C1   11/1/96 P/N 15032:C1
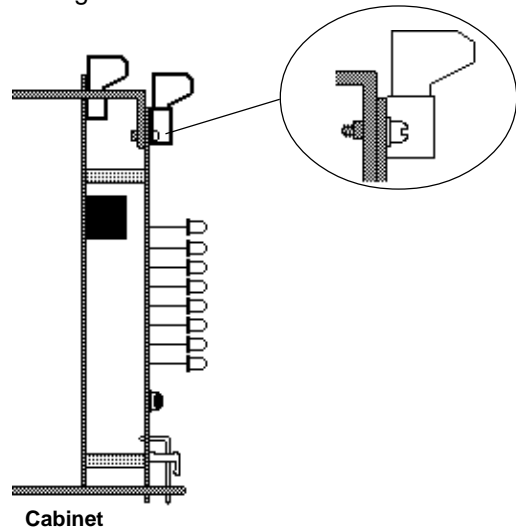
UL Power-limited Wiring Requirements

Power-limited and nonpower-limited circuit wiring must remain separated in the cabinet. All power-limited circuit wiring must remain at least 0.25" away from any nonpower-limited circuit wiring. Furthermore, all power-limited and nonpower-limited circuit wiring must enter and exit the cabinet through different knockouts and/or conduits. A typical wiring diagram for the Sensiscan 200 is shown below.
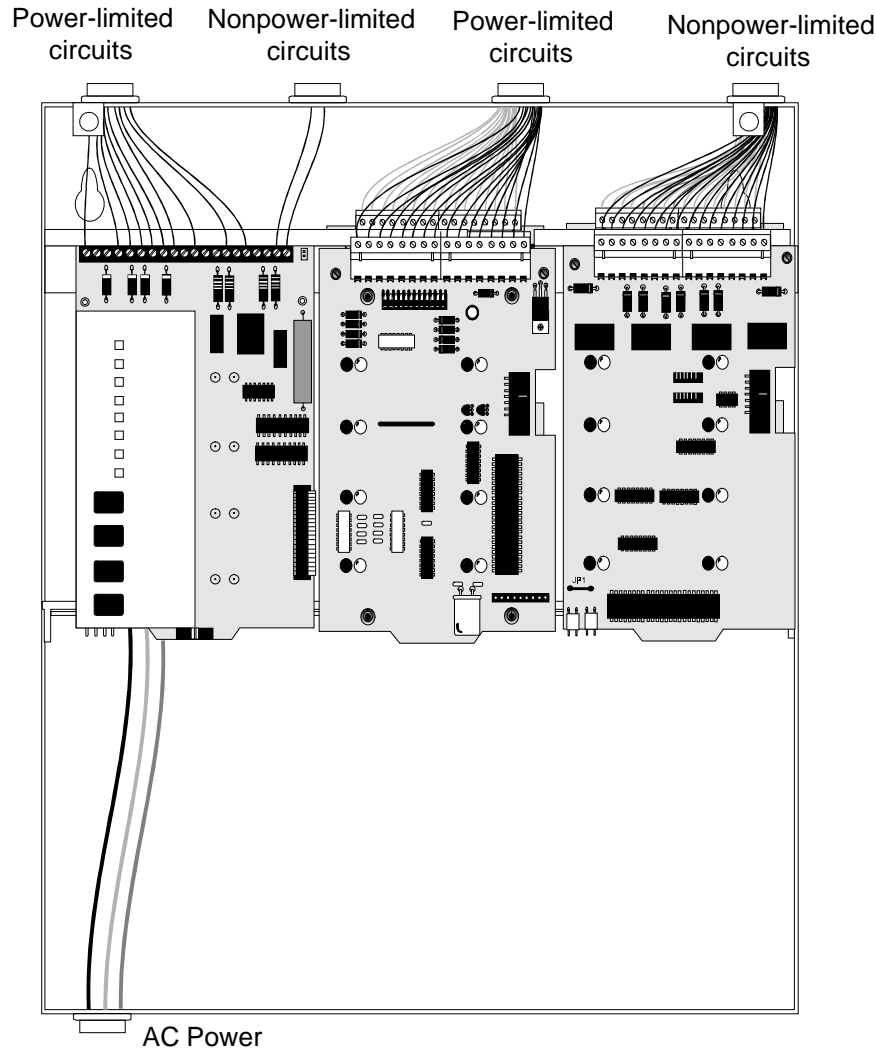
Figure 3-7: Typical Wiring Diagram for UL Power-limited Requirements

Notes:
  1) The power-limited Remote Station Alarm Output and the nonpower-limited Municipal Box Output must not be used simultaneously.
  2) Mounting two or more modules in the same chassis position requires that all modules be either power-limited or nonpower-limited; mixing is not allowed. Following is a list of Power-limited and Nonpower-limited modules:

Power-limited Modules	**Nonpower-limited Modules**
IZ-8F	CR-4F (no power-limited label)
IZE-AF	CR-4LF (no power-limited label)
IZ-4F	CRE-4F (no power-limited label)
IZ-4AF	TC-2F (Releasing mode)
IC-4F	TC-4F (Releasing mode)
ICE-4F	
ICR-4LF	
CR-4F (with power-limited label)	
CR-4LF (with power-limited label)	
CRE-4F (with power-limited label)	
TC-2F (Notification mode)	
TC-4F (Notification mode)	
Fire-Lite Serial Annunciators	

Section Four:
Field Wiring the Modules

The following procedures, diagrams, and instructions must be followed precisely to avoid damage to the control panel and its associated equipment. Reliability depends to a great extent upon proper installation and maintenance.
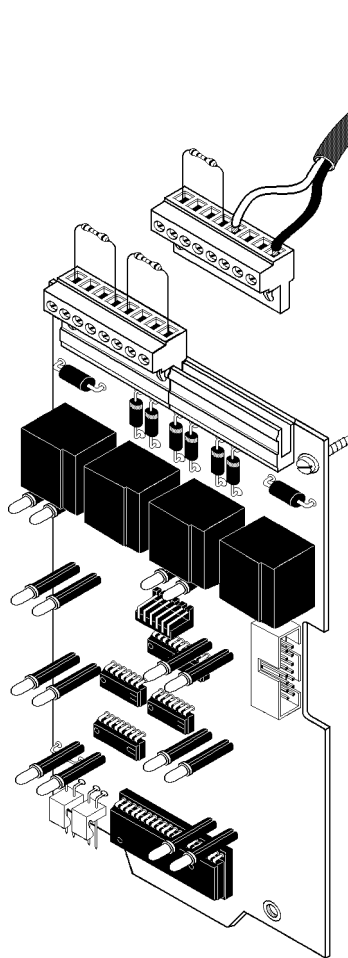
The system's modules feature removable terminal blocks that ease installation and servicing of the control panel.

Figure 4-1: CPU Terminal Connections

Typical Supervised Power Limited Notification Appliance Circuits

Use only compatible, UL listed notification appliances (see the Device Compatibility Document). Max current per circuit is 3.0 amps, subject to the limitations of the power supply.

Remote Station Outputs
Non-Supervised, Power Limited
(Standby polarity shown)
Wiring can leave the building

24 VDC (nominal). 10 mA max rated current.
Internal resistance = 1360 ohms (nominal).

Intended for connection to the polarity reversal circuit of a remote station receiving unit (Fire-Lite Model RS-82) having compatible ratings.

Local Energy Municipal Box

Trip current = 0.25 Amps (min)
Coil voltage = 3.65 VDC (min)
Coil resistance = 14.6 ohms (max)

Remote Station Trouble Output

Remote Station Alarm Output

FIRE

Municipal box wiring must be run in conduit.

Style Y

4.7K, 1/2 watt ELR, Part # 71252.

UL listed 24 VDC Polarized Bell

UL listed 24 VDC Polarized Horn

Style Z

TB2 TB4 TB6

RS1459

TB1 TB3 TB5

Municipal Box Output
Supervised (for open circuit)
Wiring can leave the building

General Trouble Contacts
(power-limited source only)
2A @ 30VDC
1A @ 120VAC
(resistive)

General Alarm Contacts
(power-limited source only)
5A @ 30VDC
5A @ 120VAC
(resistive)

B+	A+	A-	B-	B+	A+	A-	B-	C	NC	NO	-	+	C	NO	NC	+	-	+	-
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Max Current = (short circuit) = 0.6 Amps
Max Voltage = (open circuit) = 27.6 VDC
Max Wire Resistance = 5 Ohms

Notes:

1) The Remote Station Alarm Output and the Municipal Box Output must not be used simultaneously.
2) Notification Appliance Circuits, Remote Station Trouble output, and the Remote Station Alarm output are power limited and may be connected to limited-energy cable.
3) Wire Notification Appliances according to the manufacturer's instructions packaged with each device.
4) Terminal blocks will accept #12 to #22 AWG wire.
5) Size notification circuit wire for a maximum drop of 2 volts DC.
6) The RS-1459 module is required when the Remote Station or Municipal Box Output is connected to a circuit that exits the protected premises. Exception - The RS-1459 module is not required for the Municipal Box Circuit if ALL of the following conditions exist: (1) wiring is in conduit, (2) wire length is less than 1000 meters, (3) wiring does not cross any power lines and (4) must not be in the vicinity of any high voltage..

4.7K, 1/2-watt Resistor,
Part # 71245.

4.7K, 1/2W Resistor
Part # 71245

B+ A+ A− B− B+ A+ A− B−

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
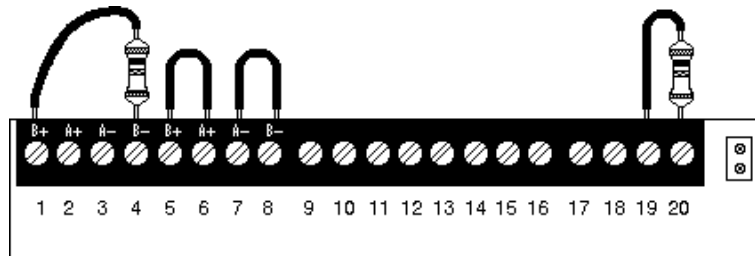
An unused notification circuit can be terminated with one dummy-load resistor (illustrated above on Terminals 1-4) or with two jumpers (illustrated above on Terminals 5-8).

If the Municipal Box Output is not to be used, it must be terminated with a dummy-load resistor.

Figure 4-2: Dummy-loading of Unused Circuits

EIA-485 Interface
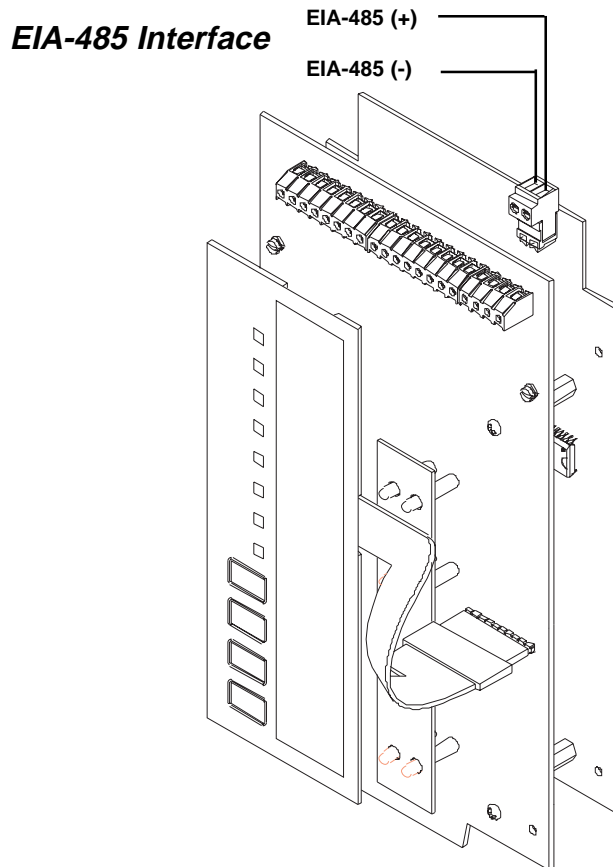
EIA-485 (+)

EIA-485 (-)

Figure 4-3: The EIA-485 Interface

The control panel communicates with the serial annunciator modules of the AFMX and LDM Series through the EIA–485 interface on the CPU. The EIA terminal block is installed on the lower CPU board. Maximum distance is 6000 feet. Maximum resistance is 100 ohms.

Figure 4-4: NFPA Style B Field Wiring of Initiating Zone Modules (IZ-4F[7], IZ-8F)

A B C D E* F* G* H*

b+ b- b+ b- b+ b- b+ b- b+ b- b+ b- b+ b- b+ b-

IZB

A   E

B   F

C   G

D   H

4.7K, 1/2 watt ELR, Part # 71252. [5]

Manual Pull Station

UL-listed 2-wire
Photo smoke detector [2]

UL-listed 2-wire
Ion smoke detector [2]

+ −
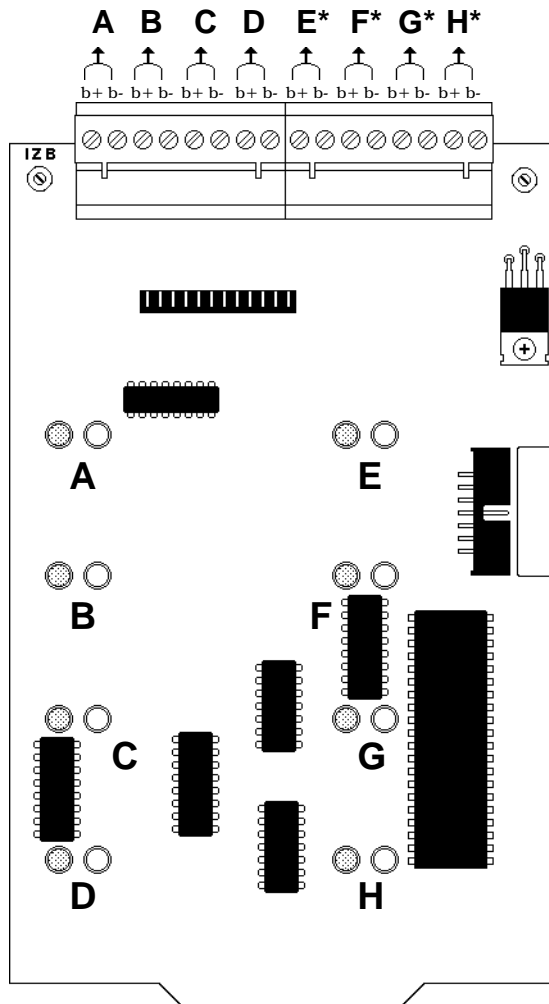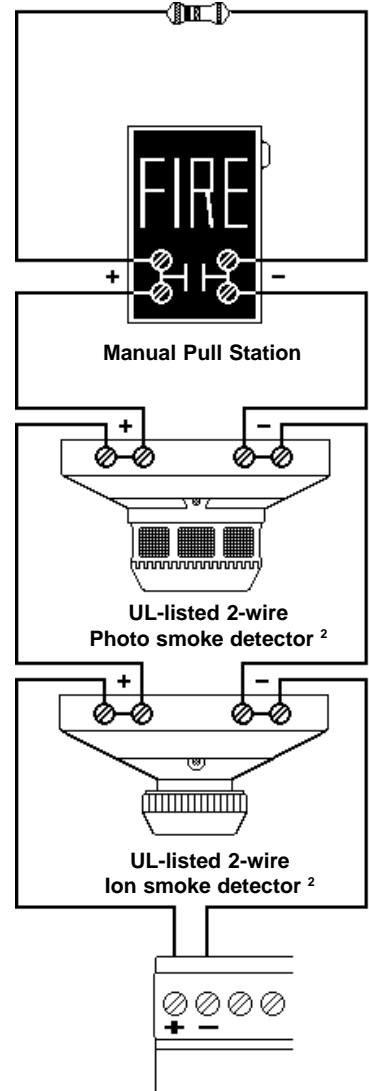
*Typical NFPA Style B
Initiating Device Circuit*

**Dummy load all unused circuits
with 4.7K ELR (71245).**
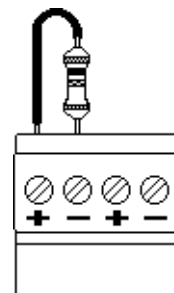
+ − + −

1) Initiating Device Circuits are supervised, power limited and may be connected to limited-energy cable, except for initiating devices that require 24 VDC power.

2) Use only the compatible, UL-listed 2-wire smoke detectors that are listed in the Device Compatibility Document.

3) For connection of 4-wire smoke detectors, refer to Section Six.

4) Wire initiating devices according to the manufacturer's instructions packaged with each device.

5) For Canada, model F-ELR End-of-Line Resistor Assembly required.

6) Maximum line resistance is 100 ohms.

7) IZ-4F contains only circuits A, B, C and D.

Figure 4-5: Style D Field Wiring of IZ-8F Initiating Zone Module with IZE-AF Expander

FIRE

+   −

Manual Pull Station

+   −

UL-listed 2-wire Photo smoke detector [2]

+   −

UL-listed 2-wire Ion smoke detector [2]

+ − + −

+ − + −

A B C D E F G H

a+ a- a+ a- a+ a- a+ a- a+ a- a+ a- a+ a- a+ a-

b+ b- b+ b- b+ b- b+ b- b+ b- b+ b- b+ b- b+ b-

I Z B

A   E

B   F

C   G

D   H
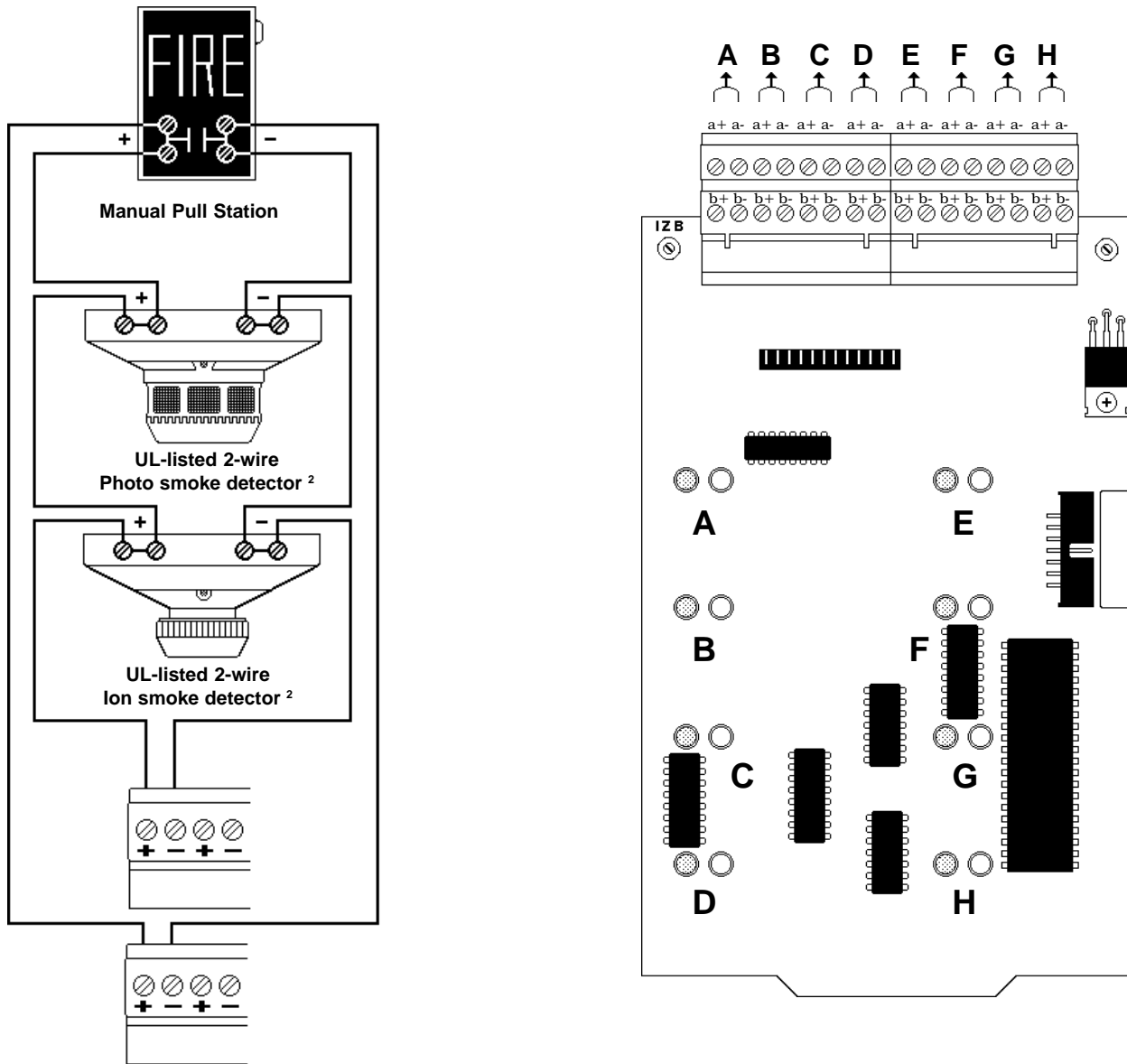
Typical NFPA Style D Initiating Device Circuit

Jumper all unused circuits
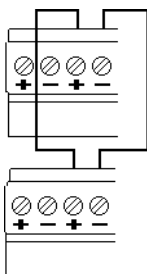
+ − + −

+ − + −

1) Initiating Device Circuits are supervised, power limited and may be connected to limited-energy cable, except for initiating devices that require 24 VDC power.

2) Use only the compatible, UL listed 2-wire smoke detectors are listed in the Device Compatibility Document.

3) For connection of 4-wire smoke detectors, refer to Section Six.

4) Wire initiating devices according to the manufacturer's instructions packaged with each device.

5) The IZ-4F does not support the IZE-AF Expander and therefore cannot be wired for Style D circuits.

6) Maximum line resistance is 100 ohms.

Figure 4-6: Style D Field Wiring of
IZ-4AF Initiating Zone Module
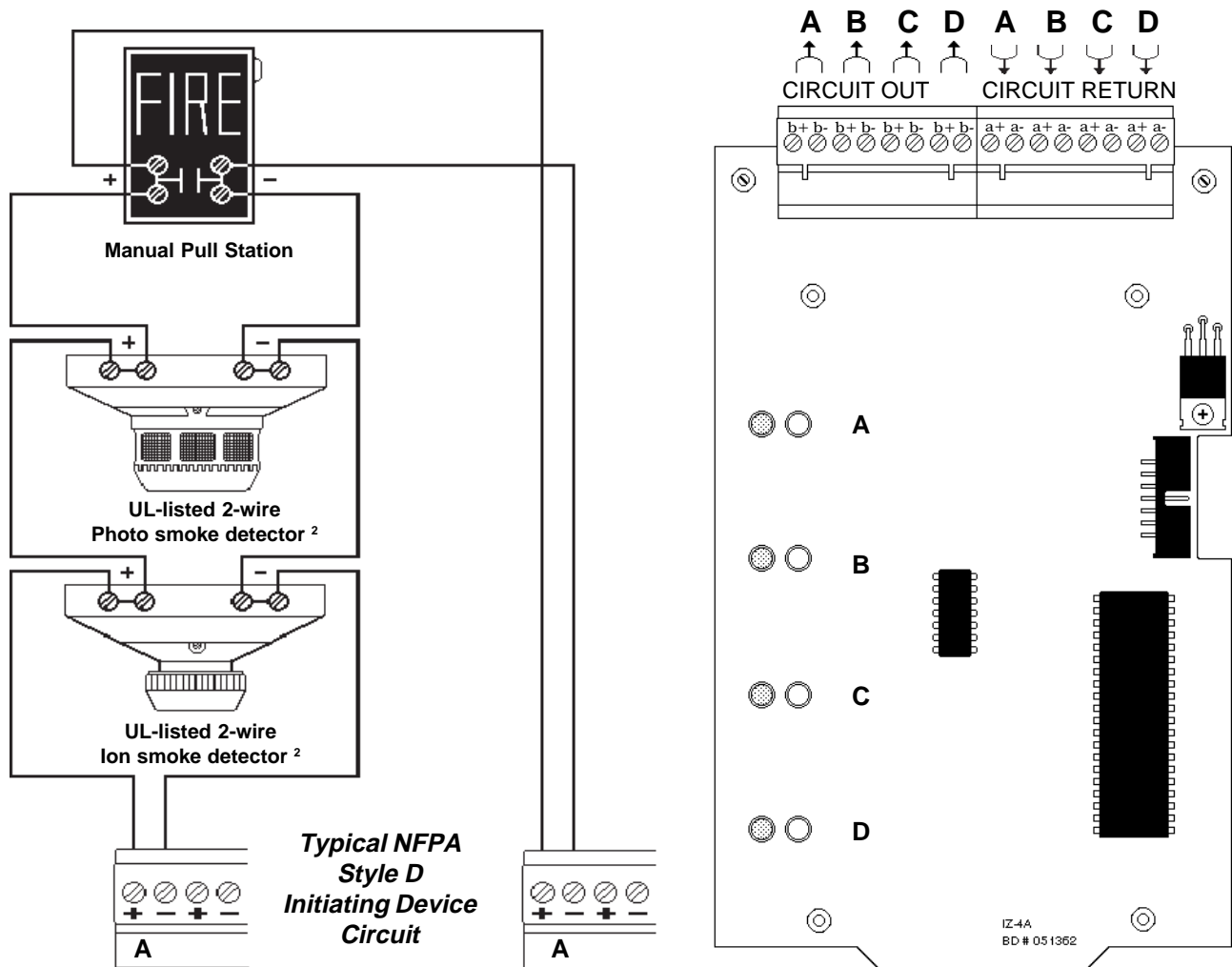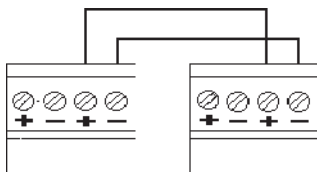
Manual Pull Station

**UL-listed 2-wire
Photo smoke detector [2]**

**UL-listed 2-wire
Ion smoke detector [2]**

*Typical NFPA
Style D
Initiating Device
Circuit*

A

A

A B C D   A B C D

CIRCUIT OUT   CIRCUIT RETURN

b+ b- b+ b- b+ b- b+ b-   a+ a- a+ a- a+ a- a+ a-

A

B

C

D

IZ-4A
BD # 051352

Jumper all unused circuits

1) Initiating Device Circuits are supervised, power limited and may be connected to limited-energy cable, except for initiating devices that require 24 VDC power.

2) Use only the compatible, UL listed 2-wire smoke detectors are listed in the Device Compatibility Document.

3) For connection of 4-wire smoke detectors, refer to Section Six.

4) Wire initiating devices according to the manufacturer's instructions packaged with each device.

5) Maximum line resistance is 100 ohms.

Figure 4-7: NFPA Style Y / Z Field Wiring of Notification Circuit Module (IC-4F) and Expander (ICE-4F)
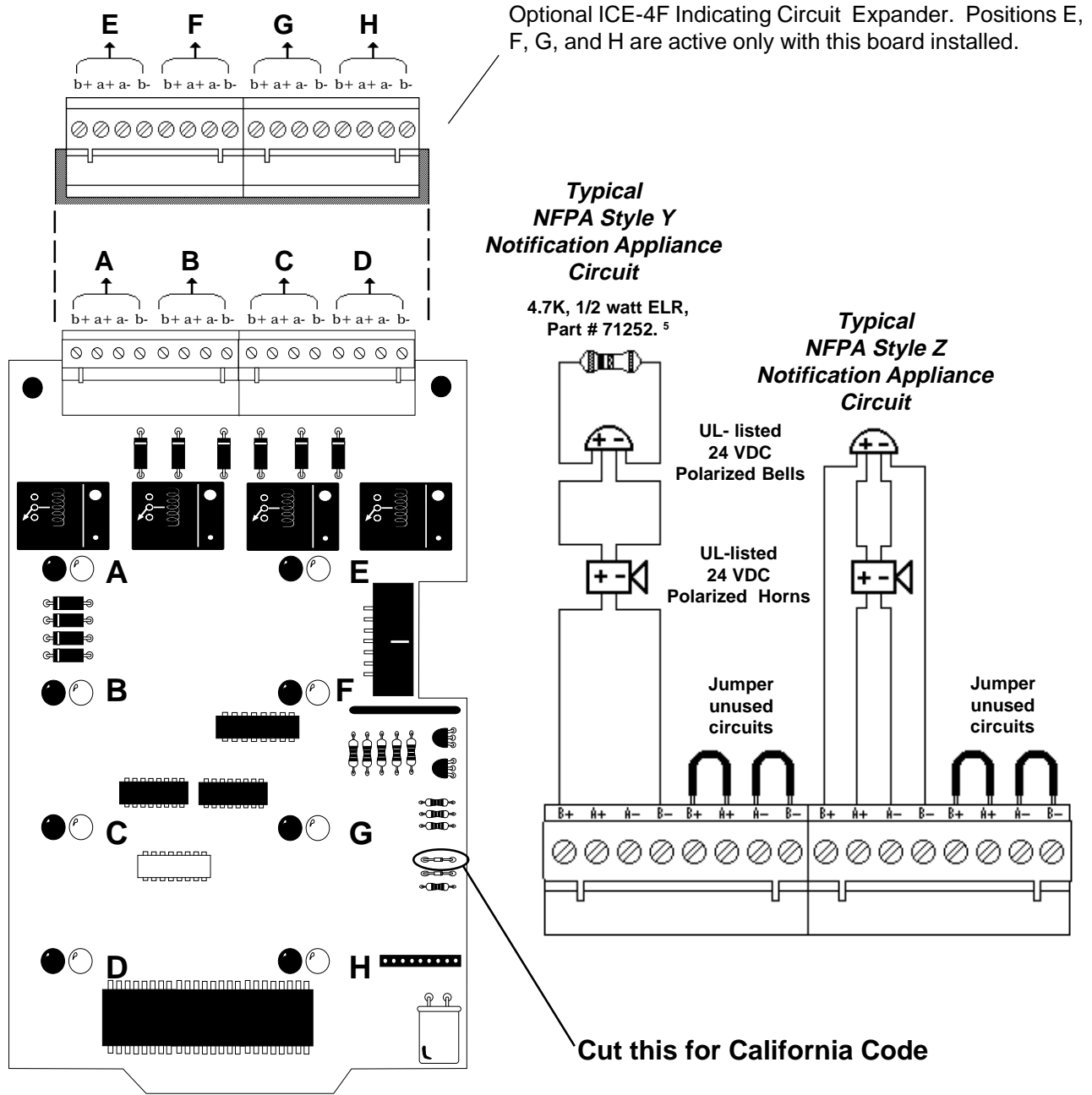
Optional ICE-4F Indicating Circuit Expander. Positions E, F, G, and H are active only with this board installed.

Typical
NFPA Style Y
Notification Appliance
Circuit

4.7K, 1/2 watt ELR,
Part # 71252. [5]

Typical
NFPA Style Z
Notification Appliance
Circuit

UL- listed 24 VDC Polarized Bells

UL-listed 24 VDC Polarized Horns

Jumper unused circuits

Jumper unused circuits

Cut this for California Code

1) Notification Appliance Circuits are supervised, power limited and may be connected to energy-limited cable.

2) Wire Notification Appliances according to the manufacturer's instructions packaged with each device.

3) Max current per circuit is 3.0 amps, subject to the limitations of the source of power (MPS–24BPCC or AVPS-24F).

4) For Canada, model F-ELR End-of-Line Resistor Assembly required.

5) Size wiring for a maximum voltage drop of 2 volts at the end of the Notification Appliance Circuit.

6) The IC-4F is California Code programmable (microprocessor Rev. B or higher). To program for California Code, cut diode D35.

Figure 4-8: Field Wiring of the Control Relay Module (CR-4F) and Control Relay Expander (CRE-4F)

E   F   G   H

no nc c no nc c no nc c no nc c

CRBE

A   B   C   D

no nc c no nc c no nc c no nc c

CRB

A

B

C   G

D   H

E

F
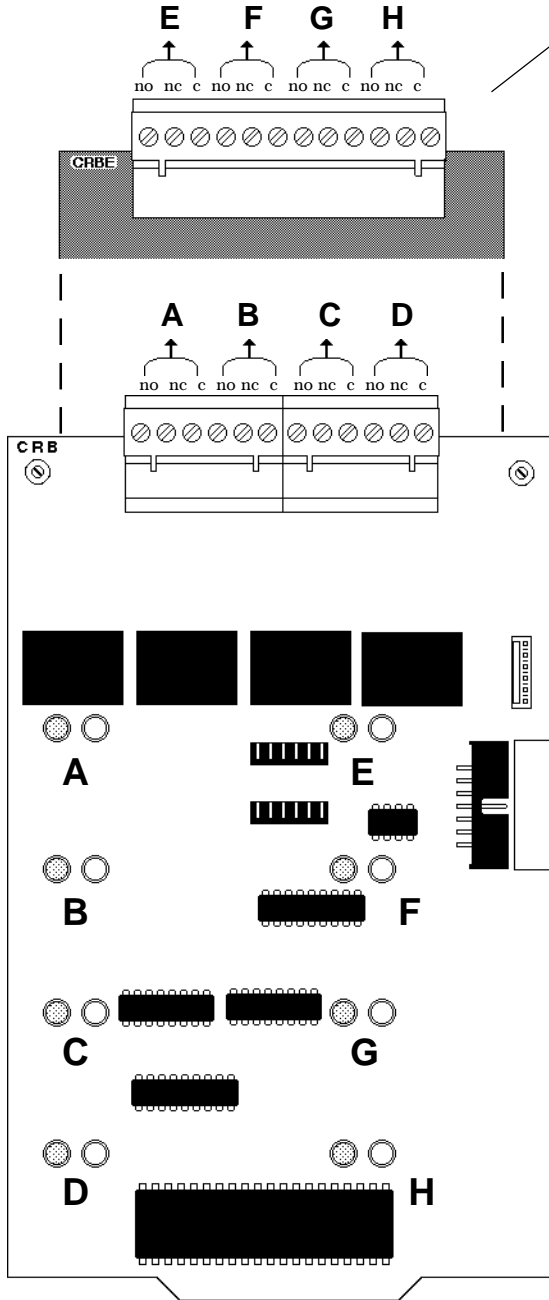
* Optional CRE-4F Control Relay Expander. Positions E, F, G and H are active only with this board installed.

1) These Form-C gold-plated, silver alloy relay contacts are for medium duty switching and for Pilot Duty.

2) UL contact ratings are 5 amps @ 125 volts AC (resistive) or 30 volts DC (resistive) and 2 amps @ 125 volts AC (inductive).

3) Activation of a CR-4F or CRE-4F relay occurs automatically when an alarm is detected on a selected (programmed) Initiating Device Circuit.

Note: Refer to the Power-limited label located on the FACP door. Make a notation on the label for each circuit being employed as a Nonpower-limited circuit. (Refer to the example on the label).

NO   NC   C
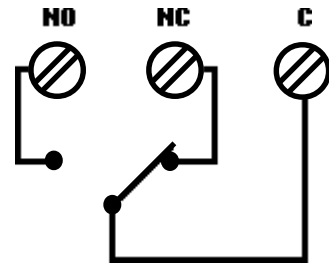
Typical Form-C Control Relay in Standby Position

Non-power-limited and power-limited wiring must have a minimum distance of 0.25" wire to wire and must enter and exit from different knockouts. If this module is used to drive nonpower-limited and power-limited circuits, please follow the instructions:
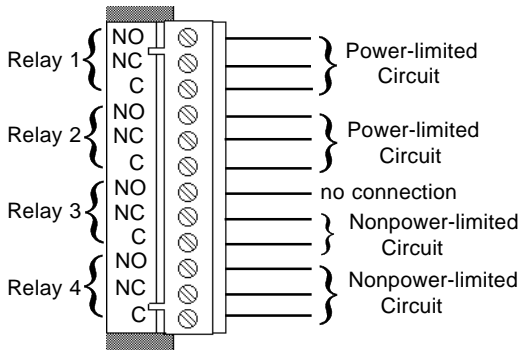
1) Skip a set of dry contacts to maintain the 0.25" required space between power-limited and nonpower-limited circuits. The wiring of this module must follow UL Power-limited Wiring Requirements.

OR

2) If this module is needed to drive power-limited and nonpower-limited relays that are next to each other, refer to the figure to the left showing a typical connection.

Relay 1 { NO NC C }   Power-limited Circuit

Relay 2 { NO NC C }   Power-limited Circuit

Relay 3 { NO NC C }   no connection / Nonpower-limited Circuit

Relay 4 { NO NC C }   Nonpower-limited Circuit

Figure 4-9: Field Wiring of the L-Series Control Relay Module (CR-4LF)
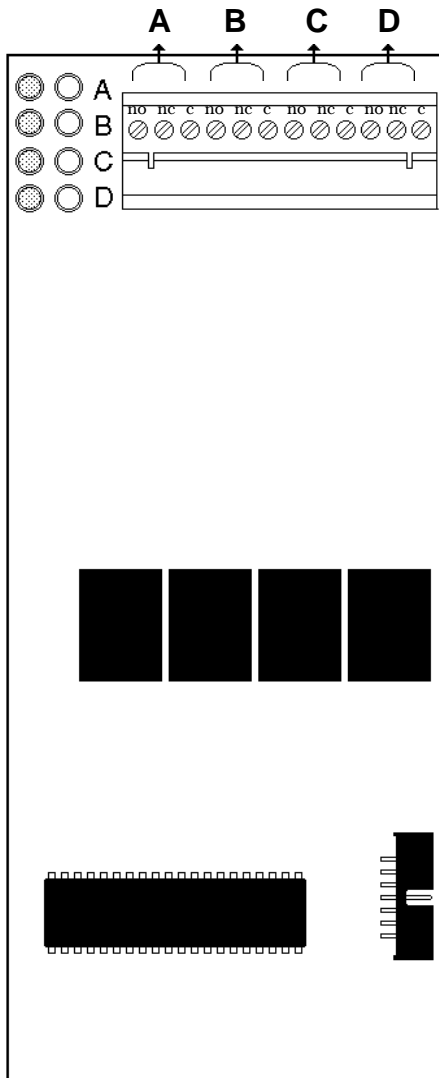
1) These Form-C gold-plated, silver alloy relay contacts are for medium duty switching and for Pilot Duty.

2) UL contact ratings are 5 amps @ 125 volts AC (resistive) or 30 volts DC (resistive) and 2 amps @ 125 volts AC (inductive).

3) Activation of a CR-4LF relay occurs automatically when an alarm is detected on a selected (programmed) Initiating Device Circuit.
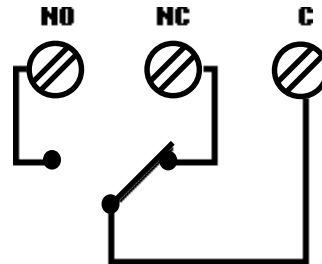
Typical Form-C Control Relay in Standby Position

Figure 4-10: Field Wiring of the L-Series Combination Output Module (ICR-4LF)
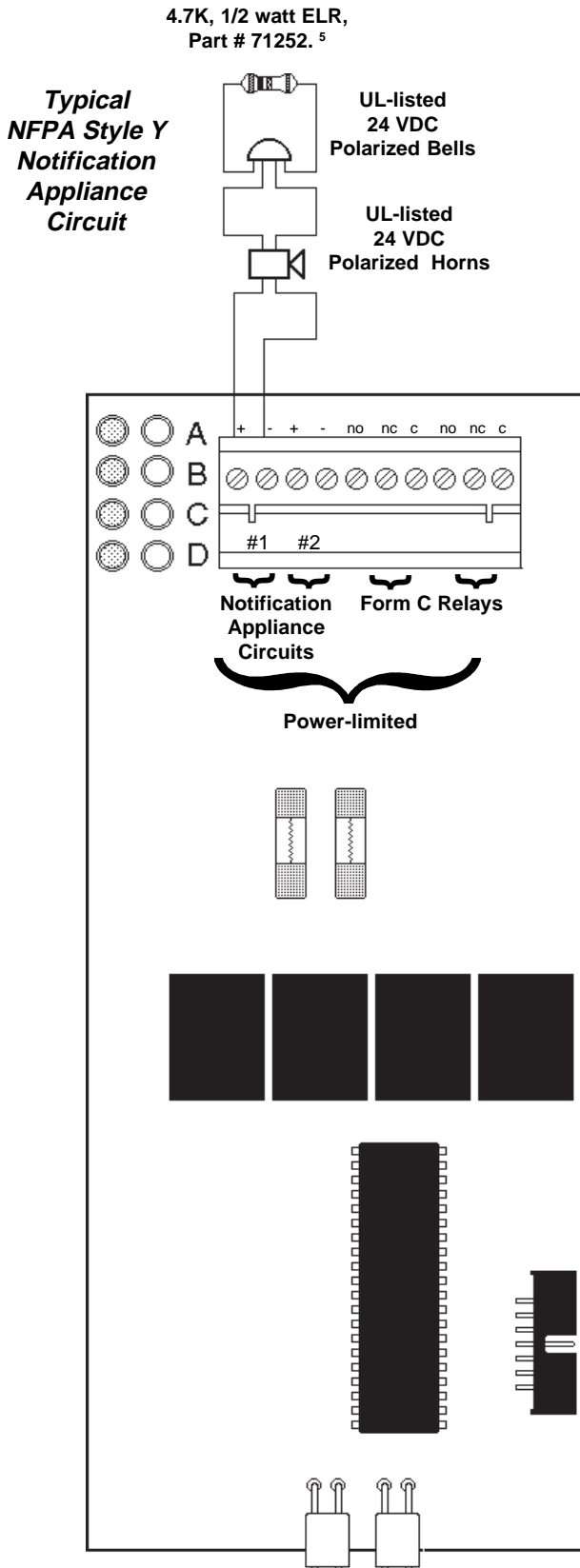
4.7K, 1/2 watt ELR, Part # 71252. [5]

Typical NFPA Style Y Notification Appliance Circuit

UL-listed 24 VDC Polarized Bells

UL-listed 24 VDC Polarized Horns

NO   NC   C

Typical Form-C Control Relay in Standby Position

A   B   C   D   + - + - no nc c no nc c

#1   #2

Notification Appliance Circuits   **Form C Relays**

Power-limited

1) Notification Appliance Circuits are supervised, power limited and may be connected to energy-limited cable.

2) Use only the compatible, UL-listed Notification Appliances listed in the Device Compatibility Document.

3) Wire Notification Appliances according to the manufacturer's instructions packaged with each device.

4) Max current per circuit is 3.0 amps, subject to the limitations of the source of power (MPS = 2.0 amps; AVPS-24F=3.0 amps total).

5) For Canada, model F-ELR End-of-Line Resistor Assembly required.

6) Size wiring for a maximum voltage drop of 2 volts at the end of the Notification Appliance Circuit.

7) Form-C gold-plated, silver alloy relay contacts are for medium duty switching and for Pilot Duty. *They must be used as power-limited circuits.*

8) UL contact ratings are 5 amps @ 125 volts AC (resistive) or 30 volts DC (resistive) and 2 amps @ 125 volts AC (inductive).

9) Activation of a CR-4LF relay occurs automatically when an alarm is detected on a selected (programmed) Initiating Device Circuit.

Section Five:
Power Supplies

The Main Power Supply

The MPS-24BPCC Main Power Supply is capable of powering the control panel continuously during standby and alarm conditions. A total of 750 mA amps @ 24 VDC regulated is available from the power supply for operating the system during Standby conditions.

Figures 5-1 and 5-2 illustrate connections for primary and secondary power to the main power supply, as well as terminal and harness connections for the control panel.

AC Power Requirements

Primary power required for the MPS-24BPCC Main Power Supply is 120 VAC, 50/60 Hz, 1.8 amps.

Connecting the Primary Power Source

With the breaker at the main power distribution panel turned off, remove the plastic insulating cover from Terminal Block TB1 on the main power supply and connect the system primary power source. Connect the service ground to TB1 terminal 2. Ground the power supply assembly to the cabinet with a Chassis Ground cable (71073) to TB1 Terminal 2. Connect the primary Neutral line to TB1 Terminal 3 and the primary Hot line to TB1 Terminal 4. Do not route 120 VAC wiring in the same conduit as other circuits. After completion of these connections reinstall the plastic insulating cover over the terminal strip. Leave the main power breaker off until installation of the entire system is complete.

Connecting the Secondary Power Source (24 VDC)

Secondary power (batteries) is required to support the system during loss of primary power. These batteries reside in the control panel cabinet. Connect the Battery Positive Cable to TB3 Terminal 1 (+) and the Battery Negative Cable to TB3 Terminal 2 (-). *Do not connect the Battery Interconnect Cable at this time. This connection will be made just after initial primary system power-up. Batteries may be installed in external cabinet BB-17, cabinet limit-17AH.*

Earth Fault Detection

The MPS-24BPCC automatically employs detection of earth faults in the system.

Four-Wire Smoke Detector Power (24 VDC)

Up to 200mA of current for 24 VDC four-wire smoke detectors can be drawn from TB2 Terminals 1 (+) and 2 (-). Power is removed from these terminals during system reset (unless Jumper JP1 is removed). This regulated four-wire smoke detector power is power-limited but must be supervised via an end-of-line Power Supervision Relay. The power supervision relay is energized by the four-wire power circuit and its contact must be connected in series with an IZ-4F or IZ–8F circuit as shown in Figures 6-5 and 6-6.

Annunciator Power (24 VDC)

Up to 200 mA of current suitable for powering an AFMX or LDM Annunciators can be drawn from TB2 Terminals 1 (+) and 2 (-). This power is filtered, regulated, power-limited, and is supervised by the annunciator (*Loss of Communications* error).

Notification Appliance Power (24 VDC)

Up to 2.0 amps of regulated current for powering notification appliances can be drawn from TB2 Terminals 3(+) and 4(–). Power is not removed from these terminals during system reset. *Do not connect AFMX or LDM annunciators (or any device requiring filtered 24 VDC power) to this circuit or damage may result!*

System Harness Connections

Internal power for the system is provided via the Power Harness (76100). Connect this harness from P2 on the main power supply to the CPU. Signaling between the CPU and the main power supply is accomplished through connection of the Power Ribbon (71087) to P3 on the MPS-24BPCC.

Figure 5-1: Field Wiring the Main Power Supply

JP2
Removal disables
battery charger

* Cut JP1 to make 4-Wire
Smoke Detector Power on
TB2 Terminals 1 and 2 a
non-resettable circuit.

JP1

Do not
cut JP3

JP3

REV
MPS-24BPCC

1
2
3

5

P1
7

**Trouble Cable
To Optional
AVPS–24**

(see Figure 5-3) and
Trouble Contacts on
UDACT-F if UDACT-F is
configured for "Receive
Only" (see UDACT-F
Manual)

P4

Earth   Earth   Battery   AC
Fault   Fault   Failure   Power

-         +
-EF   +EF   BATT   AC
TROUBLES

P3

P2

CB1

2   1
TB3   4   3   2   1   TB2
BATT- BATT+   P O W E R   L I M I T E D
COMMON +24 VPOWER COMMON +24 VRESET

8 7 6 4 3 2 1   R55
AC HOT AC NEUT EARTH   TB1

Secondary Power
27.6 VDC, 6.5 to 17 AH. Supervised and
power-limited. Fast charge = 0.75 amps
(typical), trickle charge = 20 mA (typical).

Battery **-**
Battery **+**

Cut R55 to disable
Earth Fault Detection

Earth Ground
Connect to chassis
with a Grounding
Cable Assembly
(Cable # 71073).

**Common
Notification Appliance Power**

+24 VDC power-limited, RMS-regulated, non-resettable, 2.0
amps (in alarm) max. Power is supervised by output module
(such as an IC-4F).
**This output is not suitable for powering Annuncia-
tors!**

Hot Neutral
Primary Power

Earth/Service
Ground

-   **+**

Common Four-Wire Smoke Detector/Annunciator Power
+24 VDC (20.4-26.4, 200 mV ripple), 200 mA max. Filtered, regulated and
resettable. Power-limited but when used for 4-wire smoke detectors, the power
run must be supervised by a UL Listed Power Supervision Relay.

Figure 5-2: Main Power Supply Harness Connections

If powering a notification appliance circuit or time control module from the MPS, connect the Bell Power Harness from J6 on the CPU to J5 on the particular output module.

Bottom View of IC-4F

J5 J6
IC-4F

J5 J6
ICE-4F

J5

J6

Main Bell Power Harness (75169)

Connect Blue Wire to MPS TB2 Terminal 3 (+). Connect Black Wire to MPS TB2 Terminal 4 (-).

CPU

Transformer Harness connection

Power Ribbon (75170)

Power Harness (75168)

MPS-24BPCC

Figure 5-3: Field Wiring the AVPS-24F
Audio Visual Power Supply

AC Power Requirements

AC power required for the AVPS-24F is 120 VAC, 50/60 Hz, 1.0 amps.

(Bottom view)

J5 J6
IC-4F

J5 J6
ICE-4F

+24 VDC Special Purpose Power

Unfiltered, unregulated, power-limited (3.0 amps max). Use power harness to provide power to notification circuit or time control modules (connect to J5 on IC-4F or ICE-4F).

Auxiliary Bell Power Harness

No connection

Note orientation of connectors

Connect the AVPS Trouble Cable to P4 on the MPS.

Trouble LED

1 2 3 4 5 6

Chassis

Connect to a suitable ground or to TB1-2 on the Main Power Supply (see Figure 5-1).

Secondary Power

to MPS Terminals 5 (+) & 6 (-)

Primary Power

Neutral   Hot
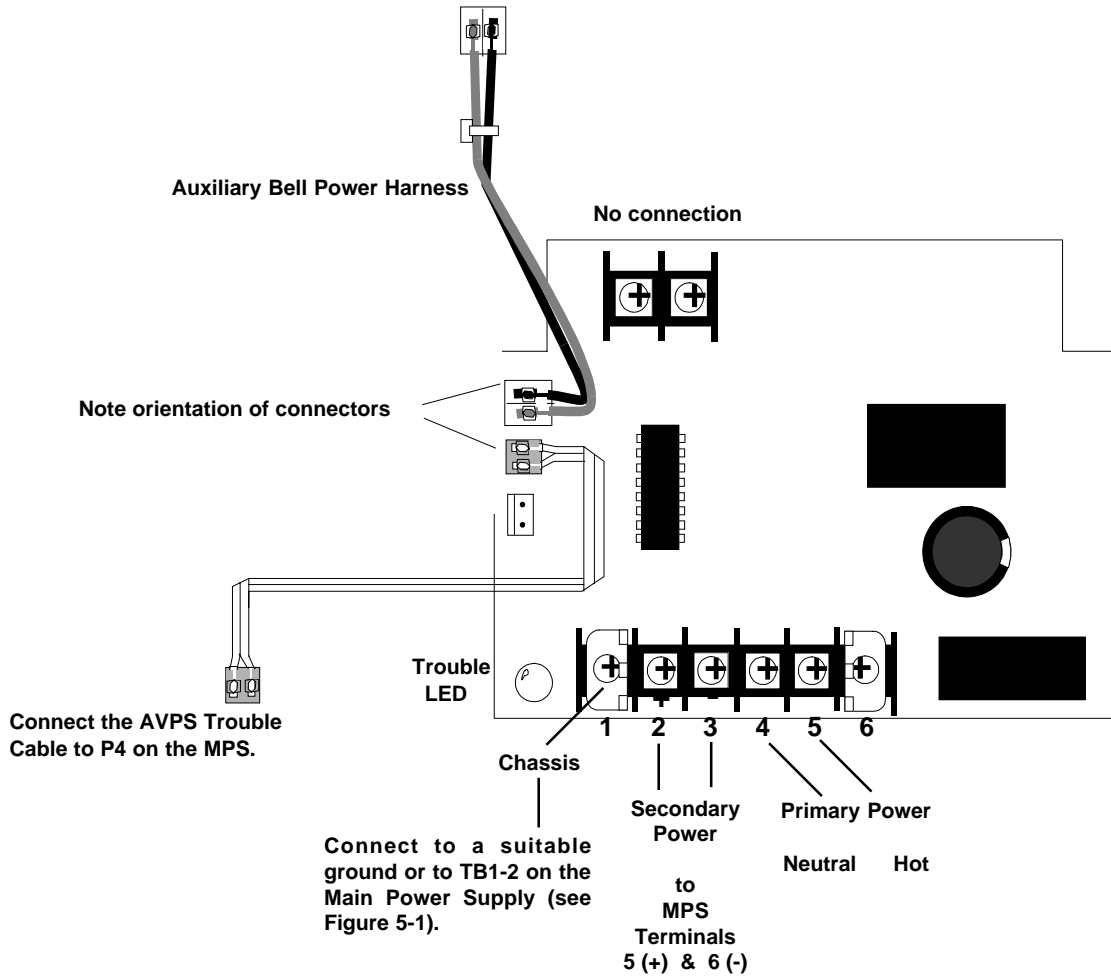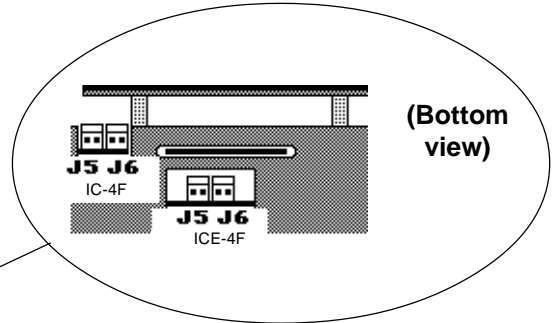
Section Six:
Applications

Waterflow Alarm

A waterflow alarm device may be connected to an Initiating Device Circuit (zone) provided that the circuit is programmed to activate at least one Notification Appliance Circuit and one of the following conditions are met:

> ✔ The Initiating Device Circuit is programmed for waterflow operation
>
> **OR**
>
> ✔ The Notification Appliance Circuit is programmed as non-silenceable.

Supervisory Service

Supervisory Devices: Normally open supervisory devices may be connected to any Initiating Device Circuit provided that the circuit is programmed for supervisory operation. This circuit must be dedicated to supervisory devices.

Central Station

This control panel can be employed as a protected premises Control Unit (meeting the requirements of NFPA 72-1993 Remote Station and Central Station) when used in conjunction with a compatible, UL listed Digital Alarm Communicator such as the Noti•Fire 911A or UDACT-F.

Digital Alarm Communicator Transmitters (DACT)

The Fire Alarm Control Panel (FACP) will support a Digital Alarm Communicator Transmitter (DACT) provided that the panel is configured and programmed for DACT operation. Software P/N 73452 (or higher) will support DACT's that are activated via relay contacts (Notifier 911A), while Software P/N 73611 (or higher) will support the Fire-Lite UDACT-F via the EIA-485 Annunciator Port.

The FACP must be programmed for DACT operation (see the Extended Programming Section). Programming the FACP for DACT operation will delay the reporting of an AC loss condition for approximately eight hours (Software P/N 73452 or higher) and modify the EIA-485 Annunciator Port protocol (Software P/N 73611 or higher) for UDACT-F operation. The modified protocol is compatible with the AFMX and LDM Annunciators.

DACT continued

Annunciators and a UDACT-F can be connected to the EIA-485 Annunciator Port simultaneously. However, the modified EIA-485 protocol alters the assignment of the first eight yellow annunciator LED's as follows:

Trouble Point (Yellow LED)	Software P/N 73452 and Lower	Sofware P/N 73611 and Higher	
		Without UDACT-F	With UDACT-F
1	System Trouble	System Trouble (less AC loss)	System Trouble (less AC loss)
2	Signal Silenced	Signal Silenced	Signal Silenced
3	Not Used	Not Used	Not Used
4	Supervisory	Supervisory	Supervisory
5	Indicating Ckt 1 Trouble	Indicating Ckt 1 Trouble	Indicating Ckt 1 Trouble
6	Indicating Ckt 2 Trouble	Indicating Ckt 2 Trouble	Indicating Ckt 2 Trouble
7	Municipal Tie Trouble	Municipal Tie Trouble	Low Battery/Gnd Fault
8	Panel Trouble	AC Fail	AC Fail

The FACP must be programmed for an annunciator whenever it's connected to a UDACT-F since the UDACT-F receives the FACP status on the EIA-485 Annunciator Port. If the FACP is connected to both annunciators and a UDACT-F, all devices except one must be configured as receive only. Refer to the table below for configuration and supervision arrangements.

Devices Installed	UDACT-F		Annunciator (Note 1)	
	Configuration	Supervision	Configuration	Supervision
UDACT-F Only	Receive/Transmit	Via EIA-485	Not applicable	
UDACT-F and Annunciator	Receive/ Transmit	Via EIA-485	Address 1 Receive Only	Unsupervised
	Receive Only	Via UDACT-F Comm Fail Output (Note 2)	Address 1 Receive/Transmit	Via EIA-485
	Receive/Transmit	Via EIA-485	Address 1 Receive Only	Via EIA-485 (Note 3)

1) Additional annunciators may be employed in the Receive Only Mode. The wiring to these annunciators will be supervised only if the power and the EIA-485 circuits are wired sequentially and the Receive/Transmit device is connected last.
2) The UDACT-F's Comm Fail Output (TB3, pin #2) must be connected to P4 pin #1 (lower pin) on the FACP power supply.
3) The power and the EIA-485 circuits are wired sequentially (the FACP connects to the annunciator and the annunciator connects to the UDACT-F).

The UDACT-F is capable of reporting the status of each zone (circuit) on the Sensiscan 200. The UDACT-F reports alarms and troubles on inputs and reports only troubles on outputs. Beware of 'gaps' in the reporting of input circuits. The gaps depend upon the mounting location and FACP configuration. *Note: L Series modules report troubles using points 41 to 44 and 49 to 52. The Sensiscan 200 has a maximum of 16 inputs.*
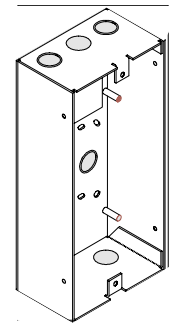
The UDACT-F must be mounted remotely in an ABS-8RF or UBS-1F enclosure and may be placed up to 6000 feet away from the control panel. All power must be removed from the control panel before making any connections to prevent circuit damage. The EIA-485 serial interface is connected between the control panel and UDACT-F using twisted, shielded pair wire. Power should be wired from the control panel's main power supply (MPS-24BPCC) 24 VDC (nominal) filtered power supply output to TB1 on the UDACT-F.

ABS-8R

Figure 6-1A: External UDACT-F Connection in ABS-8RF

UDACT-F in ABS-8RF
(Shown with cover removed)
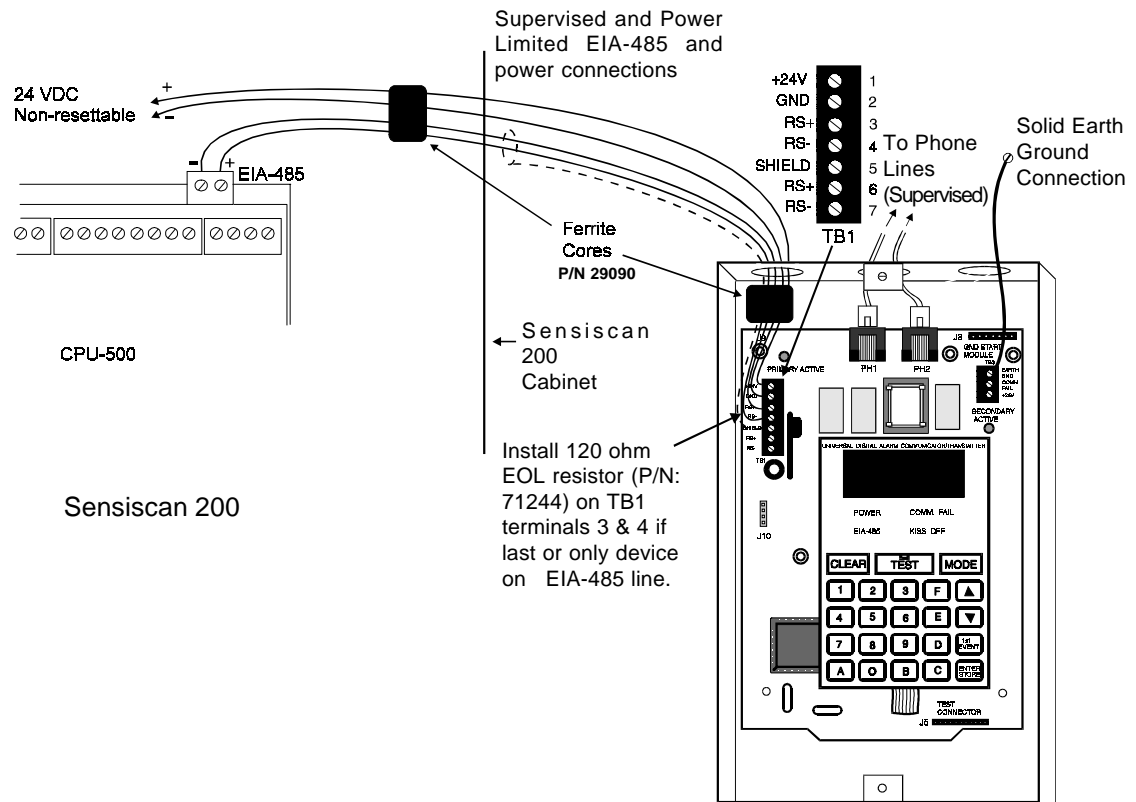
1) Ferrite cores are recommended for all applications.

2) Recommended wire is 12 AWG to 18 AWG twisted pair.

3) Shielded wire is not required (unless mandated by local AHJ).

    If shielded wire is used, connect only one end of shield:

    a) Shield may be connected to cabinet (earth ground) at fire alarm panel, or

    b) Shield may be connected to TB1 Terminal 5 (Shield) at UDACT-F. *The shield end that is not connected should be insulated to prevent accidental grounding. Do not connect both ends of shield under any circumstance since a ground fault may result.*

4) Conduit is recommended for external wire runs. Consult local building codes.

5) Connect Ground Strap (supplied with ABS-8RF enclosure) from Earth Ground terminal on UDACT-F to a solid building earth ground. Conduit alone will not provide a reliable earth ground.

6) UDACT-F may be located up to 6000 feet away from the host control panel.

7) Refer to Specifications for power requirements.

No connection to top pin

Lower pin connects to TB3, pin #2 on UDACT-F (Comm Fail)

- + Filtered, regulated, resettable, power limited 24 VDC

Required for supervision if UDACT-F is operated in "receive only" mode. Fire-Lite Alarms cable P/N 75148 may be ordered for this purpose.
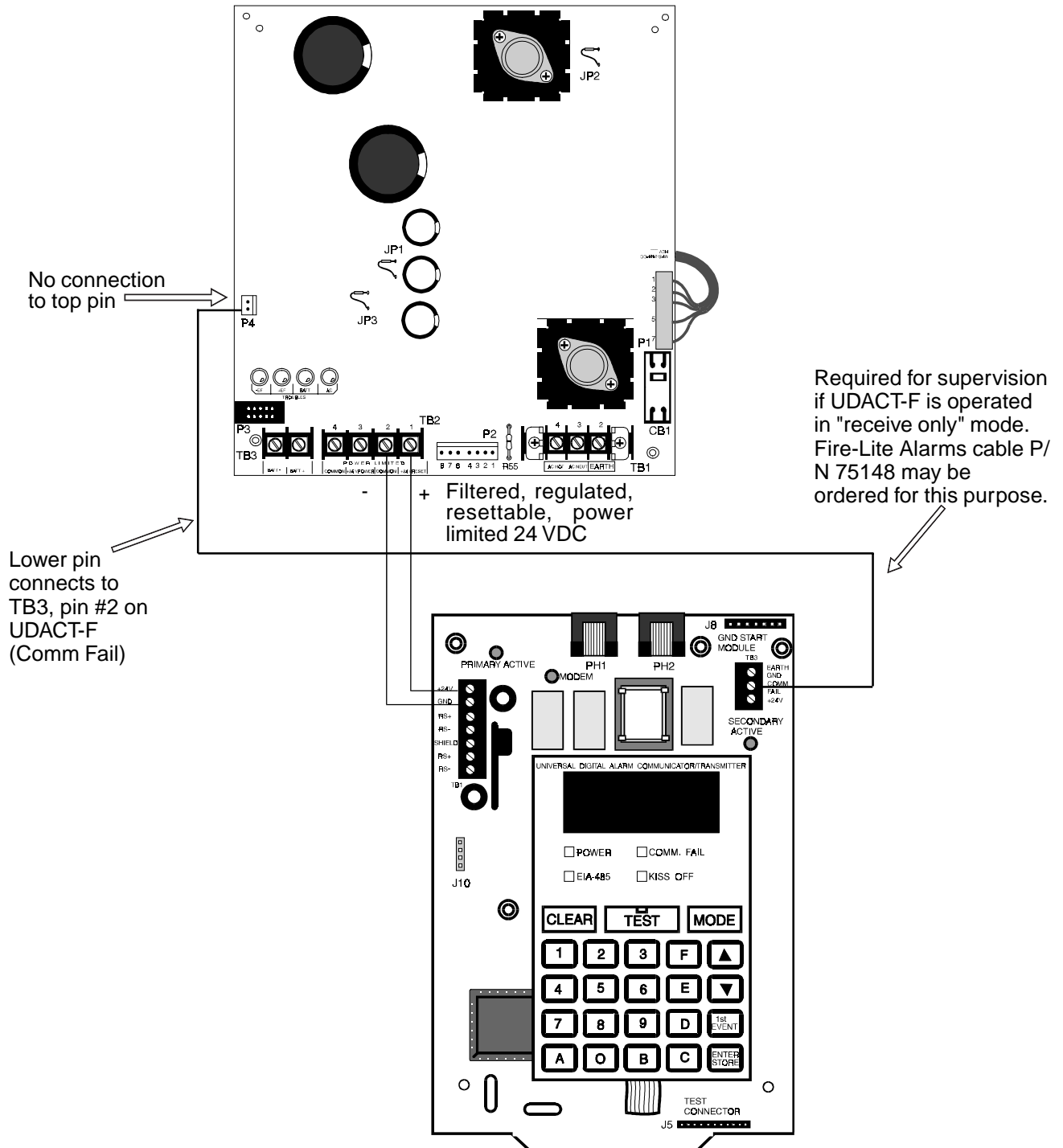
Figure 6-1B: MPS-24BPCC Connection to UDACT-F

Figure 6-2: 911A Digital Communicator Connection

The Noti-Fire 911A Digital Alarm Communicator Transmitter (DACT) is a three-zone module designed to provide for off-premises monitoring of this fire alarm control panel. For stand-alone installations, use the 911AC kit that includes a transformer and an enclosure(s) for both the 911A and the transformer. The 911A is self-powered in this mode and is triggered by the alarm and/or trouble contacts received from the control panel. It communicates with a digital receiver by means of one of two transmission formats, BFSK or Pulsed Fast Single Round format.

Power Requirements: 24VDC, 30 mA in Normal; 138 mA while communicating; 166.8 mA with alarm & trouble relays while communicating. Retard time and Reset time must be programmed for zero second when connecting the alarm initiating circuit to an existing control panel.

For more detailed instructions refer to the Noti-Fire 911A manual, Document #74-06200-005-A. Note: The 911A is not FM-approved.

Note: Wiring between the FACP and 911A must be in conduit.

	CPU	911A	MPS
Alarm Normally open contacts	TB1-14	6 and 7	
	TB1-15	8 and 9	
Trouble Normally open contacts	TB1-9	10	
	TB1-11	11	
+24 VDC		2	TB2-3
Common		4	TB2-4
+27.6 VDC		1	TB2-5
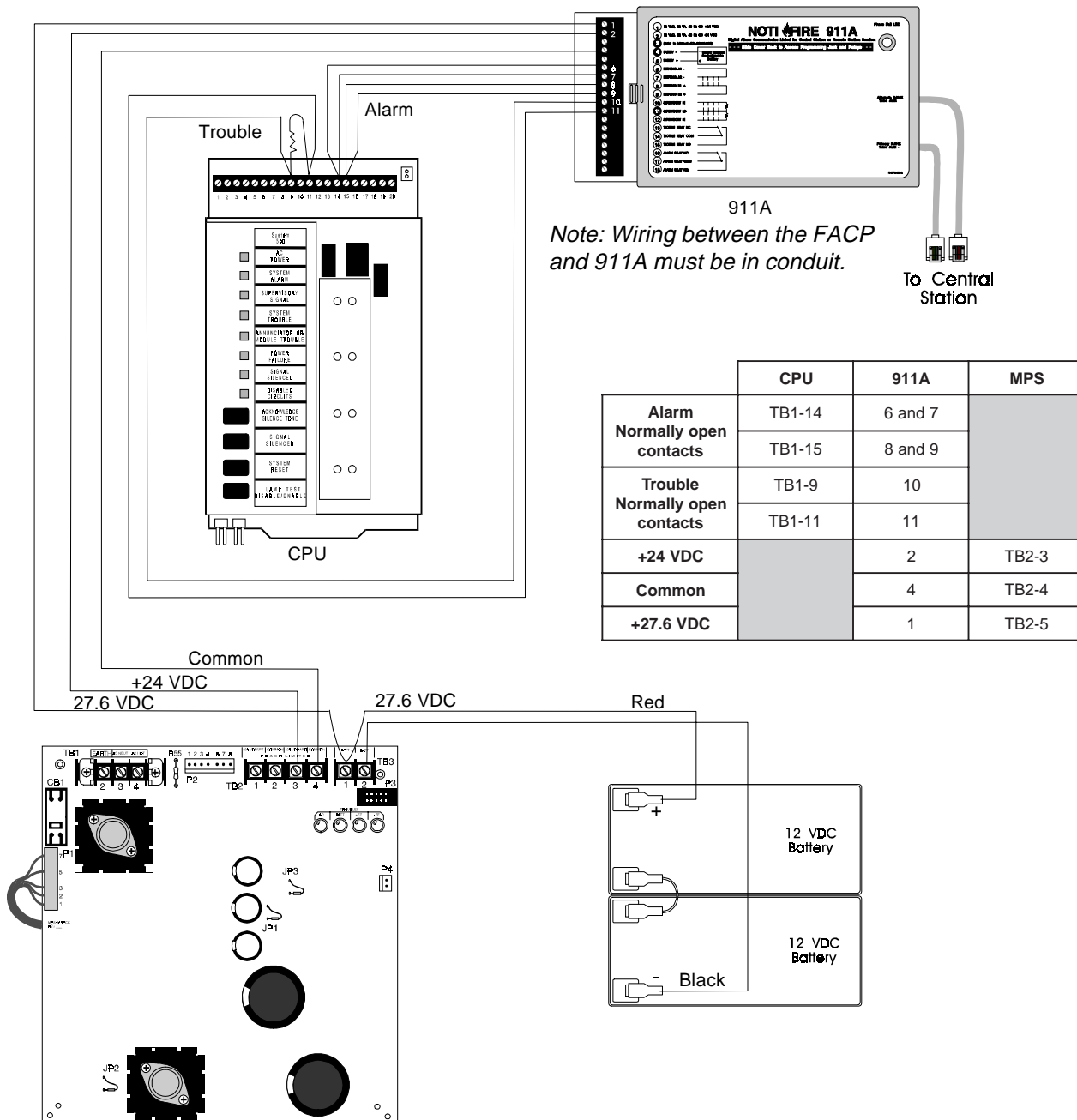
Tee-Tapping

One Tee-Tap will be allowed on Style Y Notification Appliance Circuits if a 10K End-of-Line Resistor (Part # 71274) is used on each branch as shown in Figure 6-3.

4.7K ELR
(Part # 71252)

Listed
10K ELR
(Part # 71274)

Standard
Style Y

Tee-Tapped Notification
Appliance Circuit

Listed
10K ELR
(Part # 71274)

I C B
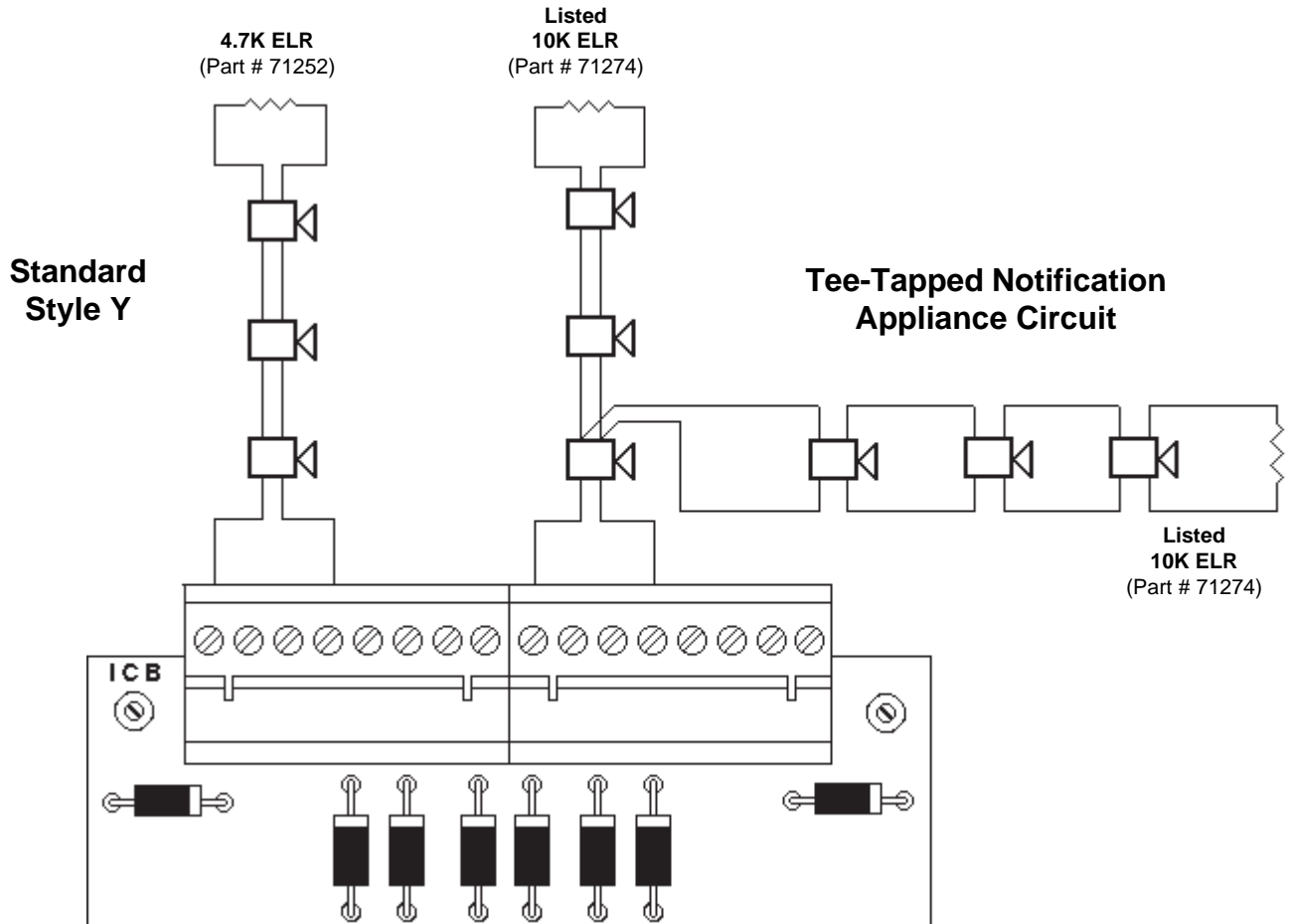
Figure 6-3: Tee-Tapping Notification Appliance Circuits

Note: Factory Mutual (FM) recommends this application not be used.

Four-Wire Smoke Detectors

Initiating devices requiring 24 VDC operating power can be wired as illustrated in Figures 6-4 and 6-5.

Figure 6-4:
Employing Four-Wire Smoke Detectors (Style D)
All connections are supervised and power limited

Figure 6-5:
Employing Four-Wire Smoke Detectors (Style B)
All connections are supervised and power limited
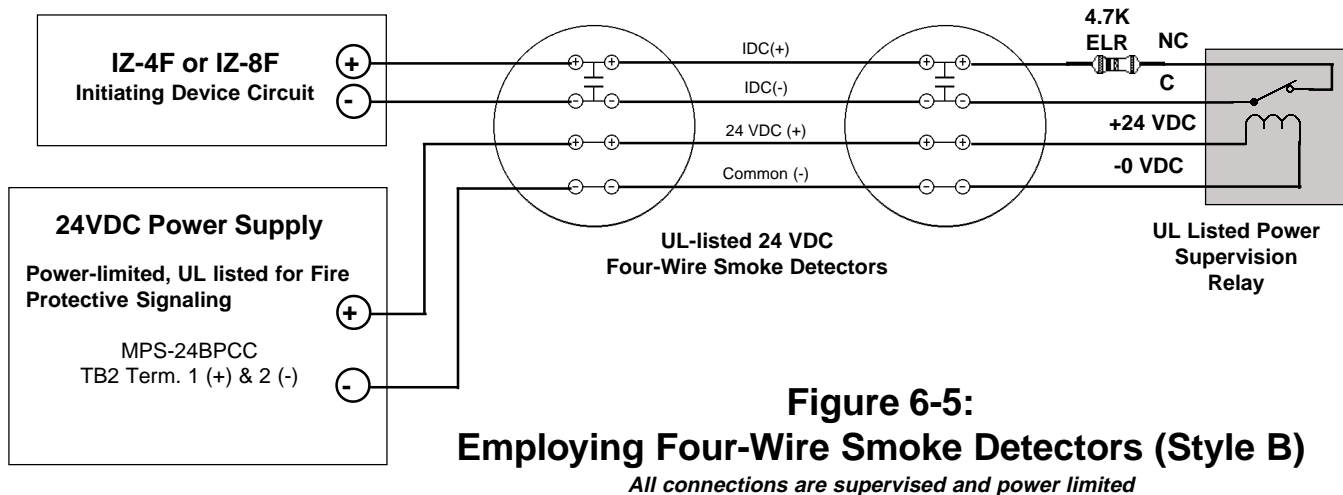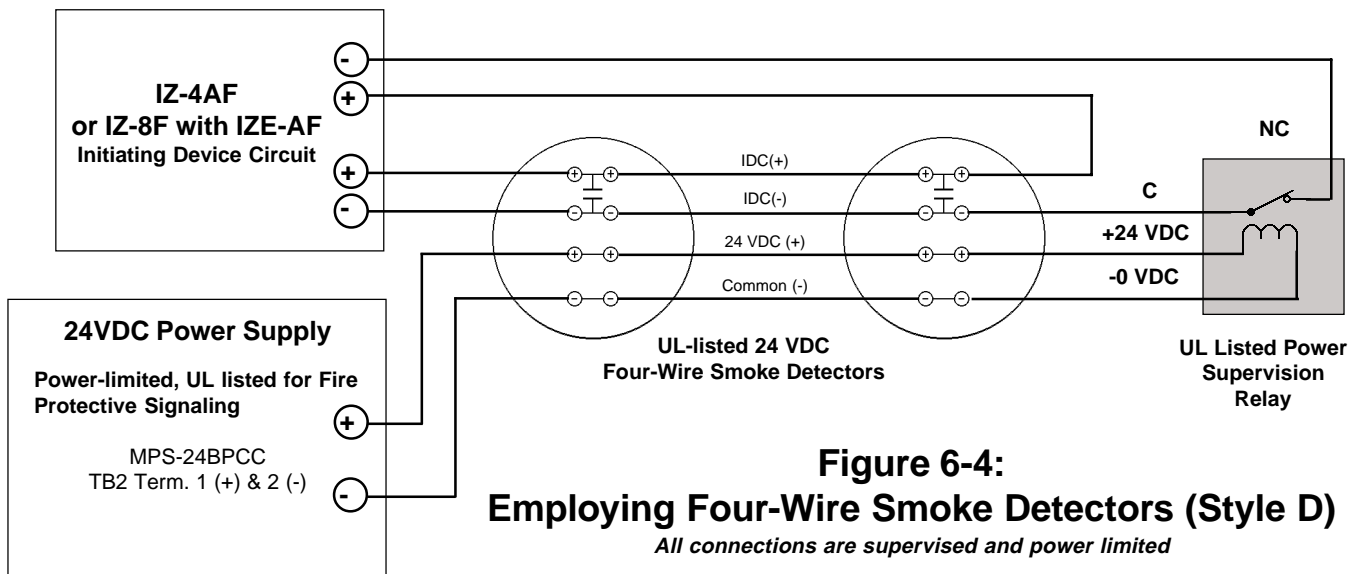
Notes on Style B and Style D field wiring:

1) The Power Supervision Relay coil leads must be connected to the last detector base 24V screw terminal.

2) Calculation of the maximum allowable resistance in the 24VDC detector power wiring:

$$R_{MAX} = \frac{(20.6 - V_{OM})}{(N)(I_S) + (NA)(I_A) + (I_R)} \quad \text{where:}$$

R_{MAX} — is the maximum total resistance of the 24-volt power circuits.

V_{OM} — is the minimum operating voltage of the detector or end of line relay, whichever is greater, in volts.

N — is the total number of detectors on the 24V supply loop.

I_S — is the detector current in standby.

NA — is the number of detectors on the 24V power loop which must function at the same time in alarm.

I_A — is the detector current in alarm.

I_R — is the end-of-line relay current.

Notification Appliance Circuit Power Configurations

The total current drawn from a Notification Appliance Circuit cannot exceed 3.0 amps (subject to the limitations of the power supply). Figure 6-6 illustrates some of the typical power supply/Notification Appliance Circuit configurations possible.
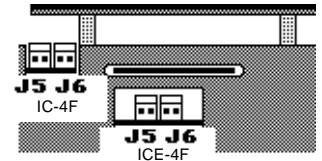
**Bottom view of the
IC-4F/ICE-4F**

Figure 6-6: Typical Supply/Notification Circuit Configurations

MPS →	J5 CPU Module → →	These two Notification Appliance Circuits share 2.0 amps.

MPS →	J5 CPU Module J6 → →	
	J5 IC-4F J6 → → → →	These six Notification Appliance Circuits share 2.0 amps.

MPS →	J5 CPU Module J6 → →	
	J5 IC-4F J6 → → → →	These ten Notification Appliance Circuits share 2.0 amps.
	J5 ICE-4F → → → →	

MPS →	J5 CPU Module → →	These two Notification Appliance Circuits share 2.0 amps.
AVPS-24F →	J5 IC-4F → → → →	These four Notification Appliance Circuits share the total 3.0 amps of current on the AVPS-24F.
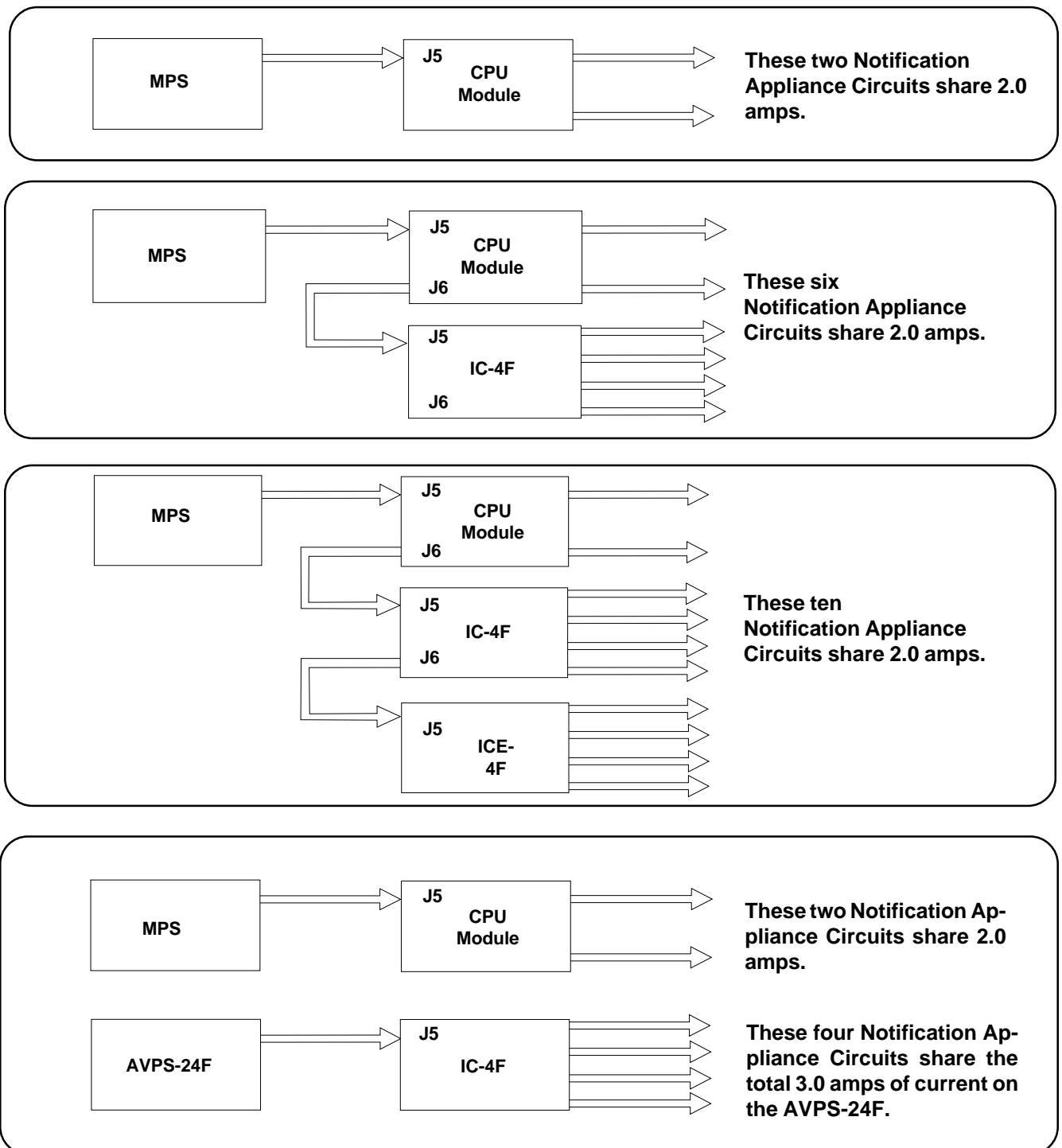
Figure 6-6: Typical Supply/Notification Circuit Configurations (continued)

These four Notification Appliance Circuits share 2.0 amps

These two Notification Appliance Circuits share 2.0 amps and these two Notification Appliance Circuits share 3.0 amps
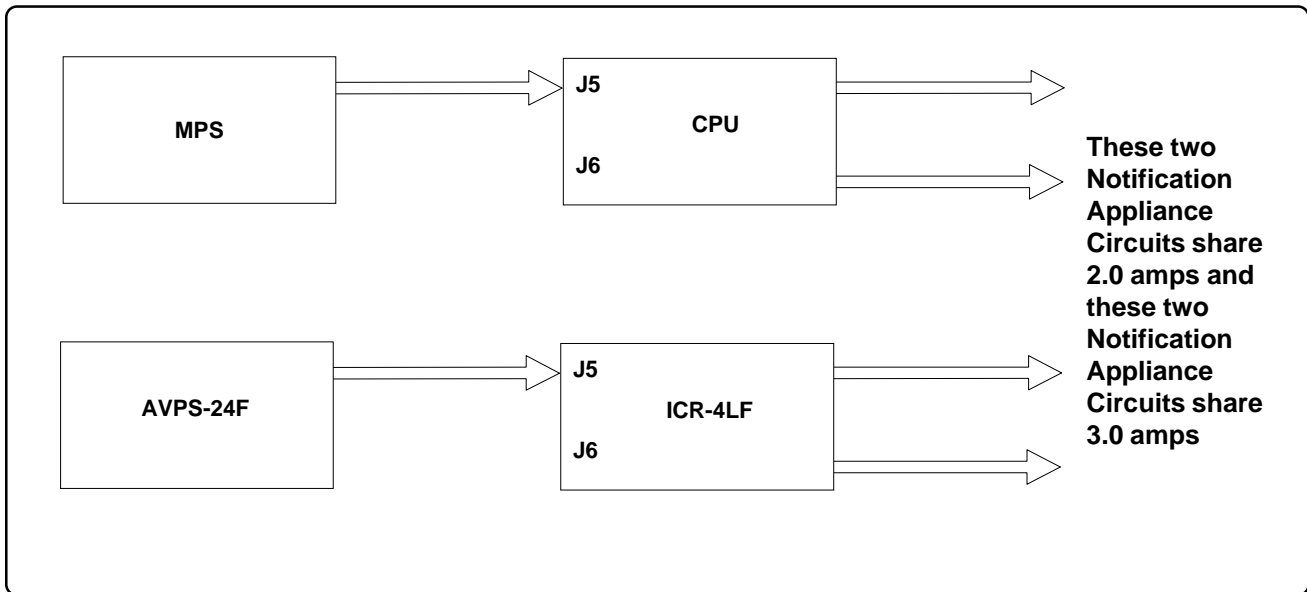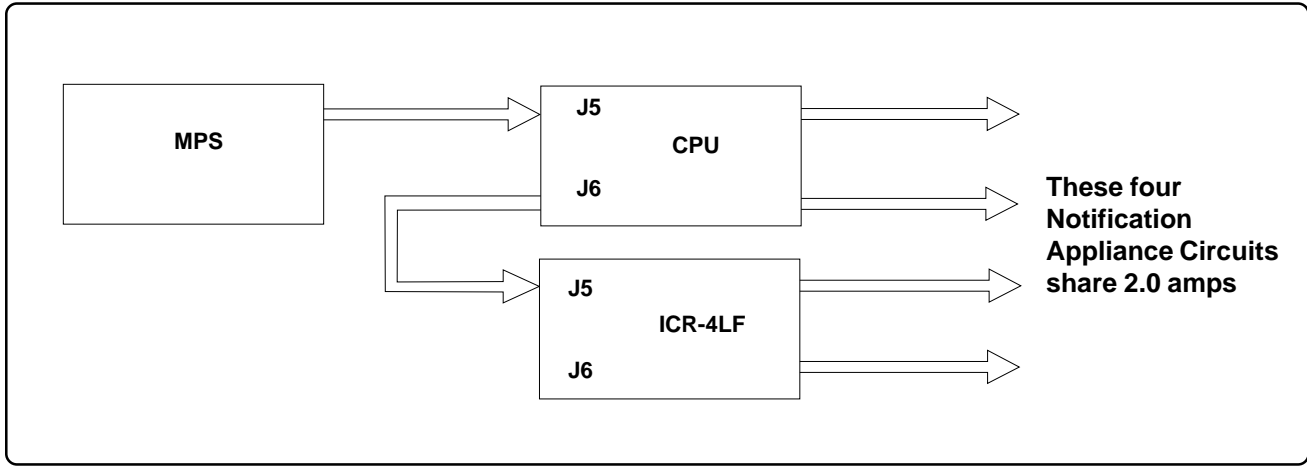
Remote Command Inputs

The function of Acknowledge, Signal Silence, and Reset can be executed from remote switches. The switches are wired to IZ-8F circuits which must be programmed for this special operation. Additional functions are outlined below.

Presignal Inhibit: Zone 1. Program zone as non-alarm and supervisory. This command is used to inhibit presignal operation. Upon entering presignal, the CPU checks zone 1 on all IZ-8F modules. If the zone is active (shorted), all presignal or PAS operation will be ignored.

Emergency Alert: Zone 5. Program zone as non-alarm and supervisory. Use as an evacuation signal for tornados, bomb-scares and other non-fire emergency situations. If the control panel is not in alarm, activation (short) on zone 5 will activate all Notification Appliance Circuits and output relays, that are mapped to zone 5, with a steady signal. Programmed March Time or Temporal code is ignored. A fire alarm will take priority over an emergency alert. Notification Appliance Circuit used for fire must be programmed for MTC or Code 3 operation. Emergency Alert is for local signalling only, do not map to "Remote Signalling/Municipal Tie" outputs.

Acknowledge: Zone 6. Program circuit as non-alarm and supervisory. Use to remotely execute an Acknowledge command without the need of an AFM-16ATX annunciator.

Signal Silence: Zone 7. Program circuit as non-alarm and supervisory. Use to remotely execute the Signal Silence command without the need of an AFM-16ATX annunciator.

System Reset: Zone 8. Program circuit as non-alarm and supervisory. Use to execute the Reset function without the need of an AFM-16ATX annunciator.
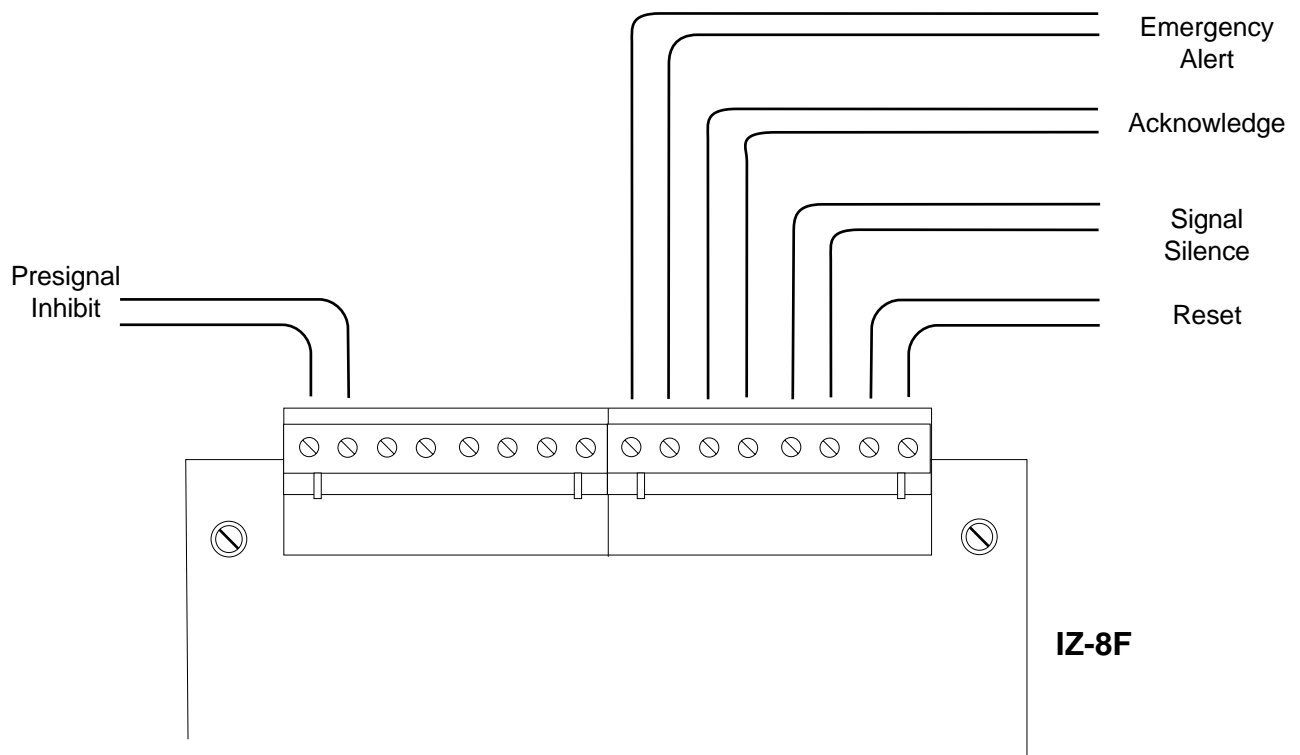
Figure 6-7: Remote Command Input Connections

1) Initiating circuits used as command circuits are supervised, power limited, and may be connected to limited-energy cable.
2) Maximum line resistance allowed due to wiring is 100 ohms.

Figure 6-8: Remote Presignal Inhibit, Emergency Alert,
Acknowledge, Signal Silence and System Reset Switches **(Style B).**

*Use circuit "E" for Emergency Alert,
"F" for Acknowledge, "G" for Signal Silence, and "H" for Reset.*

1) Switches used to control Presignal Inhibit, Acknowledge, Signal Silence or System Reset must be key operated, located within a locked cabinet, or arranged to provide equivalent protection against unauthorized use.

2) Switches must be UL listed to switch 30 VDC at 50mA.

3) If a key operated switch is used, the key should be removable in both open and closed positions, when used for Presignal Inhibit. The keys should be removable in the open position only when used for Acknowledge, Signal Silence or System Reset.

4) The Presignal Inhibit, Emergency Alert, Acknowledge, Signal Silence or System Reset functions can be controlled by a relay contact from a CR-4F/CRE-4F Relay Module, which can be operated from switches on AFM-16ATX, AEM-16ATF, AFM-16ATF, or LDM-32F Annunciators.

5) Locate Acknowledge, Signal Silence and System Reset switches adjacent to a system annunciator so that system status is available to the operator.

6) Remote Command Circuits are supervised and power limited. Maximum wire resistance per circuit is 100 ohms. Circuits wired for Style B operation requires a 4.7K ELR (P/N 71252) at the end of the line.

Figure 6-9: Remote Presignal Inhibit, Emergency Alert,
Acknowledge, Signal Silence and System Reset Switches **(Style D).**

Use circuit "E" for Emergency Alert,
"F" for Acknowledge, "G" for Signal Silence, and "H" for Reset.

1) Switches used to control Presignal Inhibit, Acknowledge, Signal Silence or System Reset must be key operated, located within a locked cabinet or arranged to provide equivalent protection against unauthorized use.

2) Switches must be UL listed to switch 30 VDC at 50mA.

3) If a key operated switch is used, the key should be removable in both open and closed positions, when used for Presignal Inhibit. The keys should be removable in the open position only when used for Acknowledge, Signal Silence or System Reset.

4) The Presignal Inhibit, Emergency Alert, Acknowledge, Signal Silence or System Reset functions can be controlled by a relay contact from a CR-4F/CRE-4F Relay Module, which can be operated from switches on AFM-16ATX, AEM-16ATF, or LDM-32F Annunciators.

5) Locate Acknowledge, Signal Silence and System Reset switches adjacent to a system annunciator so that system status is available to the operator.

6) Remote Command Circuits are supervised and power limited. Maximum wire resistance per circuit is 100 ohms. Circuits wired for style B operation requires a 4.7K ELR (P/N 71252) at the end of the line.

Section Seven: Programming

General
The control panel is programmed entirely by using the four switches on the CPU. The eight LEDs are used to show the programmer the status of programming. Each of these LEDs has two states - flashing and steady. On the programming label, two functions are associated with each LED. The function marked with an "F" is indicated by a flashing LED. The function marked with a "S" is indicated by steady LED illumination.

Preparing for Programming
Slide programming label into Dress Panel. Insert the Programming Key through the dress panel into Plug J11 on the CPU. Wait until ENTER PASSWORD LED and PRESS ENTER LED flash, then enter password.

Entering Passwords
There are four different programming modes, each with its own password. They are as follows:
Reconfigure: 123-1231 System Programming: 123-1232 Extended Features: 123-3211 Clear Program 312-1233 After entering the appropriate password digits, press the ENTER switch.

Clear Program
Before reconfiguring the system, we recommend clearing the CPU's memory. To do this use the PROGRAM CLEAR function. After PREPARING FOR PROGRAMMING enter the password 312-1233 then press and hold the ENTER key. The LEDs on the modules will go through a scrolling sequence until finally only the ENTER PASSWORD and PRESS ENTER LEDs are lit (approx. 10 sec.). PROGRAM CLEAR is now complete and the system is ready for reconfiguration. NOTE: Program clear should only be executed on new systems or ones that have been significantly changed because all previous programming will be removed!

Reconfigure Mode
Upon entering the *Reconfigure Mode*, the CPU identifies what modules are in the system. The system must be reconfigured the first time it is programmed and any time a module is removed or added. The *Reconfigure Mode* sets <u>new</u> modules to the following default conditions: (the program for modules that have been previously reconfigured remains unchanged)

✔ No circuits are selected for waterflow, supervisory, or circuit verification.
✔ No circuits are selected for coded output. ✔ All Notification Appliance Circuits are silenceable.
✔ Control relays are non-silenceable. ✔ All circuits are mapped for general alarm.

After entering the Reconfigure password and pressing CHANGE STATE key, the PASSWORD ACCEPTED LED and the RECONFIGURE LED will illuminate. All correctly-installed modules will light their LEDs as follows:
   IZ-8F: All red and yellow LEDs
   IZ-4F, IZ-4AF: All red and yellow LEDs
   IC-4F, ICR-4LF: Four green LEDs on left. All eight will light if an expander has been installed.
   CR-4F, CR-4LF: Four yellow LEDs on left. All eight will light if an expander has been installed
   TC-2F TC-4F: All eight green LEDs will light.
Press the ESCAPE switch to store the system configuration. Programming will advance to programming of the system.

Access Security
Additional access security for the system can be obtained by setting a switch on the lower CPU board to the *Write Inhibit* position. When set to the *Write Inhibit* position, the system will still give the impression that it can be programmed, but pressing the ENTER key will not result in the storing of any program data — all work will be lost.

The Security Switch can be found in one of two locations on the CPU.

Write Enable Position   Write Inhibit Position
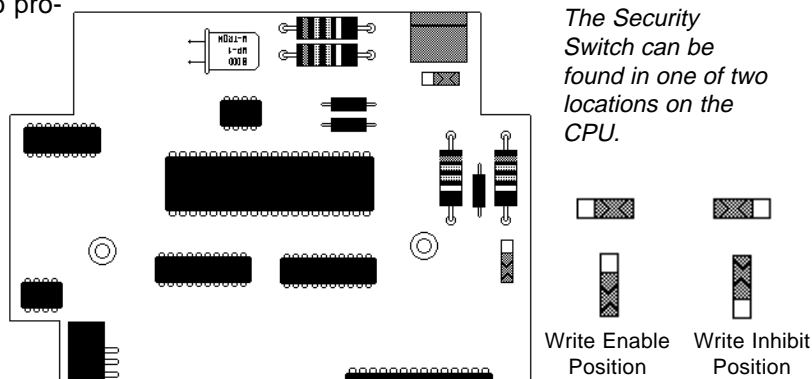
Note: The panel's Disable feature will not function with Write Inhibit selected.

System Programming
System programming may be entered directly by password or is automatically entered after reconfiguring the panel.

After entering the system programming password (123-1232), the green PASSWORD ACCEPT LED and the yellow PROGRAM/SERVICE LED will illuminate. Programming of the system is performed sequentially. The first function to be programmed is WATERFLOW.

Waterflow Operation
Notification Appliance Circuits and other outputs that are activated in response to an alarm on a waterflow initiating circuit cannot be silenced by the SIGNAL SILENCE switch.

Programming Waterflow Circuits
The WATERFLOW LED will flash to indicate the control panel is ready to be programmed for waterflow circuits.

A flashing yellow initiating circuit LED serves as the pointer. It shows the programmer what circuit is being programmed at that time. Press the STATE CHANGE switch to select or deselect this circuit for waterflow alarm. The red LED on that circuit will illuminate when that circuit has been selected. Pressing the POINT SELECT A switch advances the pointer to the next initiating circuit. Pressing the POINT SELECT B switch moves the pointer to the previous initiating circuit.

When all waterflow circuits have been selected, press the FUNCTION SELECT switch to store the WATERFLOW programming information and advance programming to the next function — SUPERVISORY.

Supervisory Operation
Activation of a device on a circuit programmed for supervisory will light the supervisory LED. The system trouble LED and the system trouble outputs will not be activated. Supervisory circuits can be mapped to controlled outputs. Circuits can detect the difference between the normally open supervisory switch and a break in the field wiring.

Programming Supervisory Circuits
The Supervisory LED will illuminate steadily on the CPU. The pointer LED will be at the first initiating circuit. Use the STATE CHANGE switch to select or deselect that circuit for supervisory. The POINT SELECT switches move the pointer to the other initiating circuits. When all Supervisory circuits have been programmed, press the FUNCTION SELECT switch to store the programming information and advance programming to the next function — SILENCEABLE.

Note: Circuit programmed for both supervisory and non-alarm performs special functions. See Remote Command Inputs.
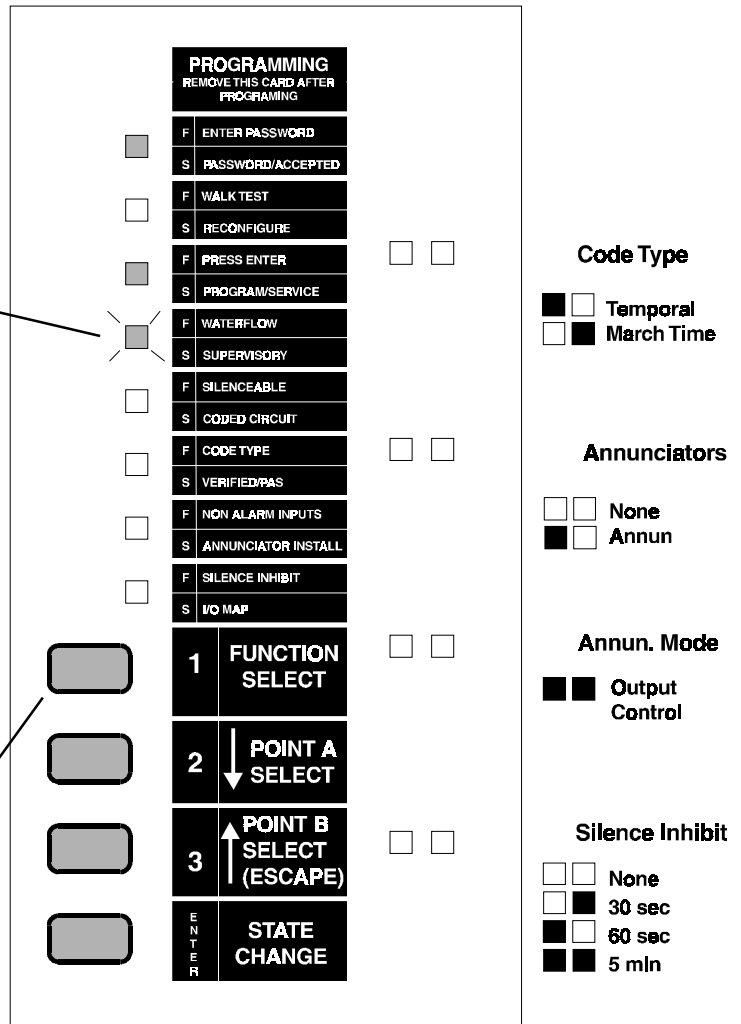
Silenceable Operation

Silenceable circuits are controlled output circuits that, when activated, can be silenced by pressing the signal silence key on the CPU. Do Not program the Remote Signalling / Municipal Tie output for silenceable operation.

Programming Silenceable Circuits
The SILENCEABLE LED will flash on the CPU. The pointer is represented by a flashing yellow LED on the first output circuit. Use the STATE CHANGE switch to select or deselect the circuit for silenceable operation. The green LED will illuminate when the circuit has been selected as silenceable. Use the POINT SELECT switches to move the pointer to the other output circuits.

When all silenceable circuits have been programmed, press the FUNCTION SELECT switch to store the programming information and advance programming to the next function — CODED CIRCUITS.

Coded Circuit Operation

Selecting controlled outputs for coded operation enables those outputs to pulse a selected code chosen later in the programming process (see code type). Outputs that are not selected for coded operation will turn on steady.

Programming Coded Circuits
The CODED CIRCUIT LED will illuminate steadily on the CPU. The pointer will be at the first output circuit. Use the STATE CHANGE switch to select or deselect the circuit for coded operation. Use the POINT SELECT switches to move the pointer to the other output circuits.

When all coded circuits have been selected, press the FUNCTION SELECT switch to store the programming information and advance programming to the next function — CODE TYPE.

Code Type Selection

Allows for the selection of March Time Code (110 beats per minute) or Temporal (3-3-3) coding for circuits programmed as coded in the previous step. Code type selection is on a system basis, therefore all coded circuits will sound the same code. Circuits that were not selected as coded are unaffected by Code Type selection.

Notes:
1) DO NOT program the Remote Signalling/Municipal Tie output for coded operation
2) Special requirements are necessary for coded circuit selections when using the TC-2F and TC-4F module. Refer to respective Time Control manual for details.
3) If the Emergency Alert option is to be employed, circuits used for fire must be selected as coded. See "Remote Command Inputs".

Programming Code Type
The CODE TYPE LED flashes. Use the STATE CHANGE switch to chose between the two codes:

Code Type

Green LED for Notification Appliance Circuit 1 on-Temporal
Yellow LED for Notification Appliance Circuit 1 on-March Time Code

■ □ **Temporal**
□ ■ **March Time**

When code type is programmed, press the FUNCTION SELECT switch to store the programming information and advance the programming to the next function — VERIFIED ZONES.

Verified / PAS

Alarm Verification increases the time required to initiate an alarm from two wire smoke detectors. When the system detects an alarm on an initiating circuit programmed for verification, it will automatically reset the power to that circuit. Power is then reapplied, beginning a verification period. Any alarm detected during this period will initiate an immediate system alarm.

Verification should only be used on circuits where the false alarm rate cannot be reduced to an acceptable level by other means. Only alarm signals from two-wire smoke detectors can be verified since four-wire smoke detectors are not reset during verification. Both two-wire smoke detectors and N.O. shorting-type initiating devices may be connected to the same circuit, although verification will not affect the contact type devices.

Positive Alarm Sequence (PAS)
PAS adds a 15 second, post-alarm delay to signal activation. Pressing the ACKNOWLEDGE or SILENCE key before 15 seconds has expired will change the timer to its full value (1, 2, OR 3 MINUTES) programmed.

For proper operation of PAS, the following conditions must be met:
1) The control panel must be located so that an alarm signal can be acknowledged by trained personnel within 15 seconds.
2) The system must be equipped with a presignal bypass switch.
3) The system must be configured so that activation of a second automatic fire detector bypasses presignal and immediately activates alarm signals. To accomplish this, the installer must employ AIM-200 modules to provide point annunciation of initiating points OR install one smoke detector per conventional initiating device zone.
4) Zones selected for PAS operation shall contain smoke detectors only. These zones may not contain other initiating devices such as manual stations, heat detectors, waterflow indicators, etc.

A fire alarm system that fails to meet the above requirements for PAS service will be classified as a presignal system only.

Programming Verified or PAS Zones
The VERIFIED / PAS LED will illuminate steady. The pointer will be at the first initiating circuit. Use the STATE CHANGE switch to select or deselect the circuit for verification. Use the POINT SELECT switches to move the pointer to the other initiating circuits.

When all VERIFIED / PAS ZONES are programmed press the FUNCTION SELECT switch to store programing information and advance programming to the next function — NON ALARM INPUTS.

Non Alarm Inputs
A non-alarm input is an initiating circuit that, upon activation, will not light the System Alarm LED or cause the piezo to sound, will not latch, will self-restore and can be mapped to activate output circuits. Note: If the system is in alarm, or enters an alarm condition, non-alarm inputs WILL latch.

When a short circuit occurs on a non-alarm circuit, the IZ red LED is turned on, but the System Alarm LED and the piezo sounder are not activated. Non-alarm points have a lower priority compared to regular IZ alarm zones.

Non-alarm circuits are "tracking" (non-latching) in that they turn on when the circuit is shorted and turn off when the circuit returns to normal (unless the system is in alarm). Non-alarm circuits use the I/O map capability of the control panel and the mapped controls simply turn on/off as the non-alarm point turns on/off. Non-alarm circuits are supervised for opens. Note: Circuits programmed for both supervisory and non-alarm perform special functions. See Remote Command Inputs.

Applications
Non-Alarm circuits are used to monitor devices that are not fire initiating sensors. Examples of these applications are:

✔ Sensors such as thermostats or timers could be connected to Non-Alarm points and used to open/close ventilation dampers connected to S200 outputs. In the event of a fire situation, the control panel could force the dampers in one position or the other, and subsequent non alarm state changes would be ignored.

✔ A manual drill switch could be connected to an IZ point and used to manually test the alarm system without causing a System Alarm or activating a Remote Station.

✔ Door locks connected to CR-4F/CRE-4F modules could be unlocked when a fire is detected by the control panel. A Non-Alarm point could be used to manually unlock/lock the doors in non-fire situations.

Programming Non-Alarm Inputs

The NON ALARM INPUTS LED will flash. The pointer will be at the first initiating circuit. Use the STATE CHANGE switch to select or deselect the circuit as a Non Alarm Input. The left-hand LED (red) on each point will illuminate when the circuit is selected, and will extinguish when the circuit has been deselected. Use the POINT SELECT switches to move the pointer to the other output circuits. Press the FUNCTION SELECT switch to store this programming and proceed to programming the next function — ANNUNCIATOR INSTALL.

Annunciator/UDACT-F Installation

Annunciator/UDACT-F installation programming allows the programmer to tell the panel if a serial annunciator or UDACT-F has been installed.

Programming Annunciator Installation

The ANNUNCIATOR INSTALL LED will illuminate steadily. An illuminated green LED for Notification Appliance Circuit #2 represents an installed annunciator. Use the STATE CHANGE switch to select or deselect annunciator installation. After programming annunciator installation, press the FUNCTION SELECT key to store the programming information and advance programming to the next function.

Annunciators

☐ ☐ **None**
■ ☐ **Annun**

Silence Inhibit

The SILENCE INHIBIT function prevents the operation of the Signal Silence switch for 30 seconds, 60 seconds or 5 minutes after the output circuits have been activated.

Programming Silence Inhibit

The SILENCE INHIBIT LED will flash. Use the STATE CHANGE switch to select Silence Inhibit time as represented by the Alarm Relay LEDs.

After programming Silence Inhibit press the FUNCTION SELECT switch to store this information and select the next function — I/O Map.

Silence Inhibit

☐ ☐ **None**
☐ ■ **30 Sec**
■ ☐ **60 Sec**
■ ■ **5 min**

Input/Output MAP

The I/O map is the assignment of output circuits to be activated by particular initiating circuits. Unmapped initiating circuits will not generate a system alarm. Unmapped controlled outputs will not operate.

Programming the I/O MAP

The I/O Map LED will illuminate steadily. The red LED pointer will illuminate steadily on the selected initiating circuit. A yellow flashing LED points to an output circuit. Pressing the STATE CHANGE switch will select or deselect the output circuit to be activated by the initiating circuit. Use the POINT B SELECT to scroll through each of the output circuits and the STATE CHANGE switch to select/deselect the outputs (after scrolling through all of the output circuits it will cycle back to the first).

After each of the output circuits has been selected/deselected, press the POINT A SELECT switch to move the red pointer to the next initiating circuit. Continue mapping outputs for each initiating circuit.

After programming the I/O map, press the FUNCTION SELECT key to store I/O map programmed. **If you do not press the FUNCTION SELECT switch after programming the I/O Map, the I/O map will not be saved.** Yellow LEDs on initiating circuits show unmapped circuits. Press ESCAPE switch to return to I/O mapping, or ENTER switch to return to Waterflow. Remove the Programming Key to exit programming mode.

> ***Note: After the system has been programmed, the Programming Key must be removed to transfer the programming information from temporary memory storage to nonvolatile memory.***

Extended Programming Features

These features are available in CPU EPROM U4 software numbered 73167 (or greater).

The **AUTO SILENCE** feature will automatically turn off all silenceable circuits after a pre-programmed delay. The delay timer starts after a system alarm. Any subsequent alarms which occur before the auto silence activates will restart the delay countdown at zero.

The **PRESIGNAL DELAY** delays the activation of all silenceable circuits mapped to a zone in alarm for a pre-programmed length of time. A subsequent alarm aborts the delay and re-maps all alarm points. Pressing the SIGNAL SILENCE switch before the delay time has expired aborts the delayed activation of the silenceable circuits.

The **Positive Alarm Sequence** (PAS) function adds a timer. After a first alarm, the timer is set for 15 seconds. If nothing happens in that 15 seconds, all signals are activated. If an ACKNOWLEDGE or SILENCE key (including annunciator keys) is pressed before 15 seconds, the timer changes to its full value (1, 2, or 3 minutes).

Note: When Pre-Signal Delay has been selected, at least one Notification Appliance Circuit must be programmed as non-silenceable. This will ensure that at least one notification circuit will sound immediately after initiation of an alarm condition.

Note: NFPA 72 requires the installation of a Day/Night/Weekend switch that can override PAS operation. This can be accomplished by using a normally open switch to close an IZ-8F that has been programmed for NON-ALARM and SUPERVISORY operation. Note: That zone cannot have a Notification Appliance Circuit mapped to it.

The switch totally inhibits all presignal function. On entering presignal mode, the CPU checks zone 1 in module 1. If this is an IZ-8F zone set for NON-ALARM and SUPERVISORY, and it is *active* (switch is on), all presignal and PAS operation will be ignored.

DACT - (UDACT-F)

When a Digital Alarm Communicator Transmitter (Notifier 911A) is used, the reporting of an AC Loss condition must be delayed. With software P/N 73452 (or higher), this function can be selected under extended programming features. When selected, the CPU's trouble contacts will not be activated for loss of AC power until approximately 8 hours after loss of power occurs.

Software P/N 73611 (or higher) is required to support the Fire-Lite UDACT-F. When using a UDACT-F, the "DACT" mode must be selected under the extended programming feature and "Annun" under programming.

The **CALIFORNIA CODE** mode adds a ten second timer. When an alarm occurs, the timer is started. At the end of the ten second period, all silenceable circuits are shut off for five seconds. At the end of the five seconds, the circuits are turned on again for 10 seconds. This cycle repeats indefinitely.

In the event of an acknowledged alarm, the REMINDER mode pulses the piezo every 15 seconds. If an acknowledged trouble exists, but not an alarm, the piezo is pulsed every two minutes.

Programming

To program the features of AUTO SILENCE, PRESIGNAL DELAY, and CALIFORNIA CODE, key in the password 123-3211 and push ENTER.

In addition to PASSWORD ACCEPTED and PROGRAM/SERVICE LEDs, the NON-ALARM LED will flash on the CPU.

Press the **ENTER** switch to scroll through the options for AUTO SILENCE until the LEDs reflect the desired choice.

Press the **FUNCTION SELECT** switch to store the option setting in memory and advance to the next point to be programmed. Again, press the **ENTER** switch until the LEDs reflect the desired choice, followed by the **FUNCTION SELECT** switch to store the data.

To exit extended programming at any time, remove the programming key. The 123-3211 password does not allow access to any other program features and does not cause the system to reconfigure.

PROGRAMMING
REMOVE THIS CARD AFTER PROGRAMING

F	ENTER PASSWORD
S	PASSWORD/ACCEPTED
F	WALK TEST
S	RECONFIGURE
F	PRESS ENTER
S	PROGRAM/SERVICE
F	WATERFLOW
S	SUPERVISORY
F	SILENCEABLE
S	CODED CIRCUIT
F	CODE TYPE
S	VERIFIED/PAS
F	NON ALARM INPUTS
S	ANNUNCIATOR INSTALL
F	SILENCE INHIBIT
S	I/O MAP

1	FUNCTION SELECT
2	POINT A SELECT
3	POINT B SELECT (ESCAPE)
ENTER	STATE CHANGE

CPU

Auto Silence
- None
- 5 minutes
- 10 minutes
- 20 minutes

Pre-Sig Delay
- None
- 1 minute
- 2 minutes
- 3 minutes
- PAS 1 minute
- PAS 2 minutes
- PAS 3 minutes

Dact
- None
- DACT

California Code
- None
- Reminder
- Calif. Code
- Remind & Cal

Section Eight:
Operating the Control Panel

CPU LED Indicators

AC POWER: A green LED that indicates the presence of normal AC power. This LED is turned off when the AC line voltage falls below normal.

SYSTEM ALARM: A red LED that indicates an alarm condition. This LED initially flashes during alarm (the CPU will also sound a continuous audible tone). Silencing or acknowledging the alarm(s) turns the audible tone off and causes the LED to illuminate steadily. Subsequent alarms will resound the audible tone and flash their LEDs. Alarm signals latch until the control panel is reset.

SUPERVISORY SIGNAL A yellow LED that indicates activation of a circuit programmed to monitor supervisory devices.

SYSTEM TROUBLE: Indicates the presence of a trouble condition in the system.

ANNUNCIATOR OR MODULE TROUBLE: Indicates a trouble in a module in the control unit or in a remote annunciator.

AC/BATT/GND FAULT: Indicates 1) that a power supply is not functioning correctly, 2) AC line voltage is below normal, 3) improper battery voltage, or 4) that a ground fault exists. Additional information is displayed on internal LEDs located on power supply assemblies.

SIGNAL SILENCE: Indicates that an output circuit is silenced. Indication will remain until the reset switch is depressed.

DISABLED CIRCUITS: Indicates that a circuit(s) within the system has been manually disabled.

CPU Control Switches

ACKNOWLEDGE (SILENCE TONE): Depressing Acknowledge turns the audible tone off and switches LED operation from flashing to steady. A subsequent trouble or alarm will resound the audible tone and flash appropriate LEDs.

SIGNAL SILENCE: Returns all silenceable outputs, which were automatically activated by the alarm condition, to their non-alarm state. A subsequent alarm can reactivate alarm outputs.

SYSTEM RESET: The System Reset Switch will reset the system provided that the alarm condition is clear. Holding this switch depressed will sequentially light (lamp test) all LEDs.

LAMP TEST: The Lamp Test Switch illuminates all the LEDs in the system for as long as the switch is held down. This switch can also be used to disable or enable individual circuits.

Note:
The CPU produces a pulsed tone for troubles, disabled outputs, and supervisory conditions. A continuous tone is generated for alarms.
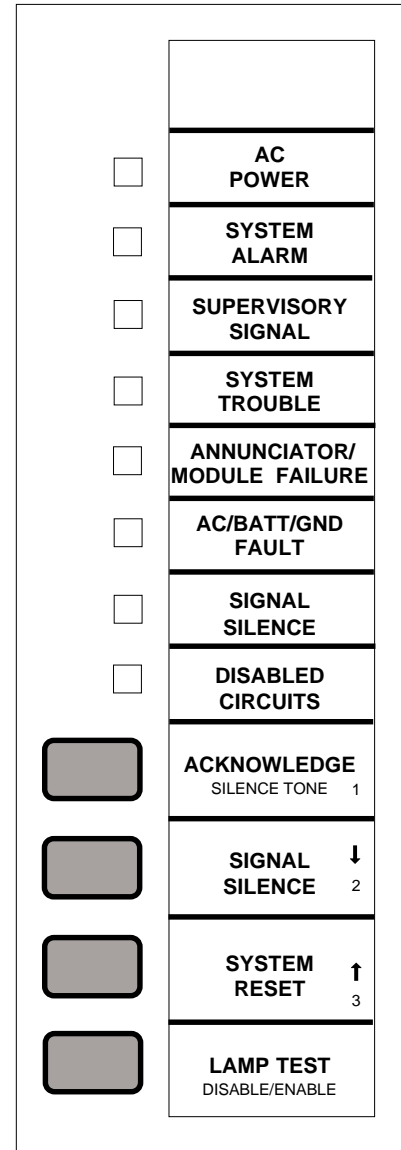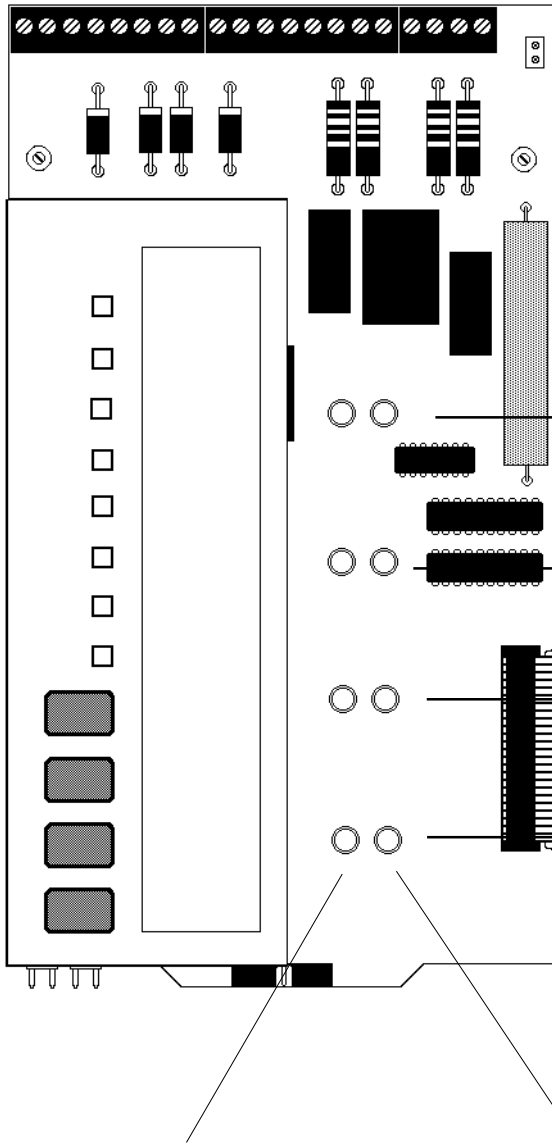
CPU Circuits

The CPU Module contains: 1) Two supervised Notification Appliance Circuits that can be used to control evacuation signaling devices such as bells, chimes, horns, and strobes. 2) An alarm relay that can control external devices such as elevators, and doors. 3) A Remote Signaling/Municipal Tie output for connection to a municipal fire department, central station, or a remote monitoring station.

Notification Appliance Circuit #1

Notification Appliance Circuit #2

Municipal Box/Remote Signaling Tie

Form-C Alarm Relay

Green LEDs: Each output has a green LED that indicates activation of that circuit.

Yellow LEDs: Each output circuit has a yellow LED that indicates trouble conditions or disabled outputs. New troubles are indicated by a flashing LED.

IZ-4F

IC-4F

CR-4F
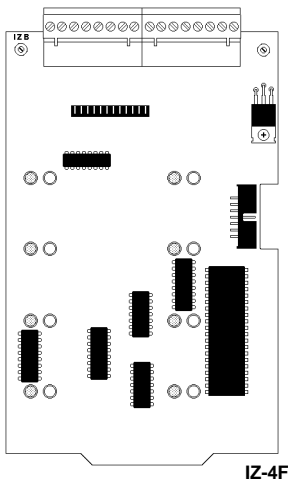
IZ-4F, IZ-4AF and IZ-8F Initiating Zone Modules

Each Initiating Zone Module (IZ) will monitor up to eight initiating zones (groups) of initiating devices (smoke detectors, pull stations, heat detectors) for alarm signals. It also checks the integrity of the building wiring between the module and the initiating devices. The IZ module conveys the status of the initiating zones and their wiring to the CPU module and at the direction of the CPU will light the appropriate LEDs to display alarm and trouble conditions (broken wire, inactive circuit, etc.).

The red LEDs indicate alarm conditions. New alarms are indicated by a flashing LED and a steady audible tone. Silencing an alarm turns the audible tone off and causes the LED to illuminate steadily.

The yellow LEDs indicate an initiating zone trouble or a disabled zone. New troubles are indicated by a flashing LED and a pulsed audible tone. Silencing a trouble turns the audible tone off and switches LED operation from flashing to steady. A subsequent trouble from a different initiating zone will resound the audible tone and flash its LED. Trouble signals will self-restore as soon as the trouble conditions are corrected.
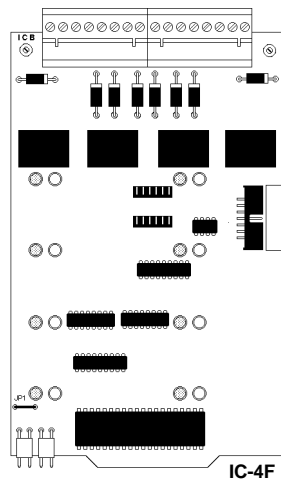
IC-4F Indicating Circuit Module

Each Indicating Circuit Module (IC) will control and monitor up to eight Notification Appliance Circuits (with an ICE-4F expander installed) of evacuation signaling devices, such as bells, chimes, horns, and lights. The IC module conveys the status of the Notification Appliance Circuits and their wiring to the CPU module and at the direction of the CPU will light the appropriate LEDs to display activation and trouble conditions (broken wire, inactive circuit). The Notification Appliance Circuits activate automatically during an alarm condition according to a program instructions stored in CPU nonvolatile memory. This module is also programmable for California Code.

The green LEDs indicate an activated Notification Appliance Circuit.

The yellow LEDs indicate a notification circuit trouble or a disabled circuit. New troubles are indicated by a flashing LED and a pulsed audible tone. Silencing a trouble turns the audible tone off and causes the LED to illuminate steadily. A subsequent trouble from a different circuit will resound the audible tone and flash the associated trouble LED. Trouble signals will self-restore as soon as the trouble condition has been corrected.
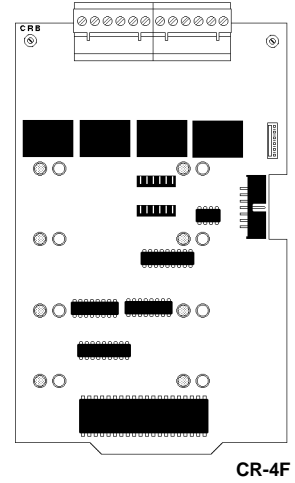
CR-4F and CR-4LF Control Relay Modules

Each Control Relay Module (CR) controls up to eight relays (with a CRE-4F expander installed), which can be connected to control external devices including elevators, doors, and air handling equipment. These relays will be activated automatically during an alarm condition according to program instructions stored in CPU module's memory.

The green LEDs indicate that the associated control relay has been activated.

The yellow LEDs indicate that the associated control relay output has been disabled.

NOTE: ICR-4LF Notification Appliance Circuits function like those on IC-4F. Relays function as on the CR-4F.

Disabling/Enabling Circuits

For servicing of the system, input or output circuits can be disabled.

To disable a circuit, a 1-2-3 key sequence must be entered and the operator must advance to the circuit to be disabled.

1) Press the LAMP TEST switch and hold it in throughout the remainder of this procedure.

2) Press 1, 2, 3. If any circuits have been previously disabled, they will be indicated by illumination of their left-hand LED (red for initiating circuits, green for all others).

    The position of the circuit pointer is indicated by the flashing yellow LED.

    To move forward in the circuit map, press Switch 3 (SYSTEM RESET). To move backward in the circuit map, press Switch 2 (SIGNAL SILENCE).

3) Move forward or reverse until the pointer stops at the circuit to be disabled.

4) Press Switch 1 (ACKNOWLEDGE) to turn on the left-hand LED on the circuit to be disabled. When this LED is on, the circuit has been disabled.

    A circuit can be re-enabled by pressing Switch 1 until the left-hand LED goes out.

5) Repeat steps 3 and 4 until all disabling/enabling has been accomplished.

6) Release the LAMP TEST switch to exit Disable/Enable mode. The control panel will return to operation with the selected circuits disabled.
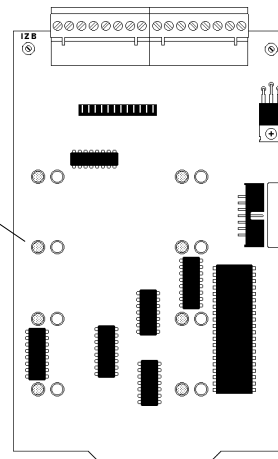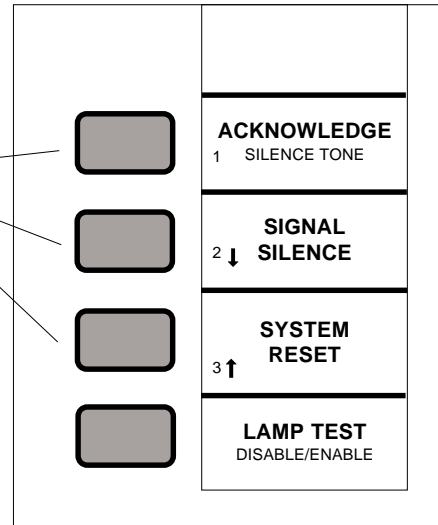
Caution: Disabling a circuit will reduce or eliminate fire protection.

Section Nine:
Testing & Maintenance

Acceptance Test
Upon completion of the original installation and following subsequent modifications, a complete operational test should be conducted on the entire installation for the purpose of verification of compliance with the applicable NFPA standards. Testing should be conducted by a factory-trained distributor in the presence of a representative of the Authority Having Jurisdiction and the Owner's Representative. Follow procedures contained in NFPA 72-1993, Chapter 7, "Inspection, Testing and Maintenance."

Periodic Testing and Service
Periodic testing and servicing of the system, all initiating devices and notification appliances, and any other associated equipment is essential to insure proper and reliable operation. Testing and servicing should be in accordance with the schedules and procedures outlined in: 1) NFPA 72-1993, Chapter 7, "Inspection, Testing and Maintenance," and 2) the service manuals and instructions for the peripheral devices contained in your system. Correct any trouble condition or malfunction immediately.

Operational Checks
Between formal periodic testing and servicing intervals, the following operation checks should be performed monthly or more frequently when required by the Authority Having Jurisdiction.

1) Check that the green "AC POWER" LED is illuminated.

2) Check that all yellow LEDs are off.

3) Holding "SYSTEM RESET" depressed should sequentially light all system LEDs.

4) Before proceeding, a) notify fire department and/or central alarm receiving station if alarm conditions are transmitted; b) notify facility personnel of test so that alarm sounding devices are ignored during test period; c) when necessary, activation of alarm notification appliances can be prevented by disabling those circuits.

5) Activate an Initiating Device Circuit via an alarm initiating device and check that all active notification appliances function. Reset the alarm initiating device, the control panel, and any other associated equipment.

6) Repeat Step 5 for each Initiating Device Circuit.

7) Remove AC power, activate an Initiating Device Circuit via an alarm initiating device and check that active notification appliances sound, and alarm indicators illuminate. Measure the battery voltage while notification appliances are activated. Replace any battery with a terminal voltage less than 21.6 volts. Replacement batteries may be obtained from control panel manufacturer. Minimal replacement battery capacity is indicated on the control panel marking label. Reapply AC Power. Note: This test requires fully charged batteries, if batteries are new or discharged due to a recent power outage, allow the control panel to charge batteries for 48 hours before testing.

8) Check that all yellow LEDs are off and that the green "AC POWER" LED is illuminated.

9) Notify fire, central station and/or building personnel that test is complete.

Battery Checks

Maintenance-free sealed lead-acid batteries do not require the addition of water or electrolyte. They are charged and are maintained in a fully charged state by the main power supply's float charger during normal system operation. A discharged battery will charge at 0.75 amps (typically) and obtain its float voltage of 27.6 volts within 48 hours.

Replace any battery that is leaking or damaged. Replacement batteries may be obtained from Fire-Lite Alarms, Inc. Minimal replacement battery capacity is indicated on the control panel marking label. To check battery and system, Refer to Section "Operational Checks" above.

Caution!
Batteries contain Sulfuric Acid which can cause severe burns to the skin and eyes and damage to fabrics. In the event a battery leaks and contact is made with the Sulfuric Acid, immediately flush skin and/or eyes with water for at least 15 minutes. For eyes, seek immediate medical attention. A good neutralizing solution for Sulfuric Acid is water and household baking soda. Care should be taken to insure proper handling of the battery to prevent short-circuiting. Accidental shorting of the leads from uninsulated work benches, tools, bracelets, rings, and coins should be avoided. Shorting the battery leads can damage the battery, equipment, and could cause injury to personnel.

Walk Test

In order to execute Walk Test from the control panel, the PKB Programming Key must be inserted into the CPU. Enter the Walk Test password (123-1233). The PASSWORD ACCEPTED LED will light and the WALK TEST LED will flash. Activate an initiating device and all output circuits that are programmed as silenceable will activate for approximately four seconds. If a device on the same initiating device circuit is activated more than once, the outputs will activate for one second. This alternate timing scheme enables the tester to determine if devices intended to be installed on a certain initiating circuit are in fact on that circuit. Once an initiating circuit has been activated, its red LED will flash. All of the red LEDs on the initiating circuit modules will illuminate. The green LEDs on all Notification Appliance Circuits that are silenceable will illuminate.

Testing Initiating Circuits for Trouble

Inducing a trouble into an initiating circuit will activate all output circuits that are programmed as silenceable. The outputs will remain activated until the trouble is cleared. After a circuit is tested for trouble, the yellow LED for that circuit will flash.

Testing Notification Appliance Circuits for Trouble

Inducing a trouble into a notification circuit will activate the particular circuit and pulse the circuit at one second on/off rate until the trouble is cleared.

Exiting Walk Test

To exit Walk Test, remove the programming key.

NOTE: Fire protection capabilities are removed during walk-test.

Appendix A:
Supply Calculations

Section A.1: The 120VAC Fire Alarm Circuit

The control panel requires connection to a separate dedicated VAC fire alarm circuit, which must be labeled "FIRE ALARM." This VAC circuit must connect to the line side of the main power feed of the protected premises. No other equipment may be powered from the fire alarm circuit. The VAC circuit wire run must run continuously, without any disconnect devices, from the power source to the fire alarm control panel. Overcurrent protection for this circuit must comply with Article 760 of the National Electrical Code as well as local codes. Use #12 AWG wire with 600-volt insulation for this circuit.

Device Type	# of Devices		Current (amps)		Total Current
AVPS-24F	[ ]	X	1.0	=	
MPS-24BPCC	1	X	1.8	=	1.8
Sum Column for AC Branch Current Required				=	amps

Table A-1: 120 VAC Fire Alarm Circuit

Use Table A-1 to determine the total amount of current, in AC amps, that the AC service must be capable of supplying to the system.

The power supply must be capable of powering the system under all operating conditions. Use Table A-2A to determine power supply loading and verify that the loading is within the limits permitted. Use Table A-2B and A-2C to determine secondary (battery) power requirements.

S200 System Current Draw Calculation Table
(Table A-2A)

Note: The Primary Power Source Non-Alarm Current and Alarm Current columns of this table are not battery calculations. They are simply current calculations to confirm that the MPS can supply enough current to support the system during Primary Non-Fire Alarm and Fire Alarm conditions.

Note: Throughout these current calculation tables, the word "primary" refers to the FACP's primary source of power, i.e. 120 VAC power. The word "secondary" refers to the FACP's backup batteries (or any other 24 VDC uninterruptable, regulated power supply listed for Fire Protective Signaling and connected in place of the batteries).

Part One - Non-Fire Alarm Current (Primary Power Source): This column of Table A-2A allows the user to calculate the current that will be drawn from the MPS during a non-fire alarm condition, with AC power applied. This current draw cannot exceed 0.750 amp. This column does not account for current drawn from TB2-3 and TB2-4 in Non-Fire Alarm conditions which is limited to 0.800 amp, exclusive of the 0.750 amp limit on the Non-Fire Alarm Current Load. Current drawn from TB2-1 and TB2-2 cannot exceed 0.20 amp at any time and must be included in the 0.750 amp limit.

Part Two - Fire Alarm Current (Primary AC Power): The second column of Table A-2A allows the system designer to determine the current load that must be supported by the MPS during a fire alarm condition with primary power applied. This current drawn during a fire alarm cannot exceed 0.750 amp. This column does not account for current drawn from TB2-3 and TB2-4 in Fire Alarm which is limited to 2.0 amps exclusive of the 0.750 amp Fire Alarm Load.

Note: Typically, a system should be designed around the capacity to activate all output circuits and relays, and support fire alarms on no less than 10% of initiating device circuits (subject to the requirements of the Local Authority Having Jurisdiction (LAHJ).

Concerning 4-wire detectors: In Table A-2A, the current to be entered for 4-wire smoke detectors is the manufacturer's rated fire alarm current minus the manufacturer's rated non-fire alarm current. The maximum 4-wire detector current from TB2-2 is 200 mA.

Concerning notification appliances: The MPS provides a regulated supply for notification appliance circuits, permitting the use of any 24 VDC notification appliances UL listed for Fire Alarm Systems. The maximum notification appliance current is 2.0 amps.

Part Three - Non-Fire Alarm Current (Secondary battery power): The last column of Table A-2A allows the system designer to calculate the secondary non-fire alarm current. This is the current that will be drawn from the secondary source in a non-fire alarm condition during AC power loss. This figure is required to complete the standby battery calculations. After adding up all the individual current draws, the total figure is then transferred to Table A-2C.

Category	Primary Power Source Non-Alarm Current (amps)			Primary Power Source Alarm Current (amps)			Secondary Power Source Non-Alarm Current (amps)		
	Qty	X [current draw]=	total	Qty	X [current draw]=	total	Qty	X [current draw]=	total
CPU	1	x [0.031] =	0.031	1	x [0.223]=	0.223	1	x [0.031] =	0.031
MPS-24BPCC	1	x [0.062]=		1	x [0.062]=		1	x [0.022]=	
AVPS-24F	[ ]	x [0.009]=		[ ]	x [0.009]=		[ ]	x [0.009]=	
IZ-8F IZE-AF IC-4F, CR-4F, CR-4LF, ICR-4LF ICE-4F CRE-4F TC-2F, TC-4F IZ-4F IZ-4AF	[ ] [ ] [ ] [ ] [ ]	x [0.047]= x [0.004]= x [0.007]= x [0.001]= not applicable x [0.007]= x [0.027]= x [0.029]=		[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	x [0.047]= x [0.003]= x [0.072]= x [0.065]= x [0.065]= x [0.072]= x [0.027]= x [0.029]=		[ ] [ ] [ ] [ ] [ ] [ ] [ ]	x [0.047]= x [0.004]= x [0.007]= x [0.001]= not applicable x [0.007]= x [0.027]= x [0.029]=	
AFM-16ATF, AFM-32AF ACM-16ATF, ACM-32AF AEM-16ATF, AEM-32AF AFM-16AF ACM-8RF (refer to Doc. 50362) LDM (refer to Doc. 50055)	[ ] [ ] [ ] [ ] [ ] [ ]	x [0.040]= x [0.040]= x [0.002]= x [0.025]= x [ ]= x [ ]=		[ ] [ ] [ ] [ ] [ ] [ ]	x [0.056]= x [0.056]= x [0.018]= x [0.065]= x [ ]= x [ ]=		[ ] [ ] [ ] [ ] [ ] [ ]	x [0.040]= x [0.040]= x [0.002]= x [0.030]= x [ ]= x [ ]=	
2-Wire Smoke Detectors (refer to the Device Compatibility Document for current draws)	[ ] [ ] [ ] [ ]	x [ ]= x [ ]= x [ ]= x [ ]=		[ ] [ ] [ ] [ ]	x [ ]= x [ ]= x [ ]= x [ ]=		[ ] [ ] [ ] [ ]	x [ ]= x [ ]= x [ ]= x [ ]=	
1 to 16 zones	NOT APPLICABLE			[ ]	x [0.120]=		NOT APPLICABLE		
911A Communicator UDACTF Communicator	[ ] [ ]	x [0.030]= x [0.040]=		[ ] [ ]	x [0.167]= x [0.100]=		[ ] [ ]	x [0.030]= x [0.040]=	
Other devices drawing power from the power supply excluding Notification Appliance Power (see notes 1 and 3)	[ ] [ ] [ ] [ ]	x [ ]= x [ ]= x [ ]= x [ ]=		[ ] [ ] [ ] [ ]	x [ ]= x [ ]= x [ ]= x [ ]=		[ ] [ ] [ ] [ ]	x [ ]= x [ ]= x [ ]= x [ ]=	
Power Supervision Relays (see notes 1 and 3)	[ ] [ ]	x [ ]= x [ ]=		[ ] [ ]	x [ ]= x [ ]=		[ ] [ ]	x [ ]= x [ ]=	
Remote Station Circuits	[ ]	x [0.018]=		[ ]	x [0.018]=		[ ]	x [0.018]=	
4-Wire Smoke Detectors	[ ] [ ]	x [ ]= x [ ]=		[ ] [ ]	x [ ]= x [ ]=		[ ] [ ]	x [ ]= x [ ]=	
Sum each column for totals	Primary², non-alarm total:			Primary², alarm total:			Secondary, alarm total:		

Limit: 0.750 amps   Limit: 0.750 amps   Limit: 0.750 amps

Table A-2A: S200 System Current Draw Calculations

1) Current drawn from TB2-1 and TB2-2 cannot exceed 200 mA at anytime.

2) The load on the regulator cannot exceed 750 mA.

3) This table does not account for current drawn from TB2-3 and TB2-4, which is limited to 800 mA in Standby and 2.0 amps in Alarm, exclusive of the 750 mA limit on the regulator. Standby current from TB2-3 and TB2-4 must be included in Table A-2B.

Maximum Secondary Power Fire Alarm Current Draw

Use Table A-2B to determine the maximum current requirements of secondary power source during fire alarm conditions. The total obtained in Table A-2B is the amount of current that the batteries must be capable of supplying. This figure will be used in Table A-2C to determine the size of the batteries needed to support five minutes of fire alarm operation.

Table A-2B assumes that while in a fire alarm condition, the batteries must feed the main power supply and any additional supplies (AVPS-24F) with the maximum rated power each supply can provide. Note: Due to the maximum rating of 9 amps imposed when using PS-12250 batteries, it may be necessary to calculate the exact requirements of the secondary supply. In that case, add the Secondary Non-Fire Alarm Load obtained in Table A-2A to the total fire alarm current draw of all Notification Appliances in the system and substitute that figure in Table A-2B for the Main Power Supply and any additional supplies.

Device Type	Model Number	# of Devices		Current (amps)		Total Current
Power Supplies:	MPS-24BPCC	1	X	2.93	=	
	AVPS-24	[ ]	X	3.0	=	
Sum Column for Secondary Alarm Load					=	amps

Table A-2B: Maximum Secondary Power Fire Alarm Current Draw

Secondary Non-Fire Alarm Load (from third column, Table A-2A)	X	Required Secondary Non-Fire Alarm Standby Time (24 or 60 hours)	=	Non-Fire Alarm Secondary Standby Amp Hours
Standby Load Current from TB2-3 and TB2-4	X	Required Secondary Standby Time (24 or 60 hours)	=	Amp Hours for TB2-3 and TB2-4
Secondary Fire Alarm Load (from Table A-2B)	X	Required Fire Alarm Time (For 5 minutes, enter 0.084, for 15 minutes, enter 0.25)	=	Secondary Fire Alarm Amp Hour Requirement

Sum Column for Total Secondary Ampere Hours calculated =

Multiply by the derating factor X 1.2 =

Total Secondary Ampere Hours Required   amps

Table A-2C: Secondary Power Standby and Fire Alarm Load

1) NFPA 72-1993 Local, Central Station and Proprietary Fire Alarm Systems require 24 hours of standby power followed by five minutes in alarm. NFPA 72-1993 Auxiliary and Remote Station Fire Alarm Systems require 60 hours of standby power followed by five minutes in alarm. Batteries installed in a system powered by a generator need to provide at least four hours of standby power.
2) The total amp hours required cannot exceed 17 AH.
3) Factory Mutual Systems require 90 hours of standby for protection/deluge applications.

Calculating battery size needed

Table A-2C sums the standby and alarm loads to arrive at the battery size, in ampere hours, needed to support the system. Each MPS has a specific range of batteries that can be charged properly. Select batteries that meet or exceed the Total Ampere-Hours calculated and the are within the acceptable charger range:

Battery Size	Voltage Rating	Number Required	Part Number
7.0 AH	12 volts	two	PS-1270
12 AH	12 volts	two	PS-12120

Appendix B:
Canadian Requirements
for Supervisory Zones

Note for Canadian installations:

Canadian installations require the use of modified modules and annunciators used for supervisory zones. The modified units have the red LED covered up so that illumination of this LED under supervisory condition will not be visible to the user. For more information, refer to the "Addendum for Canadian Requirements for Supervisory Signals.

Red LED

Yellow LED

covered by label

Initiating Zone
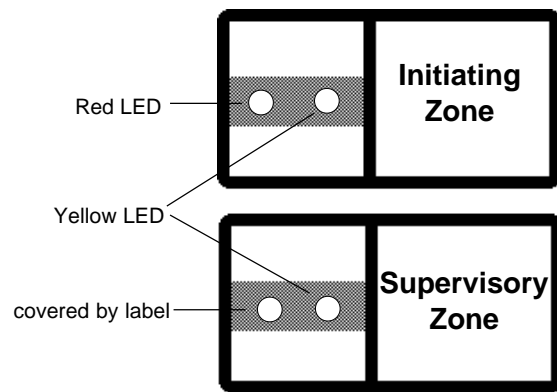
Supervisory Zone

Operation:

The Trouble LED (yellow) will flash at one of two rates to distinguish between trouble and supervisory conditions.

Supervisory - fast flash (approximately 160 pulses per minute).

Trouble condition - slower flash (approximately 60 pulses per minute).

Acknowledging the control panel will silence the audible tone and change flashing LEDs to steady operation.

Programming Log

Initiating Device Circuits Label	Zone Type	Alarm Verification or PAS?	This zone has been mapped to output circuits										
			CPU				Output Module						
			1	2	Mun Box	Alarm Relay	3	4	5	6	7	8	9	10
Zone #1:														
Zone #2:														
Zone #3:														
Zone #4:														
Zone #5:														
Zone #6:														
Zone #7:														
Zone #8:														
Zone #9:														
Zone #10:														
Zone #11:														
Zone #12:														
Zone #13:														
Zone #14:														
Zone #15:														
Zone #16:														

Notification Appliance Circuits Label	Output Type	Coded?	Silenceable?
Bell Circuit #1:	B		
Bell Circuit #2:	B		
Municipal Box:			
General Alarm:	R		
Output #1:			
Output #2:			
Output #3:			
Output #4:			
Output #5:			
Output #6:			
Output #7:			
Output #8:			

Legend	
Zone Type Enter One Letter	Output Type Enter One Letter
F - Fire	B - Bell
W - Waterflow	R - Relay
S - Supervisory	T - Time Control
N - Non Alarm	

System-Wide Settings				
Code Type:	❏ Temporal		❏ March Time	
Silence Inhibit:	❏ None	❏ 30 sec.	❏ 1 min.	❏ 5 min.
Alarm Silence:	❏ None	❏ 5 min.	❏ 10 min.	❏ 20 min
Pre-Signal/PAS Delay	❏ None	❏ 1 min.	❏ 2 min.	❏ 3 min.

NOTES

NOTES

Limited Warranty

Fire-Lite® warrants its products to be free from defects in materials and workmanship for eighteen (18) months from the date of manufacture, under normal use and service. Products are date stamped at time of manufacture. The sole and exclusive obligation of **Fire-Lite**® is to repair or replace, at its option, free of charge for parts and labor, any part which is defective in materials or workmanship under normal use and service. For products not under **Fire-Lite**® manufacturing date-stamp control, the warranty is eighteen (18) months from date of original purchase by **Fire-Lite**®'s distributor unless the installation instructions or catalog sets forth a shorter period, in which case the shorter period shall apply. This warranty is void if the product is altered, repaired or serviced by anyone other than **Fire-Lite**® or its authorized distributors or if there is a failure to maintain the products and systems in which they operate in a proper and workable manner. In case of defect, secure a Return Material Authorization form from our customer service department. Return product, transportation prepaid, to **Fire-Lite**®, One Fire-Lite Place, Northford, Connecticut 06472-1653.

This writing constitutes the only warranty made by **Fire-Lite**® with respect to its products. **Fire-Lite**® does not represent that its products will prevent any loss by fire or otherwise, or that its products will in all cases provide the protection for which they are installed or intended. Buyer acknowledges that **Fire-Lite**® is not an insurer and assumes no risk for loss or damages or the cost of any inconvenience, transportation, damage, misuse, abuse, accident or similar incident.

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Fire·Lite®**Alarms**
incorporated

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FAX: (203) 484-7118

Operating Instructions

NORMAL STANDBY OPERATION: 1) The green AC POWER indicator must be lit, 2) all alarm (red LEDs) and trouble indicators (yellow LEDs) should be off.

ALARM CONDITION: Activation of a compatible detector or any normally open fire alarm initiating device will result in the following action by the Sensiscan 200 control panel: 1) activate alarm notification, control, and signaling outputs as programmed, 2) light the Red SYSTEM ALARM LED and the associated initiating circuit alarm LED(s), and 3) A steady audible tone will sound until the alarm is acknowledged or silenced. The controlled outputs will remain activated and the associated alarm LEDs will flash until the alarm has been silenced or acknowledged, or the system has been reset.

If **PRESIGNAL DELAY** has been programmed, the activation of all *silenceable* output circuits will be delayed by the time marked at right. For Positive Alarm Sequence (PAS): If the ACKNOWLEDGE or SILENCE keys are not pressed within 15 seconds of initiation of a first (and only) alarm, output signals will be activated. Otherwise, the programmed PAS 1, 2, or 3-minute time delay will take effect.

☐ None selected
☐ 1 Minute
☐ 2 Minutes
☐ 3 Minutes
☐ PAS 1 Minute
☐ PAS 2 Minutes
☐ PAS 3 Minutes

If **ALARM SILENCE** has been programmed, all silenceable output circuits will be shut off after the time marked at right.

☐ None selected
☐ 5 Minutes
☐ 10 Minutes
☐ 20 Minutes

ACKNOWLEDGE (SILENCE TONE): Depressing the ACKNOWLEDGE switch will turn the audible tone off and switch operation of associated LED(s) from flashing to steady. New alarms and/or troubles will resound the audible tone and flash their associated LED(s).

ALARM SILENCING PROCEDURE: Alarm Notification Appliance Circuits, control relays and signalling circuits that have been programmed as silenceable may be silenced by depressing the SIGNAL SILENCE switch on the CPU control panel (top left module). Subsequent alarms will reactivate alarm outputs.

If **SIGNAL SILENCE INHIBIT** has been programmed, Signal Silence will not function for the inhibit time marked at right.

☐ None selected
☐ 30 Seconds
☐ 1 Minute
☐ 5 Minutes

SIGNAL SILENCE should not pressed until it is determined that an evacuation of the building is not required!

ALARM RESET: After locating and correcting the alarm condition, reset the control panel by depressing the SYSTEM RESET switch on the CPU control panel (top left module).

DISABLE/ENABLE: Refer to the Sensiscan 200 Installation Manual. WARNING: Disabling a circuit will reduce or eliminate fire protection.

TROUBLE CONDITION: Activation of a trouble signal under normal operation indicates a condition that requires immediate correction. Carefully note which indicators (LEDs) are illuminated and contact your local service representative. The audible tone may be silenced by depressing the ACKNOWLEDGE switch, subsequent trouble(s) will reactivate the audible tone. Trouble LEDs will continue to display the trouble condition(s) until the trouble(s) is corrected.

Local Service Representative

Name: _____

Company: _____

Address: _____

_____

Telephone: _____

Programmer: Mark the check-boxes above as appropriate. This sheet must be framed and mounted adjacent to control panel.