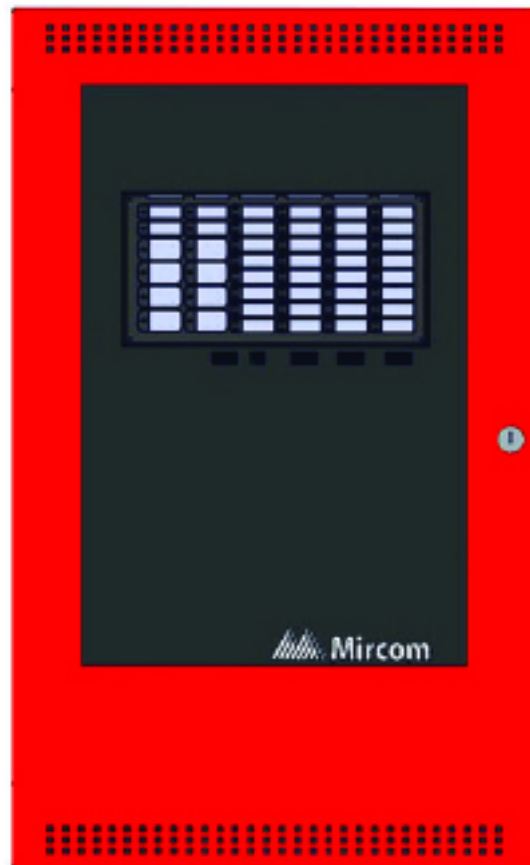


# FA-1000 Series

Microprocessor-Based Fire Alarm Control Panel





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# 1.0 Introduction

## 1.1 About this Manual

This installation and operation manual provides information on installing the FA-1000 Series Fire Alarm Control Panel.

## 1.2 About the FA-1000

Mircom's FA-1000 Fire Alarm Control Units provide a large capacity of supervised Class A or B (Style D or B) initiating circuits and supervised Class A or B (Style Z or Y) indicating circuits. All circuits are supervised for opens and ground faults, and indicating circuits are supervised for shorts. Optional modules include additional initiating and indicating circuits, relay, and polarity reversal and city tie. Flush or surface mountable enclosures can be used for retrofits and on new installations.

### 1.2.1 Overall Features:

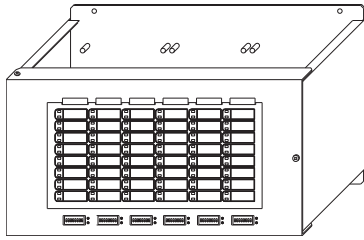
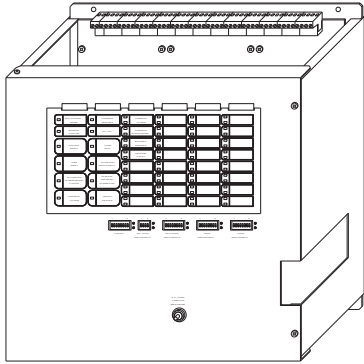

- Basic unit has eight Class B (Style B) initiating circuits that may be configured as four Class A (Style D) circuits. These are configurable as Alarm, Verified Alarm, Waterflow Alarm, Sprinkler Alarm, Latching or Non-Latching Supervisory, or Trouble-Only circuits. There are two LEDs per circuit: one for trouble (amber), and one for status (red/amber)
- Basic unit has four power limited Class A/B (Style Z/Y) indicating circuits with individual trouble indicators. Each circuit can be configured as Audible (Silenceable) or Visual (Non-Silenceable). Audibles may be configured as Steady, Temporal Code, California Code, or March Time
- Initiating and indicating circuits may be individually disconnected by a DIP switch (slide switch on "S" Versions for the U.S.A. market only)
- Configurable Signal Silence Inhibit, Auto Signal Silence, Two-Stage Operation, One-Man Walk Test  
For UL installations, disable the Auto Signal Silence timer.
- Subsequent Alarm, Supervisory, and Trouble operation
- Two outputs for four-wire resettable smoke power supply (200 mA each max., 300 mA total max.)
- Auxiliary relay contacts for Common Alarm and Common Supervisory (disconnectable), and a Common Trouble relay
- RS-485 interface for RA-1000 Series Remote Multiplex Annunciators
- Optional modules for additional initiating, indicating, and relay circuits, and city tie and polarity reversal signalling
- Easy configuration via pushbuttons and switches
- Extensive transient protection
- Surface mountable enclosures, flush trims available

### 1.2.2 Controls and Indicators

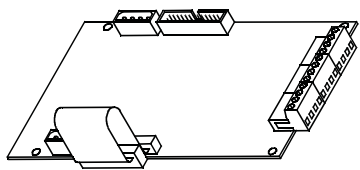
Eight pushbuttons, 16 common indicators, provision for up to 24 points (expansion chassis adds provision for up to another 48 points).

## 2.0 System Components

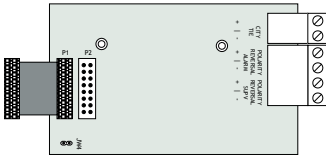
### 2.1 Chassis

	Model	Description
	ECH-1048	48 zone extension chassis.
	MCC-1024-6 (add suffix S for slide switch model)	Main Chassis with eight Style B / four Style D initiating circuits, four Style Y or Z indicating circuits, and a six ampere power supply. For more information see 12.0 Appendix B: Specifications on page 75.
	MCC-1024-12	Same as MCC-1024-6, but with a 12 ampere power supply. For more information see 12.0 Appendix B: Specifications on page 75.
	MCC-1024-6S	Same as MCC-1024-6, but with disconnect slide switches instead of DIP switches. For the U.S.A. Market only.
	MCC-1024-12S	Same as MCC-1024-12, but with disconnect slide switches instead of DIP switches. For the U.S.A. Market only.
	MCC-1024-6ADS	Main Chassis with eight Style B / four Style D initiating circuits, four Style Y or Z indicating circuits, and a six ampere power supply. For more information see 12.0 Appendix B: Specifications on page 75.
	MCC-1024-12ADS	Same as MCC-1024-6ADS, but with a 12 ampere power supply. For more information see 12.0 Appendix B: Specifications on page 75.

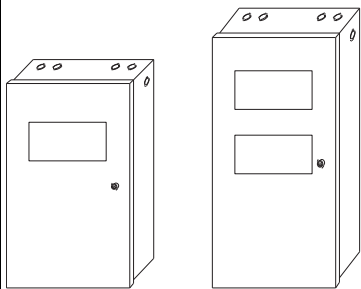
## 2.2 Circuit Adder Modules


	Model	Description
	DM-1008A	Eight detection circuit modules
	SGM-1004A	Four signal circuit modules
	RM-1008A	Eight relay circuit modules

## 2.3 Auxiliary Models

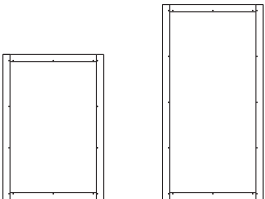
	Model	Description
	PR-300	Polarity Reversal and City Tie Module

## 2.4 Enclosures

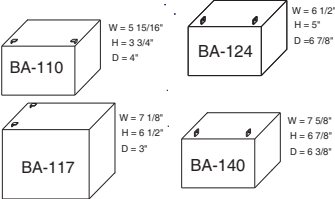
	Model	Description
 <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>BB-1024</span> <span>BB-1072</span> </div>	BB-1024 (add suffix "R" for red enclosure)	Surface enclosure 24 circuits
	BB-1072 (add suffix "R" for red enclosure)	Surface enclosure 72 circuits

	Model	Description
	BBX-1024DS	Universal Enclosure, white door.
	BBX-1024DSR	Universal Enclosure, red door.

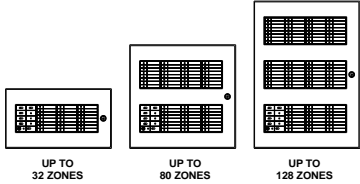
## 2.5 Flush Trim Rings

	Model	Description
	FA-UNIV-TRB (add suffix "R" for red enclosure)	Flush trim ring in Black
	FA-1072TR (add another suffix R for red enclosure)	Flush trim ring

## 2.6 Batteries

	Model	Description
 <p>Figures Not Drawn to Scale</p>	12-volt batteries (2 required for 24 volts)	10 to 40 AH

## 2.7 Remote Annunciators

	Model	Description
	RA-1000 Series	Remote multiplex annunciator panels

## 2.8 FA-1000 Fire Alarm Control Panel Kits

For any other sizes, etc., components are ordered separately.

Model	Description
FA-1008KA	Expandable kit for the Canadian market. Eight Class B (or four Class A) initiating and four (Class A or B) indicating circuits, Expandable to 24 circuits, six amp power supply (MCC-1024-6Main Chassis in a BB-1024 enclosure).
FA-1008KUA	Expandable kit for the U.S.A. market. Eight Class B (or four Class A) initiating and four (Class A or B) indicating circuits. Expandable to 24 circuits, six amp power supply (MCC-1024-6 main chassis in a BB-1024R enclosure).

## 2.9 FA-1000 Accessories

Model	Description
MP-300	End-of-line Resistor Plate
MP-300R	End-of-line Resistor Plate, red
MP-300S	End-of-line Resistor Plate, stainless steel finish

## 2.10 Maximum Number of Circuit Adder Modules that may be Installed

The maximum number of circuit adder modules that may be physically installed in a system is outlined in the table below.

Main Chassis Type	Number of Adders
MCC-1024-6(S) or MCC-1024-12(S)	Two circuit adder modules of any type.
MCC-1024-6(S) or MCC-1024-12(S) and ECH-1048	Eight circuit adder modules of any type.

The "S" Version Chassis have slide switches instead of DIP switches for disconnects. The maximum number of each circuit adder module type is outlined in the following table.

Module	Description	Maximum	Total per System
DM-1008A	Eight detection circuit modules (total of 64 initiating circuits in a system).	7	64
SGM-1004A	Four signal circuit modules (total of 24 initiating circuits in a system).	3	16
RM-1008A	Eight relay circuit modules (total of 32 relay circuits in a system).	4	32



**Notes:** Any FA-1000 System may have a PR-300 or UDACT-300A and up to eight (8) Remote Multiplex Annunciators externally. As good practice, it is recommended that circuit adder modules be installed in the order of detection modules, followed by signal modules, followed by relay modules.

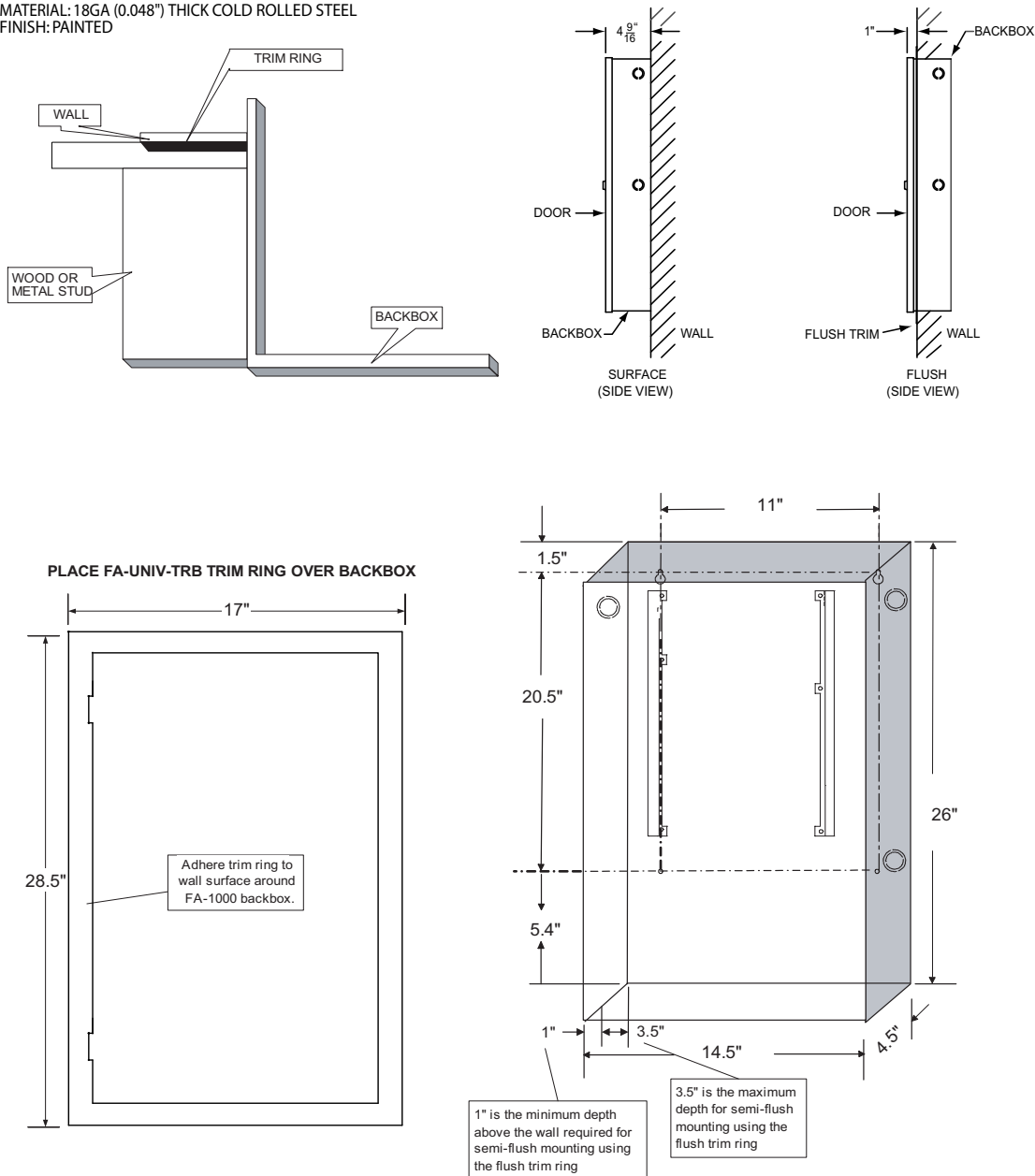
All systems can carry a maximum of eight adder modules in the combinations permitted above.

## 3.0 Mechanical Installation and Dimensions

Install the enclosure as shown for the BB-1024 in Figure 1, or for the BB-1072 in Figure 2 on page 15.

### 3.1 BB-1024 Installation

MATERIAL: 18GA (0.048") THICK COLD ROLLED STEEL  
FINISH: PAINTED



**Figure 1 BB-1024 Flush or Surface Enclosure Installation and Dimensions**

MATERIAL: 16GA (0.059") THICK  
COLD ROLLED STEEL

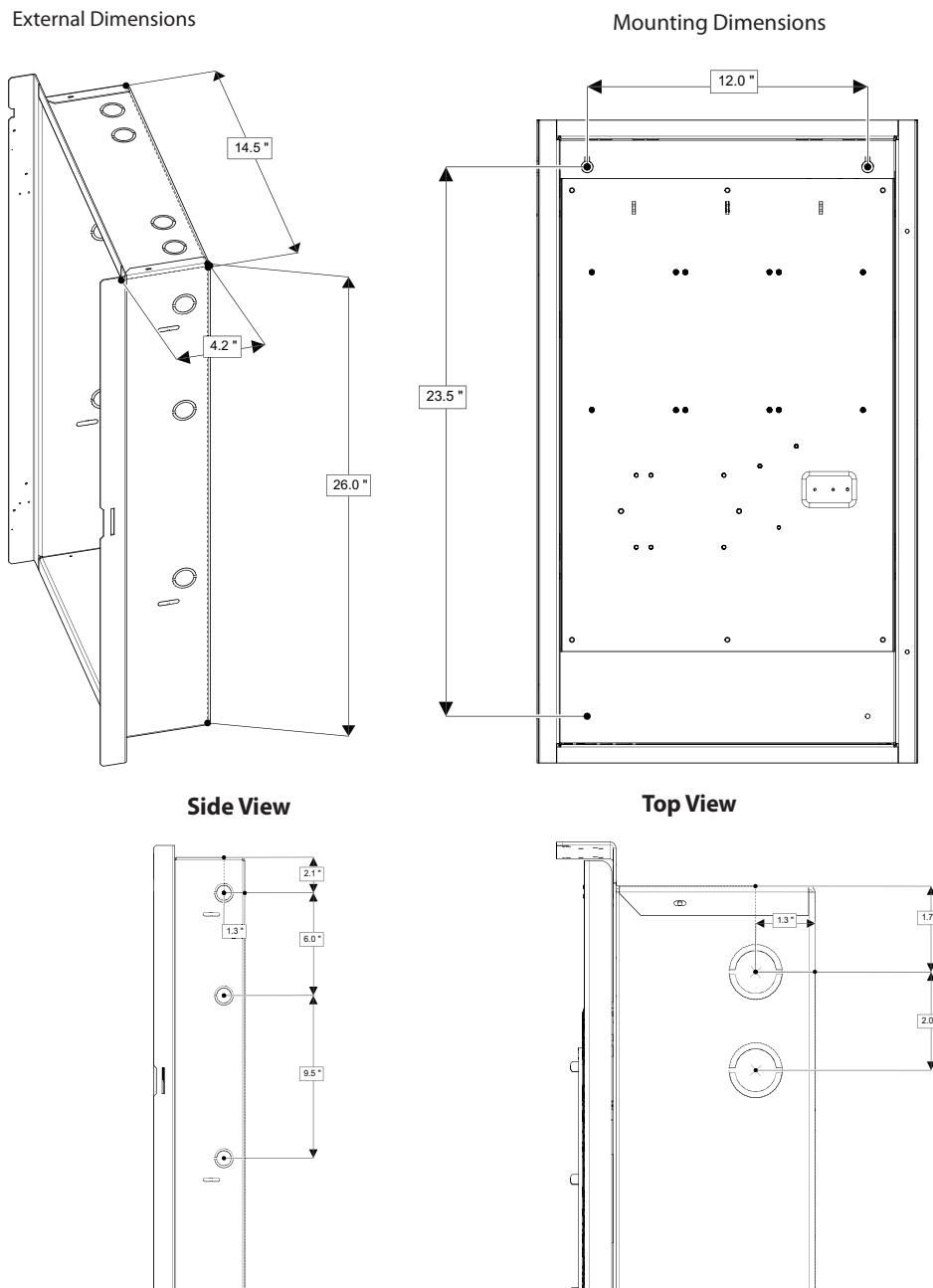
FINISH: PAINTED



### 3.3 BBX-1024DS and BBX-1024DSR Mechanical Installation

The BBX-1024DS and BBX-1024DSR are suitable for flush or surface mounting, and have a built-in trim ring.

<b>Dimensions of Enclosure (minus built in trim ring)</b>	14.5" x 4.2" x 26"
<b>Distance between horizontal mounting screws</b>	12"
<b>Distance between vertical mounting screws</b>	23.5"
<b>Complete Dimensions of Enclosures</b>	16.3" x 5.5" x 27.5"

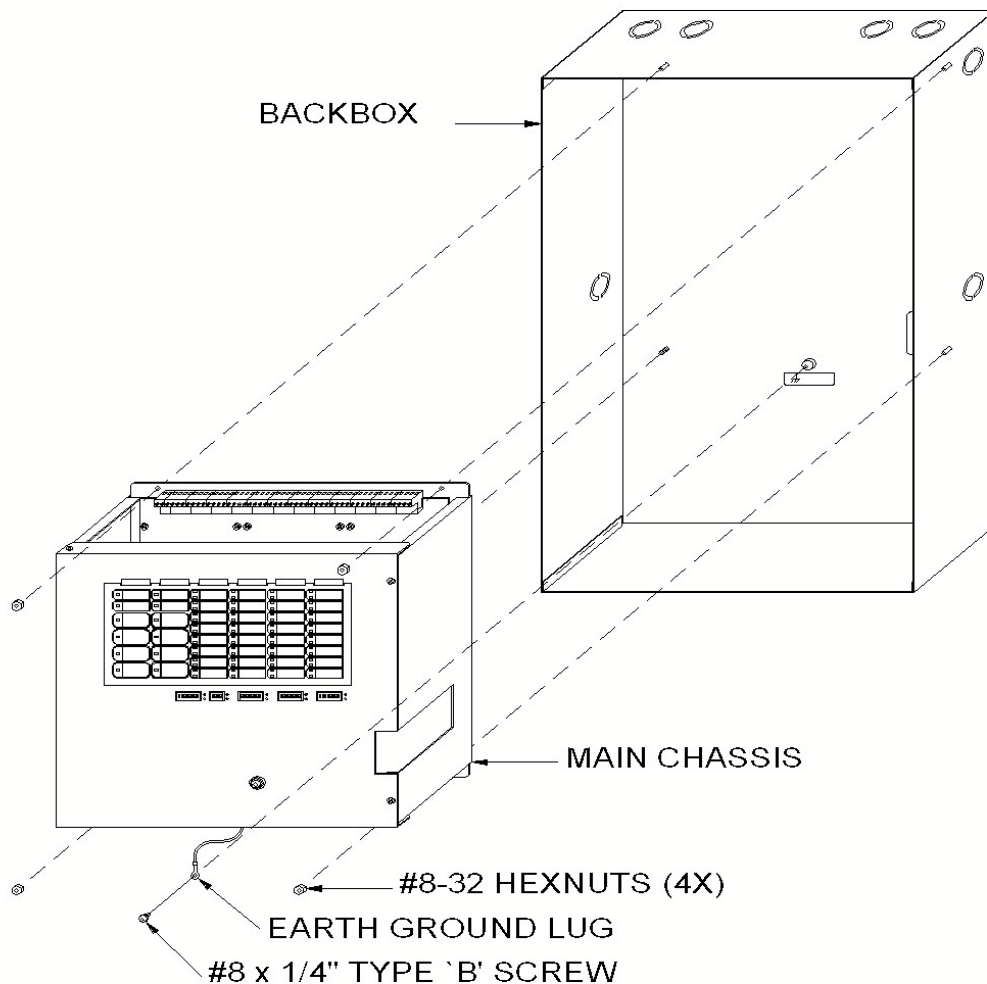


**Figure 3 BBX-1024DS and BBX-1024DSR Installation Instructions and Dimensions**

### 3.4 Main Chassis Installation

#### To install the main chassis

1. Install the main chassis in the BB-1024 backbox as shown in Figure 4 below, using the supplied hex-nuts.
2. Group the incoming wires through the top of the enclosure to prepare them for wiring the modules. Do not run the wires in-between the modules since this could cause a short circuit.
3. Use a wire tie to group wires for easy identification and neatness.
4. Be sure to connect a solid earth ground (from building system ground / to a cold water pipe) to the chassis earth ground mounting lug, and to connect the earth ground wire lugs from the main chassis to the ground screw on the backbox.

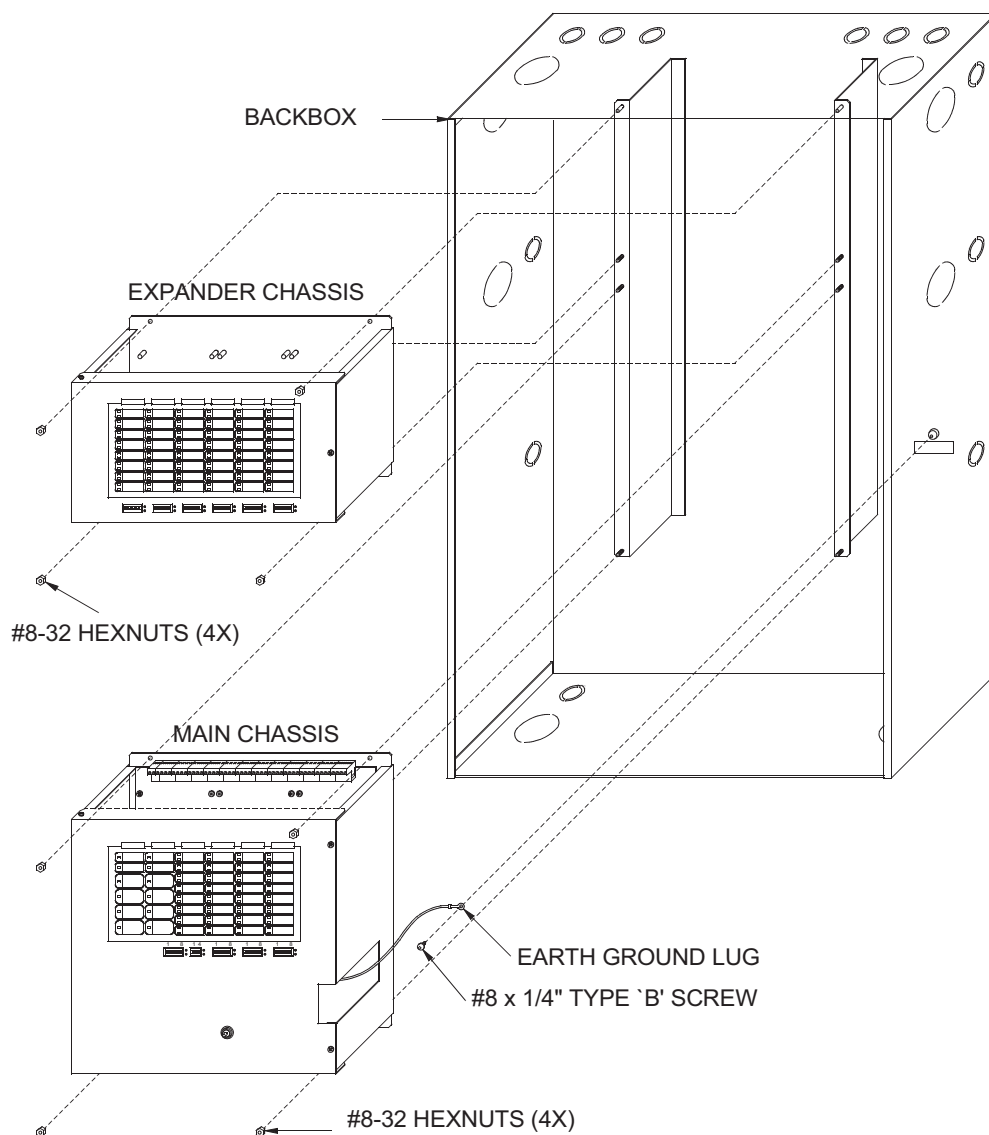


**Figure 4 Main Chassis Installation**

## 3.5 Main and Expander Chassis Installation

### To install the expander chassis

1. Install the main and expander chassis into the BB-1072 enclosure, as shown in Figure 5, using the supplied hex-nuts.
2. Group the incoming wires through the top of the enclosure to prepare them for wiring the modules. Do not run the wires in-between the modules since this could cause a short circuit.
3. Use a wire tie to group wires for easy identification and neatness.



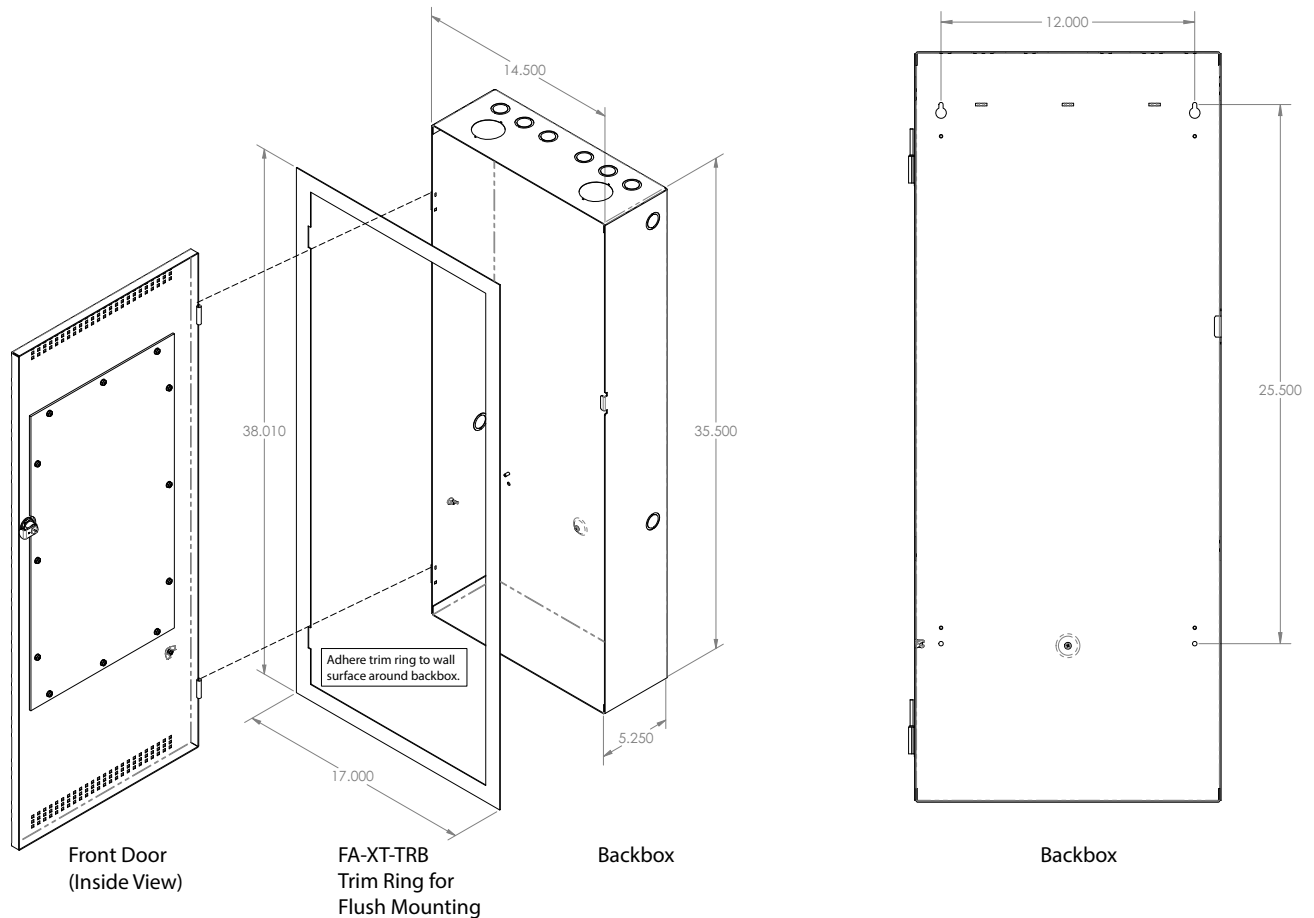
**Figure 5 Expander Chassis Installation**



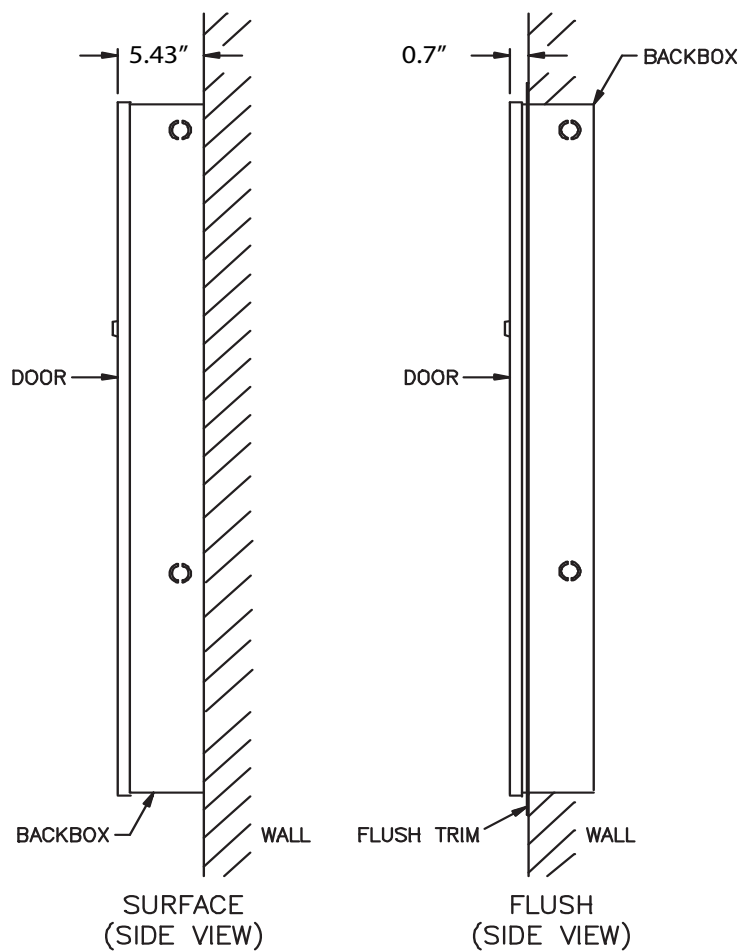
**Note:** Be sure to connect a solid earth ground (from building system ground / to a cold water pipe) to the chassis earth ground mounting lug, and to connect the earth ground wire lugs from *both* the main chassis and the expander chassis to the ground screw on the backbox.

### 3.6 BB-1024XT(R) Mechanical Installation

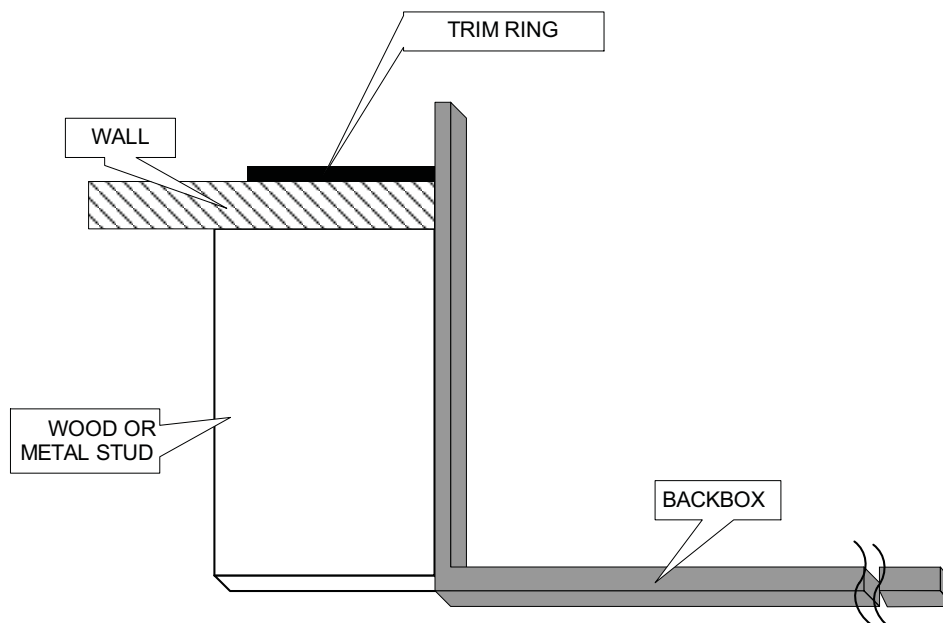
The enclosure model is BB-1024XT(R) with dimensions 15.05" wide, 35.8" long, 5.43" deep. Figure 6 below shows backbox and door dimensions as well as the trim ring model FA-XT-TRB which is used for flush mounting of the enclosure. The backbox and trim ring is black and the door is available in red Model BBX-1024XTR and white Model BBX-1024XT. In all other respects, the BBX-1024XT and BBX-1024XTR are the same.



**Figure 6 BBX-1024XT(R) Backbox Enclosure with Trim Ring**



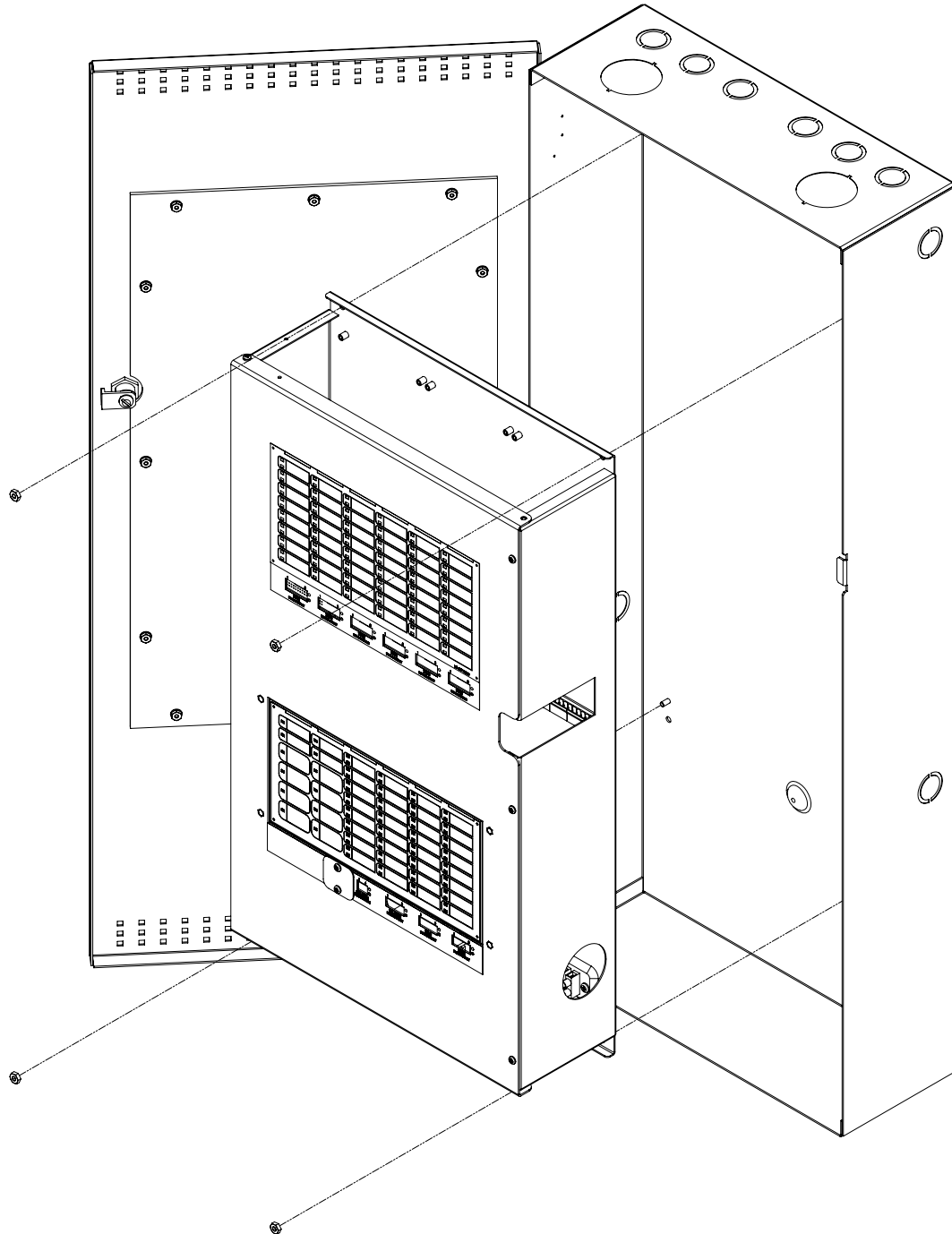
**Figure 7 Surface and Flush Mounting Views of the BBX-1024XT**



**Figure 8 Cross-Section of the BBX-1024XT Flush Mounted Box with FA-XT-TRB Trim Ring**

### 3.7 Mounting the Chassis into the BBX-1024XT(R)

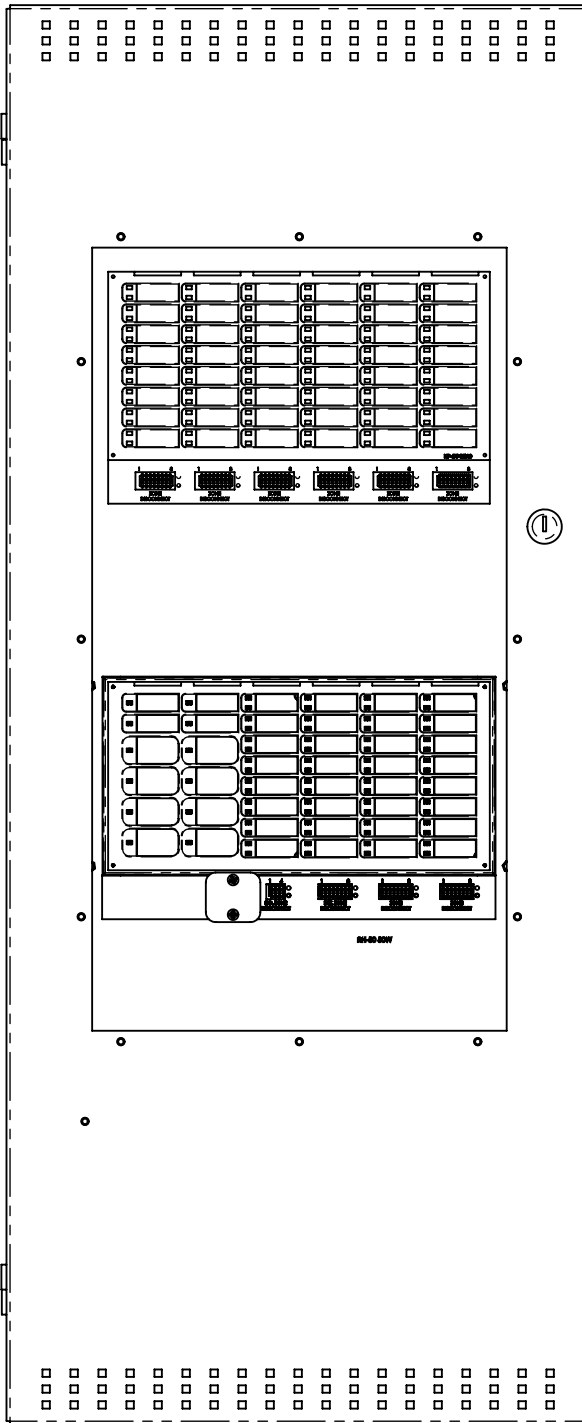
Install the chassis into the BBX-1024XT(R) enclosure as shown below in Figure 9. Use four (4) 8-32 nuts to connect the Chassis to the BBX-1024. Connect all green ground wires to the dimple in backbox and secure them using a #8 screw. Ensure that this ground connection leads to an earth ground. Connect the battery cables to the batteries. Refer to 6.7 Power Supply Connections on page 46 for more information.



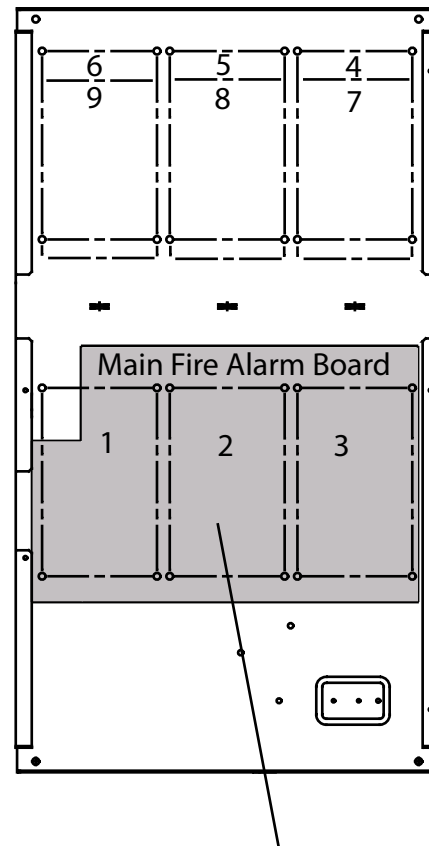
**Figure 9 Mounting of MCC-1024-12XTDS into BBX-1024XT(R)**

### 3.8 Mounting Adder Boards into the Chassis

Up to 9 adder modules can be mounted in the same manner as explained in section 4.0 and as shown in Figure 10.



Inside Chassis for mounting adder modules. Three modules can be mounted over the main fire alarm board and six above the main fire alarm board stacked three over three.



Three adder modules mounted over main fire alarm board.

**Figure 10** MCC-1024-12XTDS in a BB-1024XT Enclosure

## 4.0 Module Mounting Locations

The main chassis in a BB-1024 or BB-1072 enclosure comes pre-assembled with all power supply, main panel, and display components and boards. The expander chassis is equipped with a pre-assembled display board. The PR-300 City Tie Module or the UDACT-300A Digital Communicator may be added on the left side, as shown in Figure 13 on page 26. These modules connect directly to the dedicated P2 connection in the upper-left corner of the main fire alarm module.



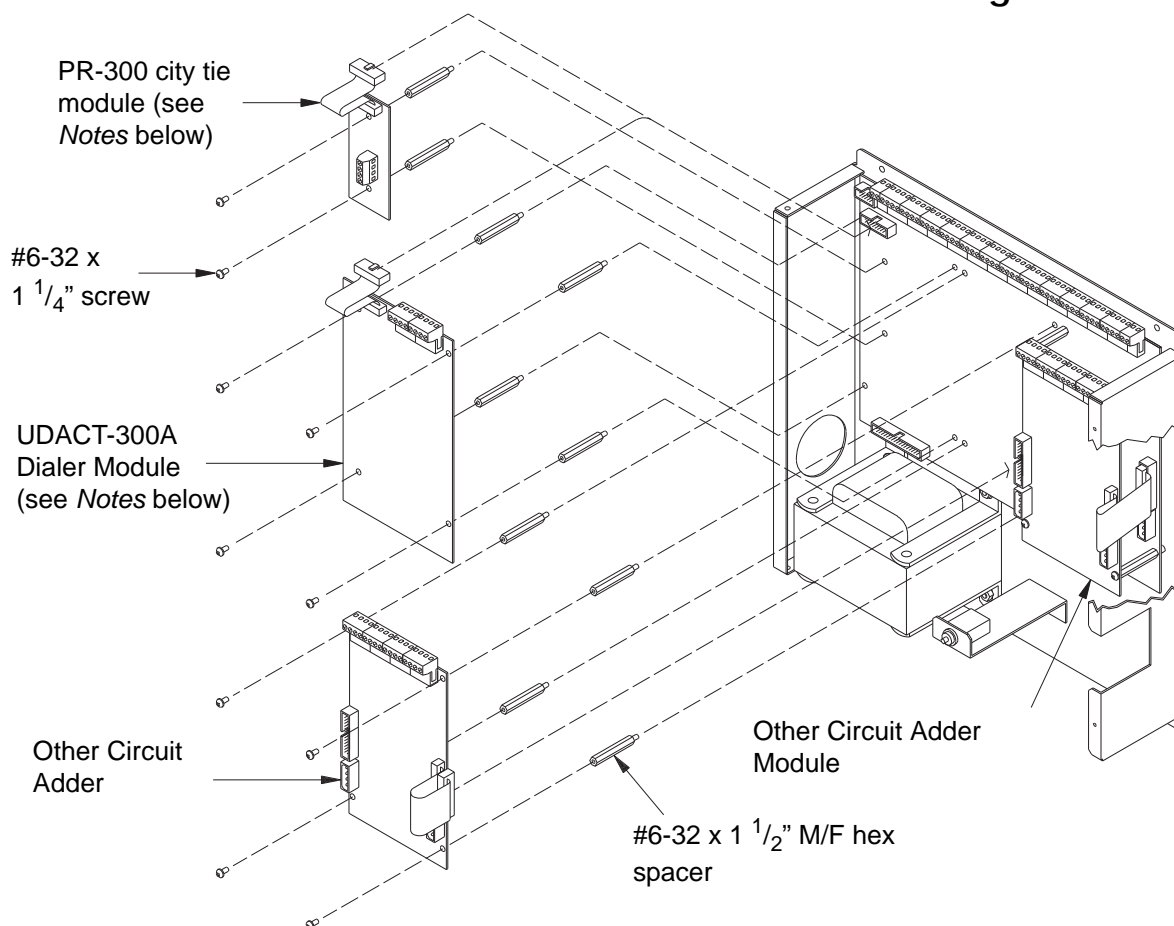
**Attention:** There needs to be enough display points for each circuit on an adder module. These display points are assigned during configuration (See System Configuration on page 61.) in the order in which the adder modules are electrically installed (the order in which they have their cables connected to each other). Both the number of points available for each display type and the number of points required for each circuit adder module type are described in 5.0 Module Settings on page 27.

As good practice, it is recommended that circuit adder modules are installed in the order of detection modules (DM-1008A) followed by signal modules (SGM-1004A), followed by relay modules (RM-1008A).

To enable communication from the main fire alarm module to all of the circuit adder modules, it is necessary to remove the continuity jumper on JW6 (near P5, the circuit adder module connector) on the main fire alarm module. This jumper plug must be installed on the continuity jumper on the last installed circuit adder module. To verify the location of the continuity jumper on a particular circuit adder module see 5.0 Module Settings on page 27

**Note:** Only the last circuit adder module should have a jumper plug on its continuity jumper - all others must be left without a jumper plug.

## 4.1 BB-1024 and BB-1072 Main Chassis Mounting Locations



**Figure 11 BB-1024 and BB-1072 Main Chassis Mounting Locations**



**Notes:** Front plate is not shown. Other circuit adder modules may be:

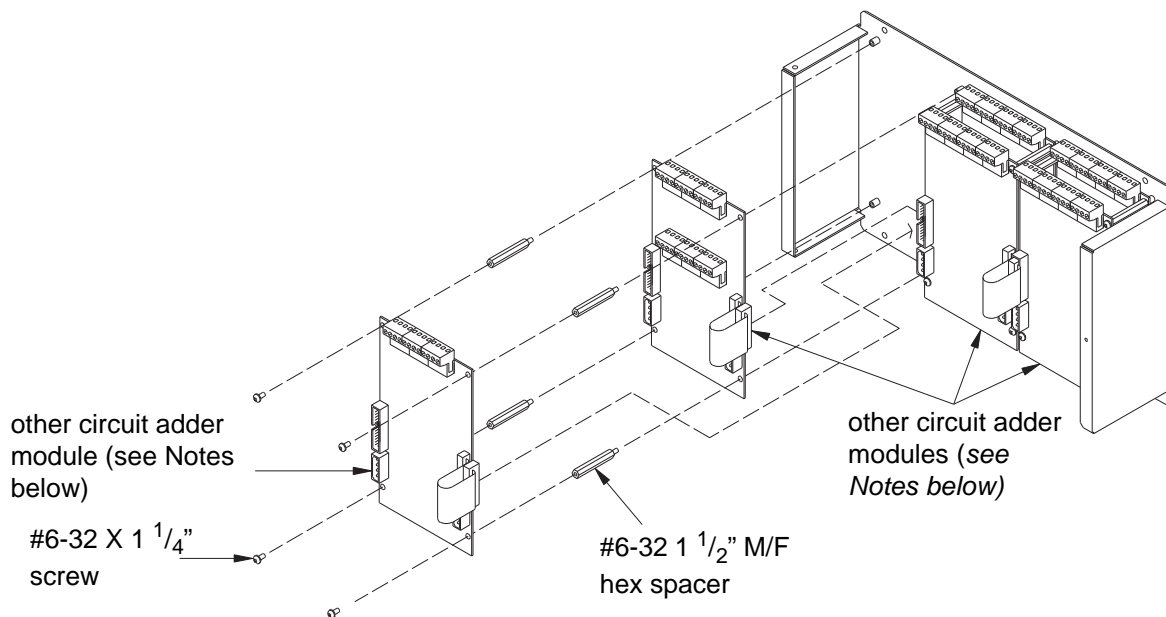
- DM-1008A Detection Circuit Module
- SGM-1004A Signal Circuit Module
- RM-1008A Relay Circuit Module

### To Install Circuit adder modules

1. Install circuit adder modules from right to left using the supplied stand-offs (Figure 13 on page 26).
2. Plug the first module with its 26-pin ribbon cable into P5 on the main fire alarm module using the included MD-579 four-wire power cable (as described in 5.0 Module Settings on page 27).
3. You can connect a second circuit adder module by plugging its 26 pin cable into the matching socket on the module to its right, and by installing the supplied MD-579 four-wire power cable (as described in 5.0 Module Settings on page 27).

## 4.2 BB-1072 Expansion Chassis Mounting Locations

The BB-1072 enclosure with an ECH-1048 expander chassis is equipped with two long extension cables: one for the 26-pin ribbon cable (MD-575) and one for the four-wire power cable (MD-580). Circuit adder modules are installed from right to left in two tiers (back then front). These circuit adder modules are cabled in the same way as the main chassis, except that the first module on the back tier to the right connects (via the MD-575 and MD-580 extension cables) to the second module in the main chassis. The fourth module on the front tier to the right connects (via MD-575 and MD-580 extension cables) to the third module on the first tier to the left. In other words, follow a continuous right to left, bottom to top, and back to front installation order (see Figure 12).



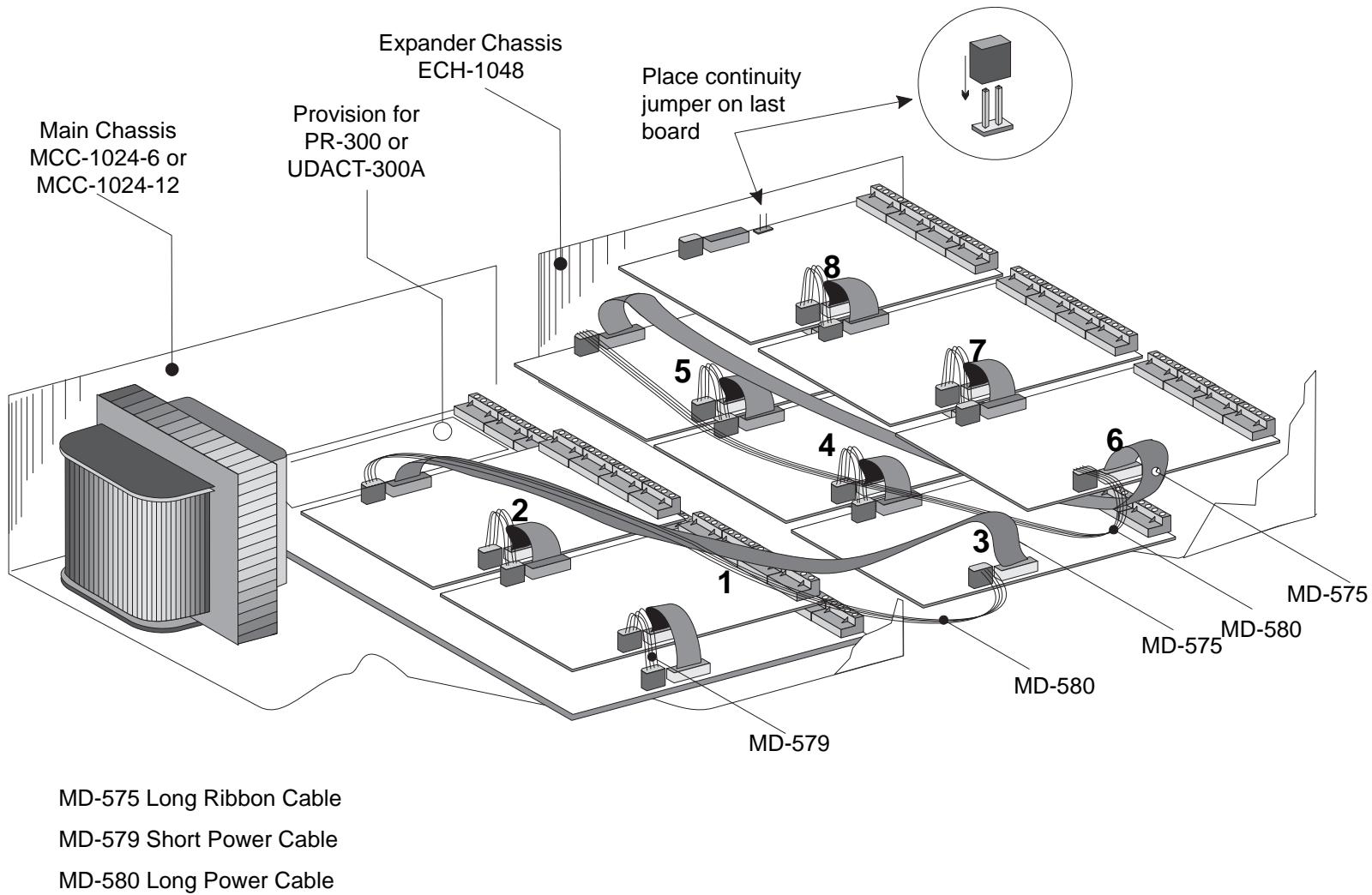
**Figure 12 BB-1072 Expansion Chassis Mounting Locations**

*i*

**Notes:** Front plate is not shown. Other circuit adder modules may be:

- DM-1008A Detection Circuit Module
- SGM-1004A Signal Circuit Module
- RM-1008A Relay Circuit Module

### 4.3 Circuit Adder Mounting Details



**Figure 13 Circuit Adder Mounting Details**

## 5.0 Module Settings

### 5.1 Main Fire Alarm Module

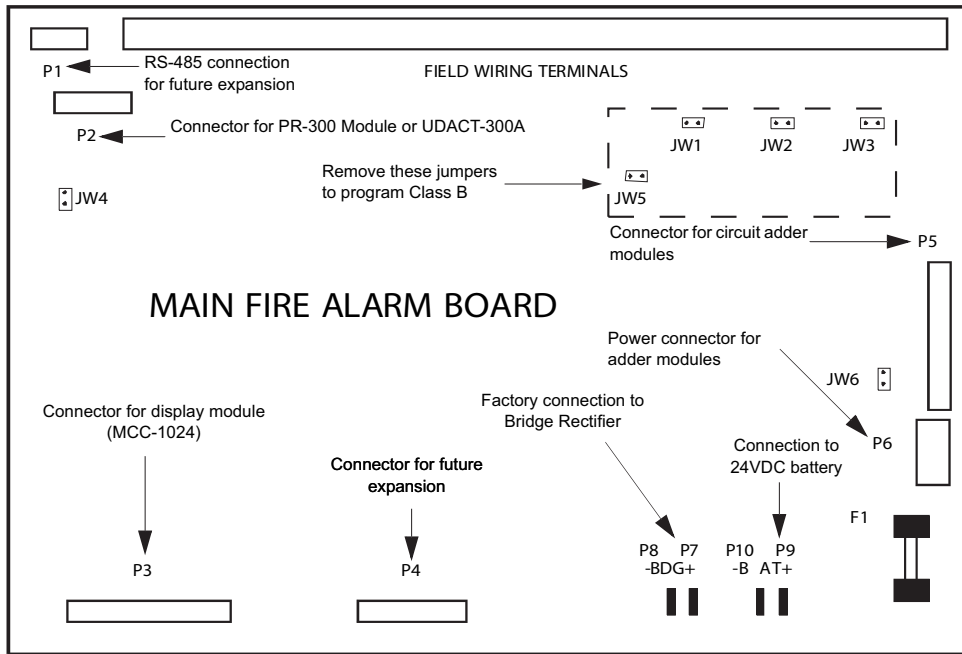


Figure 14 Main Fire Alarm Module

#### 5.1.1 Jumpers

- JW1** Install jumper for Class A (Style D) operation of initiating circuits 3 and 4.
- JW2** Install jumper for Class A (Style D) operation of initiating circuits 5 and 6.
- JW3** Install jumper for Class A (Style D) operation of initiating circuits 7 and 8.
- JW4** Remove jumper if a PR-300 Module or UDACT-300A is installed.
- JW5** Install jumper for Class A (Style D) operation of initiating circuits 1 and 2.
- JW6** Remove continuity jumper if there are any circuit adder modules installed, and install it on the last circuit adder module.

*i*

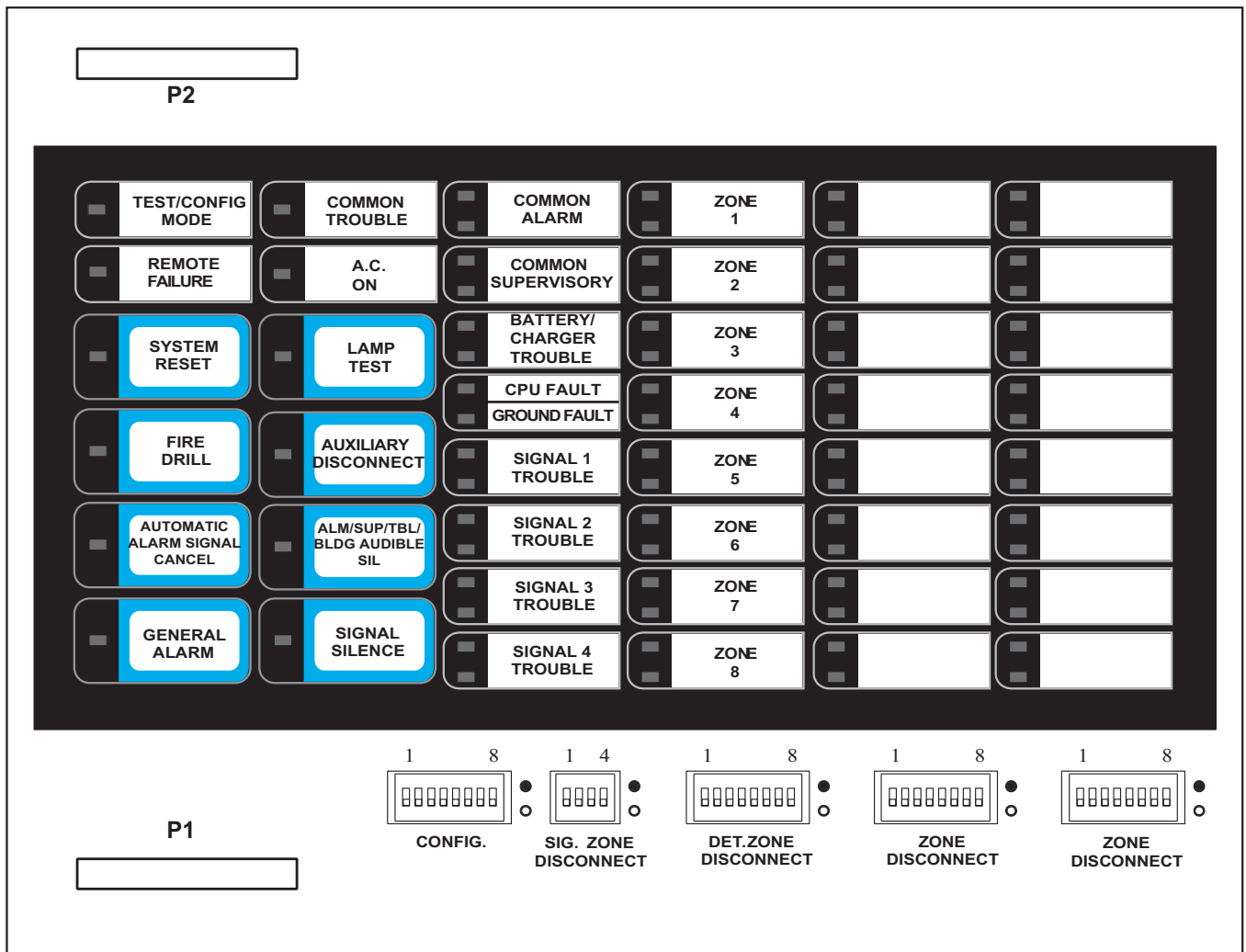
**Note:** The main display module (part of the main chassis) has four dedicated display points for the four indicating circuits on the main fire alarm module.

The main fire alarm module contains the following circuits, each requiring a certain number of display points:

Table 1 Main Fire Alarm Module Circuit Details

Chassis Type	Initiating Circuits	Indicating circuits	Display Points Required
MCC-1024-6(S)	8 Style B / 4 Style D	4 Style Y or Z	8/4 (Style B / D)
MCC-1024-12(S)	8 Style B / 4 Style D	4 Style Y or Z	8/4 (Style B / D)

## 5.2 MCC-1024-6, MCC-1024-12 Main Display Module



**Figure 15 Main Display Module (MCC-1024-6, MCC-1024-12)**

## 5.2.1 Connectors

- P1** Cable connects to **P3** of main fire alarm module.
- P2** Connection to **P1** of ECH-1048 display Module if used.
- SW1 to SW5** See 9.0 System Configuration on page 61 and 8.0 Indicators, Controls, and Operation on page 50.

*i*

**Note:** The main display module comes with a Label Sheet (NP-2854) including both English and French slide-in labels. This sheet may be run through a laser printer for labelling purposes before being installed. The first slide-in section comes in two versions; one for single-stage systems, and one for two-stage systems.

The main display module provides four dedicated display points for the four indicating circuits on the main fire alarm module. It also provides the following general-purpose display points:

Chassis Type	Display Points	
MCC-1024-6	24	The main display has dedicated display points for the eight initiating circuits and four indicating circuits that are located on the main board.
MCC-1024-12	24	

On the MCC-1024-6S and MCC-1024-12S Chassis for the U.S.A. market only, the main display module is shown in Figure 16, below. The Disconnect DIP-switches are replaced by slide switches.

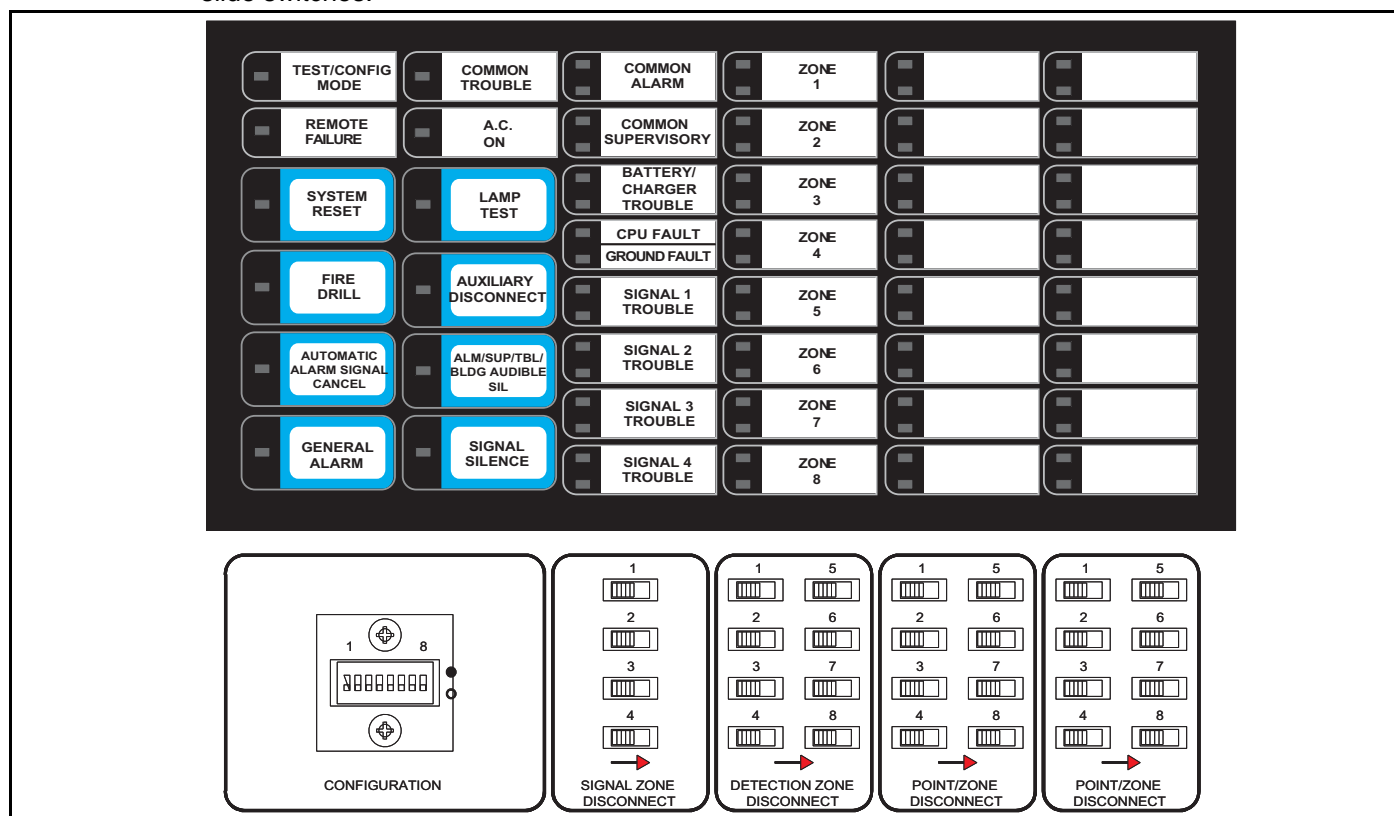


Figure 16 Main Display Module (MCC-1024-6S, MCC-1024-12S)

## 5.3 Adder Display Module

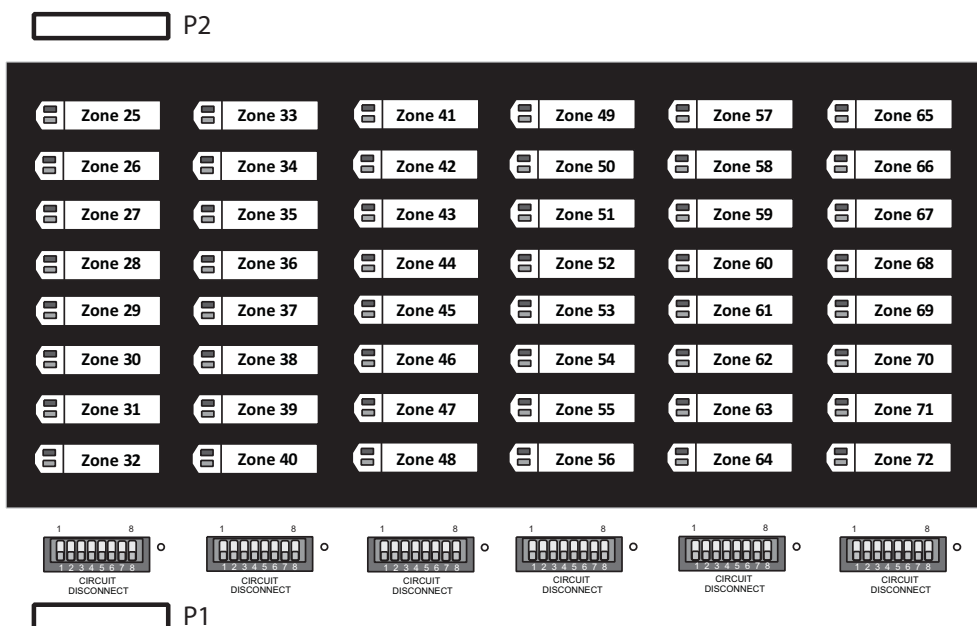


Figure 17 Adder Display Module (Part of Expander Chassis)

### 5.3.1 Connectors

- P1** Cable connects to **P2** of main display module.
- P2** Not used.
- SW1 to SW6** See 9.0 System Configuration on page 61 and 8.0 Indicators, Controls, and Operation on page 50.

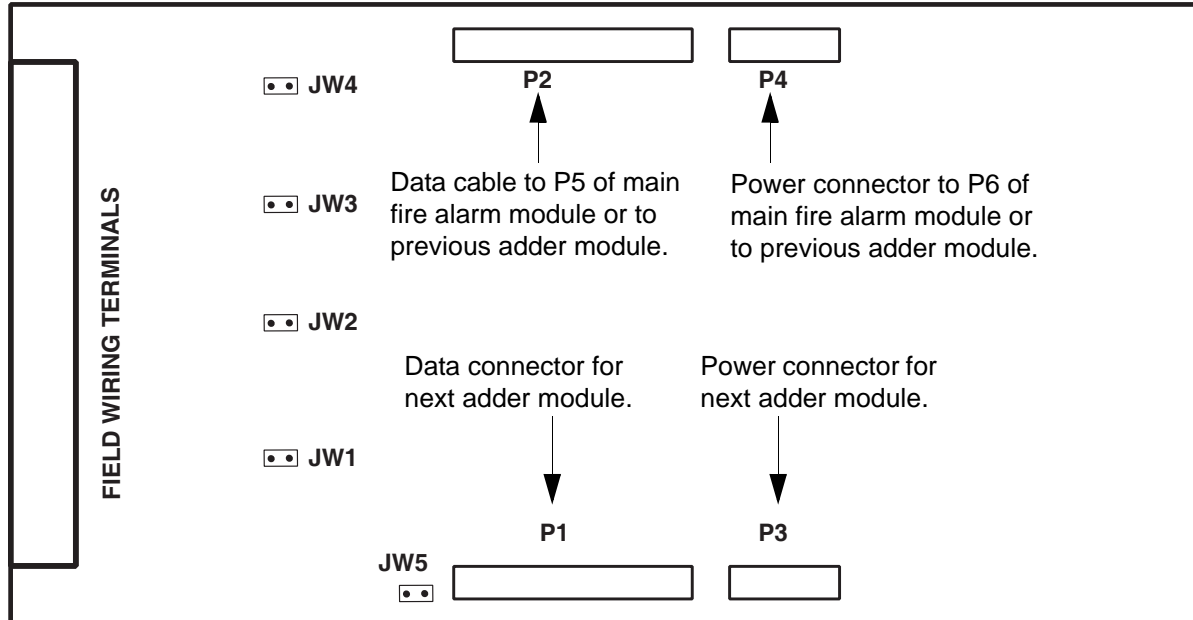
The adder display module provides the following general purpose display points:

Chassis Type	Display Points
ECH-1048	48



**Note:** The adder display module comes with a label sheet (NP-681) with blank slide-in labels. This sheet may be run through a laser printer for labelling purposes before being installed.

## 5.4 DM-1008A Detection Adder Module



**Figure 18 Detection Adder Module (Model DM-1008A)**

### 5.4.1 Jumpers

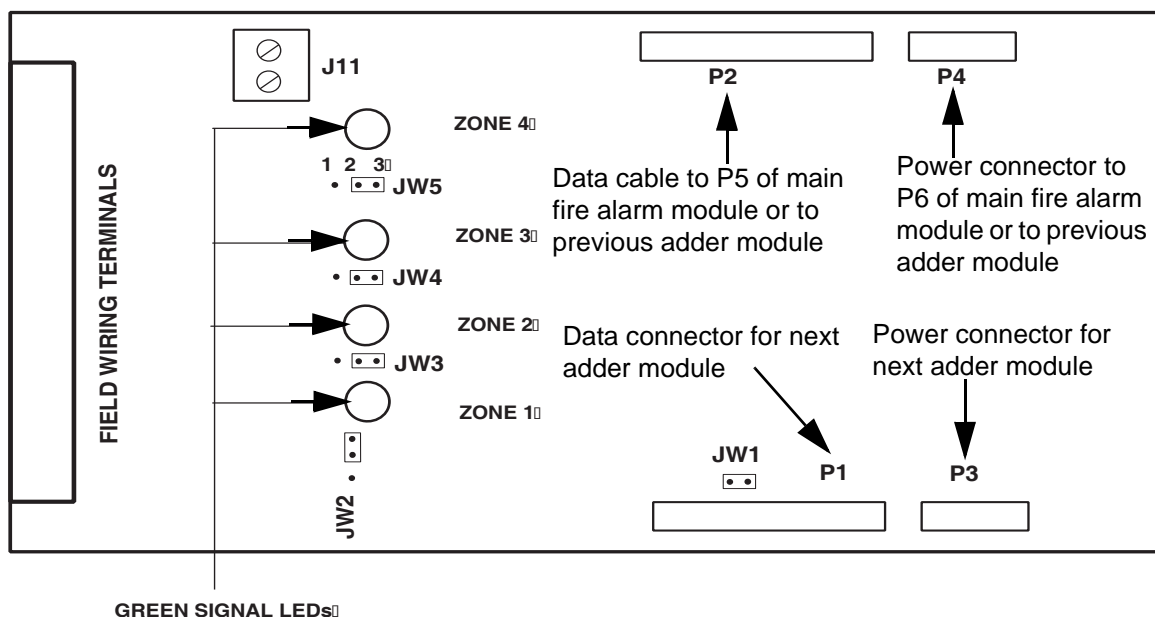
- JW1** Install jumper for Class A (Style D) operation of initiating circuits 1 and 2.
- JW2** Install jumper for Class A (Style D) operation of initiating circuits 3 and 4.
- JW3** Install jumper for Class A (Style D) operation of initiating circuits 5 and 6.
- JW4** Install jumper for Class A (Style D) operation of initiating circuits 7 and 8.
- JW5** Remove continuity jumper if there are any more adder modules installed.



**Notes:** Jumper JW6 on the main fire alarm module must be removed if there are any adder modules installed.

The DM-1008A requires eight display points for Class B (Style B) operation, and four for Class A (Style D) operation.

## 5.5 SGM-1004A Signal Adder Module



**Figure 19 Signal Adder Module (Model SGM-1004A)**

### 5.5.1 Jumpers

- JW1** Remove continuity jumper if there are any more adder modules installed.
- JW2** Jumper pins for bell cut on Zone 1.
- JW3** Jumper pins for bell cut on Zone 2.
- JW4** Jumper pins for bell cut or on Zone 3.
- JW5** Jumper pins for bell cut or on Zone 4.
- JW11** Wire these terminals to a bell cut relay (for details see *QRM-1001 Bell Cut Module Installation and Operating Instructions, LT-666*).



**Notes:** Jumper JW6 on the main fire alarm module must be removed if there are any adder modules installed.

The SGM-1004A requires 4 display points.

### 5.5.2 Components

There are four green LEDs on the board, one for each signal zone. A green LED will illuminate or flash following the signal rate sent to its zone. It will be off when the system is normal and it will illuminate when a signal zone is activated. The LED does not reflect what is happening on the signal zone, just that it is receiving data to activate that signal zone.



**Note:** Jumpers JW2, JW3, JW4 and JW5 are positioned on pins 2 and 3 (right two pins with board orientation as shown above) from factory.

### 5.5.3 Operation

There are three modes of operation for this module. The basic mode of operation does not involve any bell cut relay or isolators connected to the signal zones. For this case, leave jumpers JW2, JW3, JW4 and JW5 as they come on pins 2 and 3, and do not make any connection to terminal block J11. The second mode provides bell cut operation, which allows the silencing of the bells. The third mode is used when isolators are to be connected to the signal circuits. For further information on bell cut relays or isolators, please refer to the specific fire alarm panel manual or the isolator instruction manual.

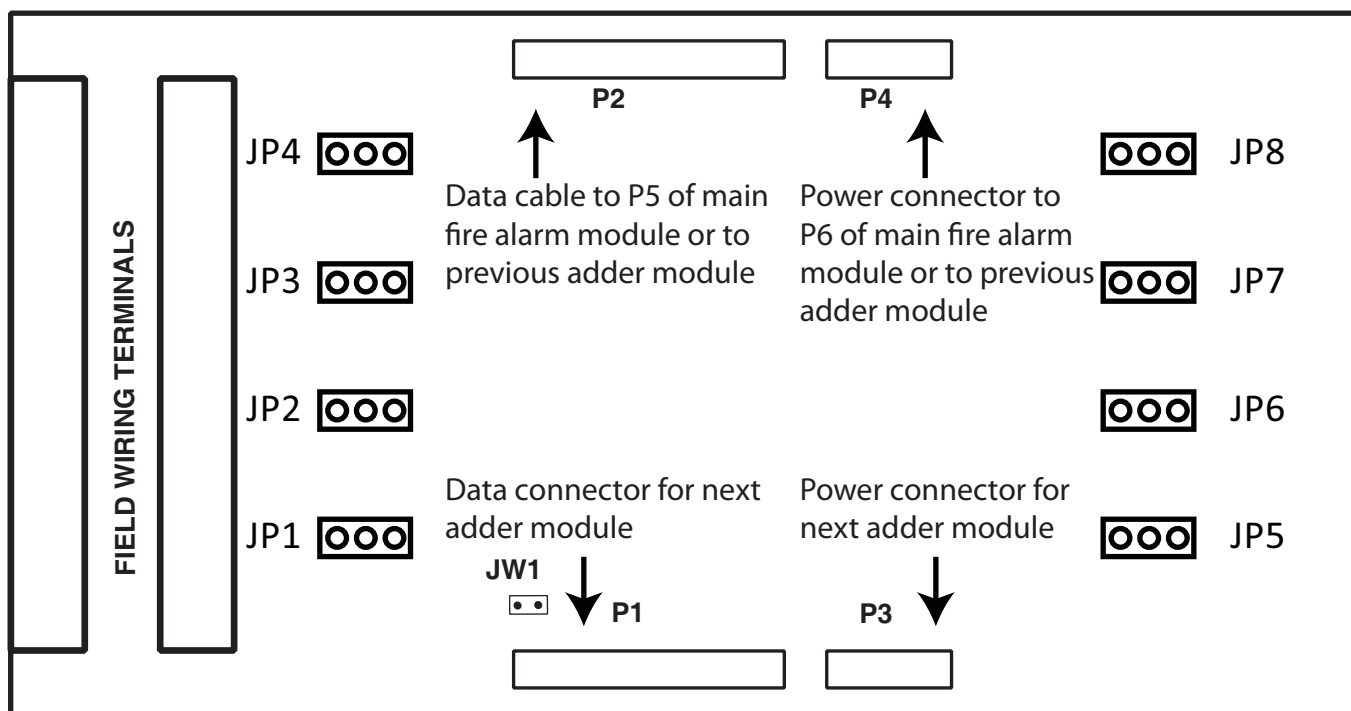
### 5.5.4 Jumpers for the Bell Cut Mode

- JW2** Place jumper over pins 1 and 2 for the ability to remotely silence the bells on Zone 1.
- JW3** Place jumper over pins 1 and 2 for the ability to remotely silence the bells on Zone 2.
- JW4** Place jumper over pins 1 and 2 for the ability to remotely silence the bells on Zone 3.
- JW5** Place jumper over pins 1 and 2 for the ability to remotely silence the bells on Zone 4.
- JW11** Wire these terminals to a bell cut relay (for details see *QRM-1001 Bell Cut Module Installation and Operating Instructions, LT-666*).



**Attention: Discard jumpers on zones that are not configured for bell cut.**

## 5.6 RM-1008A Relay Adder Module



**Figure 20 Relay Adder Module (Model RM-1008A)**

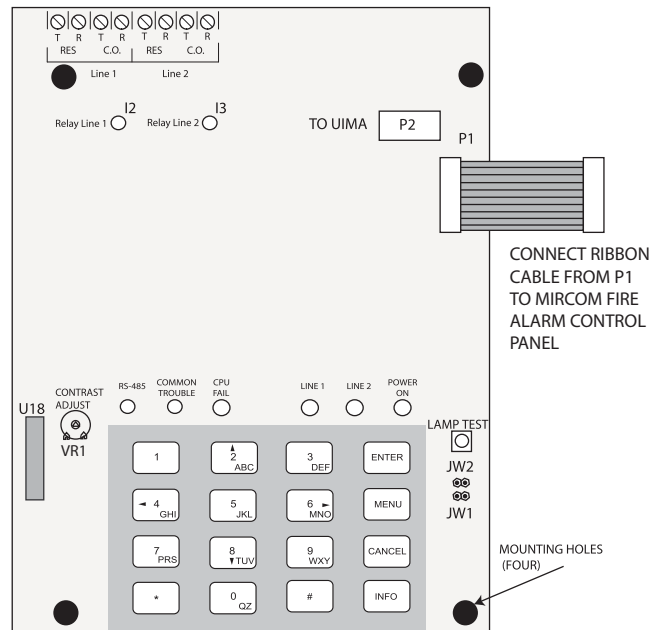
**JW1** Remove continuity jumper if there are any more adder modules installed.

- Jumper **JW6** on the main fire alarm module must be removed if there are any adder modules installed.
- The RM-1008A requires eight display points.



**Note:** To have all relays work independently remove all jumpers off of their pins. To tie all commons together, have all pins in place on their respective jumpers.

## 5.7 UDACT-300A Digital Communicator Module



**Figure 21 Digital Communicator Module (Model UDACT-300A)**

**Table 2 Cable Connectors and Miscellaneous**

<b>P1</b>	Ribbon Cable for connecting to Mircom Fire Alarm Control Panel (FACP).
<b>P2</b>	RS-232C/RS-485 Connection for computer configuration.
<b>U18</b>	Connector for CFG-300 Configuration Tool.
<b>Lamp Test button</b>	Press and hold this button to test all the UDACT-300A LEDs and LCD display.
<b>UR1 Potentiometer</b>	This potentiometer is for adjustment of the CFG-300 LCD contrast.

The following table lists all the LEDs located on the UDACT-300A board and states the function of each LED.

**Table 3 UDACT-300A List of LEDs and their Functions**

<b>Relay Line 1</b>	Located below Line 1 terminal block. When Line 1 relay is energized, this green LED will illuminate
<b>Relay Line 2</b>	Located below Line 2 terminal block. When Line 2 relay is energized, this green LED will illuminate.
<b>RS-485</b>	Status LED for communication, will flash when RS-485 communication is active.
<b>Common Trouble</b>	Steady amber for any troubles on the Fire Alarm panel or UDACT-300A.

**Table 3 UDACT-300A List of LEDs and their Functions (Continued)**

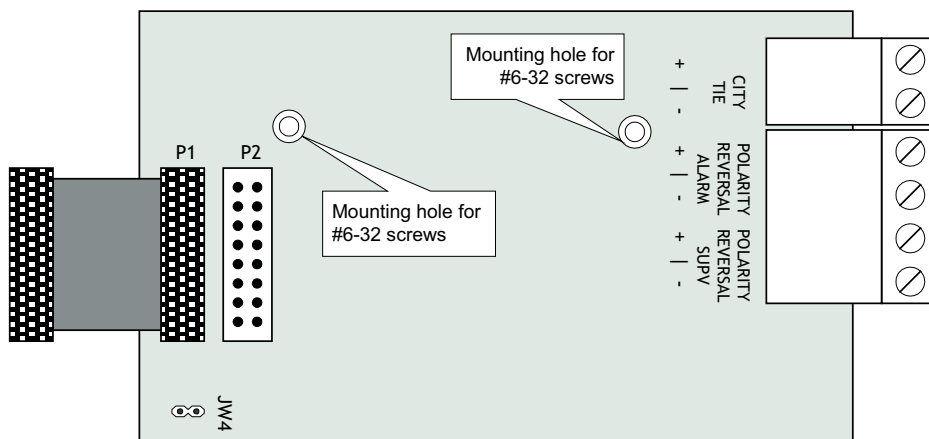
<b>CPU Fail</b>	Steady amber for any on board CPU trouble.
<b>Telephone Line 1</b>	Telephone status indicator LED; Red when the line is in use, Amber when there is a line trouble.
<b>Telephone Line 2</b>	Telephone status indicator LED; Red when the line is in use, Amber when there is a line trouble.
<b>Power ON</b>	Green LED is ON steady when power is supplied to the board.

**Table 4 Jumpers**

JUMPER NUMBER	JUMPER FUNCTIONS
<b>JW1</b>	Normally open. Place jumper here and power down the UDACT-300A by disconnecting P1 or power down the fire alarm panel (AC and Batteries), then power back to revert to default passcode. After reset, remove the jumper. Leave normally open.
<b>JW2</b>	Normally open to BLOCK remote configuration via modem, PC with a UIMA converter module or using the LCD and keypad at the UDACT-300A. Place jumper here to ALLOW any type of configuration. Remove jumper once configuration is complete.

Jumper JW4 on the main fire alarm panel must be removed if a UDACT-300A is installed.

Please see the *UDACT-300A Installation and Operation Manual (LT-888)* for more information.


**Figure 22 Polarity Reversal and City Tie Module (Model PR-300)**

### 5.7.1 Jumper and connector

- P1** Cable to P2 of main fire alarm module.
- JW4** Jumper on the main fire alarm module must be removed if a city tie module is installed.

The alarm transmit signal to the PR-300 can be programmed to turn off when signal silence is active. This allows the city tie box to be manually reset. On subsequent alarms the silenceable signals will resound and the city tie box will be retriggered (see 9.0 System Configuration on page 61).

The trouble transmit signal to the PR-300 can be programmed to delay AC power fail for zero, 1, 2, 3 hours if this is the only system trouble (see Chapter 9.0 System Configuration on page 61).

The PR-300 does not require any display points.

## 6.0 Field Wiring

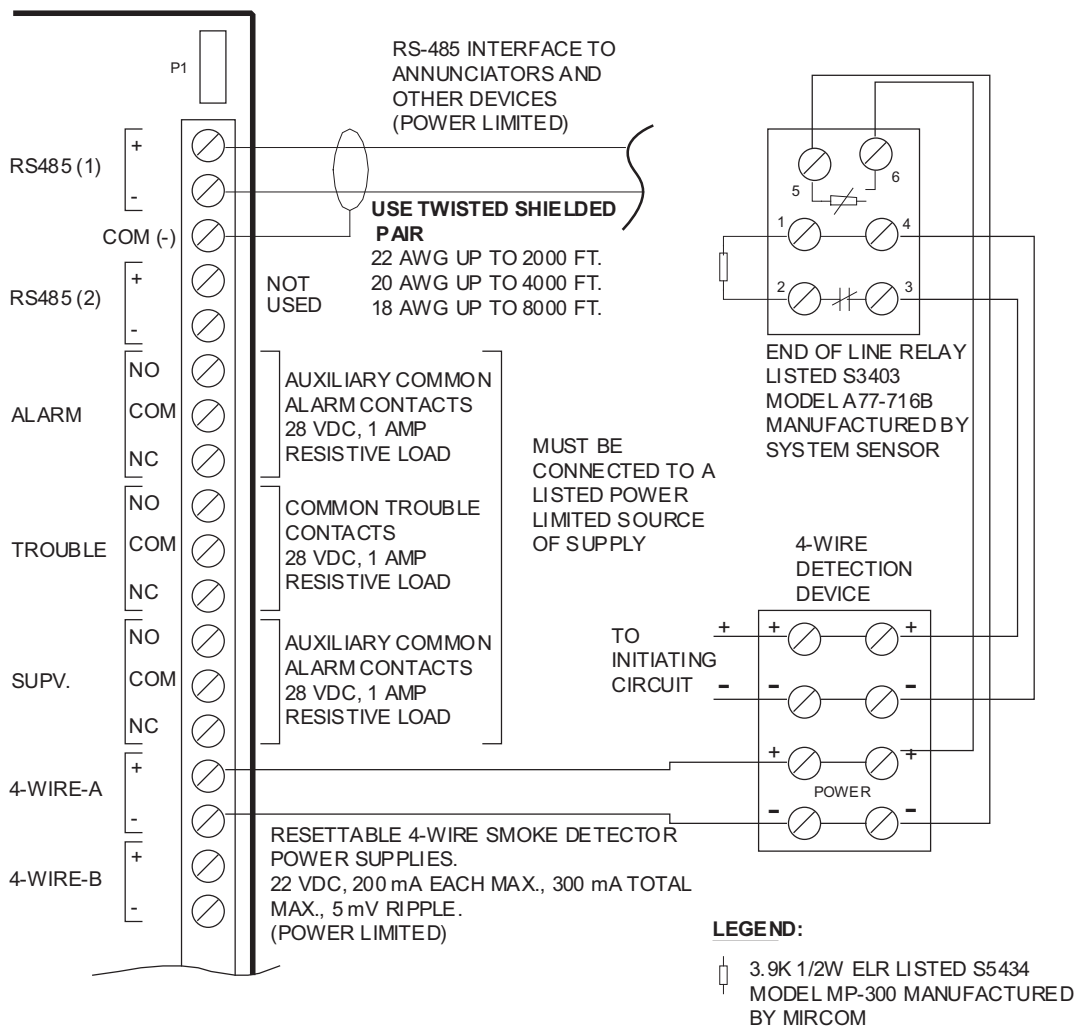
**Table 5 Settings permitted in CAN/ULCS527**

<b>NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES</b>			
This product incorporates field-programmable software. In order for the product to comply with the requirements in CAN/ULCS527, Standard for Control Units for Fire Alarm Systems, certain programming features or options must be limited to specific values or not used at all as indicated below.			
Program feature or option	Permitted in CAN/ULCS527? (Y/N)	Possible settings\methods	Settings permitted in CAN/ULCS527
System Reset and Signal Silence on RAM-208/216	N	<p>JW4 (Orange Wire) Intact = Buzzer silence &amp; Lamp Test local function only. System Reset &amp; Signal Silence are disabled.</p> <p>Cut Jumper (Orange Wire) to have all remote functions operate.</p>	Leave JW4 intact on RAM-208/216

### 6.1 Main Fire Alarm Module Terminal Connections

Wire devices to terminals as shown in Figure 23 and Figure 24. For more information see 6.9 Wiring Tables and Information on page 47, 12.0 Appendix B: Specifications on page 75, and

LT-1007, Conventional Device Compatibility Guide.



**Figure 23 Main Fire Alarm Module Terminal Connections**



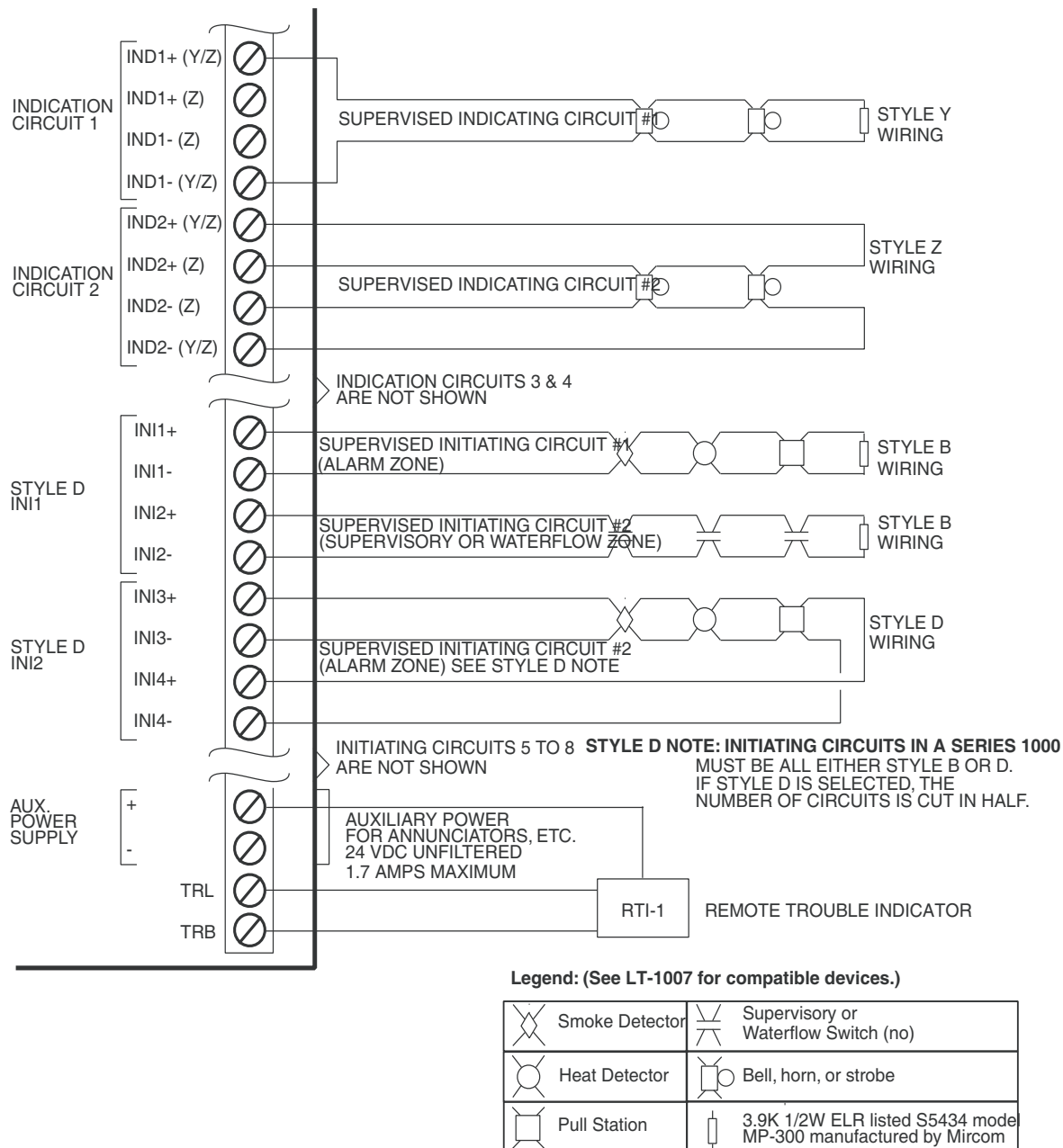
**Attention:** Do not exceed 5 amps total current for main chassis MCC-1024-6(S) indicating circuits, and 10 amps for main chassis MCC-1024-12(S).



**Notes:** The terminal blocks are "depluggable" for ease of wiring.

All initiating circuits are Compatibility ID "A".

All power limited circuits must use type FPL, FPLR, or FPLP power limited cable.



**Figure 24 Main Fire Alarm Module Terminal Connections (continued)**

*i*

**Notes:** All power limited circuits must use type FPL, FPLR, or FPLP power limited cable.

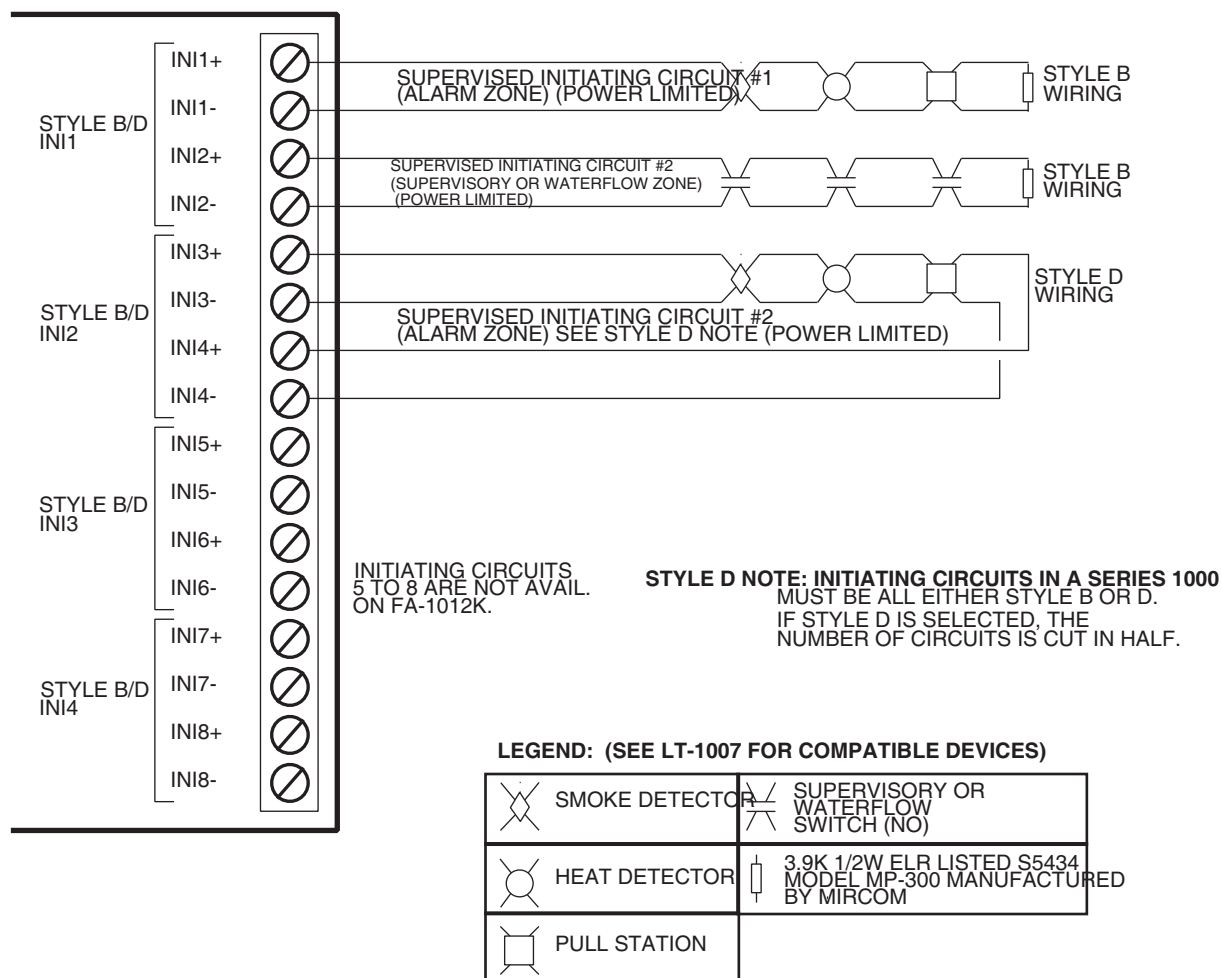
Initiating circuits are fully supervised and rated for 22 VDC, 3 mA standby, 5 mV ripple, 50 mA max alarm. They may be configured as required. the alarm threshold is 21 mA. Maximum loop resistance is 100 ohms; 50 ohms per side.

Indicating circuits are fully supervised and rated for 24 VDC unfiltered 1/7 amp max. They must be wired as shown in the wiring tables.

To supervise the 24V FWR Aux Power, use an end-of-line relay.

## 6.2 Detection Module (DM-1008A) Terminal Connections

Wire devices to terminals as shown in Figure 25 below. For more information see 6.9 Wiring Tables and Information on page 47, 12.0 Appendix B: Specifications on page 75, and LT-1007, Conventional Device Compatibility Guide.



**Figure 25 Detection Module (DM-1008A) Terminal Connections**

*i*

**Notes:** Initiating circuits in an FA-1000 Series Fire Alarm Panel must all be either Class B (Style B) or Class A (Style D). If Class A (Style D) is selected, the number of circuits is cut in half.

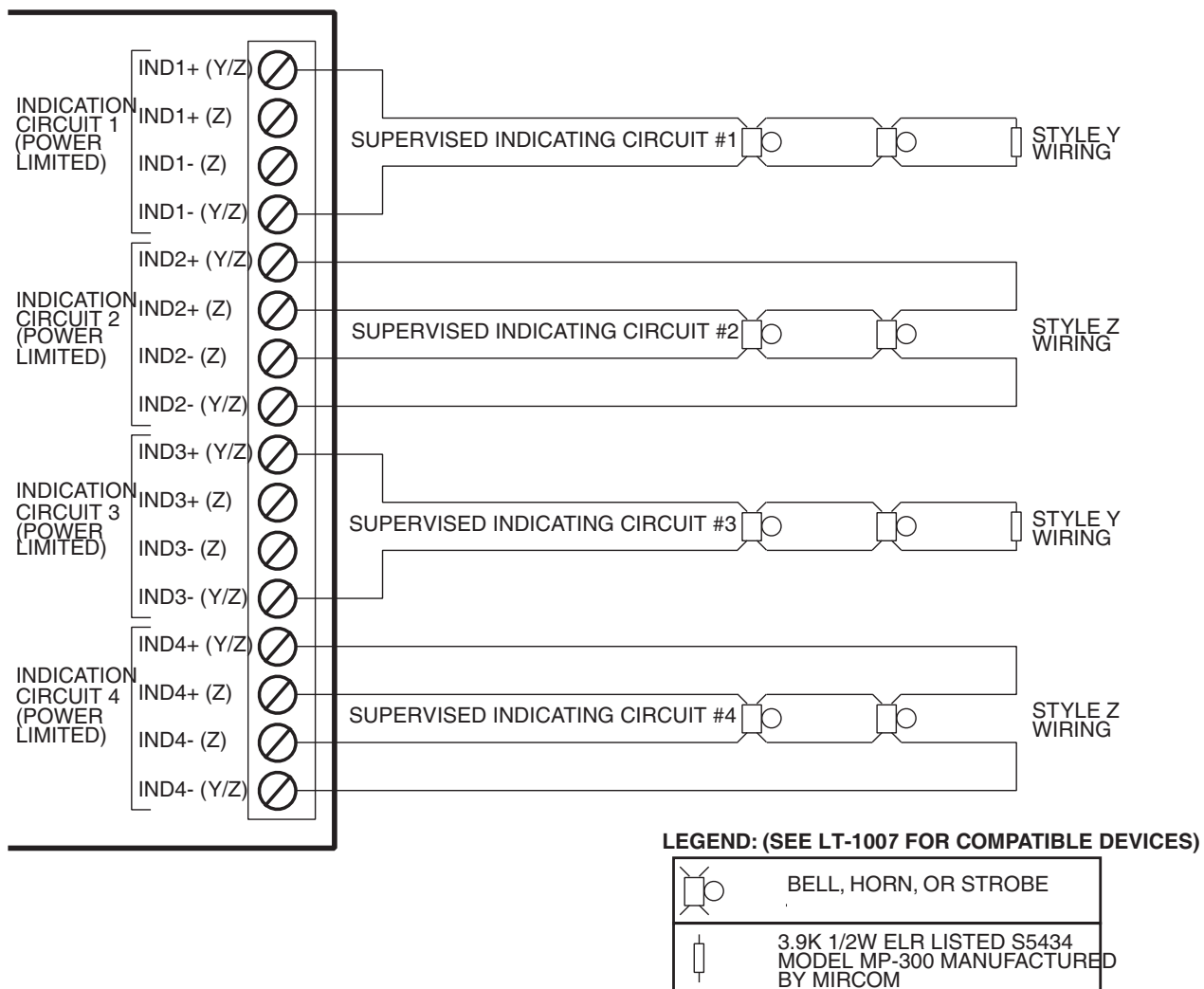
All power limited circuits must use type FPL, FPLR, or FPLP power limited cable.

Initiating circuits are fully supervised and rated for 22 VDC, 3 mA standby, 5 mV ripple, 50 mA max alarm. They may be configured as required. The alarm threshold is 21 mA. Maximum loop resistance is 100 ohms, 50 ohms per side. The terminal blocks are "depluggable" for ease of wiring.

All initiating circuits are Compatibility ID "A".

## 6.3 Signal Module (SGM-1004A) Terminal Connections

Wire devices to terminals as shown in Figure 26 below. For more information see 6.9 Wiring Tables and Information on page 47, 12.0 Appendix B: Specifications on page 75, and LT-1007, Conventional Device Compatibility Guide.



**Figure 26 Signal Module (SGM-1004A) Terminal Connections**

*i*

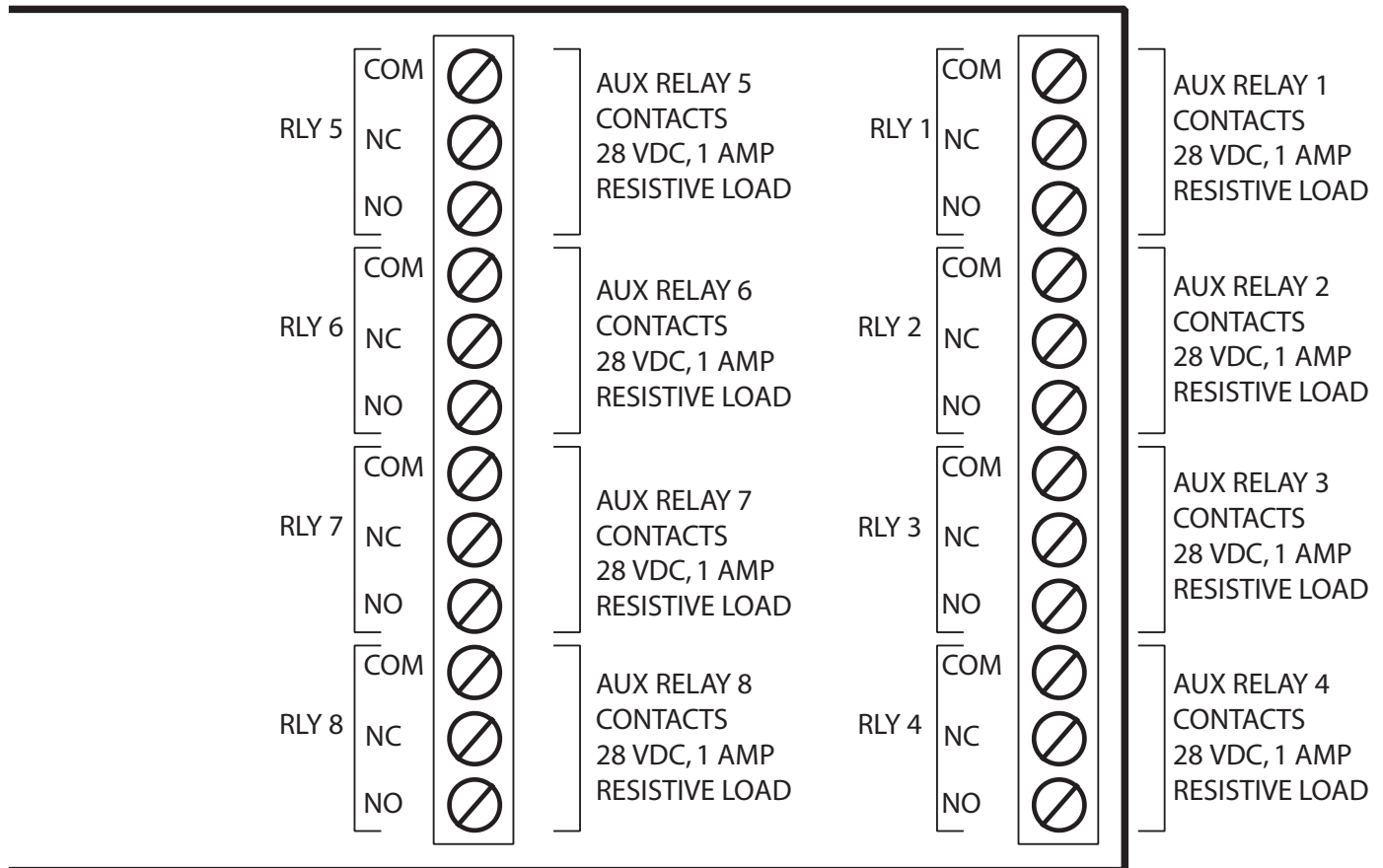
**Notes:** All power limited circuits must use type FPL, FPLR, or FPLP power limited cable.

SGM-1004A indicating circuits are fully supervised and rated for 24 VDC unfiltered, 1.70 amp max. They must be wired as shown in section 6.9 Wiring Tables and Information on page 47.

The terminal blocks are "depluggable" for ease of wiring.

## 6.4 Relay Module (RM-1008A) Terminal Connections

Wire devices to terminals as shown in Figure 27 below. For more information see 6.9 Wiring Tables and Information on page 47, 12.0 Appendix B: Specifications on page 75, and LT-1007, Conventional Device Compatibility Guide.



**Figure 27 Relay Module Terminal Connections**

*i*

**Notes:** All power limited circuits must use type FPL, FPLR, or FPLP power limited cable.

All relay circuits must be connected to a listed power limited source of supply.

The terminal blocks are "depluggable" for ease of wiring.

## 6.5 UDACT-300A Main Board Terminal Connections

Wire the two telephone line devices to terminals as shown below in Figure 28 below.

The UDACT-300A terminals are located on the top left hand corner of the board. If using a cellular or wireless service, use the Line 2 interface connection only.

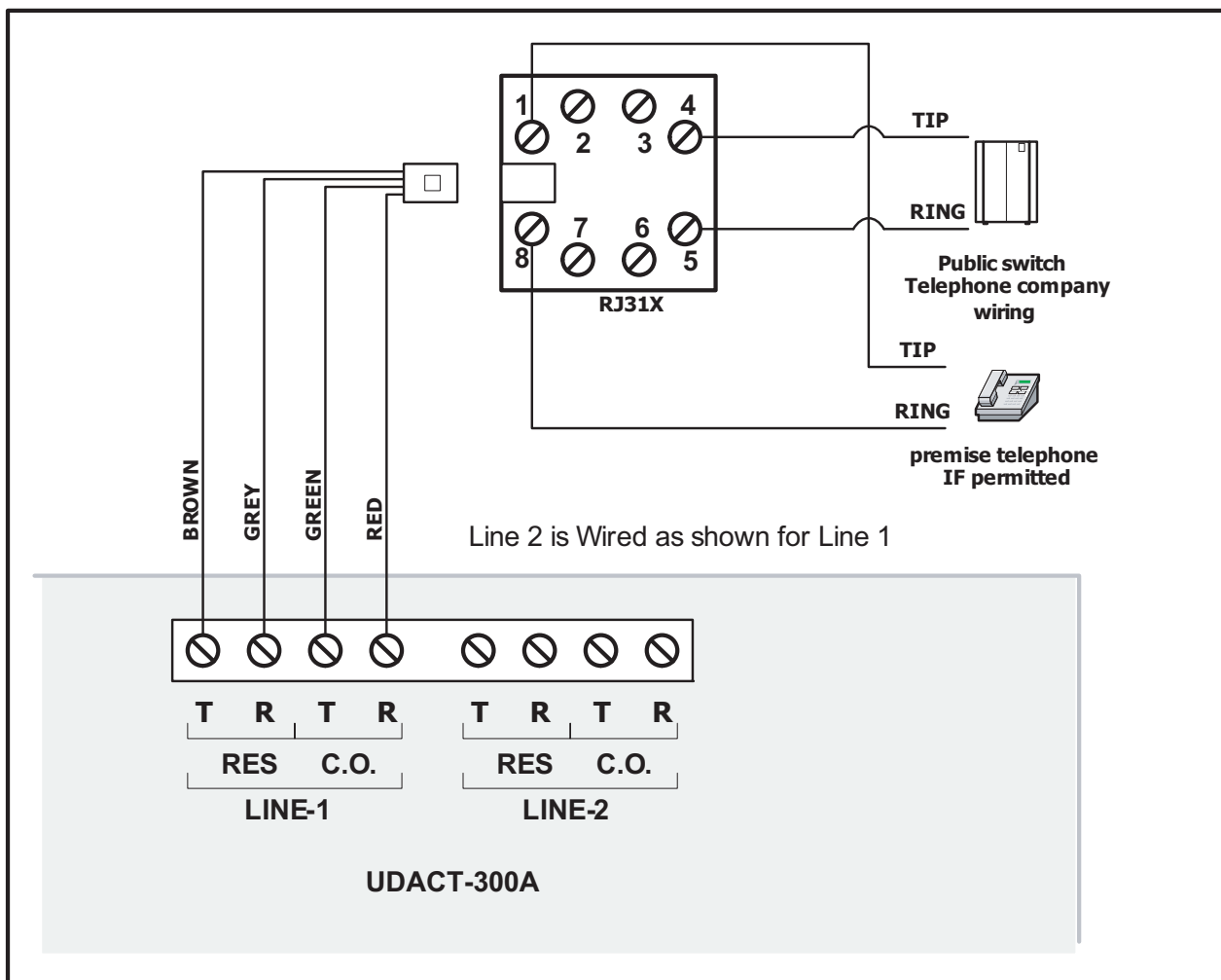


Figure 28 UDACT-300A Terminal Connections

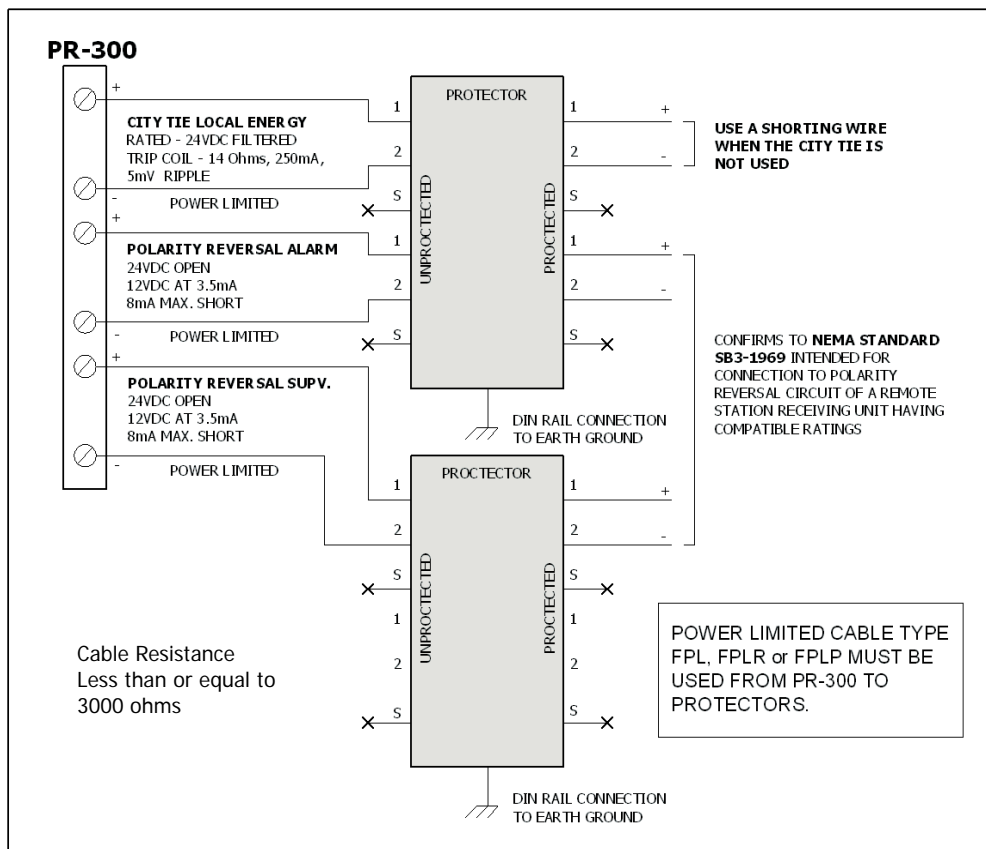


**Note:** Most AHJ's do not allow the connection of premises telephones. See UDACT-300A *Instruction and Operation Manual (LT-888)* for further details.

## 6.6 PR-300 Polarity Reversal and City Tie Module Terminal Connections

Wire as shown below in Figure 29 using proper wire gauges. For more information see Appendix B: Specifications on page 75.

**For use in the U.S.A.**, the installer *must* add an Atlantic Scientific (Tel. 407-725-8000) Model #24544 Protective Device, or similar UL-Listed QVRG Secondary Protector, as shown. For use in Canada, the protective device is still recommended, but the PR-300 may be connected directly to polarity reversal or city tie wiring.



**Figure 29 Polarity Reversal and City Tie Module Terminal Connections**

*i*

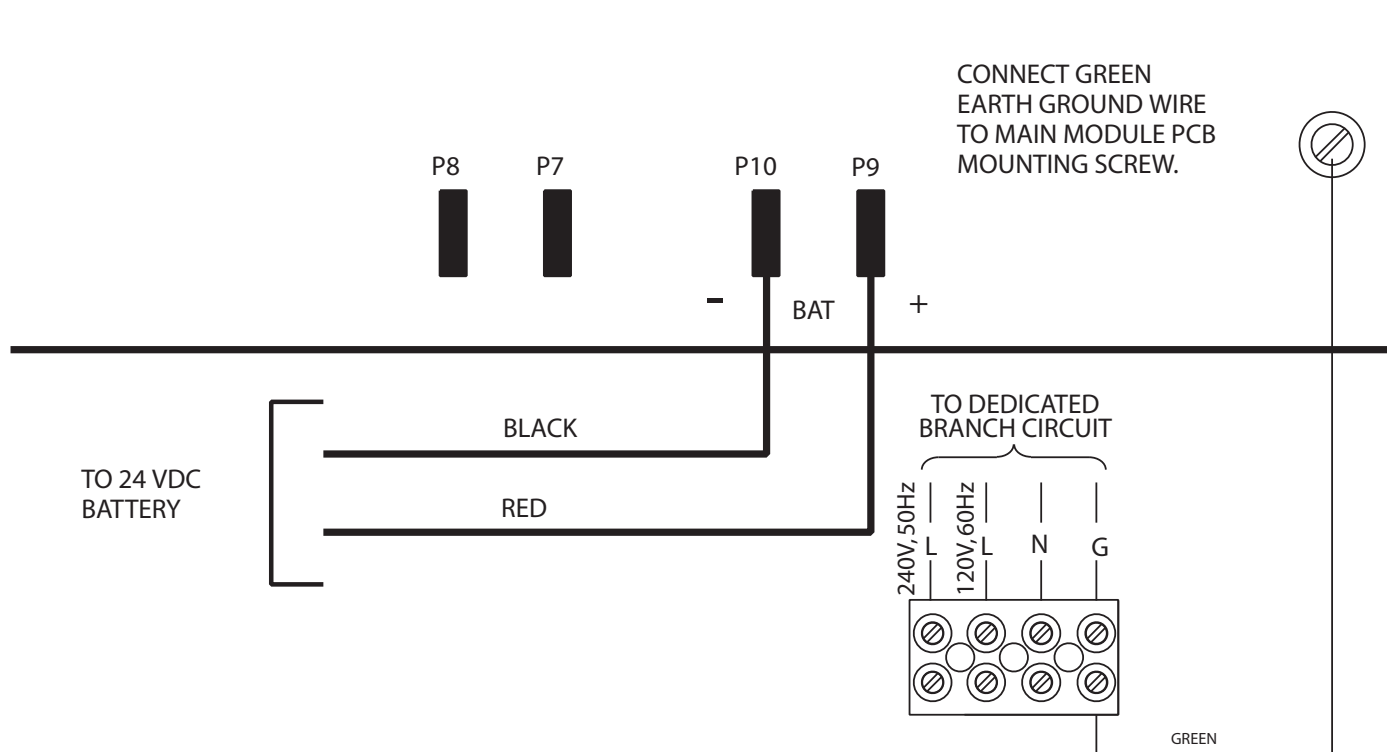
- Plug PR-300 ribbon cable (P1) into connector (P2) of the main fire alarm module.
- Cut jumper (JW1) on the PR-300 module in order to transmit a trouble condition to the monitoring station.
- Remove jumper plug from jumper JW4 on the main fire alarm module.
- The polarity reversal interface is power limited and must use type FPL, FPLR, or FPLP power limited cable.
- For polarity reversal operation, short tie the city tie connection.
- Either the PR-300's city tie or polarity reversal interface may be used, but not both.
- The city tie interface is not power limited.
- The terminal blocks are "depluggable" for ease of wiring.

## 6.7 Power Supply Connections

The power supply is part of the main chassis. The ratings are outlined in the table below.

Model	Electrical Input Ratings	Power Supply Total Current	Battery Fuse on Main Module
<b>MCC-1024-6(S) Main Chassis</b>	120 VAC, 60 Hz / 240 VAC, 50Hz	6 amps maximum	Replace with 20 amp, 1 ¼" Fast Acting Fuse
<b>MCC-1024-12(S) Main Chassis</b>	120 VAC, 60 Hz / 240 VAC, 50Hz	12 amps maximum	Replace with 20 amp, 1 ¼" Fast Acting Fuse

For more information see Appendix B: Specifications on page 75. Wire as shown in Figure 30 using proper wire gauges.



**Figure 30 Power Supply Connections**



**Attention:** To prevent sparking, connect batteries after the system main A.C. power turns on.  
Do not exceed power supply ratings.

## 6.8 Connecting to a DSC Interface Device

Refer to the *UDACT-300A Installation and Operation Manual (LT-888)* for instructions on connecting to a DSC interface device.

## 6.9 Wiring Tables and Information

Table 6 Wiring Table for Input Circuits

Wire Gauge	Maximum Wiring Run to Last Device (ELR)	
(AWG)	ft	m
22	2990	910
20	4760	1450
18	7560	2300
16	12000	3600
14	19000	5800
12	30400	9200



**Note:** Maximum loop resistance should not exceed 100 Ohms.

Main board SGM-1004A indicating circuits are rated for 1.7 amps each. The indicating circuits are rated for 1.7 amps each.

Table 7 Wiring Table for Indicating Circuits

TOTAL SIGNAL LOAD	MAXIMUM WIRING RUN TO LAST DEVICE (ELR)								MAX. LOOP RESISTANCE
	18AWG		16AWG		14AWG		12AWG		
Amperes	ft	m	ft	m	ft	m	ft	m	Ohms
0.06	2350	716	3750	1143	6000	1829	9500	2895	30
0.12	1180	360	1850	567	3000	915	4720	1438	15
0.30	470	143	750	229	1200	366	1900	579	6
0.60	235	71	375	114	600	183	950	289	3
0.90	156	47	250	76	400	122	630	192	2
1.20	118	36	185	56	300	91	470	143	1.5
1.50	94	29	150	46	240	73	380	115	1.2
1.70	78	24	125	38	200	61	315	96	1.0



**Note:** Maximum voltage drop should not exceed 1.8 volts.

### Auxiliary Power Wiring

Use Table 7 Wiring Table for Indicating Circuits above to see the wiring information for the remote annunciator being used.

### RS-485 Wiring

See the wiring information for the remote annunciator being used.

### 4-Wire Smoke Wiring

The maximum allowable current is 0.2 amperes. The maximum allowed voltage drop is 1 volt. Refer to Table 7 Wiring Table for Indicating Circuits above.

## 7.0 System Checkout

### 7.1 Before Turning the Power On

1. To prevent sparking, *do not* connect the batteries. Connect the batteries after powering the system from the main AC supply.
2. Check that all modules are installed in the proper location with the proper connections.
3. Check all field (external) wiring for opens, shorts, and ground.
4. Check that all interconnection cables are secure, and that all connectors are plugged in properly.
5. Check all jumpers and switches for proper setting.
6. Check the AC power wiring for proper connection.
7. Check that the chassis is connected to EARTH GROUND (cold water pipe).
8. Make sure to *close the front cover plate* before powering the system from main AC supply.

### 7.2 Power-Up Procedure

1. After completing the above procedures, power-up the panel. The green AC ON LED and the Common Trouble LED should illuminate, and the buzzer should sound.
2. Press the System Reset button. Since the batteries are not connected, the Battery/Charger Trouble LED should illuminate, the trouble buzzer should sound intermittently, and the Common Trouble LED should flash.
3. Connect the batteries while observing correct polarity: the red wire is positive (+) and the black wire is negative (-). All indicators should extinguish except for the AC ON LED.
4. Configure the fire alarm control panel as described in 9.0 System Configuration on page 61.

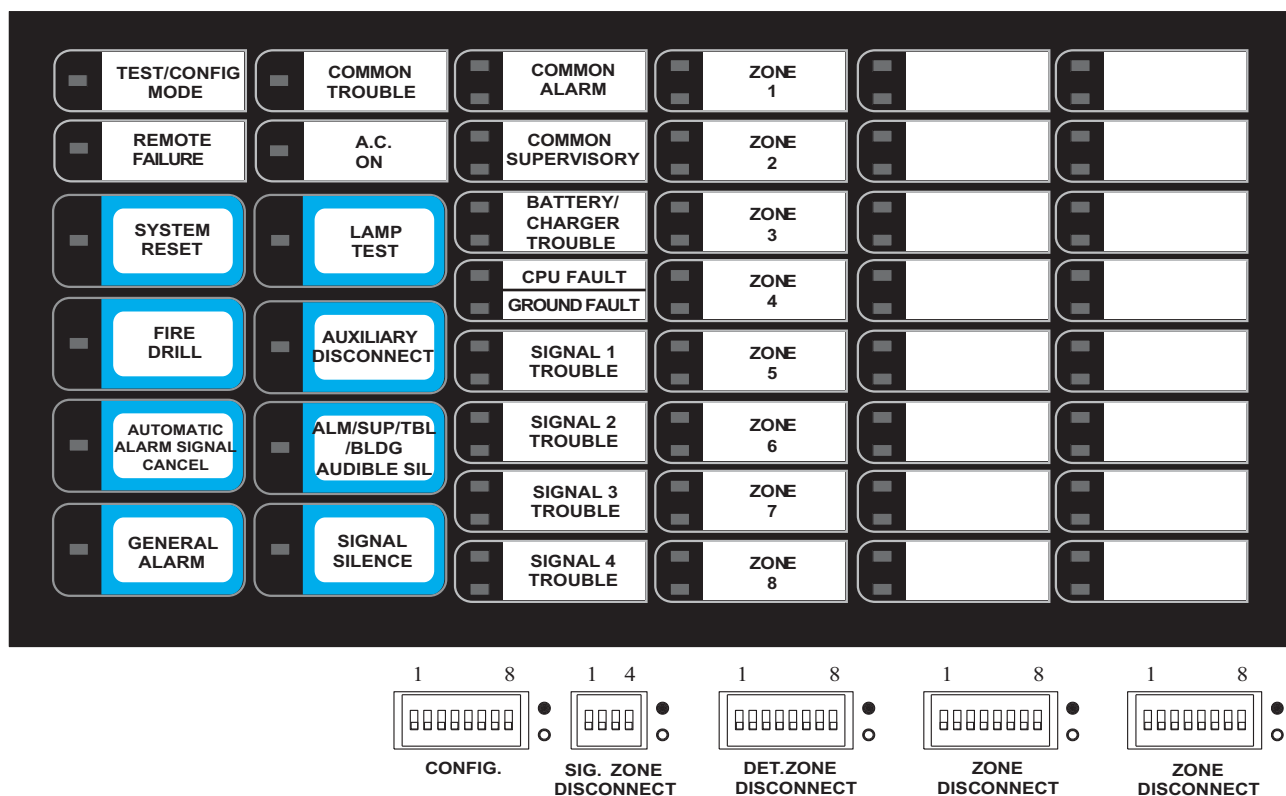
### 7.3 Troubleshooting

Message	Description
<b>Circuit Trouble</b>	Normally when a circuit trouble occurs, its designated trouble indicator will be illuminated, as well as the Common Trouble indicator and Trouble buzzer. To correct the fault, check for open wiring on that particular circuit loop or see if the circuit disconnect switch is in the ON or CLOSED position. <i>Note: disconnecting a circuit will cause a system trouble (off-normal position).</i>
<b>Remote Fail</b>	The panel will display a Remote Fail for any failure reported by or failure to communicate with a remote annunciator or other remote device.
<b>Ground Fault</b>	The FA-1000 panel has a Common Ground Fault Detector. To correct the fault, check for any external wiring touching the chassis or other earth ground connection.
<b>Battery/Charger Trouble</b>	Check for the presence of batteries and their conditions. Low voltage (below 20.4V) will cause a battery trouble. If battery/charger trouble condition persists, replace the batteries as soon as possible. If the problem still persists, main board may need to be replaced.

Message	Description
<b>Configuration Mode</b>	If the Test/Config Mode LED is illuminated steadily, the system is in either configuration mode or walk test mode. If the LED is flashing, the configuration has been corrupted and has been reset to defaults; you must therefore review / re-enter your configuration.
<b>Common Trouble</b>	<p>If only a common trouble is indicated on the main panel and none of the above confirming trouble indicators are on, then check the following for possible fault:</p> <ul style="list-style-type: none"> <li>i) Check for any missing interconnection wiring.</li> <li>ii) Check for any missing modules that are part of the configuration.</li> <li>iii) Check jumper positions. Particularly ensure that the continuity jumper is installed only on the <i>last</i> circuit adder module in the system.</li> <li>iv) Check for improperly secured cabling.</li> </ul>
<b>CPU Fault</b>	This LED will only illuminate for a short period upon power up when system is normal. It will illuminate steadily when there has been a major CPU failure. This indicates the system is not functioning and main board must be replaced.

## 8.0 Indicators, Controls, and Operation

Refer to *Figure 31* below for LED indicators, control buttons, and switches locations.



**Figure 31 Indicators and Control Location**

The main display panel on the fire alarm control unit consists of:

- A)
  - 16 common LED indicators
  - 28 circuit / circuit indicators
  - 28 circuit disconnect DIP switches
  - 8 Common Buttons
  - Configuration DIP switch
- B) An adder display module is part of the ECH-1048 Expander Chassis, which adds 48 circuit / circuit indicators and disconnect switches.
- C) LED indicators may be amber, red, or green, and may illuminate continuously (steady), or at one of two flash rates
  - **Fast flash:** 120 flashes per minute, 50% duty cycle, for supervisory alarms
  - **Trouble flash:** 20 flashes per minute, 50% duty cycle

### 8.0.1 Paper labels for buttons and indicators

Each display is supplied with laser printable labels. These labels slide into the plastic label templates on the panel. The label paper for the main display includes English and French versions (Mircom #NP-2854, NP-680). Two slide-in labels are also included for single-stage and two-stage operation. For the adder display, the labels are blank (Mircom #NP-681).

## 8.1 Common Indicators

### 8.1.1 Buzzer

The buzzer is activated by any of the following:

- **Fire alarm:** steady
- **Supervisory alarm:** fast flash rate
- **Trouble:** trouble flash rate

If the buzzer turns on in response to a non-latching trouble or supervisory, it will turn off if the condition causing it to sound goes away and there is no other reason for it to be on.

### 8.1.2 AC ON LED

The green AC ON LED illuminates steadily while the main AC power is within acceptable levels. It turns off when the level falls below the power-fail threshold and the panel switches to standby (battery) power.

### 8.1.3 Common Alarm LED

The red Common Alarm LED illuminates steadily whenever the panel is in alarm as a result of an alarm on any initiating circuit or activation of the manual red General Alarm Button. Since all alarms are latched until the panel is reset, the LED will remain on until then.

### 8.1.4 Common Supervisory LED

The amber Common Supervisory LED illuminates steadily when there is a supervisory alarm in the panel resulting from any latching or non-latching supervisory circuit. The LED turns off if all non-latching supervisory circuits are restored and there are no active latching supervisory circuits. Latching supervisory alarms remain active until the panel is reset.

### 8.1.5 Common Trouble LED

The Common Trouble LED flashes amber at the trouble flash rate when the panel detects any trouble condition. It turns off when all non-latching troubles are cleared.

### 8.1.6 Remote Failure LED

The Remote Failure LED flashes amber at the trouble flash rate if the panel detects:

- Trouble at the city tie, or
- Trouble at the UDACT, or
- Communication trouble with a remote annunciator, or
- Local trouble with a remote annunciator.

It turns off once these conditions return to normal.

### 8.1.7 Fire Drill LED

The amber Fire Drill LED illuminates steadily while the fire drill is active.

### 8.1.8 Automatic Alarm Signal Cancel LED (Acknowledge)

If the panel is configured as two stage, the Automatic Alarm Signal Cancel LED illuminates steadily when the timer is cancelled by activating the Automatic Alarm Signal Cancel or Signal Silence buttons. If the Auto General Alarm timer times out and puts the panel into General Alarm, the LED turns off.

### 8.1.9 General Alarm LED

The red General Alarm LED illuminates steadily after the General Alarm button is pressed, a general alarm initiating circuit is activated, or the Auto General Alarm timer times out. Once the General Alarm LED turns on, it will stay active until the panel is reset.

### 8.1.10 Configuration / Test Mode LED

The amber Configuration / Test Mode LED illuminates steadily to indicate that the panel is in either walk test or configuration mode. If the panel is left in either mode for over an hour with no operator activity, this LED will flash at the trouble flash rate.

### 8.1.11 Auxiliary Disconnect LED

The amber Auxiliary Disconnect LED flashes at the trouble flash rate after the Auxiliary Disconnect button is pressed. It turns off after the button is pressed a second time. When on, it indicates that common alarm and common supervisory relays are not activated, and programmable relays (if disconnect is enabled) are not activated. The city tie module, if installed, is also inactive.

### 8.1.12 Signal Silence LED

The amber Signal Silence LED flashes at the trouble flash rate when indication circuits are silenced either by the Signal Silence button or by the Auto Signal Silence timer. It turns off when the signals are re-sounded by a subsequent alarm.



**Note:** For UL installations, disable the Auto Signal Silence timer.

### 8.1.13 Battery/Charger Trouble LED

The Battery/Charger Trouble LED flashes amber at the trouble flash rate when the battery is either low (below 20.4 VDC) or disconnected.

### 8.1.14 Ground Fault LED

The Ground Fault LED flashes amber at the trouble flash rate when the Ground Fault Detector detects a ground fault on any field wiring. It turns off when the ground fault is cleared.

### 8.1.15 CPU Fault LED

The CPU Fault LED Indicator illuminates steadily to indicate a microprocessor failure on the main board.

## 8.2 Common Controls

### 8.2.1 System Reset Button (White)

The System Reset button resets the fire alarm control panel and all circuits:

- Resets all latching trouble conditions
- Resets four-wire smoke supply
- Turns off Signal Silence, Automatic Alarm Signal Cancel & General Alarm LEDs
- Stops and resets all timers
- Aux Disconnect is not affected
- Resets all initiating circuits
- Turns off all indicating circuits
- Turns off Fire Drill
- Processes inputs as new events
- Reset cannot be activated until the Signal Silence Inhibit timer has expired

### 8.2.2 Signal Silence Button (Blue)

Pressing the Signal Silence button after the panel is in alarm turns on the Signal Silence LED and deactivates any silenceable indicating circuits. Non-Silenceable circuits are unaffected. Signals will re-sound upon any subsequent Alarm. This button does not function during any configured Signal Silence Inhibit timer period. It also does not function if indicating circuits are active as the result of a Fire Drill. In a two-stage system, the Signal Silence button silences the stage 1 and stage 2 alarms.

### 8.2.3 Fire Drill Button (Orange)

The Fire Drill button activates all programmed and non-disconnected indicating circuits, but does not transmit any Alarms via the city tie or common alarm relay. The Fire Drill button may be programmed to operate specific indicating circuits. The Fire Drill is cancelled by pressing the button again (toggle switch), or if the panel goes into a real Alarm.

### 8.2.4 Automatic Alarm Signal Cancel Button (Yellow)

If the Panel is *not* configured for two stage operation, this button does nothing. If the panel is configured for two stage operation, pressing the Automatic Alarm Signal Cancel button while the Auto General Alarm timer is timing (there is an Alarm in the panel, but it is still in the first stage) cancels the timer and turns the Automatic Alarm Signal Cancel LED on steady amber.

### 8.2.5 General Alarm Button (Red)

Pressing the General Alarm button immediately sends the panel into General Alarm. It will also re-activate the signals if they have been silenced during a General Alarm initiated through a detection circuit. The General Alarm condition remains active until the panel is reset.

### 8.2.6 Auxiliary Disconnect Button (Orange)

Pressing the Auxiliary Disconnect button activates the Auxiliary Disconnect function. Pressing the button again deactivates the function.

### 8.2.7 Lamp Test Button (Orange)

Pressing the Lamp Test button causes all front panel indicators to illuminate and sounds the buzzer steadily. If Lamp Test is active for more than ten seconds, the Common Trouble LED is activates.

### 8.2.8 Alm/Sup/Tbl/Bldg Audible Sil Button (Blue)

Activation of the Alm/Sup/Tbl/Bldg Audible Sil button while the buzzer is sounding silences the buzzer. The buzzer will resound if there is a subsequent event. Pressing the button when the buzzer is not sounding has no effect.

## 8.3 Circuit Status Indicators

There is one pair of circuit Status LEDs for each initiating, indicating, and relay circuit. The first four indicating circuits on the main fire alarm module are part of the common indicators. All other circuits (including the first eight initiating circuits on the main fire alarm module) are arranged in columns of eight indicators numbered from one to eight. For each circuit, the upper circuit Status LED may be red or amber, and will either be steadily illuminated or flashing at either the fast flash or trouble flash rates, depending on the operation. The amber Circuit Trouble LED flashes at the trouble flash rate when active. The Status LED is used on initiating circuits only.

After the first eight initiating circuits (corresponding to the first column of circuit LED's) the circuit LEDs are configured in the same order as any adder modules. If there are insufficient display adders for the number of circuits on the panel, the last circuits will not be displayed. If there are too many displays for the number of circuits on the panel, the unassigned ones will be unused.

### 8.3.1 Alarm Circuit Indicators

The operation of alarm circuit indicators applies to initiating circuits configured as verified alarm, non-verified alarm, water-flow alarm, sprinkler alarm, or general alarm circuits.

- The **Circuit Trouble LED** flashes at the trouble flash rate to indicate circuit trouble (open circuit or Style D / Class A trouble) or a disconnected circuit. It always turns off when the circuit is in alarm.
- The **Circuit Status LED** illuminates steady red when the circuit is in alarm. On verified alarm circuits, sprinkler alarm, and water-flow alarm circuits, the circuit Status LED will illuminate at the fast flash rate during the pre-alarm condition. This LED will also flash at the fast flash rate while an active circuit is being un-disconnected.

### 8.3.2 Supervisory Circuit Indicators

The operation of supervisory circuit indicators applies to initiating circuits configured as latching or non-latching supervisory circuits.

- The Circuit Trouble LED flashes at the trouble flash rate to indicate circuit trouble (open circuit or Class A (Style D) trouble) or a disconnected circuit. It always turns off when the circuit is in alarm.
- The Circuit Status LED turns on steady amber when the corresponding circuit is in alarm. This LED will also flash at the fast flash rate while an active circuit is being reconnected.

### 8.3.3 Property and Building Safety Circuit Indicators

The operation of Property and Building Safety (Monitor) circuit indicators applies to initiating circuits associated with property and building safety.

- The Circuit Trouble LED flashes at the trouble flash rate to indicate circuit trouble (open circuit or Class A (Style D) trouble) or a disconnected circuit. It always turns off when the circuit is in alarm.

- The Circuit Status LED turns on steady amber when the corresponding circuit is in alarm. This LED will also flash at the fast flash rate while an active circuit is being reconnected.

### 8.3.4 Trouble-Only Circuit Indicators

The operation of trouble-only circuit indicators applies to initiating circuits configured as trouble-only circuits. The Circuit Trouble LED flashes at the trouble flash rate to indicate circuit trouble (open circuit or Class A (Style D) trouble) or if the circuit is disconnected. The Circuit Status LED also flashes amber at the trouble flash rate to indicate a short-circuit trouble.

### 8.3.5 Signal Circuit Indicators

The operation of signal circuit indicators applies to indicating circuits of any type. The Circuit Trouble LED flashes amber at the trouble flash rate to indicate short-circuit or open circuit trouble, or a disconnected circuit.

### 8.3.6 Relay Circuit Indicators

Relay circuit trouble indicators flash amber at the trouble flash rate while the corresponding circuit is disconnected.

## 8.4 Circuit (Zone) Disconnect Switches

Circuit (zone) disconnect switches are provided for all initiating, indicating, and relay circuits on the fire alarm control panel. For the first four indicating circuits on the main fire alarm module, the disconnect switches consist of either a bank of DIP switches (or slide switches in "S" Version Chassis) DIP switches numbered one to eight correspond to the circuits indicated in the indicator column from top to bottom

Changing a circuit disconnect switch to the ON position bypasses the associated circuit, turns on its trouble indicator, and activates common trouble. While a circuit is disconnected, all changes in status (alarms and troubles) on that circuit are ignored. The panel does not activate disconnected indicating circuits.

Disconnecting an active latching initiating circuit such as water-flow alarm, sprinkler alarm, general alarm, and latching supervisory does not affect its status until the panel is reset. Disconnecting active non-latching initiating circuits including non-latching supervisory and trouble-only causes them to behave as if conditions returned to normal. Disconnecting an active indicating circuit immediately deactivates the circuit.

When an initiating circuit disconnect switch is returned to its normal state, the panel checks the state of the circuit. If the circuit is active, the Status LED flashes for ten seconds at the fast flash rate without processing the input. If the circuit is not re-disconnected by then, it will be processed as a new input.

Disconnect switches are also used during *Configuration Mode* (see page 61) and *Walk Test Mode* (see page 73) as described in those sections.

## 8.5 Single Stage Operation

In a single stage system, all alarm inputs are treated in a similar manner. Alarm inputs include any of the following: non-verified alarm, verified alarm, sprinkler alarm, water-flow alarm, and general alarm circuits. Any of these alarm inputs occurring when the panel is not already in alarm cause the following:

- The buzzer sounds steadily
- If fire drill is active, it is cancelled
- The Common Alarm LED turns on
- The Common Alarm relay activates if Aux disconnect is not active
- The Auto Signal Silence timer, if configured, starts. For UL installations, disable the Auto Signal Silence timer.
- The Signal Silence Inhibit timer, if configured, starts
- All non-disconnected indicating circuits programmed to the input circuits are activated provided that Aux disconnect is not active
- Non-disconnected strobes associated with the input are activated
- Non-disconnected signals associated with the input are activated at the evacuation rate

Pressing the General Alarm button on the panel also initiates a general alarm.

Subsequent alarms when the panel is already in alarm cause the following:

- The alert buzzer sounds steadily
- If Signals have been silenced, they are resounded, the Signal Silence LED turns off, and the Auto Signal Silence timer, if configured, is restarted. For UL installations, disable the Auto Signal Silence timer.
- Any additional non-disconnected strobes associated with the input are activated continuously
- Any additional non-disconnected signals associated with the new input are activated at the evacuation rate

## 8.6 Two Stage Operation

In a two stage system, alarm inputs are either first stage (alert) inputs or second stage (general alarm) inputs. First stage inputs include inputs from the following types of circuits: non-verified alarm, verified alarm, sprinkler alarm, and water-flow alarm. Second stage inputs include alarms on the general alarm circuits, activation of the General Alarm button, or expiration of the Auto General Alarm timer. Any of these alarm inputs occurring when the panel is not already in alarm cause the following:

- The buzzer sounds steadily
- If fire drill is active, it is cancelled
- The Common Alarm LED turns on
- The Common Alarm relay activates if Aux disconnect is not active
- The Auto Signal Silence timer, if configured, starts. For UL installations, disable the Auto Signal Silence timer.
- The Signal Silence Inhibit timer, if configured, starts
- All Non-disconnected indicating programmed to the input are activated provided that Aux disconnect is not active

If the alarm is a second stage alarm,

- All non-disconnected strobe circuits are activated continuously
- All non-disconnected signal circuits are activated at the evacuation rate
- The General Alarm LED turns on

If the alarm is a first stage alarm,

- Non-disconnected strobe circuits programmed to that circuit are activated continuously

- Non-disconnected signal circuits programmed to that circuit are activated with the alert code (for more information see Indicating (Signal) Circuit Types on page 59)
- The Auto General Alarm timer, if configured, starts

Subsequent First Stage alarms when the panel is already in alarm, cause the following:

- The buzzer sounds steadily
- If signals have been silenced as a result of the silence button or the Auto signal silence timer, signals are resounded as they were before signal silence, the Signal Silence LED turns off, and the Auto Signal Silence timer, if configured, is restarted. For UL installations, disable the Auto Signal Silence timer.
- If the panel is not already in General Alarm, additional non-disconnected signals programmed to the new input are activated with the Alert Code (*for more information see Indicating (Signal) Circuit Types on page 59*)
- If the panel is not already in General Alarm and if the Automatic Alarm Signal Cancel LED is on steady indicating that the Auto General Alarm timer has been acknowledged, then the timer is restarted and the Automatic Alarm Signal Cancel LED is extinguished

A second stage alarm (general alarm) when the panel is already in alarm causes the following:

- The buzzer sounds steadily
- All non-disconnected signals are activated at the evacuation rate
- If the Signal Silence LED is on, it turns off and the Auto Signal Silence timer, if configured, is restarted
- The Automatic Alarm Signal Cancel LED if on, turns off
- Alarm inputs are latching: they remain active until system reset.



**Note:** If the system is configured for correlations, any second stage / general alarm condition activates all indicating circuits whether they are correlated or not.

## 8.7 Circuit Types

The term **circuits** refers to an actual electrical interface, either initiating (detection) or indicating (signal). The term **zone** is a logical concept for a fire alarm protected area, and will consist of at least one circuit. Often the terms zone and circuit are used interchangeably, but in this manual the term circuit is used.

## 8.7.1 Initiating (Detection) Circuit Types

**Table 8 Initiating (Detection) Circuit Types**

Circuit Type	Description
<b>Non-Verified Alarm</b>	This is a "normal" type of alarm which may have pull stations, smoke detectors, or heat detectors attached. Any activation of these devices will immediately result in an alarm condition in the fire alarm control panel. An alarm condition causes the associated circuit Status LED and the Common Alarm LED to illuminate red.
<b>Verified Alarm</b>	These alarms are verified by a reset and timing procedure, and may have pull stations, smoke detectors, or heat detectors attached. Any activation of pull stations or heat detectors will result in an alarm condition in the fire alarm control panel within four seconds. Smoke detectors will be verified for a real alarm within 60 seconds depending upon the startup time of the smoke detectors being used. If four seconds is too long a response time for pull stations, then they should be wired separately on a non-verified alarm circuit. An alarm condition causes the associated circuit Status LED and the Common Alarm LED to illuminate red. Smoke detectors that incorporate a built-in alarm verification feature must not be connected to a "Verified Alarm" circuit. For such detectors, use a separately wired non-verified alarm circuit.
<b>Water-Flow Alarm</b>	An alarm for water-flow sensors. These alarms are identical to normal non-verified alarms except that any indicating circuits programmed to these circuits (all are by default) are non-silenceable. Also, if water-flow retard operation is enabled, then these circuits are sampled every one second; if ten samples are active within any 15 second interval, the water-flow alarm is confirmed and processed. An alarm condition causes the associated circuit Status LED and the Common Alarm LED to illuminate red. <b>Note: Do not use the retard operation with any external retarding device; maximum retard may not exceed 120 seconds.</b>
<b>Sprinkler Alarm</b>	An alarm for sprinkler flow sensors. These alarms are identical to normal non-verified alarms unless the water-flow retard operation is enabled. If water-flow retard operation is enabled, then these circuits are sampled every one second; if ten samples are active within any 15 second interval, the sprinkler alarm is confirmed and processed. An alarm condition causes the associated circuit Status LED and the Common Alarm LED to illuminate red. <b>Note: Do not use the retard operation with any external retarding device; maximum retard may not exceed 120 seconds.</b>
<b>General Alarm</b>	These alarms provide remote general alarm such as for remote key switches. In a two stage system, these inputs perform exactly the same function as the front panel or remote annunciator general alarm button. In a single stage system, these inputs act the same as non-verified alarms, but if correlations are enabled, general alarm initiating circuits are correlated to <i>all</i> indicating circuits.
<b>Non-Latching Supervisory</b>	These alarms are for supervisory devices. An activation on these circuits will cause the Circuit Status LED and the Common Supervisory LED to illuminate amber. The buzzer will sound continuously. If the circuit activation is removed, the supervisory condition will clear (so long as there are no other supervisory conditions in the system) and the circuit Status LED will extinguish.
<b>Latching Supervisory</b>	These alarms are for supervisory devices. An activation on these circuits will cause the Circuit Status LED and the Common Supervisory LED to illuminate amber. The buzzer will sound continuously. If the circuit activation is removed, the Supervisory condition will <i>not</i> clear.

**Table 8 Initiating (Detection) Circuit Types (Continued)**

Circuit Type	Description
<b>Property and Building Safety</b>	This is a supervised general purpose non-latching input used mainly for correlating to a relay circuit. No other system condition occurs as a result of its activation (short-circuit), although it is supervised for trouble (open-circuit).
<b>Trouble-Only</b>	This circuit is used for monitoring a trouble condition from an external device such as a Mircom Series 500 Audio System. Both open and short circuits generate a non-latching trouble condition.

## 8.7.2 Indicating (Signal) Circuit Types

**Table 9 Indicating (Signal) Circuit Types**

Circuit Type	Description
<b>Silenceable Signal</b>	For audible devices such as bells and piezo mini-horns that may be silenced either manually or automatically. While sounding, these follow the pattern appropriate for the condition: the configured evacuation code (default is temporal code) during single-stage alarm, or two stage general alarm, or the alert code during a two stage system's alert (first) stage.
<b>Non-Silenceable Signal</b>	For audible devices such as bells and piezo mini-horns that may not be silenced either manually or automatically. While sounding, these follow the pattern appropriate for the condition: the configured evacuation code (default is temporal code) during single-stage alarm, or two-stage general alarm, or the alert code during a two stage system's alert (first) stage.
<b>Strobe</b>	For visual devices such as strobes that use no code patterns (they are continuous).

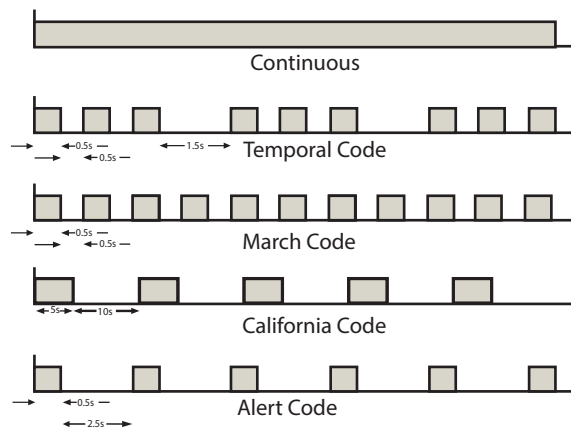
## 8.7.3 Evacuation Codes

### Single stage codes

<b>Continuous</b>	On 100% of the time
<b>Temporal Code</b>	3 of 0.5 second on, 0.5 second off then, 1.5 second pause
<b>March Code</b>	0.5 second on, 0.5 second off
<b>California Code</b>	5 seconds on, 10 seconds off

### Two-stage codes

<b>Alert Code</b>	0.5 second on, 2.75 seconds off
<b>General Alarm</b>	Evacuation code as selected from above.



**Figure 32 Evacuation Codes**

## 9.0 System Configuration

**Table 10 Settings permitted in CAN/ULCS527**

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES			
This product incorporates field-programmable software. In order for the product to comply with the requirements in CAN/ULCS527, Standard for Control Units for Fire Alarm Systems, certain programming features or options must be limited to specific values or not used at all as indicated below.			
Program feature or option	Permitted in CAN/ULCS527? (Y/N)	Possible settings\methods	Settings permitted in CAN/ULCS527
Auto signal silence timer	Y	Disabled or 5, 10, 15, 20, or 30 minutes	All

**Table 11 Settings permitted in UL864**

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES			
This product incorporates field-programmable software. In order for the product to comply with the requirements in UL864, Control Units and Accessories for Fire Alarm Systems, certain programming features or options must be limited to specific values or not used at all as indicated below.			
Program feature or option	Permitted in CAN/UL864? (Y/N)	Possible settings\methods	Settings permitted in UL864
AC power fail delay	Y	0, 60, 120, 180 minutes	60, 120, 180 minutes
Auto signal silence timer	N	Disabled or 5, 10, 15, 20, or 30 minutes	Disabled

### 9.1 Introduction to Configuration

Configuration of the FA-1000 Fire Alarm Control Panel is performed by a combination of configuration DIP switch settings and button presses. Circuit-related operations are correlated to their respective disconnect switches.

You can access the configuration DIP switches from the main display module after removing the protective lexan cover. The DIP switches are labelled as CONFIG. 1 to 8. The circuit (zone) disconnect switches are re-defined as circuit (zone) select during configuration. Make sure you have set the circuit disconnect switches to the desired settings before exiting configuration mode. Normal system operation is suspended while configuration mode is active. You enter configuration mode whenever any of the configuration DIP switches are set as per the functions listed in Table 12 Configuration DIP Switch Functions on page 63, and you exit configuration mode by turning all the DIP switches OFF (put switches in the bottom or OFF positions), then pressing the System Reset button.



**Note:** While in configuration mode the fire alarm control panel is not operating.

### 9.1.1 Three buttons and LED indicators are used in configuration mode

#### Automatic

#### Alarm Signal Cancel (yellow button)

This becomes a "Select Setting" button and the LED indicator may show the current status of a function.

#### General Alarm (red button)

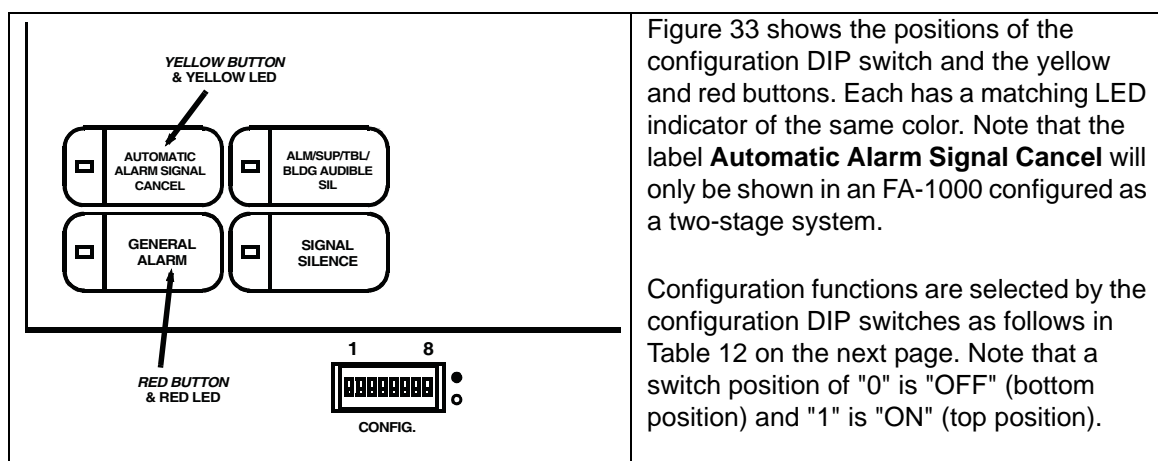
This becomes a "Confirmation" button for some functions, used together with the Yellow Button.

#### Alm/Sup/Tbl/ Bldg Audible Sil (blue button)

This button performs its normal function of silencing the buzzer.

#### California Code

All other buttons are non-functional during configuration mode. Additionally, the Green Power "ON" LED will be "OFF" during configuration mode. Common trouble LED will flash to test. Config LED (amber) will be on.



**Figure 33 Configuration Indicators and Controls**

## 9.2 Configuration DIP Switch Functions

**Table 12 Configuration DIP Switch Functions**

DIP Switch Position (1-8)	Function Number	Button Operations	Description
0000 0000	00	None	Normal Operation (not in configuration mode)
<b>Features</b>			
0000 0001	01	Yellow	Select Style D/B (Class A/B) Initiating Circuits
0000 0010	02	Yellow	Manual Signal Silence Enable
0000 0011	03	Yellow	Fire Drill Enable
0000 0100	04	Yellow	Two Stage Operation
0000 0101	05	Yellow	Common Alarm Relay Operation
0000 0110	06	Yellow	Output Circuit Correlations Enabled
0000 0111	07	Yellow	Water Flow Alarm and Sprinkler Alarm Retard Operation
0000 1000	08	Yellow	Reserved for Future Use
0000 1001	09	Yellow	Aux Disconnect disconnects Correlated Relays
0000 1010	0A	Yellow	Signal Silence Inhibit timer
0000 1011	0B	Yellow	Auto Signal Silence timer
0000 1100	0C	Yellow	Auto General Alarm timer
000011 01	0D	Yellow	Evacuation Code Selection
0000 1110	0E	Yellow	Number of Remote Annunciators
0000 1111	0F	Yellow	Alarm Transmit Silence Option
0001 0000	10	Yellow	AC Power Fail Delay Time
0001 0001	11	Yellow	Common Supervisory Relay Action
0001 0010	12	Yellow	Signal Circuit Isolator Option
<b>Initiating Circuits/ Detection Zones</b>			
0010 0000	20	Yellow	Normal (Non-Verified) Alarm
0010 0001	21	Yellow	Verified Alarm
0010 0010	22	Yellow	Sprinkler Alarm
0010 0011	23	Yellow	Water Flow Alarm
0010 0100	24	Yellow	Non-Latching Supervisory
0010 0101	25	Yellow	Latching Supervisory
0010 0110	26	Yellow	General Alarm
0010 0111	27	Yellow	Property and Building Safety

**Table 12 Configuration DIP Switch Functions (Continued)**

DIP Switch Position (1-8)	Function Number	Button Operations	Description
0010 1000	28	Yellow	Trouble Only
<b>Indicating Circuits/Signal Zones</b>			
0011 0000	30	Yellow	Silenceable
0011 0001	31	Yellow	Non-Silenceable
0011 0010	32	Yellow	Silenceable Strobes
0011 0011	33	Yellow	Non-Silenceable Strobes
<b>Relays</b>			
0011 1000	38	None	Show Relay Circuits
<b>Resize System</b>			
0100 0000	40	Yellow and Red	Set Circuit Adder Module Number and Type
<b>Correlations</b>			
0100 0001	41	Yellow	Correlation by Input Circuit
0100 0010	42	Yellow	Correlation by Output Circuit
<b>Default</b>			
0111 1111	7F	Yellow and Red	Restore to Default Configuration
<b>Walk Test</b>			
1000 0000	80	None	Walk Test

## 9.3 Entering Configuration Mode

The system enters configuration mode whenever any of the configuration DIP switches 2 to 8 (switch 1 is used to enter walk test mode) are set to a "1" or the ON position (top position). The Test / Config Mode and Common Trouble LEDs will turn on and the buzzer will sound. You can silence the buzzer at this point.



**Note:** The fire alarm control panel is not operating as a fire alarm system while it is in configuration mode.

If there is no activity (no buttons pressed or switches changed) for one hour, the system will return to normal operation, but will remain in a trouble condition.

As you change the configuration DIP switches to select different functions, wait for a few seconds for the appropriate LEDs to change as the system recognizes the change(s). Note

that configuration changes take effect immediately as they are made, there is no "undo" function.



**Note:** Write down the configuration changes that you make and store them with the panel, so that you can refer to them later.

## 9.4 Exiting Configuration Mode

To exit configuration mode after all desired changes are made, all configuration DIP switches must be returned to a "0" or OFF position (bottom position). Wait about five seconds before pressing the System Reset button. The system should now be back in normal operation.

## 9.5 Factory Default Configuration

The system as shipped from the factory is configured with no adder modules, and with set defaults as outlined below:

- All initiating circuits are Style B (Class B) non-verified alarms (any alarm on any initiating circuit activates all indicating circuits)
- Indicating circuits are all common alarm and set as silenceable, temporal code. If shorts exist on any indicating circuits, then they will not activate on alarms.
- Manual signal silence is enabled
- Fire drill is enabled
- Two stage is disabled (the system will operate single stage)
- If a two stage system is enabled, the common alarm relay operates on both stages
- All indicating and relay correlations are set to common alarm activation
- Water-flow retard operation is disabled
- Aux disconnect will disconnect correlated relays
- The Signal Silence Inhibit timer, Auto Signal Silence timer, and the Auto General Alarm timer are disabled
- The systems assumes there are no remote annunciators
- Relay adder module(s) activate only on common alarm
- The system assumes that there are no adder modules

## 9.6 Restore to Default/Resize (Class A or B)

Restore the system to the default configuration whenever you would like to restore the factory default configuration, and whenever circuit adder modules (detection, signal, or relay) are added, removed, or re-arranged. Restoring the system to the default configuration is performed slightly differently depending on whether the system is intended to operate with Class B (Style B) or Class A (Style D) initiating circuits (detection zones).



**Note:** Remember to set the main fire alarm board and detection adder module jumpers for the appropriate Class (Style) (see *Module Settings on page 27.*), and that the Class (Style) setting is global - for *all* initiating circuits.

### 9.6.1 Class B (Style B) Restore Defaults

1. Set the Config DIP switch to 0111 1111 (restore defaults). Wait five seconds.
2. Press the yellow and red buttons together for five seconds. Wait five seconds.
3. Set the Config DIP switch to 0000 0001 (select Class/Style). Wait five seconds.
4. Press the yellow button until yellow LED turns **off**.
5. Set the Config DIP switch to 0100 0000 (resize system<sup>1</sup>). Wait five seconds.
6. Press the yellow and red buttons together for five seconds. Wait ten seconds.

### 9.6.2 Class A (Style D) Restore Defaults

1. Set the Config DIP switch to 0111 1111 (restore defaults). Wait five seconds.
2. Press the yellow and red buttons together for five seconds. Wait five seconds.
3. Set the Config DIP switch to 0000 0001 (select Style/Class). Wait five seconds.
4. Press the yellow button until yellow LED turns **on**.
5. Set the Config DIP switch to 0100 0000 (resize system<sup>1</sup>). Wait five seconds.
6. Press the yellow and red buttons together for five seconds. Wait 10 seconds.

The system is now ready for further configuration, or configuration mode may be exited if the default settings are acceptable.

## 9.7 Resize System (Set Circuit Adder Module Number and Type)

You may resize the system without performing a full “restore to defaults” if the only change you made to the system was adding or removing an adder display module or a circuit module. Otherwise, perform the “resize system” procedure as a part of a full “restore to defaults”, failure to do so may cause errors while assigning the circuit-specific configuration.

**To resize a system after circuit adder modules were added after existing modules,**

1. Set Config DIP switch to 0100 0000 (resize system<sup>1</sup>). Wait five seconds.
2. Press the yellow and red buttons together for five seconds. Wait ten seconds.

The system is now ready for further configuration, or configuration mode may be exited if the default settings for the added modules are acceptable.



**Note:** The yellow LED indicates how many adder modules (plus the main board) are found, not how many the system is configured to accept. If the number of adder modules found is different from the number the system is configured for, the system will go into a trouble condition.

1. During the resize (set circuit adder module number and type) part of the operation, the yellow LED flashes to indicate how many adder display modules (in addition to the main display module) and circuit adder modules (including the main board) are found. The yellow LED indicates the number of adder display modules followed by the number of circuit adder modules. If no adder modules are found, the LED flashes once; if one adder module is found it flashes twice, and so on. For example, if the system has one adder display module and two circuit adder modules, the yellow LED will flash two times (once for the main display module and once for the adder display module), pause, flash three times (once for the main board and once for each of the adder modules), then pause again. This sequence is then repeated.

## 9.8 Configuration Features

There are two types of features: those that can be turned on and off, and those with multiple settings. For on and off features, press the yellow button to toggle the settings on or off. The yellow LED is illuminated for ON, and not illuminated for OFF. For multiple setting features, the yellow LED flashes a number of times to indicate the setting, then pauses. Use the yellow button to change the selected setting. Be sure to pause for about three seconds after changing the configuration DIP switches or pressing the yellow button to see the results.

**Table 13 Configuration Features**

DIP Switch Position (1-8)	Features	Description
<b>0000 0001</b>	Style D/B (Class A/B) Initiating Circuits	An illuminated yellow LED indicates that all initiating circuits (detection zones) are Class A (Style D). An LED that is off (default) indicates that they are all Class B (Style B). This feature can be checked at any time, but must only be changed as described in 9.6 Restore to Default/Resize (Class A or B) on page 65.
<b>0000 0010</b>	Manual Signal Silence Enable	An illuminated yellow LED (default) indicates that manual silence is enabled.
<b>0000 0011</b>	Fire Drill Enable	An illuminated yellow LED (default) indicates that fire drill is enabled.
<b>0000 0100</b>	Two Stage Operation Enabled	An illuminated yellow LED indicates that the system is set for two stage operation. If the LED is off (default), the panel is configured for single stage operation.
<b>0000 0101</b>	Common Alarm Relay Operation	An illuminated yellow LED indicates that if the system is set for two stage operation, the common alarm relay will only operate during the general alarm stage. If the LED is off (default), the common alarm relay will operate during both stages.
<b>0000 0110</b>	Output Circuit Correlations Enabled	An illuminated yellow LED indicates that the output circuits (indicating circuits and indicating) operate according to any set correlations (see 9.10 Configuring Circuit Correlations on page 70). If the yellow LED is off (default), all output circuits are common alarm; all outputs turn on for any alarm input.
<b>0000 0111</b>	Waterflow and Sprinkler Retard Operation	An illuminated yellow LED indicates that waterflow retard is enabled. If the LED is off (default), it indicates that retard is disabled.
<b>0000 1001</b>	Aux Disc and Programmable Relays	An illuminated yellow LED (default) indicates that correlated relays are disconnected by auxiliary disconnect.
<b>0001 0001</b>	Common Supervisory Relay Action	An illuminated yellow LED indicates that the common supervisory relay will follow the common alarm status. If the yellow LED is off (default), the common supervisory relay will follow the common supervisory status. Use this feature to provide an extra common alarm relay if a common supervisory relay is not needed.

**Table 13 Configuration Features (Continued)**

<b>DIP Switch Position (1-8)</b>	<b>Features</b>	<b>Description</b>
<b>0001 0010</b>	Signal Circuit Isolator Option	An illuminated yellow LED indicates that if a short circuit exists on any indicating circuit and an alarm condition follows, then those indicating circuits will be activated anyway. If the yellow LED is off (default), then under the same conditions, the indicating circuits will not be activated to prevent wasting power. This feature is needed when signal isolator devices are employed so that indicating circuits will be activated even under shorted conditions.
<b>0011 1000</b>	Show Relay Circuits	All display points assigned to relay circuits will be lit.
<b>0000 1010</b>	Signal Silence Inhibit Timer	Yellow LED does not flash = Disabled (default) Yellow LED flashes 1 time = 1 minute (ULC required) Yellow LED flashes 2 times = 2 minutes Yellow LED flashes 3 times = 3 minutes
<b>0000 1011</b>	Auto Signal Silence timer  (This timer cannot be set shorter than either the Auto General Alarm or Signal Silence Inhibit timers, if those timers are enabled)  For UL installations, disable the Auto Signal Silence timer.	Yellow LED does not flash = Disabled (default) Yellow LED flashes 1 time = 5 minute Yellow LED flashes 2 times = 10 minutes Yellow LED flashes 3 times = 15 minutes Yellow LED flashes 4 times = 20 minutes Yellow LED flashes 5 times = 30 minutes
<b>0000 1100</b>	Auto General Alarm Timer  (Leave disabled unless the system is configured for Two Stage operation)	Yellow LED does not flash = Disabled (default) Yellow LED flashes 1 time = 5 minute Yellow LED flashes 2 times = 10 minutes Yellow LED flashes 3 times = 15 minutes Yellow LED flashes 4 times = 20 minutes Yellow LED flashes 5 times = 30 minutes
<b>0000 1101</b>	Audible Indicating Circuit Evacuation Code	Yellow LED flashes 1 time = Continuous Yellow LED flashes 2 times = March Time Yellow LED flashes 3 times = Temporal Code (default) (UL & ULC required) Yellow LED flashes 4 times = California Code
<b>0000 1110</b>	Number of Remote Annunciators	The yellow LED flashes 0 to 8 times to indicate the number of remote annunciators expected by the system. (default 0 flashes)

Table 13 Configuration Features (Continued)

DIP Switch Position (1-8)	Features	Description
0000 1111	PR-300/DACT alarm Transmit Silence Option	An illuminated yellow LED indicates that the alarm transmit signal from the PR-300 or DACT will be silenceable with the activation of the signal silence button. If the yellow LED is off (default), it indicates that the alarm transmit signal from the PR-300 or DACT will not be silenceable.
0001 0000	AC Power Fail Delay Time	<p>The AC Power Fail trouble signal from the PR-300 or the DACT can be delayed when the only trouble on the fire alarm panel is AC power fail.</p> <p>Yellow LED flashes 0 times = No Delay (default)</p> <p>Yellow LED flashes 1 time = 1 Hour</p> <p>Yellow LED flashes 2 times = 2 Hours</p> <p>Yellow LED flashes 3 times = 3 Hours</p>

## 9.9 Configuring Initiating and Indicating Circuits

Initiating circuits (detection zones) and indicating circuits (signal zones) are configured by using the configuration DIP switches to select the desired circuit type function, along with the circuit trouble LEDs and disconnect DIP switches.

### To configure initiating and indicating circuits

1. Select a circuit type by raising the specified DIP switch(es) (see the table below). The yellow trouble LED for each circuit currently configured as that type will illuminate.
2. To configure circuits to be of that selected circuit type, turn on all of the desired circuit disconnect DIP switches (up position) and press the yellow button for about one second. After a short pause, the initiating circuit yellow trouble LEDs will be updated to show the new configuration.
3. Lower all DIP switches to the OFF position and press the System Reset button.



**Notes:** Any subsequent selection of a particular circuit as a different circuit type will supercede the previous selection. Also note that the physical circuit type must be appropriate for the selected circuit type. For example, only indicating circuits can be configured as silenceable strobes.

Be sure to reset circuit disconnect switches to OFF (down position) before attempting to configure any other circuits.

**Table 14 Configuring Initiating and Indicating Circuits**

Config DIP Switch Position (1-8)	Initiating Circuit (Detection Zone) Type	Config DIP Switch Position (1-8)	Indicating Circuit (Signal Zone) Type
<b>0010 0000</b>	Normal (Non-Verified Alarm)	<b>0011 0000</b>	Silenceable Audible Signal
<b>0010 0001</b>	Verified Alarm	<b>0011 0001</b>	Non-Silenceable Audible Signal
<b>0010 0010</b>	Sprinkler Alarm	<b>0011 0010</b>	Silenceable Strobe
<b>0010 0100</b>	Non-Latching Supervisory	<b>0011 0011</b>	Non-Silenceable Strobe
<b>0010 0110</b>	General Alarm		
<b>0010 1000</b>	Trouble Only		
<b>0010 0101</b>	Latching Supervisory		
<b>0010 0111</b>	Property and Building Safety		

For example, if you wanted Class B operation in a system with eight initiating circuits and four indicating circuits (main board only), the first six initiating circuits as normal non-verified alarms, the last two as latching supervisory, and the last indicating circuit as a non-silenceable strobe, you would use the following sequence:

1. Follow 9.6 Restore to Default/Resize (Class A or B) on page 65.
2. Set Config DIP switch to 0010 0000. All eight initiating yellow trouble LEDs should illuminate.
3. Set Config DIP switch to 0010 0101. All eight initiating yellow trouble LEDs should go out.
4. Set the disconnect switches to ON for initiating circuits 7 and 8 only.
5. Press the yellow button for one second. After a pause the yellow trouble LEDs for initiating circuits 7 and 8 should illuminate.
6. Turn off all disconnect switches.
7. Set Config DIP switch to 0011 0000. All four indicating yellow trouble LEDs should illuminate.
8. Set Config DIP switch to 0011 0011. All four indicating yellow trouble LEDs should go out.
9. Set the disconnect switch to ON for indicating circuit four only.
10. Press the yellow button for one second. After a pause the yellow trouble LED for initiating circuit four should illuminate.
11. Turn off all disconnect switches.
12. Exit configuration mode.

## 9.10 Configuring Circuit Correlations

As a working definition for correlations, circuits can be defined as:

- input circuits = initiating circuits (detection zones)
- output circuits = indicating circuits (signal zones), and relay circuits

With the factory default configuration, all outputs are configured to activate with any inputs configured as alarms. If output circuit correlations are enabled (see 9.8 Configuration Features on page 67), outputs must be configured to one or more inputs to activate at all. This configuration is referred to as a correlation. There are two configuration options: correlated individual outputs to one or more inputs, or correlated individual inputs to one or more outputs. Output circuits may be correlated to as many input circuits as desired, and vice-versa.

### 9.10.1 Correlation by Input Circuit

1. Raise the Config DIP switches 2 and 8. Pause for about three seconds.
2. Turn on (up position) only one input circuit's (initiating circuit / detection zone) disconnect switch. If you turn on more than one input circuit disconnect switch at one time, the selected input circuit's yellow trouble LED and the yellow trouble LEDs of any output circuits (indicating circuit / signal zone, or relay circuit) that are already correlated to that input will illuminate, and the function will not operate.

If you require only a correlations check, turn off the switch, then repeat step 2 for the next input circuit that you want to check.

If you would like to set new correlations for the selected input circuit,

3. Turn on (up position) the disconnect switch for desired output circuits.
4. Press the yellow button for one second. After a pause the yellow trouble LEDs for the newly correlated output circuits will illuminate.
5. Lower all DIP switches to the OFF position and press the System Reset button.

### 9.10.2 Correlation by Output Circuit

1. Raise the Config DIP switches 2 and 7. Pause for about three seconds.
2. Turn on (up position) only one output circuit's (indicating circuit / signal zone or relay circuit) disconnect switch. If you turn on more than one input circuit disconnect switch at one time, the selected input circuit's yellow trouble LED and the yellow trouble LEDs of any output circuits (indicating circuit / signal zone, or relay circuit) that are already correlated to that input will illuminate, and the function will not operate.

If you require only a correlations check, turn off the switch, then repeat step 2 for next output circuit that you want to check.

If you would like to set new correlations for the selected output circuit,

3. Turn on (up position) the disconnect switch for desired output circuits.
4. Press the yellow button for one second. After a pause the yellow trouble LEDs for the newly correlated input circuits will illuminate.
5. Lower all DIP switches to the OFF position and press the System Reset button.

At present, only the following types of circuit correlations are possible:

- Alarm circuits (Verified or Non-Verified, Sprinkler or Water-Flow) to indicating circuits or relays.
- General Alarm circuits to indicating (they are automatically correlated to *all* indicating circuits).
- Supervisory circuits (Latching or not) to relays.
- Property and Building Safety circuits to relays.
- Trouble-Only circuits to relays.
- See notes on next page.



**Notes:** The feature called “Output Circuit Correlations Enabled” must be ON for indicating circuit correlations to operate (see 9.8 Configuration Features on page 67), otherwise all indicating circuits will be common alarm. This means that they will all activate with any input circuits configured as alarms. Relay circuits are always enabled for correlations.

If the system is configured as two stage, any second stage / general alarm (caused by the Auto General Alarm timer, the General Alarm button on the front panel or remote annunciator, or by a General Alarm initiating circuit) condition activates *all* indicating circuits whether or not they are correlated.

## 9.11 Display Configuration

The main and adder display modules on the front panel are automatically updated to display all circuits found whenever the function “Resize - Adder Module Number and Type Configuration” is performed. The main display module has dedicated trouble LEDs for the four indicating circuits on the main fire alarm module. The eight initiating circuits (four in Class A mode) also on the main fire alarm module are annunciated on the first column of display points (from top to bottom). Any adder module circuits are displayed after the base system input circuits in the same order as the adder modules have been installed (that is from right to left). For example, if there are two eight-circuit initiating circuit adder modules and one four-circuit indicating circuit adder module, the main display will annunciate 24 initiating circuits followed by four indicating circuits. If the fire alarm control panel is configured for Class A (Style D) initiating circuits, then the number of initiating circuits is cut in half, so that in the example above, there will only be a total of 12 initiating circuits annunciated, followed by the four adder indicating circuits. Refer to Figure 31 on page 50 to see how the first 24 circuits are mapped to display points.

Any configured RA-1000 Series Remote Annunciators automatically match the main fire alarm control panel displays, except that there will be no annunciation of Common Alarm, Common Supervisory, Battery/Charger Trouble, Ground Fault and Four-Signal trouble indicators.

## 10.0 Walk Test Operation

A walk test allows you to verify the initiating circuit wiring in a system. The walk test is a special configuration mode function (function 80 on the configuration DIP switches). Circuits to be tested are identified using the circuit disconnect switches. Activation of any initiating circuit that has been selected for the walk test will cause the audible indicating circuits (not strobes) to activate briefly for a number of short bursts corresponding to the selected circuit number. If the first selected circuit is activated, the indication circuits will sound for one burst. If the second selected circuit is activated, the indication circuits will sound for two bursts, and so on. This means that if, for example, circuits 1, 6, 23, and 32 were selected for the walk test, they would sound with 1, 2, 3, and 4 bursts respectively. The maximum number of circuits that may be set at any one time for a walk test is 15. The burst interval is half a second on half a second off. After the sounding pattern has been sent on the indicating circuits, the initiating circuit is reset and tested again. If it is still active (in alarm) the pattern will be re-sent. Trouble on any initiating circuit selected for the walk test causes the indicating circuits to be activated continuously for 5 seconds.

Alarm verification and water-flow alarm retard operations are disabled on circuits being walk tested. All circuits not selected for the walk test continue to function normally. If a circuit was disconnected before walk test mode was entered and is not selected for the walk test, it remains disconnected while the walk test is active. The walk test operation is disabled if the fire alarm control panel is in alarm or goes into alarm while walk test mode is active.



**Notes:** If a UDACT is used with the system, all walk test events will be reported to the monitoring agency. Instruct the monitoring agency to ignore reported events during the walk test.

If there is no activity for one hour, the system will return to normal operation, but will remain in a trouble condition until the DIP switches are reset and the panel is reset.

# 11.0 Appendix A: RA-1000 Remote Annunciator Panels

## 11.1 RA-1000 Series

The RA-1000 Series of remote annunciators are units with electrical modules and enclosures matching the configurations of the FA-1000 Series Fire Alarm Control Panels. For detailed information see Mircom Documents RA-1000 Manual LT-617, RAM-208 Manual LT-648, RAM-216 Manual LT-658 and MGD-32 Manual LT-847.

### 11.1.1 Models

- **RAM-1032(TZ)** Main Annunciator Chassis with common indicators and controls, and 32-circuit capacity (TZ Version has 32 Trouble LEDs)
- **RAX-1048(TZ)** Adder Annunciator Chassis with 48 circuit capacity
- **RAM-1016(TZ)** Non-Expandable Annunciator Chassis with common indicators and controls, and 16-circuit capacity (TZ Version has 16 Trouble LEDs)
- **RAM-208** Non-Expandable Annunciator Chassis with limited common indicators and controls, and eight-circuit capacity
- **RAM-216** Non-Expandable Annunciator Chassis with limited common indicators and controls, and 16-circuit capacity
- **MGD-32** Main Graphic Annunciator Chassis with common indicators and controls, and 32-circuit capacity
- **AGD-048** Adder Graphic Annunciator Chassis with 48-circuit capacity

### 11.1.2 Enclosures

- **BB-1001** with capacity for one annunciator chassis
- **BB-1002** with capacity for two annunciator chassis
- **BB-1003** with capacity for three annunciator chassis
- **BB-1008** with capacity for eight annunciator chassis
- **BB-1012** with capacity for twelve annunciator chassis



- **Finish:** Painted, textured, off-white (standard) (for other paint available colors and finishes, please contact factory)
- **Material:** 18 G.A. cold roll steel (CRS)

## 12.0 Appendix B: Specifications

### 12.1 MCC-1024-6[SA] and MCC-1024-6ADS Specifications

Table 15 MCC-1024-6[SA] and MCC-1024-6ADS Specifications

MCC-1024-6[SA] and MCC-1024-6ADS Chassis		
<b>General</b>	Micro-controller based design, fully configurable from front panel, full walk test function. Up to two circuit adder modules may be added. Displays and disconnect switches for up to 24 circuits. Optional PR-300 City Tie Module.	
<b>Initiating Circuits</b>	Eight supervised Style B (Class B) or 4 Style D (Class A) initiating circuits; fully configurable. Terminals are labelled <b>INI</b> . initiating circuits are Compatibility ID "A".  Power Limited: 22 VDC, 3 mA standby, 5 mV ripple, 50 mA max. (alarm)	
<b>Indicating Circuits</b>	Four Style Y or Z (Class B or A) indicating circuits; configurable as strobes or audibles. Terminals are labelled <b>IND</b> .  Power Limited: 24 VDC unfiltered, 1.7 amps @ 49 C per circuit 5 A maximum	
<b>Aux. Power Supply.</b>	Terminals are labelled <b>AUX PWR</b> .  Power limited / 24 VDC Filtered (special application) / 1.7 A @ 49° C	
<b>Two Resettable 4-Wire Smoke Supplies</b>	Terminals are labelled <b>4-WIRE</b> .  Power Limited: 22 VDC, 200 mA each max., 300 mA total max, 5 mV ripple	
<b>RS-485 Connection</b>	1 RS-485 Connection for Remote Annunciators or interface to Audio Systems. Terminals are labelled <b>RS485</b> .  Power Limited to 300 mA.	
<b>Electrical ratings</b>	<b>AC Line Voltage</b>	120V 60Hz / 240V 50 Hz 2A / 1A primary
	<b>Power supply ratings</b>	6 Amps. max. (secondary)
	<b>For indicating circuits</b>	24VDC unfiltered, 5 Amps. max.
<b>Auxiliary relays (resistive loads)</b>	Must be connected to a listed power limited source of supply. Terminals are labelled "ALARM, TROUBLE, SUPV".  <b>Common alarm</b> Form C, 1 Amp, 28 VDC <b>Common Supv</b> Form C, 1 Amp, 28 VDC <b>Common Trouble</b> Form C, 1 Amp, 28 VDC	
<b>Battery</b>	<b>Type</b>	24VDC, Gel-Cell/Sealed Lead-Acid
	<b>Charging capability</b>	10Ah to 24Ah batteries
	<b>Current Consumption</b>	standby: 200 mA alarm: 350 mA

**Table 15 MCC-1024-6[SA] and MCC-1024-6ADS Specifications (Continued)**

<b>MCC-1024-6[SA] and MCC-1024-6ADS Chassis</b>		
<b>Compliance</b>	<b>System Model</b>	FA-1000 Series Fire Alarm Control Panel
	<b>System Type</b>	Local, auxiliary (using PR-300), remote protected premises station (using PR-300 or UDACT-300A), central station protected premises (using UDACT-300A).
	<b>Type of Service</b>	A, M, WF, SS
	<b>Type of Signalling</b>	Non-Coded
	<b>Applicable Standards</b>	NFPA 70 and 72, UL 864 R9, ULC-S524, ULC-S527-11, ULC-S559-13

## 12.2 MCC-1024-12SA and MCC-1024-12ADS Specifications

Table 16 MCC-1024-12[SA] and MCC-1024-12ADS Specifications

MCC-1024-12[SA] and MCC-1024-12ADS Chassis		
<b>General</b>	Micro-controller based design, fully configurable from front panel, full walk test function. Up to two circuit adder modules may be added. Displays and disconnect switches for up to 24 circuits. Optional PR-300 City Tie Module.	
<b>Initiating Circuits</b>	Eight supervised Style B (Class B) or 4 Style D (Class A) initiating circuits; fully configurable. Terminals are labelled <b>INI</b> . initiating circuits are Compatibility ID "A".  Power Limited: 22 VDC, 3 mA standby, 5 mV ripple, 50 mA max. (alarm)	
<b>Indicating Circuits</b>	Four Style Y or Z (Class B or A) indicating circuits; configurable as strobes or audibles. Terminals are labelled <b>IND</b> .  Power Limited: 24 VDC unfiltered, 1.7 amps @ 49 C per circuit 5 A maximum	
<b>Aux. Power Supply.</b>	Terminals are labelled <b>AUX PWR</b> .  Power limited / 24 VDC Filtered (special application) / 1.7 A @ 49° C	
<b>Two Resettable 4-Wire Smoke Supplies</b>	Terminals are labelled <b>4-WIRE</b> .  Power Limited: 22 VDC, 200 mA each max., 300 mA total max, 5 mV ripple	
<b>RS-485 Connection</b>	1 RS-485 Connection for Remote Annunciators or interface to Audio Systems. Terminals are labelled <b>RS485</b> .  Power Limited to 300 mA.	
<b>Electrical ratings</b>	<b>AC Line Voltage</b>	120V 60Hz / 240V 50 Hz 4A / 2A primary
	<b>Power supply ratings</b>	12 Amps. max. (secondary)
	<b>For indicating circuits</b>	24VDC unfiltered, 10 Amps. max.
<b>Auxiliary relays (resistive loads)</b>	Must be connected to a listed power limited source of supply. Terminals are labelled "ALARM, TROUBLE, SUPV".  <b>Common alarm</b> Form C, 1 Amp, 28 VDC <b>Common Supv</b> Form C, 1 Amp, 28 VDC <b>Common Trouble</b> Form C, 1 Amp, 28 VDC	
<b>Battery</b>	<b>Type</b>	24VDC, Gel-Cell/Sealed Lead-Acid
	<b>Charging capability</b>	17Ah to 40Ah batteries
	<b>Current Consumption</b>	standby: 200 mA alarm: 350 mA

Table 16 MCC-1024-12[SA] and MCC-1024-12ADS Specifications (Continued)

MCC-1024-12[SA] and MCC-1024-12ADS Chassis		
Compliance	System Model	FA-1000 Series Fire Alarm Control Panel
	System Type	Local, auxiliary (using PR-300), remote protected premises station (using PR-300 or UDACT-300A), central station protected premises (using UDACT-300A).
	Type of Service	A, M, WF, SS
	Type of Signalling	Non-Coded
	Applicable Standards	NFPA 70 and 72, UL 864 R9, ULC-S524, ULC-S527-11, ULC-S559-13

## 12.3 FA-1000 Expander Chassis and System Modules

Table 17 FA-1000 Expander Chassis and System Modules

FA-1000 System Modules and Annunciators		
<b>ECH -1048</b>	Expander Chassis	Up to six circuit adder modules may be added. Displays and disconnect switches for up to 48 circuits.
	Current Consumption	standby: 80 mA / alarm: 100 mA
<b>SGM-1004A</b>	Signal Adder Module	<b>Four Class B or A</b> (Style Y or Z) NAC circuits; configurable as strobes or audibles. Terminals are labelled "IND".
	Power Limited:	24 VDC unfiltered max. 1.7 amps @ 49C per circuit
	Current Consumption	standby: 35 mA / alarm: 150 mA
<b>RM-1008A</b> (resistive loads)	Relay Adder Module	Must be connected to a listed power limited source of supply. Terminals are labelled "RLY". Eight fully configurable Form C NAC. Form C, 1 amp., 28 VDC (resistive loads)
	Current Consumption	standby: 25 mA / alarm: 150 mA

Table 17 FA-1000 Expander Chassis and System Modules (Continued)

FA-1000 System Modules and Annunciators		
<b>PR-300</b>	Polarity Reversal and City Tie Module	<p>Supervised city tie--not power limited</p> <p>24VDC unfiltered, 210 mA max., Trip coil: 14 ohms.</p> <p>Terminals are labelled "City Tie".</p> <p>Polarity reversal power limited</p> <p>Terminals are labelled "Polarity Reversal".</p> <p>24VDC open</p> <p>12VDC @ 3.5 mA, 8 mA max. (shorted)</p> <p><b>Current Consumption</b></p> <p>standby: 35 mA / alarm: 300 mA</p>
<b>DM-1008A</b>	Detection Adder Module	<p>Eight supervised Class B (Style B) or four Class A (Style D) NAC circuits; fully configurable. Terminals are labelled "INI". NAC circuits are Compatibility ID "A".</p> <p><b>Power Limited</b></p> <p>22VDC, 3 mA standby, 5mV ripple, 50 mA max. (alarm)</p> <p><b>Current Consumption</b></p> <p>standby: 80mA</p> <p>alarm: 100 mA</p>
<b>UDACT-300A</b>	Digital Communicator Module	<p>Transmit alarm, supervisory, and trouble to a central monitoring station using Ademco Contact ID and SIA-DCS Protocols.</p> <p><b>Current Consumption</b></p> <p>standby: 45 mA / alarm: 120 mA</p>

## 13.0 Appendix C: Power Supply and Battery Calculations

Use the form below to determine the required main chassis and secondary power supply (batteries).

IMPORTANT NOTICE							
The main AC branch circuit connection for Fire Alarm Control Unit must provide a dedicated continuous power without provision of any disconnect devices. Use #12 AWG wire with 600-volt insulation and proper over-current circuit protection that complies with the local codes. Refer to 12.0 Appendix B: Specifications on page 75 for specifications.							
Power Requirements (All currents are in amperes)							
Model Number	Description	Qty		Standby	Total Standby	Alarm	Total Alarm
MCC-1024-6(S)	Main Chassis (6 amp)		X	0.200	=	0.350	=
MCC-1024-12(S)	Main Chassis (12 amp)		X	0.200	=	0.350	=
MCC-1024-6ADS	Main Chassis (6 amp)		X	0.200	=	0.350	=
MCC-1024-12ADS	Main Chassis (12 amp)		X	0.200	=	0.350	=
ECH-1048	Expander Chassis (48 Circuit Displays)		X	0.200	=	0.020	=
DM-1008A	8 initiating circuit Module		X	0.080	=	0.100	=
RM-1008A	4 indicating circuit Module		X	0.035	=	0.150	=
UDACT-300A	Digital Communicator Mod.		X	0.045	=	0.120	=
PR-300	City Tie Module		X	0.035	=	0.300	=
Two-Wire Smoke Detectors				♦ 0.0001	=	* 0.090	= 0.090
Four-Wire Smoke Detectors			X		=		=
Signal Load (bells, horns, strobes, and etc.)							=
Auxiliary Power Supply for Remote Annunciators						Alarm	=
Total currents (Add above currents)				STANDBY	(A)		(B)

### Total Current Requirement

ALARM (B) \_\_\_\_\_ Amps.

### Battery Capacity Requirement

$([\text{STANDBY (A)}] \times [(24 \text{ or } 60 \text{ Hours})]) + ([\text{ALARM (B)}] \times [* \text{Alarm in Hr.}]) = (\text{C}) \text{ AH}$

### Main Chassis Selection

Select MCC-1024-6(SA) if (B) is less than 12 Amps.

### Battery Selection

Multiply (C) by 1.20 to derate battery.

**Batteries:** BA-110 (10AH) and BA-117(17AH) will fit in the BB-1024  
BA-124(24AH) and BA-140(40AH) will fit in the BB-1072

\* Assuming three initiating circuits in alarm.

\* Use **0.084** for five minutes of alarm or **0.5** for thirty minutes of alarm as a multiplier figure.

♦ Using the **MIR-525/U** 2-wire smoke detector. See **LT-1007** for other available smoke detectors.

## 14.0 Warranty and Warning Information

### WARNING!

Please read this document **CAREFULLY**, as it contains important warnings, life-safety, and practical information about all products manufactured by the Mircom Group of Companies, including Mircom and Secutron branded products, which shall include without limitation all fire alarm, nurse call, building automation and access control and card access products (hereinafter individually or collectively, as applicable, referred to as “**Mircom System**”).

#### NOTE TO ALL READERS:

1. **Nature of Warnings.** The within warnings are communicated to the reader out of an abundance of caution and create no legal obligation for Mircom Group of Companies, whatsoever. Without limiting the generality of the foregoing, this document shall NOT be construed as in any way altering the rights and obligations of the parties, governed by the legal documents that apply in any given circumstance.
2. **Application.** The warnings contained in this document apply to all Mircom System and shall be read in conjunction with:
  - a. the product manual for the specific Mircom System that applies in given circumstances;
  - b. legal documents that apply to the purchase and sale of a Mircom System, which may include the company's standard terms and conditions and warranty statements;
  - c. other information about the Mircom System or the parties' rights and obligations as may be application to a given circumstance.
3. **Security and Insurance.** Regardless of its capabilities, no Mircom System is a substitute for property or life insurance. Nor is the system a substitute for property owners, renters, or other occupants to act prudently to prevent or minimize the harmful effects of an emergency situation. Building automation systems produced by the Mircom Group of Companies are not to be used as a fire, alarm, or life-safety system.

#### NOTE TO INSTALLERS:

All Mircom Systems have been carefully designed to be as effective as possible. However, there are circumstances where they may not provide protection. Some reasons for system failure include the following. As the only individual in contact with system users, please bring each item in this warning to the attention of the users of this Mircom System. Failure to properly inform system end-users of the circumstances in which the system might fail may result in over-reliance upon the system. As a result, it is imperative that you properly inform each customer for whom you install the system of the possible forms of failure:

4. **Inadequate Installation.** All Mircom Systems must be installed in accordance with all the applicable codes and standards in order to provide adequate protection. National standards require an inspection and approval to be conducted by the local authority having jurisdiction following the initial installation of the system and following any changes to the system. Such inspections ensure installation has been carried out properly.
5. **Inadequate Testing.** Most problems that would prevent an alarm a Mircom System from operating as intended can be discovered by regular testing and maintenance. The complete system should be tested by the local authority having jurisdiction immediately after a fire, storm, earthquake, accident, or any kind of construction activity inside or outside the premises.

The testing should include all sensing devices, keypads, consoles, alarm indicating devices and any other operational devices that are part of the system.

## NOTE TO USERS:

All Mircom Systems have been carefully designed to be as effective as possible. However, there are circumstances where they may not provide protection. Some reasons for system failure include the following. The end user can minimize the occurrence of any of the following by proper training, testing and maintenance of the Mircom Systems:

6. **Inadequate Testing and Maintenance.** It is imperative that the systems be periodically tested and subjected to preventative maintenance. Best practices and local authority having jurisdiction determine the frequency and type of testing that is required at a minimum. Mircom System may not function properly, and the occurrence of other system failures identified below may not be minimized, if the periodic testing and maintenance of Mircom Systems is not completed with diligence and as required.
7. **Improper Operation.** It is important that all system users be trained in the correct operation of the alarm system and that they know how to respond when the system indicates an alarm. A Mircom System may not function as intended during an emergency situation where the user is unable to operate a panic or emergency switch by reason of permanent or temporary physical disability, inability to reach the device in time, unfamiliarity with the correct operation, or related circumstances.
8. **Insufficient Time.** There may be circumstances when a Mircom System will operate as intended, yet the occupants will not be protected from the emergency due to their inability to respond to the warnings in a timely manner. If the system is monitored, the response may not occur in time enough to protect the occupants or their belongings.
9. **Carelessness or Safety Hazards.** Moreover, smoke detectors may not provide timely warning of fires caused by carelessness or safety hazards such as smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits or children playing with matches or arson.
10. **Power Failure.** Some Mircom System components require adequate electrical power supply to operate. Examples include: smoke detectors, beacons, HVAC, and lighting controllers. If a device operates only by AC power, any interruption, however brief, will render that device inoperative while it does not have power. Power interruptions of any length are often accompanied by voltage fluctuations which may damage Mircom Systems or other electronic equipment. After a power interruption has occurred, immediately conduct a complete system test to ensure that the system operates as intended.
11. **Battery Failure.** If the Mircom System or any device connected to the system operates from batteries it is possible for the batteries to fail. Even if the batteries have not failed, they must be fully charged, in good condition, and installed correctly. Some Mircom Systems use replaceable batteries, which have a limited life-span. The expected battery life is variable and in part dependent on the device environment, usage and type. Ambient conditions such as high humidity, high or low temperatures, or large temperature fluctuations may reduce the expected battery life. Moreover, some Mircom Systems do not have a battery monitor that would alert the user in the event that the battery is nearing its end of life. Regular testing and replacements are vital for ensuring that the batteries function as expected, whether or not a device has a low-battery monitor.
12. **Physical Obstructions.** Motion sensors that are part of a Mircom System must be kept clear of any obstacles which impede the sensors' ability to detect movement. Signals being communicated by a Mircom System may not reach the receiver if an item (such as metal, water, or concrete) is placed on or near the radio path. Deliberate jamming or other inadvertent radio signal interference can also negatively affect system operation.

13. **Wireless Devices Placement Proximity.** Moreover all wireless devices must be a minimum and maximum distance away from large metal objects, such as refrigerators. You are required to consult the specific Mircom System manual and application guide for any maximum distances required between devices and suggested placement of wireless devices for optimal functioning.
14. **Failure to Trigger Sensors.** Moreover, Mircom Systems may fail to operate as intended if motion, heat, or smoke sensors are not triggered.
  - a. Sensors in a fire system may fail to be triggered when the fire is in a chimney, walls, roof, or on the other side of closed doors. Smoke and heat detectors may not detect smoke or heat from fires on another level of the residence or building. In this situation the control panel may not alert occupants of a fire.
  - b. Sensors in a nurse call system may fail to be triggered when movement is occurring outside of the motion sensors' range. For example, if movement is occurring on the other side of closed doors or on another level of the residence or building the motion detector may not be triggered. In this situation the central controller may not register an alarm signal.
15. **Interference with Audible Notification Appliances.** Audible notification appliances may be interfered with by other noise sources such as stereos, radios, televisions, air conditioners, appliances, or passing traffic. Audible notification appliances, however loud, may not be heard by a hearing-impaired person.
16. **Other Impairments.** Alarm notification appliances such as sirens, bells, horns, or strobes may not warn or waken a sleeping occupant if there is an intervening wall or door. It is less likely that the occupants will be alerted or awakened when notification appliances are located on a different level of the residence or premise.
17. **Software Malfunction.** Most Mircom Systems contain software. No warranties are provided as to the software components of any products or stand-alone software products within a Mircom System. For a full statement of the warranties and exclusions and limitations of liability please refer to the company's standard Terms and Conditions and Warranties.
18. **Telephone Lines Malfunction.** Telephone service can cause system failure where telephone lines are relied upon by a Mircom System. Alarms and information coming from a Mircom System may not be transmitted if a phone line is out of service or busy for a certain period of time. Alarms and information may not be transmitted where telephone lines have been compromised by criminal tampering, local construction, storms or earthquakes.
19. **Component Failure.** Although every effort has been made to make this Mircom System as reliable as possible, the system may fail to function as intended due to the failure of a component.
20. **Integrated Products.** Mircom System might not function as intended if it is connected to a non-Mircom product or to a Mircom product that is deemed non-compatible with a particular Mircom System. A list of compatible products can be requested and obtained.

## Warranty

**Purchase of all Mircom products is governed by:**

<https://www.mircom.com/product-warranty>

<https://www.mircom.com/purchase-terms-and-conditions>

<https://www.mircom.com/software-license-terms-and-conditions>

