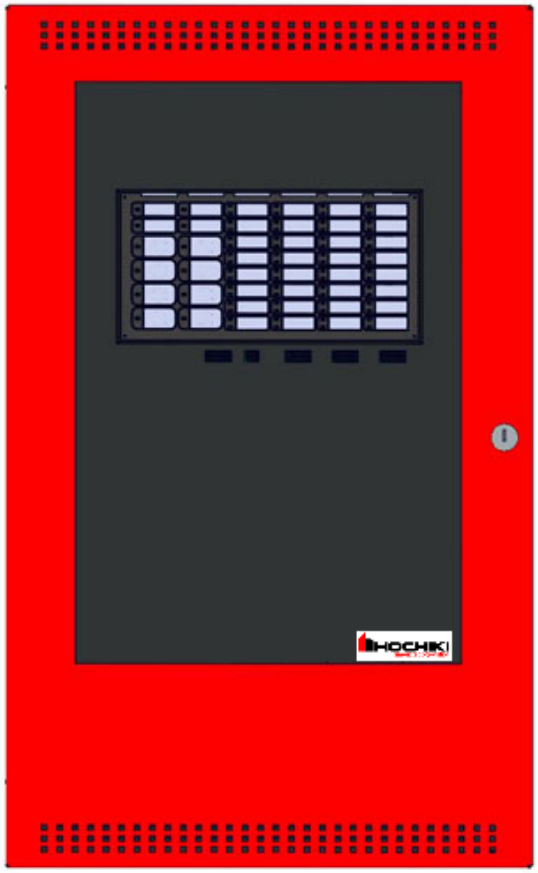
HCP 1000 SERIES

Microprocessor Based - Fire Alarm Control Panel

INSTALLATION and OPERATION MANUAL



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1.0 Introduction

1.1 About the HCP 1000

Hochiki's HCP1000 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.

1.1.1 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
- Configurable Signal Silence Inhibit, Auto Signal Silence, Two-Stage Operation, One-Man Walk Test
- 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 HRA-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 and flush mountable enclosures

1.1.2 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
	HMCC-1024-6DS, HMCC-1024-12DS	Main fire alarm chassis with eight Style B / four Style D initiating circuits, four Style Y or Z indicating circuits, and a 6 ampere power supply. For more information see Appendix C: Specifications on page 64. The HMCC-1024-12DS is the same as the HMCC-1024-6DS except it has a 12 ampere power supply. These chassis' are mounted into the HBBX-1024DS.
	HMCC-1024-12XT	Larger main fire alarm chassis with eight Style B / four Style D initiating circuits, four Style Y or Z indicating circuits, and a 12 ampere power supply. For more information see Appendix C: Specifications on page 64. The HMCC-1024-12XT is expandable up to eight adder modules of any type and comes with a 48 zone adder module. This chassis is mounted into the HBBX-1024XT.

2.2 Circuit Adder Modules

	Model	Description
	HDM-1008	Eight detection circuit modules
	HSGM-1004	Four signal circuit modules
	HRM-1008	Eight relay circuit modules

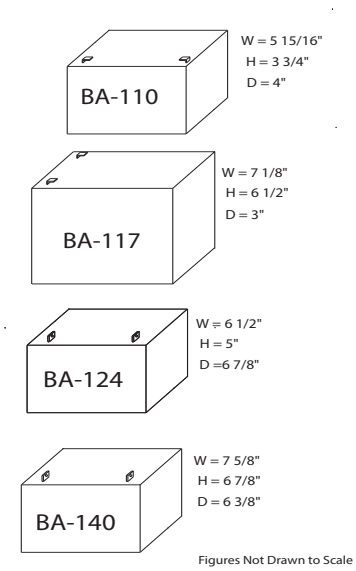
2.3 Auxiliary Adder Models

	Model	Description
	HPR-300	Polarity Reversal and City Tie Module
	HDACT-9100	Digital Alarm Communicator Module

2.4 Enclosures

	Model	Description
	HBBX-1024DS	Universal Enclosure includes the backbox and door. Color is all black.
	HBBX-1024XTDS	Extended Enclosure includes the backbox and door. Color is all black.

2.5 Batteries

	Model	Description
	12-volt batteries (2 required for 24 volts).	10 to 40AH Batteries.

2.6 Remote Annunciators

	Model	Description
	HRA-1000 Series	Remote multiplex annunciator panels

2.7 HCP-1008EDS Fire Alarm Control Panel Kit

For all other combinations, components are ordered separately.

	Model	Description
	HCP-1008EDS	Expandable 8 Zone Fire Alarm kit comes complete with eight Class B (or four Class A) initiating and four (Class A or B) indicating circuits, expandable to 24 circuits, six amp power supply. Includes the HMCC-1024-6DS Main Chassis in a HBB-1024DS enclosure.

2.8 HCP 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

2.9 Maximum Number of Circuit Adder Modules that may be Installed

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

Main Chassis Type	Number of Adders
HMCC-1024-6DS or HMCC-1024-12DS	Two adder modules of any type.
HMCC-1024-12XT includes a 48 zone adder module	Eight adder modules of any type.

The maximum number of each adder module type is outlined in the following table.

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

Notes: Any HCP 1000 System may have a HPR-300 or HDACT-9100 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

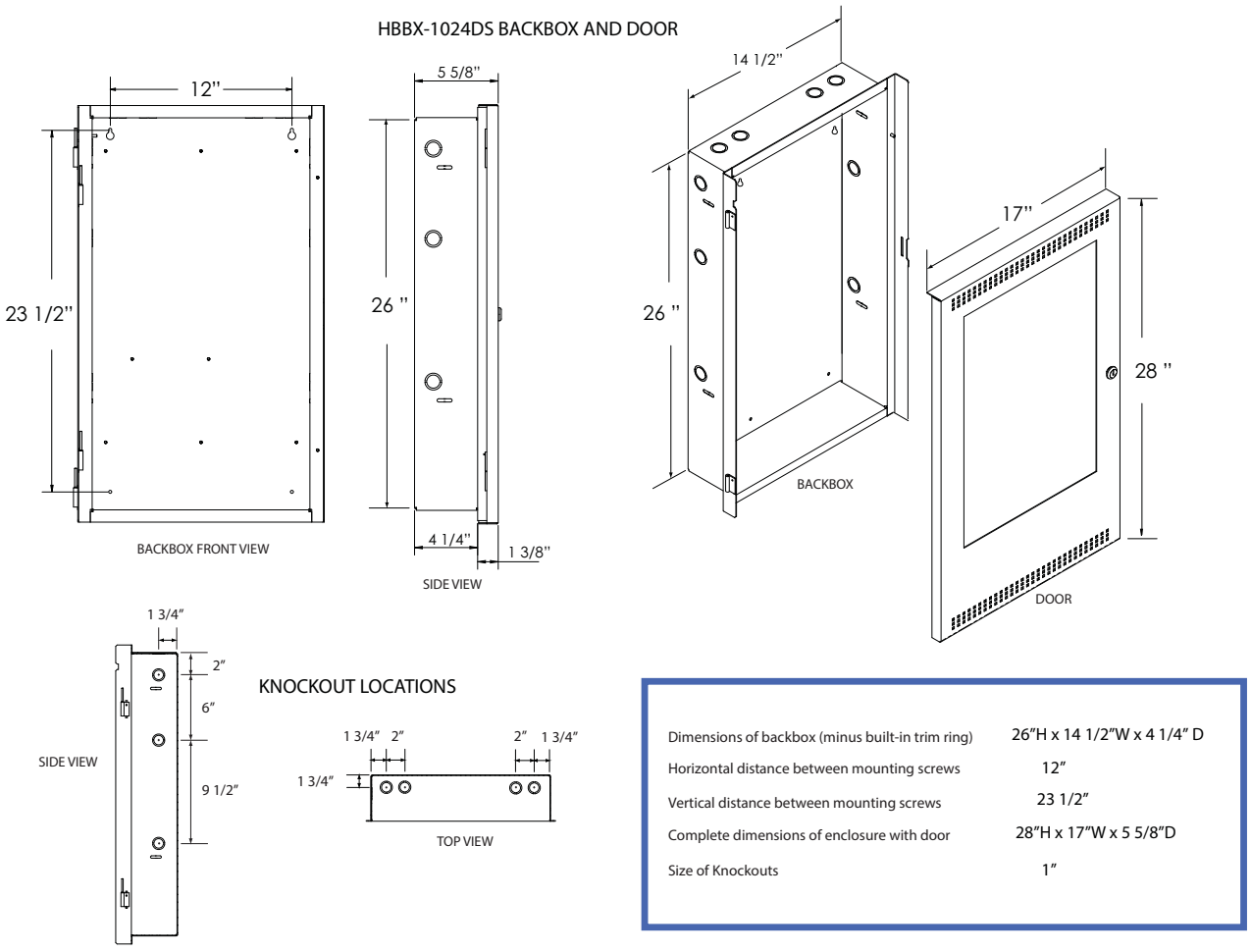
Install the enclosure as shown for the HBBX-1024XT in Figure 1.

3.1 HBBX-1024DS Mechanical Installation

The HBBX-1024DS is suitable for flush or surface mounting, since it has a built-in trim ring.

Dimensions of Enclosure (minus built in trim ring)	26”H x 14 1/2”W x 4 1/4”D
Distance between horizontal mounting screws	12”
Distance between vertical mounting screws	23 1/2”
Complete dimensions of enclosure with door	28”H x 17”W x 5 5/8”D

Figure 1 HBBX-1024DS Installation Instructions and Dimensions



Dimensions of backbox (minus built-in trim ring)	26”H x 14 1/2”W x 4 1/4” D
Horizontal distance between mounting screws	12”
Vertical distance between mounting screws	23 1/2”
Complete dimensions of enclosure with door	28”H x 17”W x 5 5/8”D
Size of Knockouts	1”

3.2 HBBX-1024XT Mechanical Installation

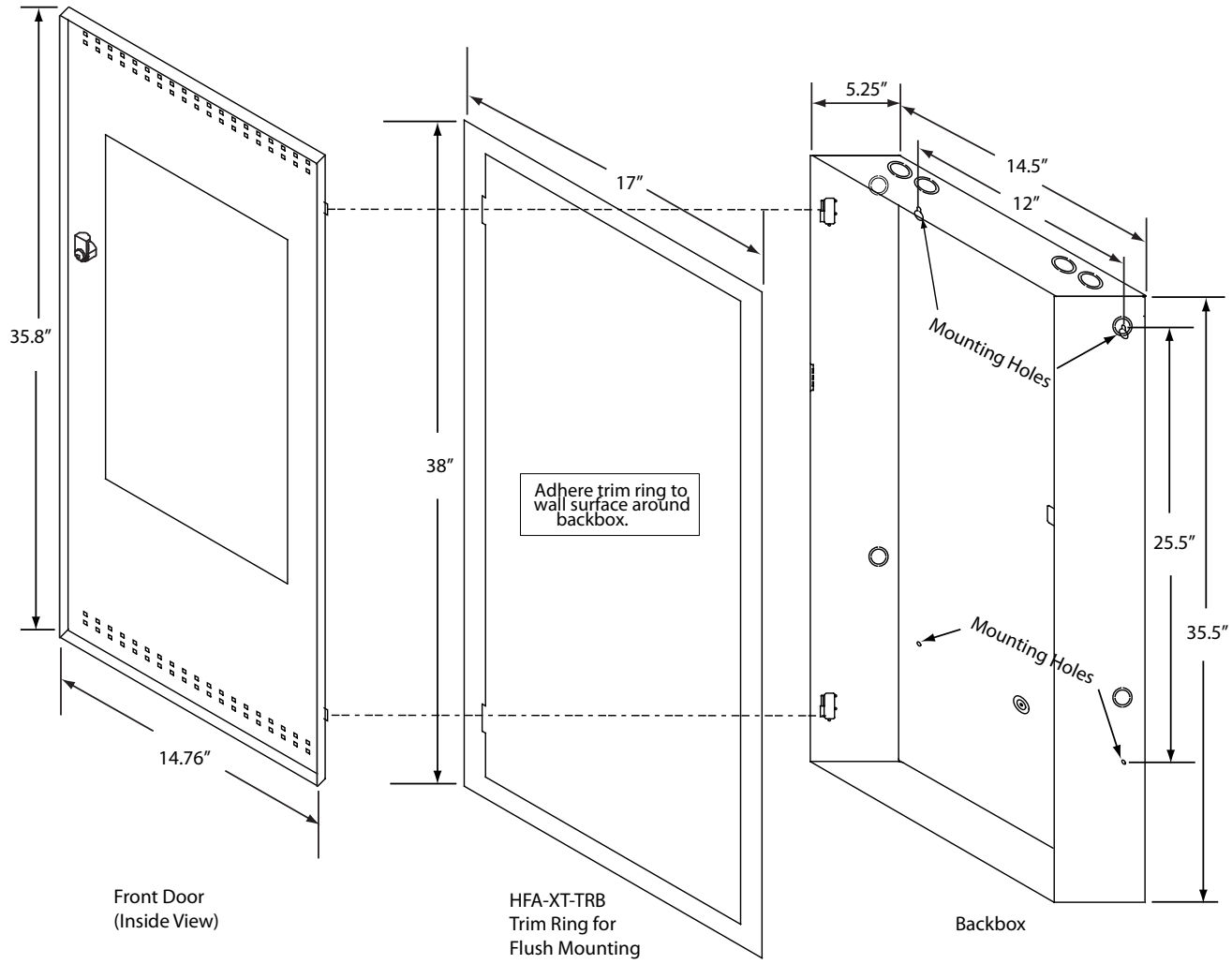


Figure 2 HBBX-1024XT Flush or Surface Enclosure Installation and Dimensions

3.3 Main Chassis Installation

To install the main chassis

1. Install the main chassis in the HBBX-1024DS backbox as shown in Figure 3 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.

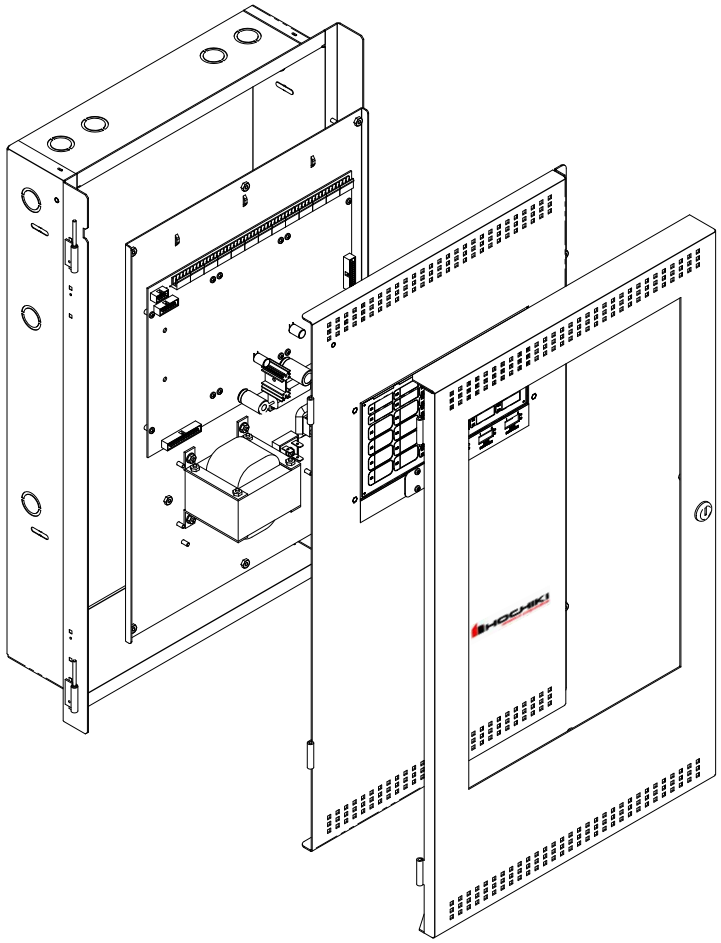


Figure 3 Main Chassis Installation

3.4 Main and Expander Chassis Installation

To install the expander chassis

1. Install the main and expander chassis into the HBBX-1024XT enclosure, as shown in Figure 4, 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.

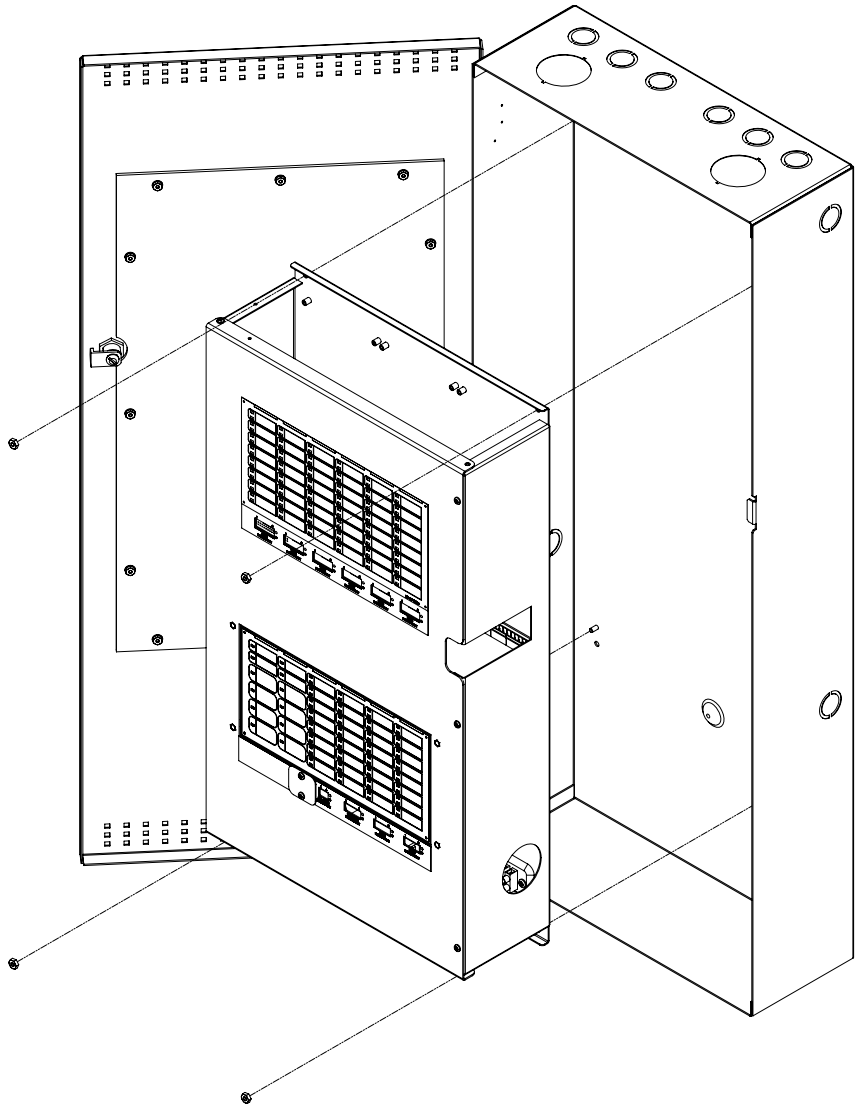


Figure 4 Expander Chassis Installation

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.

4.0 Module Mounting Locations

The main chassis in a HBBX-1024DS or HBBX-1024XT 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 HPR-300 City Tie Module or the HDACT-9100 Digital Communicator may be added on the left side, as shown in *Figure 7 on page 15*. 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 45.) 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 Module Settings on page 16.**

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

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 Module Settings on page 16.

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 HBBX-1024DS and HBBX-1024XT Main Chassis Mounting Locations

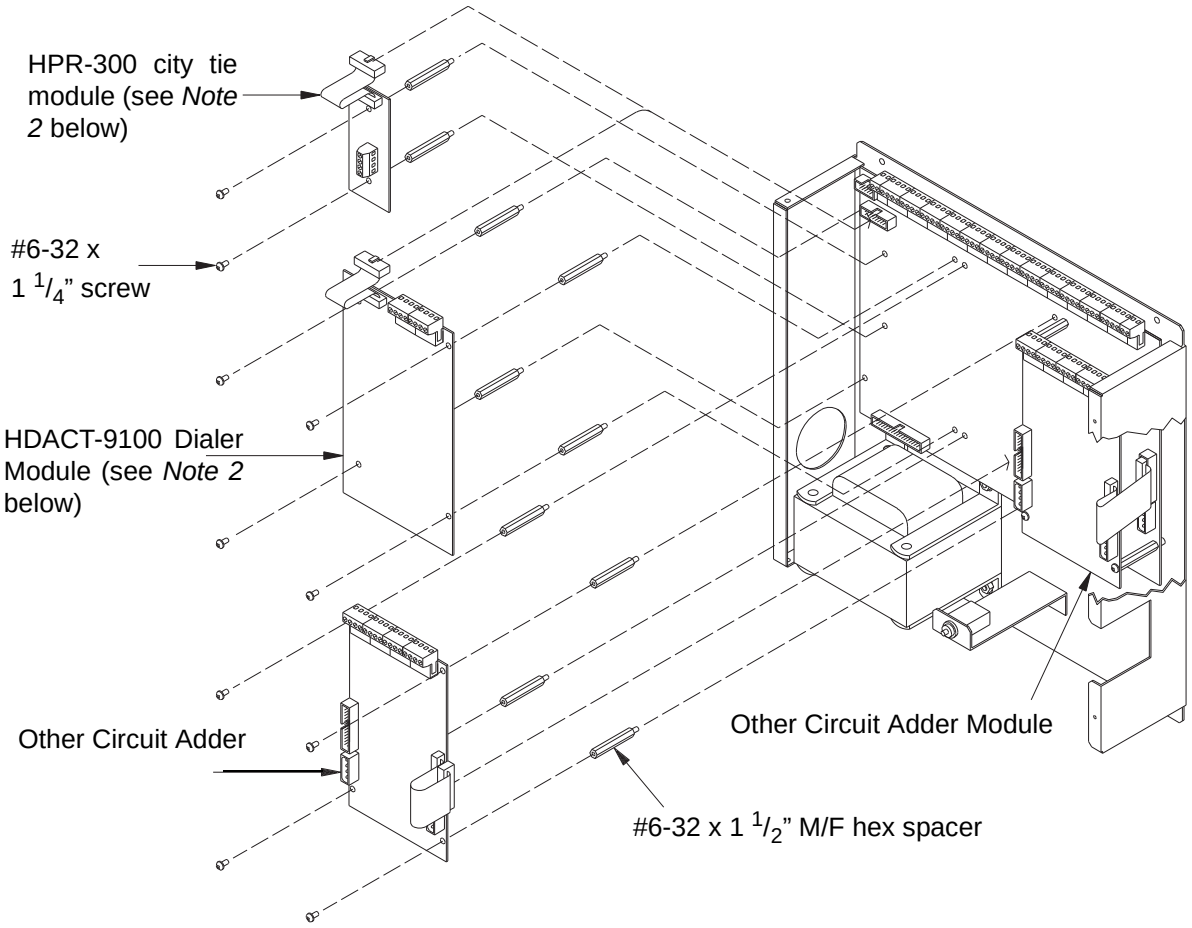


Figure 5 HBBX-1024DS and HBBX-1024XT Main Chassis Mounting Locations

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

- HDM-1008 Detection Circuit Module
- HSGM-1004 Signal Circuit Module
- HRM-1008 Relay Circuit Module

To Install Circuit adder modules

1. Install circuit adder modules from right to left using the supplied stand-offs (*Figure 7 on page 15*).
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 Module Settings on page 16).
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 Module Settings on page 16).

4.2 HBBX-1024XT Expansion Chassis Mounting Locations

The HBBX-1024XT enclosure with a 48 zone adder module and 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 6 below.

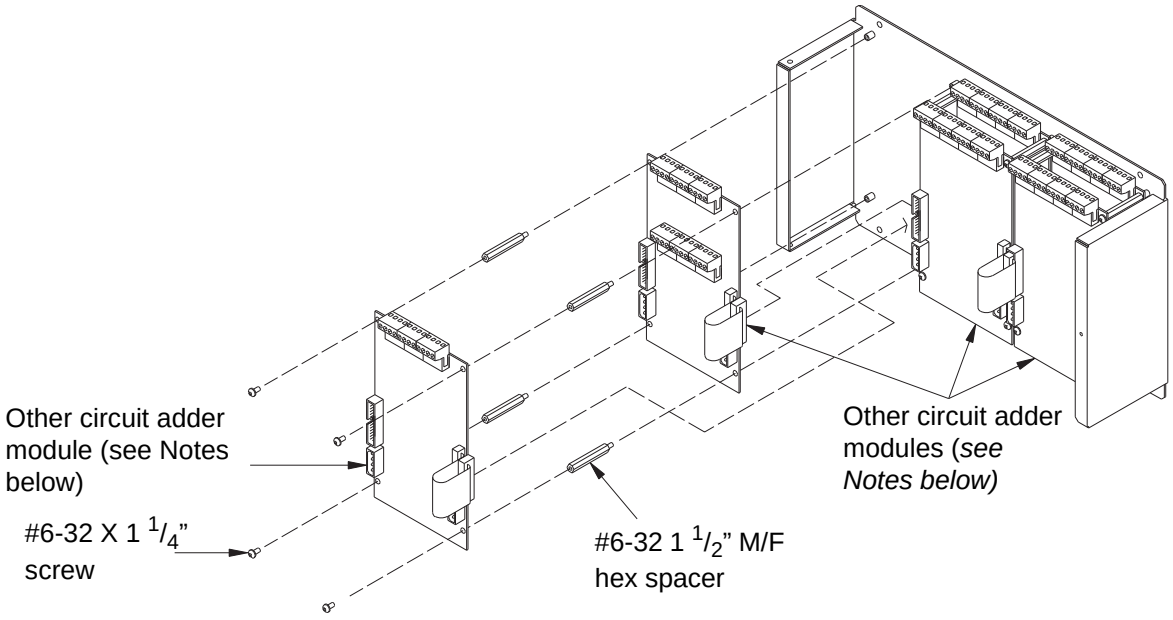
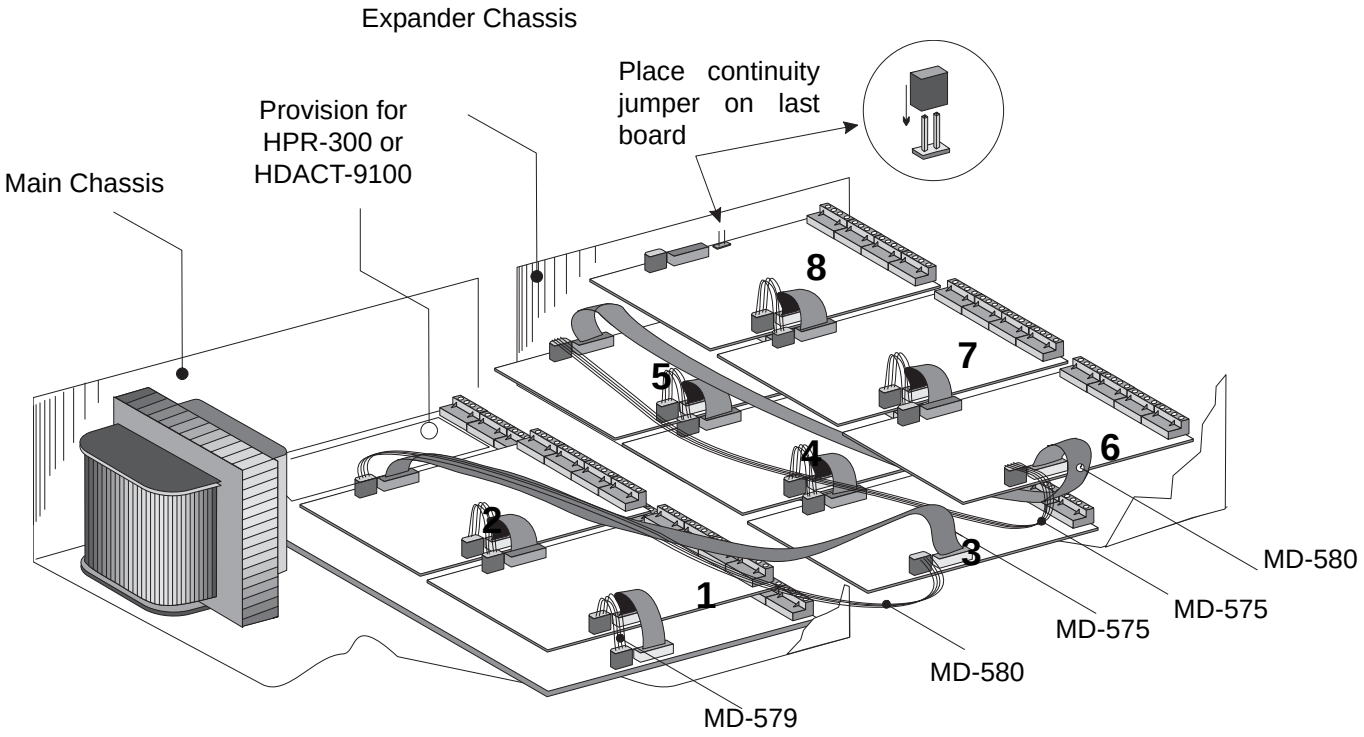


Figure 6 HBBX-1024XT Expansion Chassis Mounting Locations

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

- HDM-1008 Detection Circuit Module
- HSGM-1004 Signal Circuit Module
- HRM-1008 Relay Circuit Module

4.3 Circuit Adder Mounting Details



MD-575 Long Ribbon Cable

MD-579 Short Power Cable

MD-580 Long Power Cable

Figure 7 Circuit Adder Mounting Details

5.0 Module Settings

5.1 Main Fire Alarm Module

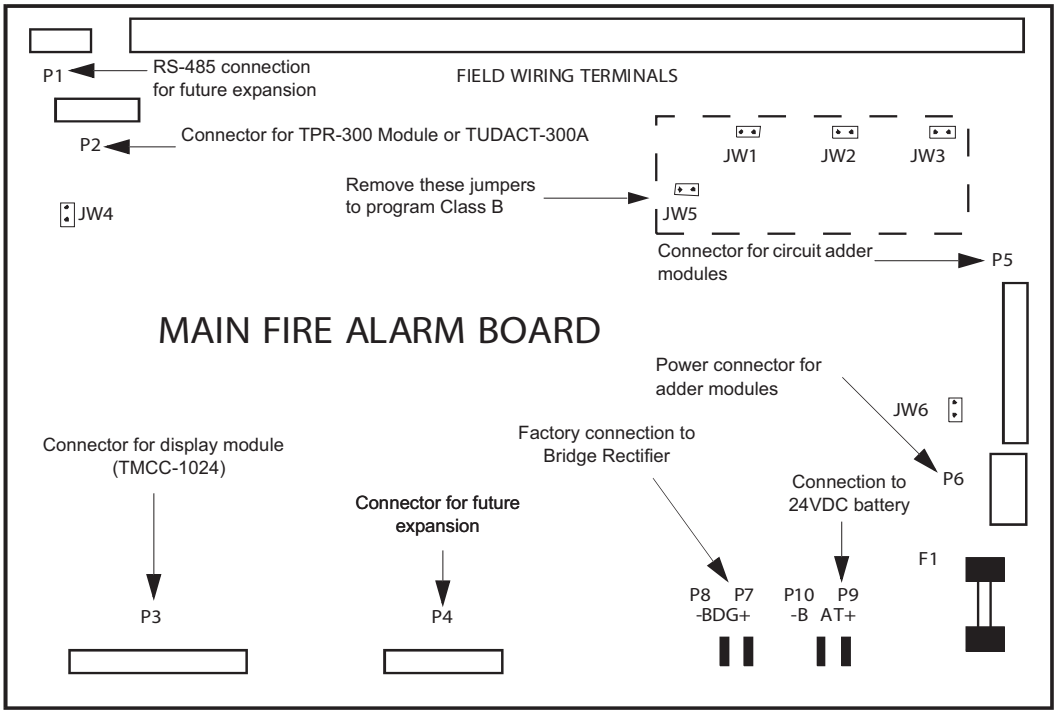


Figure 8 Main Fire Alarm Module

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 HPR-300 Module or HDACT-9100 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.

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
HMCC-1024-6DS	8 Style B / 4 Style D	4 Style Y or Z	8/4 (Style B / D)
HMCC-1024-12DS/-12XT	8 Style B / 4 Style D	4 Style Y or Z	8/4 (Style B / D)

5.2 HMCC-1024-6DS, HMCC-1024-12DS/-12XT Main Display Module

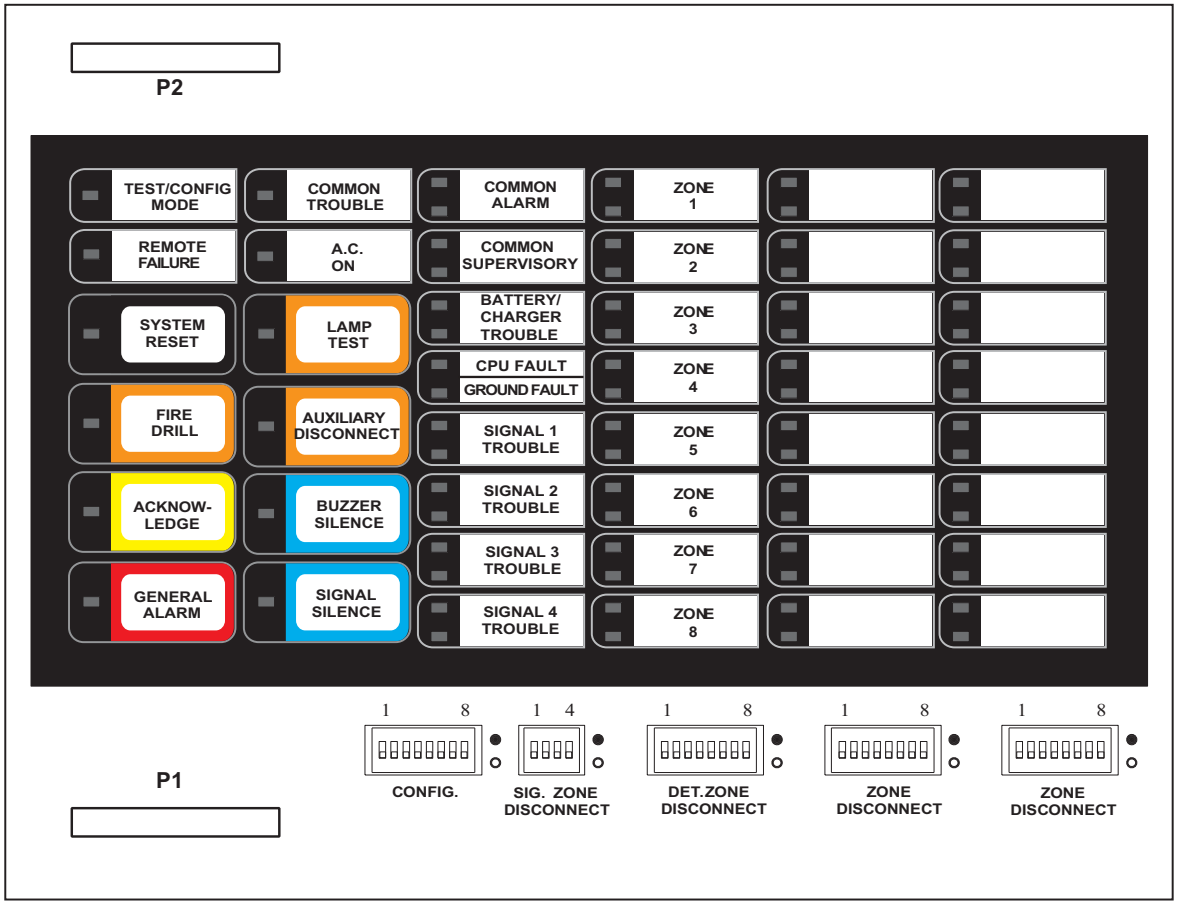


Figure 9 Main Display Module (HMCC-1024-6DS, HMCC-1024-12DS/-12XT)

5.2.1 Connectors

P1	Cable connects to **P3** of main fire alarm module.
P2	Connection to **P1** of the 48 zone adder module if used.
SW1 to SW5	See System Configuration on page 45 and Indicators, Controls, and Operation on page 35.

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	
HMCC-1024-6DS	24	The main display has dedicated display points for the eight initiating circuits and four indicating circuits that are located on the main board.
HMCC-1024-12DS/-12XT	24	

5.3 48 Zone Adder Display Module

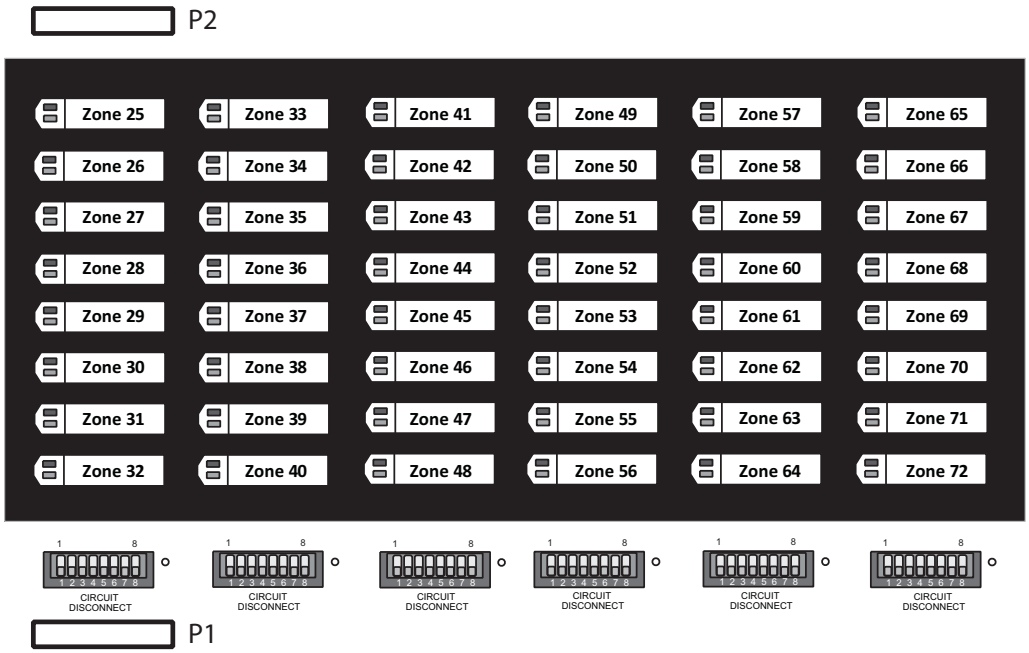


Figure 10 48 Zone Adder Module

5.3.1 Connectors

P1	Cable connects to **P2** of main display module.
P2	Not used.
SW1 to SW6	See System Configuration on page 45 and Indicators, Controls, and Operation on page 35.

The adder display module provides 48 display points:

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 HDM-1008 Detection Adder Module

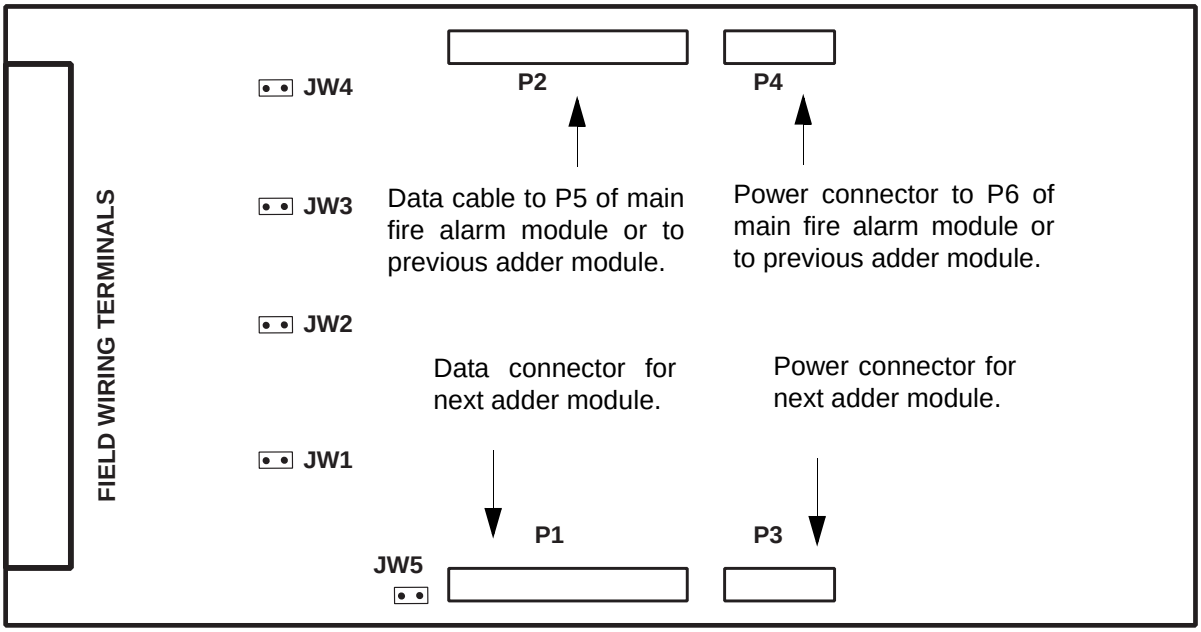


Figure 11 Detection Adder Module (Model HDM-1008)

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

5.5 HSGM-1004 Signal Adder Module

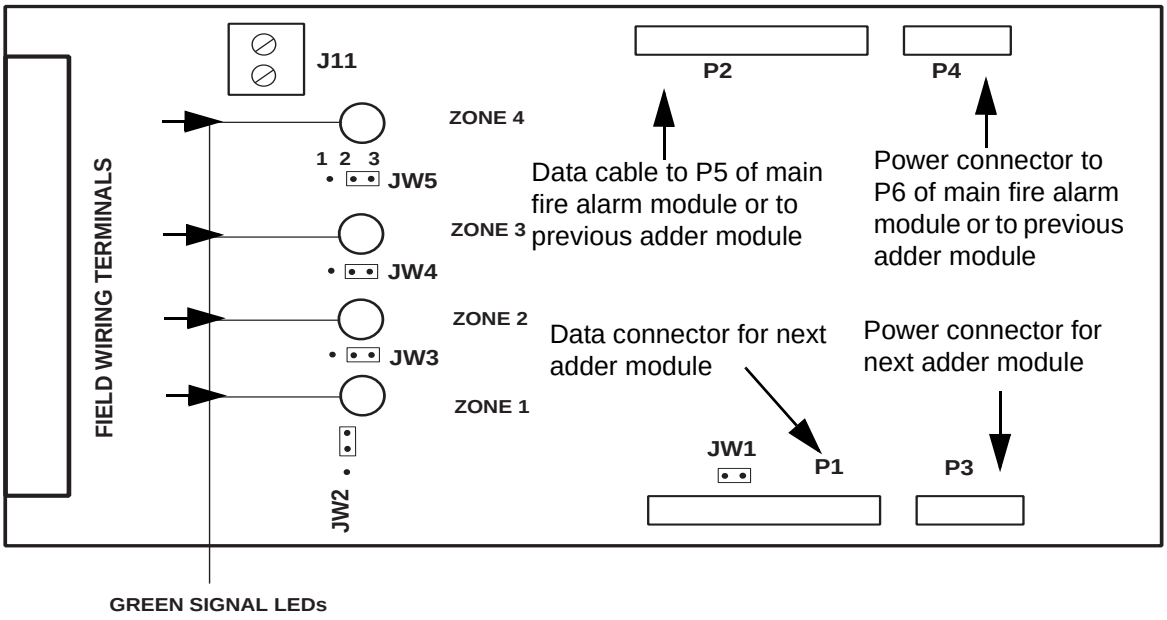


Figure 12 Signal Adder Module (Model HSGM-1004)

5.5.1 Jumpers

JW1	Remove continuity jumper if there are any more adder modules installed.
JW2	Leave jumper on pins 2 and 3 for Zone 1.
JW3	Leave jumper on pins 2 and 3 for Zone 2.
JW4	Leave jumper on pins 2 and 3 for Zone 3.
JW5	Leave jumper on pins 2 and 3 for Zone 4.
JW11	NOT USED

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

The HSGM-1004 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.

5.6 HRM-1008HRM-1008 Relay Adder Module

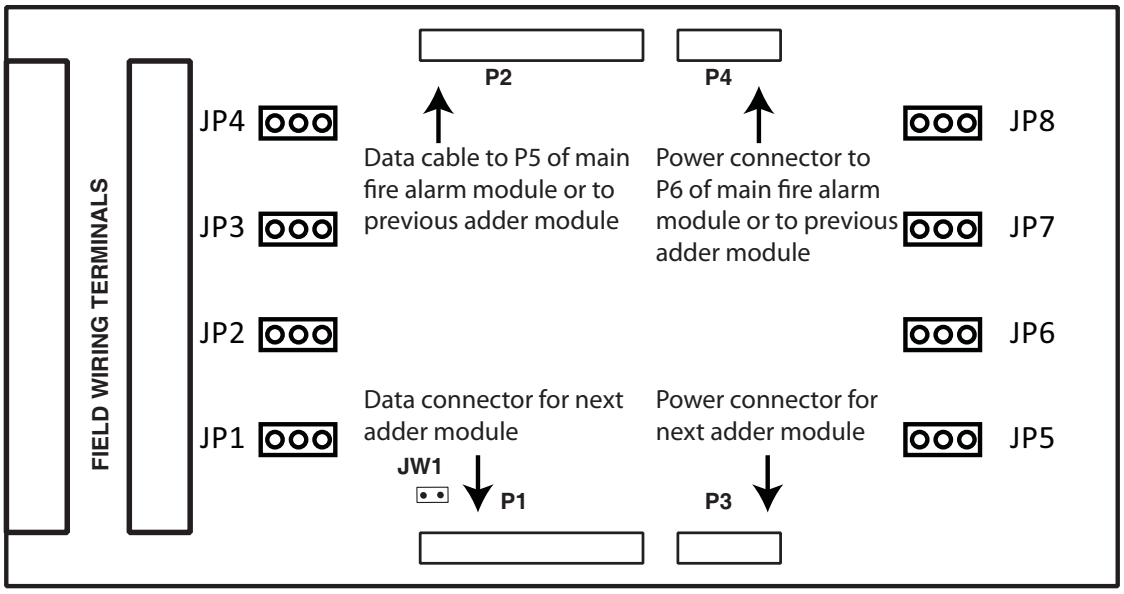


Figure 13 Relay Adder Module (Model HRM-1008)

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 HRM-1008 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 HDACT-9100 Digital Communicator Module

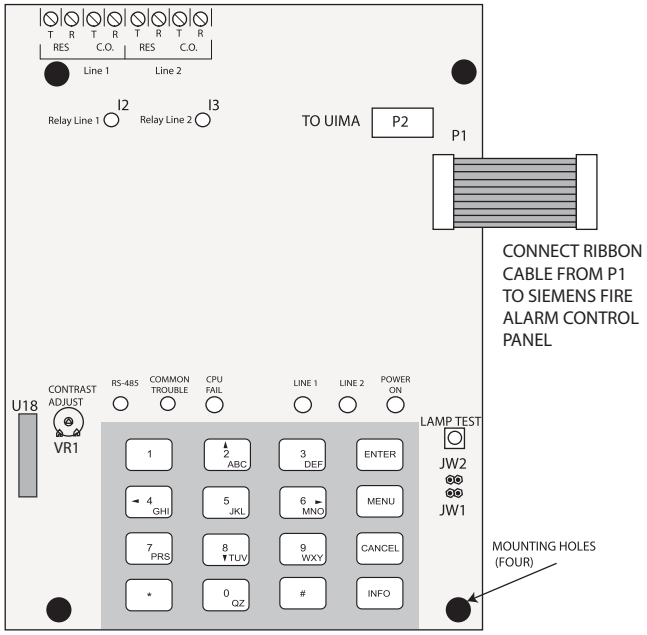


Figure 14 Digital Communicator Module (Model HDACT-9100)

Table 2 Cable Connectors and Miscellaneous

P1	Ribbon Cable for connecting to Hochiki Fire Alarm Control Panel (FACP).
P2	RS-232C/RS-485 Connection for computer configuration.
U18	Connector for CFG-300 Configuration Tool.
Lamp Test button	Press and hold this button to test all the HDACT-9100 LEDs and LCD display.
UR1 Potentiometer	This potentiometer is for adjustment of the CFG-300 LCD contrast.

The following table lists all the LEDs located on the HDACT-9100 board and states the function of each LED.

Table 3 HDACT-9100 List of LEDs and their Functions

Relay Line 1	Located below Line 1 terminal block. When Line 1 relay is energized, this green LED will illuminate
Relay Line 2	Located below Line 2 terminal block. When Line 2 relay is energized, this green LED will illuminate.
RS-485	Status LED for communication, will flash when RS-485 communication is active.
Common Trouble	Steady amber for any troubles on the Fire Alarm panel or HDACT-9100.
CPU Fail	Steady amber for any on board CPU trouble.
Telephone Line 1	Telephone status indicator LED; Red when the line is in use, Amber when there is a line trouble.
Telephone Line 2	Telephone status indicator LED; Red when the line is in use, Amber when there is a line trouble.

Table 3 HDACT-9100 List of LEDs and their Functions (Continued)

Power ON	Green LED is ON steady when power is supplied to the board.

Table 4 Jumpers

Jumper	Function
JW1	Normally open. Place jumper here and power down the HDACT-9100 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.
JW2	Normally open to BLOCK remote configuration via modem, PC with a UIMA converter module or using the LCD and keypad at the HDACT-9100. 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 city module is installed.

Please see the HDACT-9100 Installation and Operation Manual (LT-888HOC) for more information.

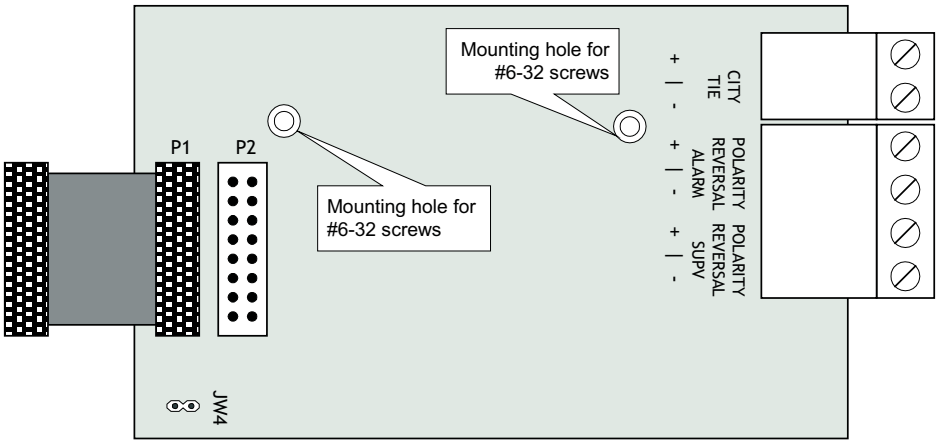


Figure 15 Polarity Reversal and City Tie Module (Model HPR-300)

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 HPR-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 System Configuration on page 45).

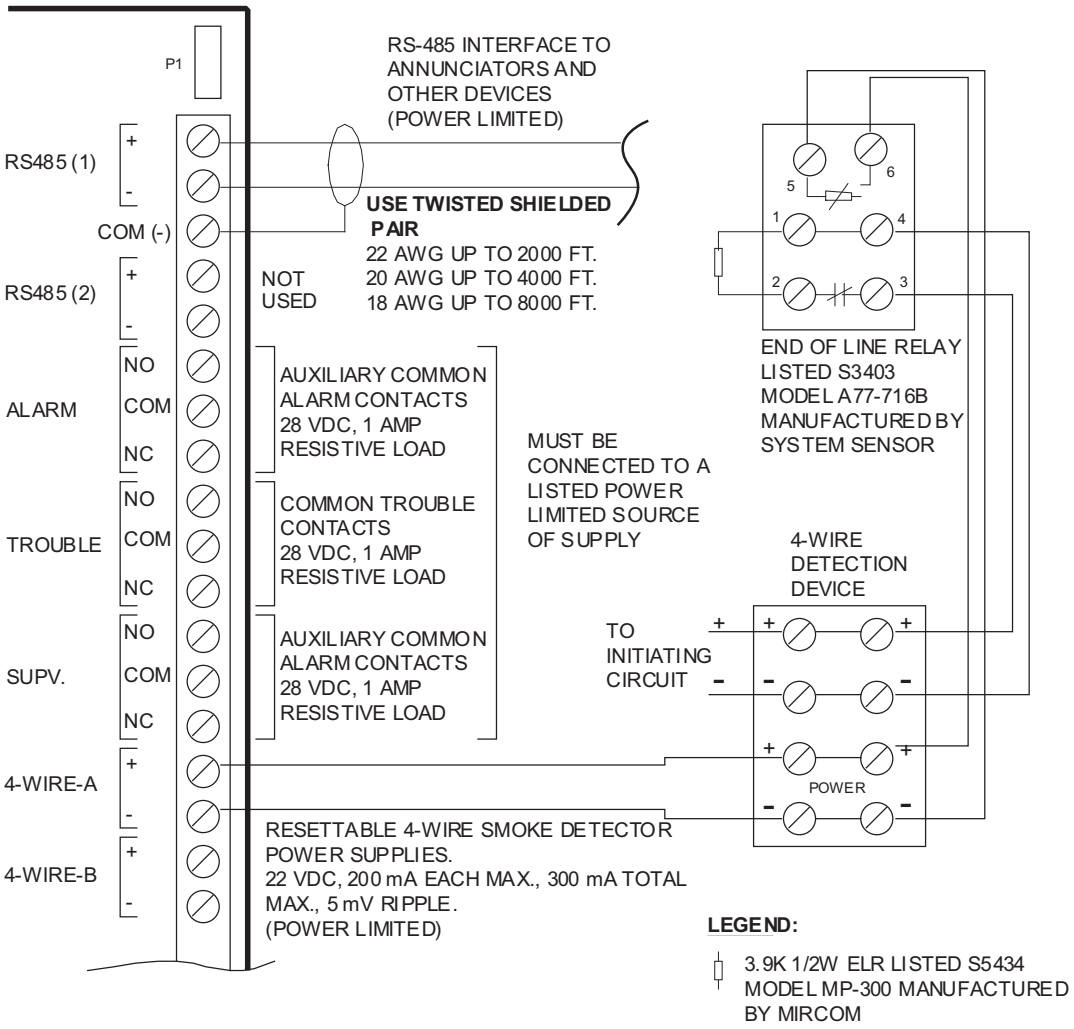
The trouble transmit signal to the HPR-300 can be programmed to delay AC power fail for zero, 1, 2, 3 hours if this is the only system trouble (see System Configuration on page 45).

The HPR-300 does not require any display points.

6.0 Field Wiring

6.1 Main Fire Alarm Module Terminal Connections

Wire devices to terminals as shown in Figure 16 and Figure 17. For more information see Wiring Tables and Information on page 32, Appendix B: Device Compatibility List on page 58, and Appendix C: Specifications on page 64.



Attention: Do not exceed 5 amps total current for main chassis HMCC-1024-6DS indicating circuits, and 10 amps for main chassis HMCC-1024-12DS,-12XT.

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 16 Main Fire Alarm Module Terminal Connections

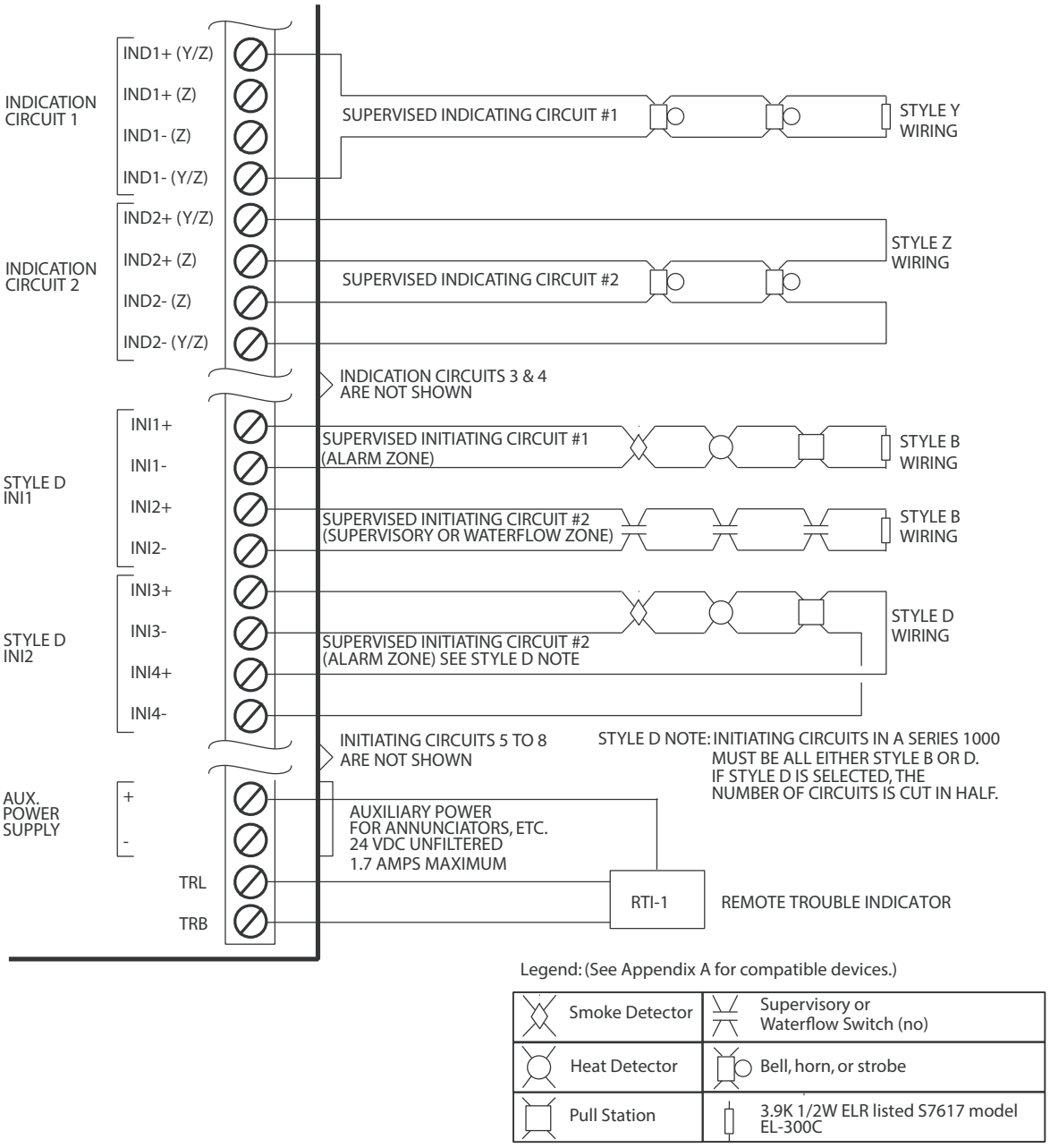


Figure 17 Main Fire Alarm Module Terminal Connections (continued)

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 end-of-line relay model A77-716B (manufactured by System Sensor as shown connected in Figure 17.

6.2 Detection Module (HDM-1008) Terminal Connections

Wire devices to terminals as shown in Figure 18 below. For more information see Wiring Tables and Information on page 32, Appendix B: Device Compatibility List on page 58 for compatible devices, and Appendix C: Specifications on page 64.

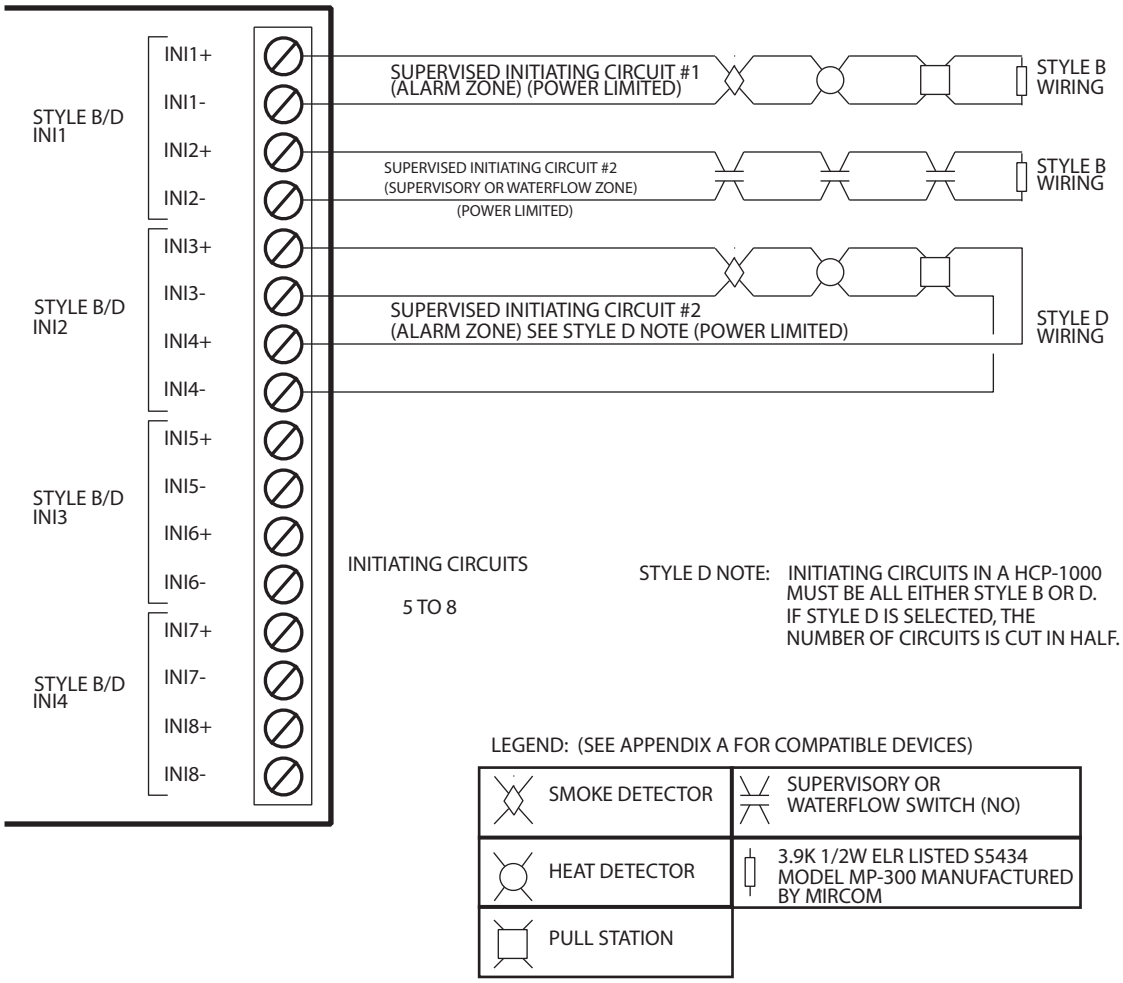


Figure 18 Detection Module (HDM-1008) Terminal Connections

Notes: Initiating circuits in an HCP 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 (HSGM-1004) Terminal Connections

Wire devices to terminals as shown in Figure 19 below. For more information see Wiring Tables and Information on page 32, Appendix B: Device Compatibility List on page 58 for compatible devices, and Appendix C: Specifications on page 64.

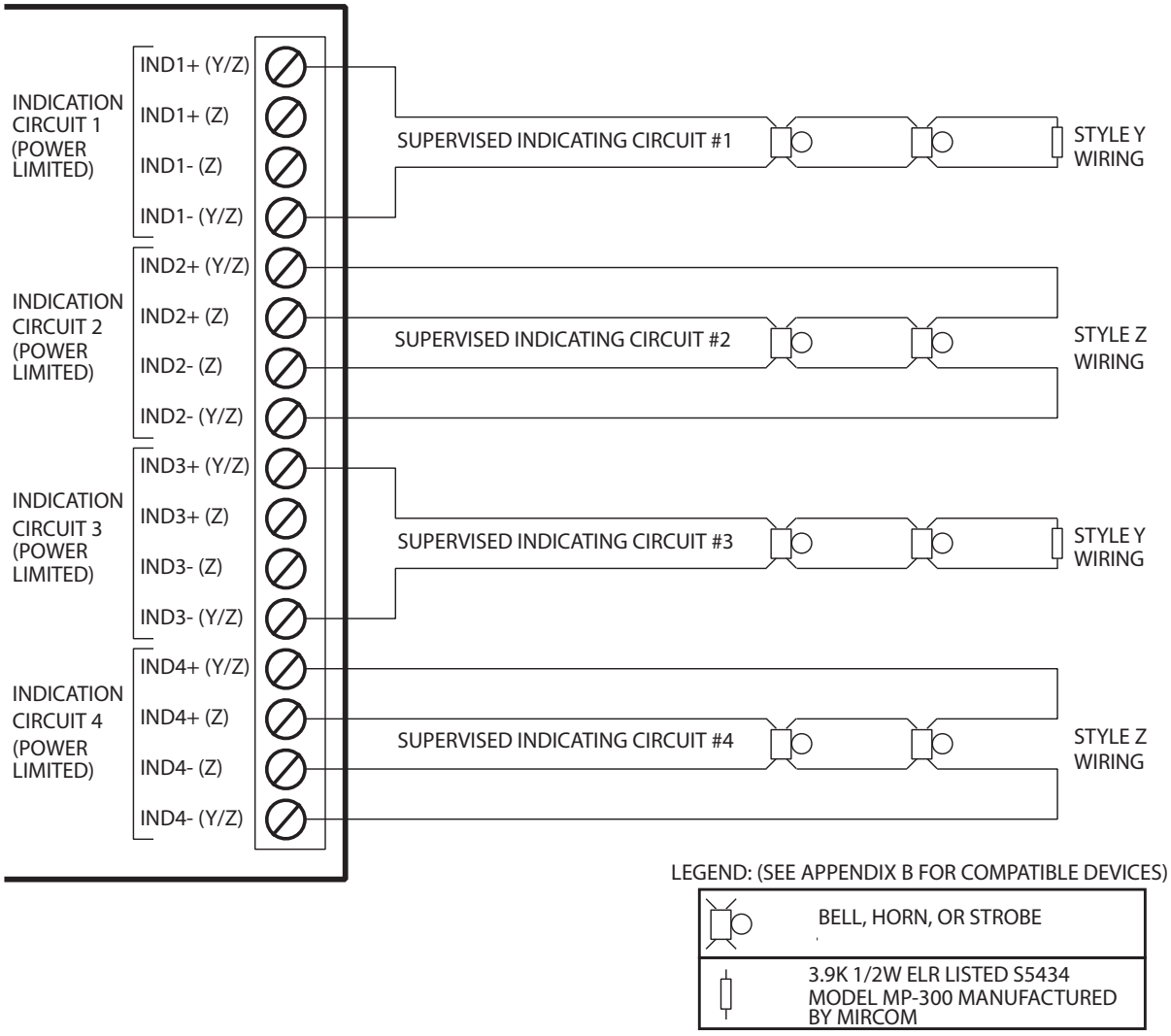


Figure 19 Signal Module (HSGM-1004) Terminal Connections

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

HSGM-1004 indicating circuits are fully supervised and rated for 24 VDC unfiltered, 1.7 amp max. They must be wired as shown in Figure 19

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

6.4 Relay Module (HRM-1008) Terminal Connections

Wire devices to terminals as shown in Figure 20 below. For more information see Wiring Tables and Information on page 32, Appendix B: Device Compatibility List on page 58 for compatible devices, and Appendix C: Specifications on page 64.

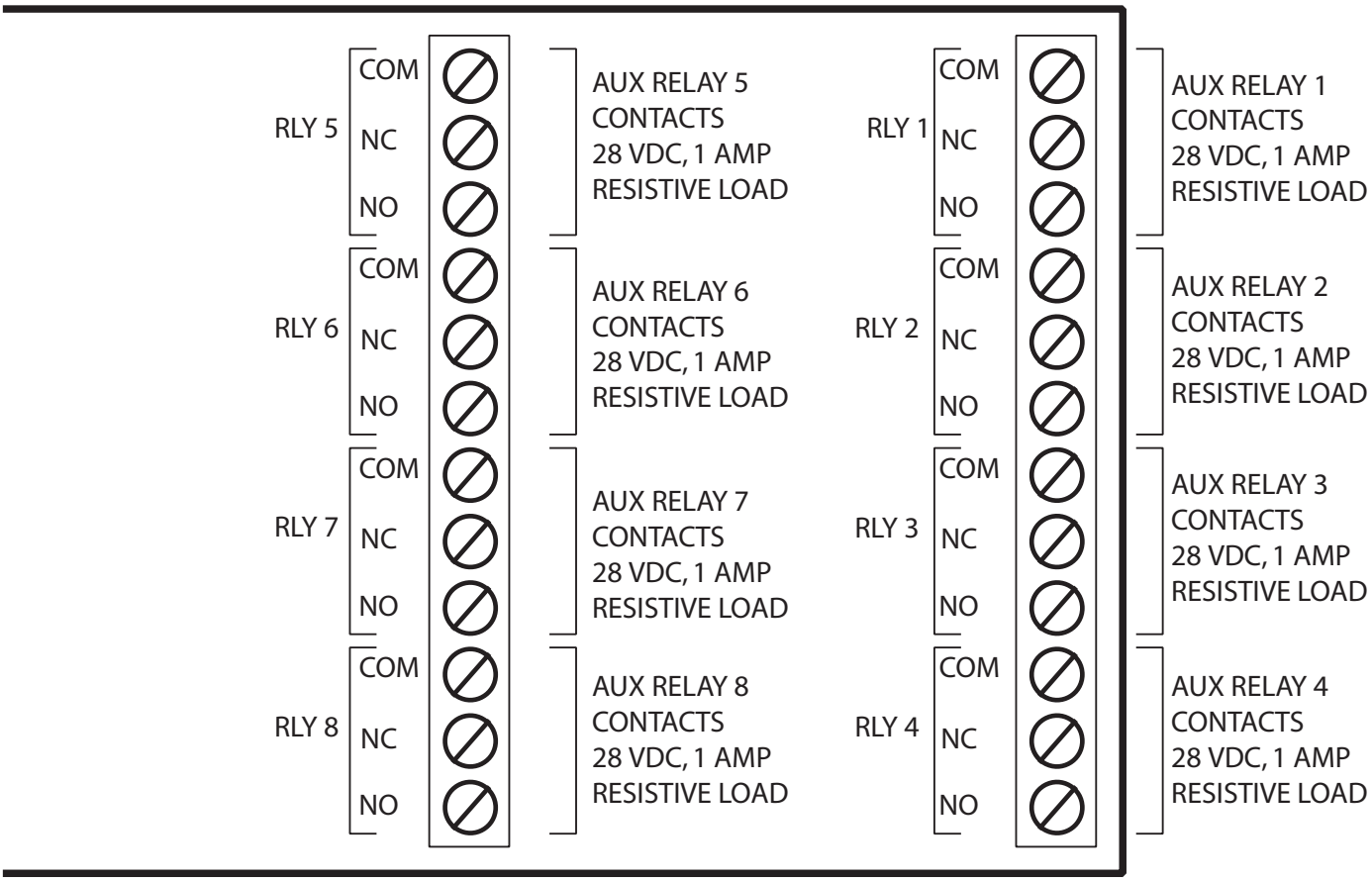


Figure 20 Relay Module Terminal Connections

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 HDACT-9100 Main Board Terminal Connections

Wire the two telephone line devices to terminals as shown below in Figure 21 below.

The HDACT-9100 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.

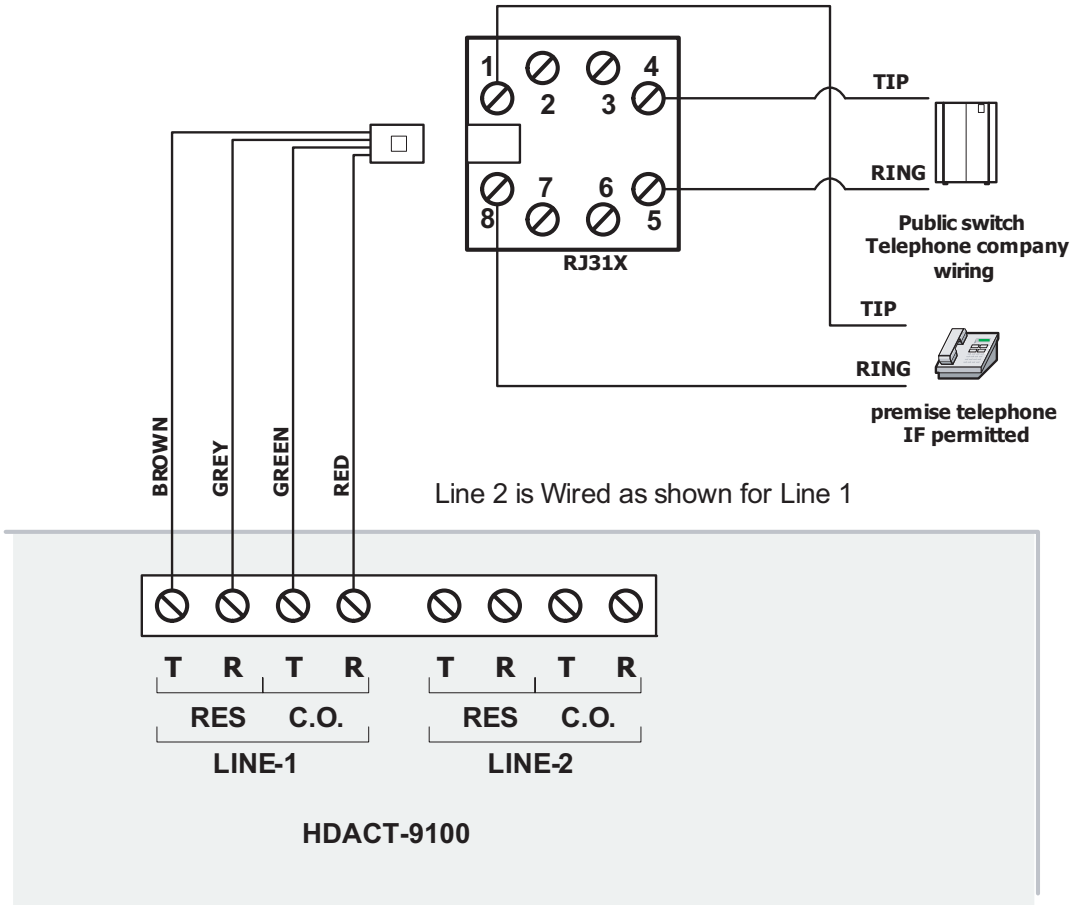


Figure 21 HDACT-9100 Terminal Connections

Note: Most AHJ's do not allow the connection of premises telephones. See HDACT-9100 Instruction and Operation Manual (LT-888HOC) for further details.

6.6 HPR-300 Polarity Reversal and City Tie Module Terminal Connections

Wire as shown below in Figure 22 using proper wire gauges. For more information see Appendix C: Specifications on page 64.

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 HPR-300 may be connected directly to polarity reversal or city tie wiring.

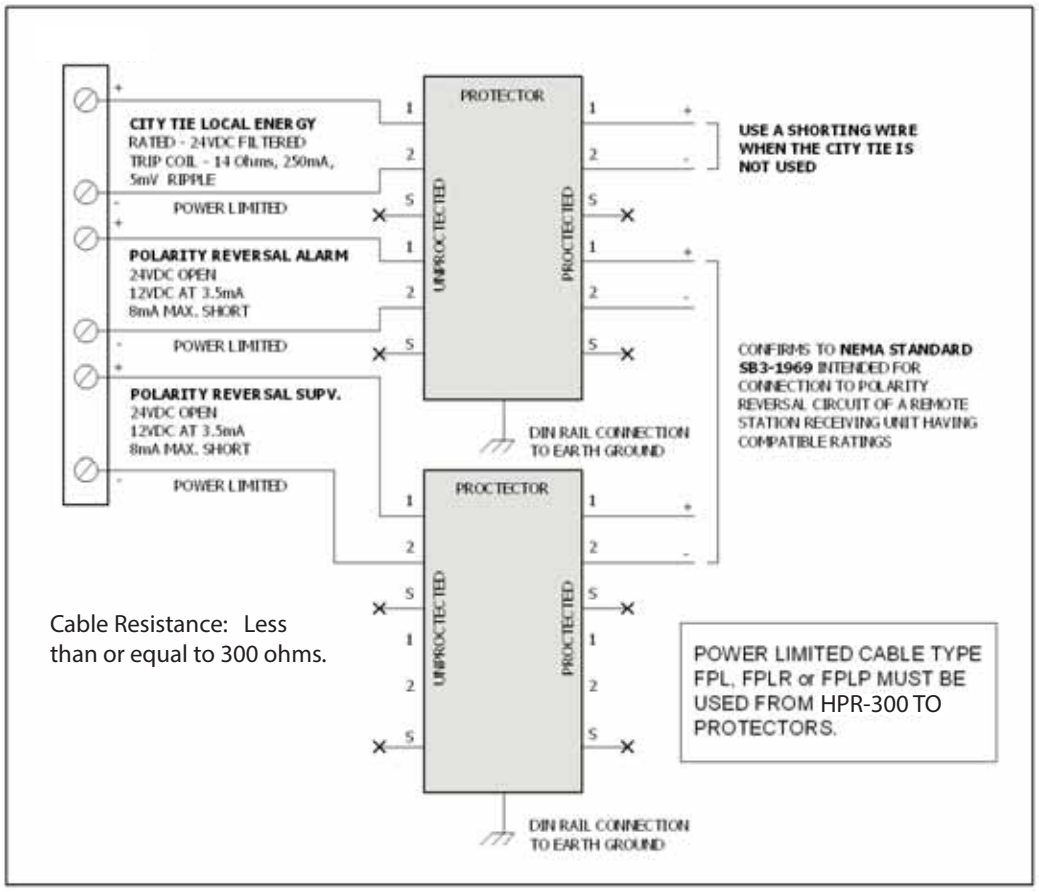


Figure 22 Polarity Reversal and City Tie Module Terminal Connections

- Plug HPR-300 ribbon cable (P1) into connector (P2) of the main fire alarm module.
- Cut jumper (JW1) on the HPR-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 THPR-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
HMCC-1024-6DS Main Chassis	120 VAC, 60 Hz / 240 VAC, 50Hz	6 amps maximum	Replace with 20 amp, 1 ¼" Fast Acting Fuse
HMCC-1024-12DS, -12XT Main Chassis	120 VAC, 60 Hz / 240 VAC, 50Hz	12 amps maximum	Replace with 20 amp, 1 ¼" Fast Acting Fuse

For more information see Appendix C: Specifications on page 64. Wire as shown in Figure 23 using proper wire gauges.

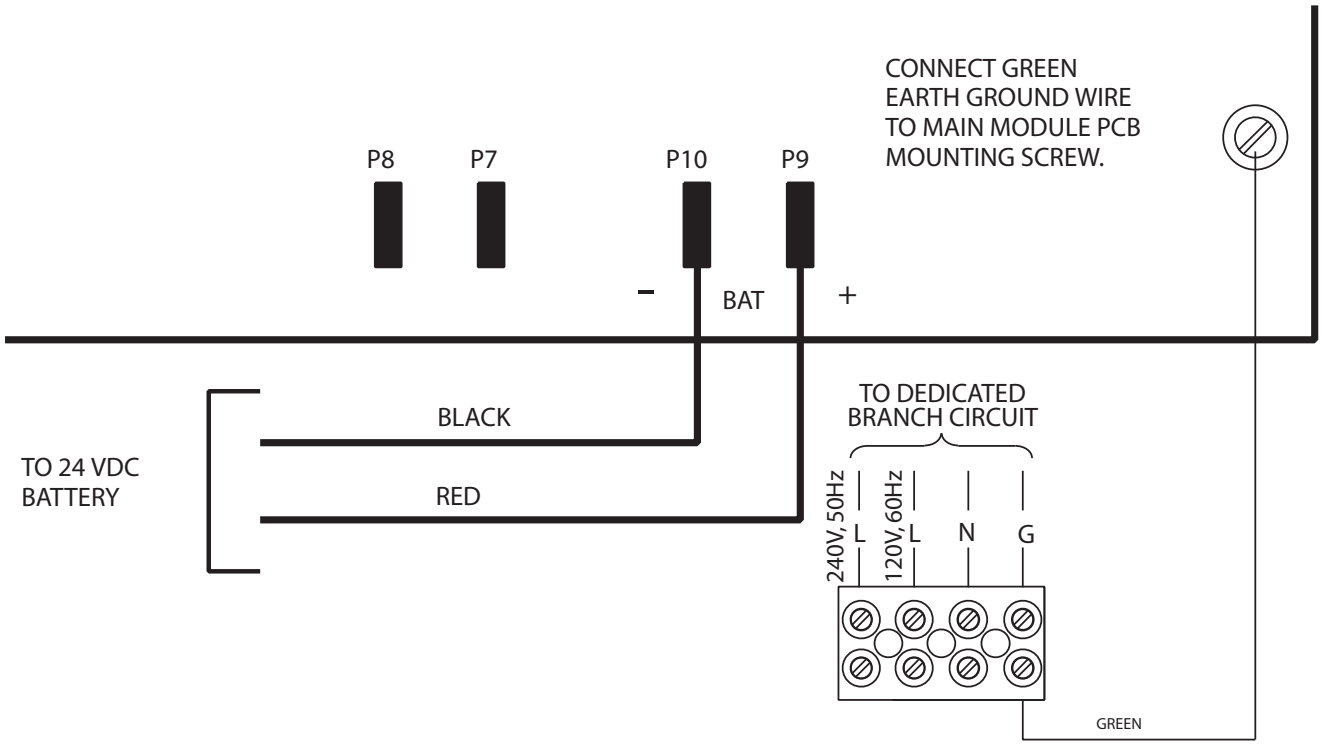


Figure 23 Power Supply Connections

Attention: To prevent sparking, connect batteries after the system main A.C. power turns on.

Do not exceed power supply ratings.

6.8 Wiring Tables and Information

Table 5 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 HSGM-1004 indicating circuits are rated for 1.7 amps each. The indicating circuits are rated for 1.7 amps each.

Table 6 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 6 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 6 Wiring Table for Indicating Circuits.

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 System Configuration on page 45.

7.3 Troubleshooting

Message	Description
Circuit Trouble	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. *Note: disconnecting a circuit will cause a system trouble (off-normal position).*
Remote Fail	The panel will display a Remote Fail for any failure reported by or failure to communicate with a remote annunciator or other remote device.
Ground Fault	The HCP 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.
Battery/Charger Trouble	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.
Configuration Mode	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.
Common Trouble	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: i) Check for any missing interconnection wiring. ii) Check for any missing modules that are part of the configuration. iii) Check jumper positions. Particularly ensure that the continuity jumper is installed only on the *last* circuit adder module in the system. iv) Check for improperly secured cabling.
CPU Fault	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 24 below for LED indicators, control buttons, and switches locations.

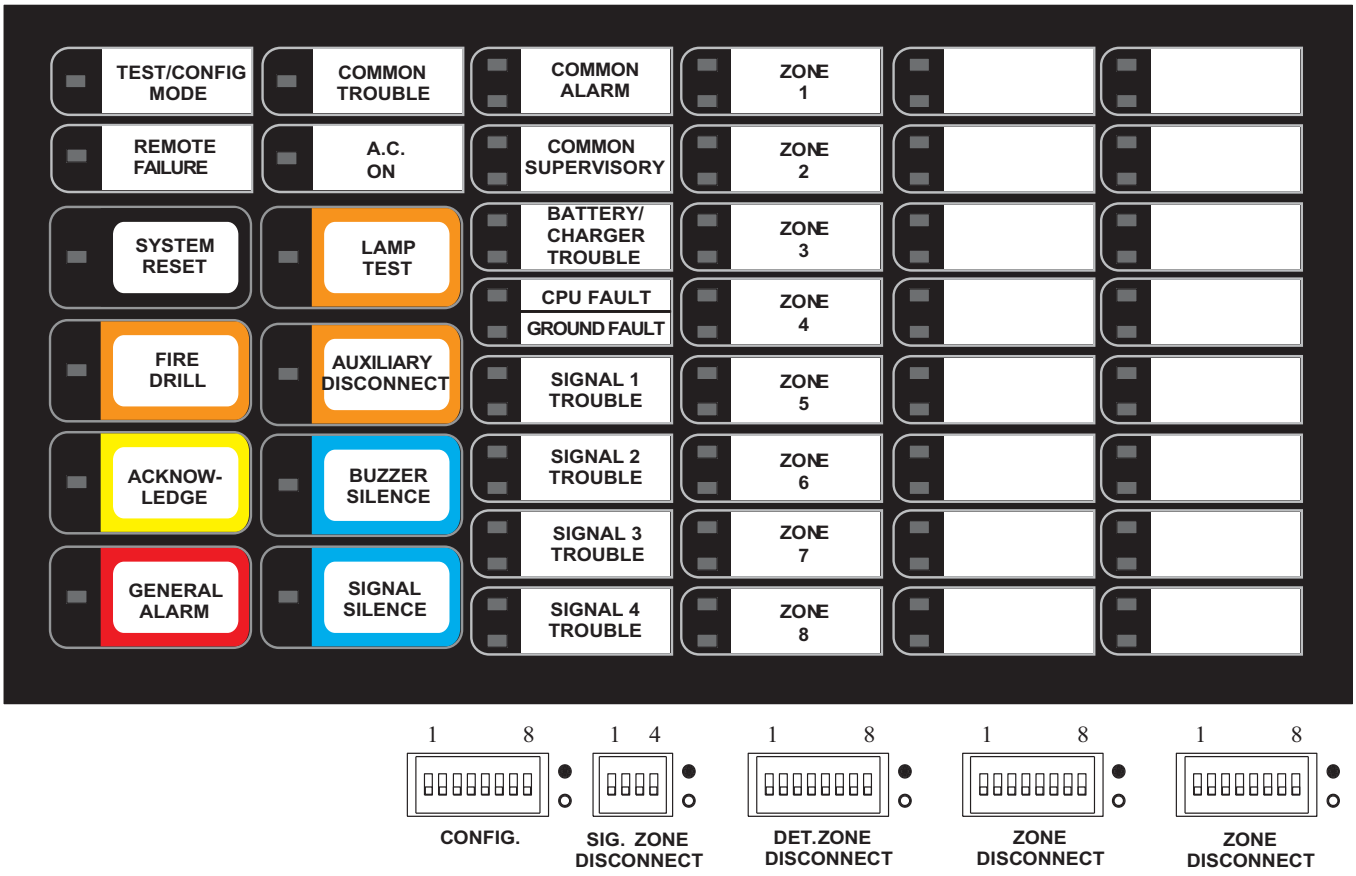


Figure 24 Indicators and Control Location

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

A)
- 8 Common Buttons
- Configuration DIP switch
-
- 28 circuit / circuit indicators
- 28 circuit disconnect DIP switches

B) An adder display module is part of the HMCC-1024-12XT chassis, which adds 48 circuit and 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 fates

- **Fast flash:** 120 flashes per minute, 50% duty cycle, for supervisory alarms
- **Trouble flash:** 20 flashes per minute, 50% duty cycle

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 (Hochiki #NP-3038). Two slide-in labels are also included for single-stage and two-stage operation. For the adder display, the labels are blank (Hochiki #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 (if the panel is set for two stage operation). 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 Acknowledge LED

If the panel is configured as two stage, the Acknowledge LED flashes amber at the fast flash rate while the Auto General Alarm timer is timing out. It illuminates steadily when the timer is cancelled by activating the Acknowledge 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

In two stage operation only, 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.

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, Acknowledge & 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, if the Auto General Alarm timer has timed out, the Signal Silence button also performs the same function as the Acknowledge button.

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 Acknowledge 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 Acknowledge 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 Acknowledge LED on steady amber.

8.2.5 General Alarm Button (Red)

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 General Alarm button immediately sends the panel into second stage General Alarm. It will also re-activate the signals if they have been silenced during General Alarm. 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 Buzzer Silence Button (Blue)

Activation of the Buzzer Silence 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 Monitor Circuit Indicators

The operation of monitor circuit indicators applies to initiating circuits configured as monitor 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.

8.3.4 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. The 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 45) and *Walk Test Mode* (see page 56) 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
- 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

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
- 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
- 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 43*)
- The Auto General Alarm timer, if configured, starts
- The Acknowledge LED starts flashing.

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
- 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 43*).
- If the panel is not already in General Alarm and if the Acknowledge LED is on steady indicating that the Auto General Alarm timer has been Acknowledged the timer is restarted and the Acknowledge 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 Acknowledge 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 7 Initiating (Detection) Circuit Types

Circuit Type	Description
Non-Verified Alarm	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.
Verified Alarm	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.
Water-Flow Alarm	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. **Note: Do not use the retard operation with any external retarding device; maximum retard may not exceed 120 seconds.**
Sprinkler Alarm	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. **Note: Do not use the retard operation with any external retarding device; maximum retard may not exceed 120 seconds.**
General Alarm	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 *all* indicating circuits.
Non-Latching Supervisory	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.

Table 7 Initiating (Detection) Circuit Types (Continued)

Circuit Type	Description
Latching Supervisory	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 *not* clear.
Monitor	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).
Trouble-Only	This circuit is used for monitoring a trouble condition from an external device. Both open and short circuits generate a non-latching trouble condition.

8.7.2 Indicating (Signal) Circuit Types

Table 8 Indicating (Signal) Circuit Types

Circuit Type	Description
Silenceable Signal	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.
Non-Silenceable Signal	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.
Strobe	For visual devices such as strobes that use no code patterns (they are continuous).

8.7.3 Evacuation Codes

Single stage codes

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

Two-stage codes

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

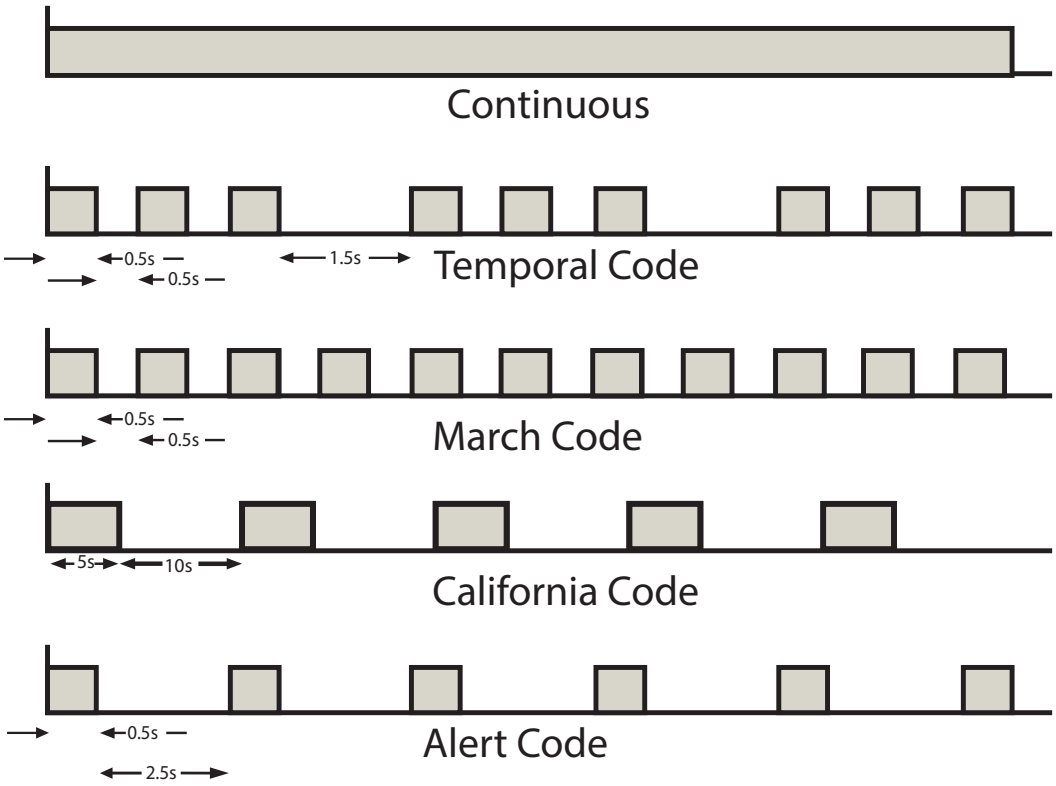


Figure 25 Evacuation Codes

9.0 System Configuration

9.1 Introduction to Configuration

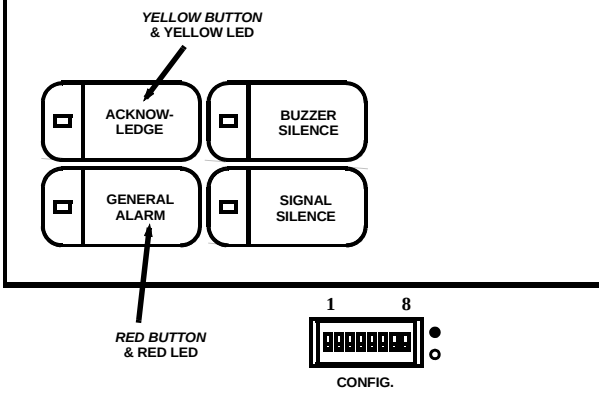
Configuration of the HCP 1000 Fire Alarm Control Panel is performed by a combination of configuration DIP switch settings and button presses. Circuit-related operations are correlated to their respective disconnect switches.

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 the Table 9 on the following page, 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:

Acknowledge (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.
Buzzer Silence (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.



The figure to the left shows the positions of the configuration DIP switch and the yellow and red buttons. Each has a matching LED indicator of the same color. Note that the labels **Acknowledge** and **General Alarm** will only be shown in an HCP 1000 configured as a two-stage system.

Configuration functions are selected by the configuration DIP switches as follows in Table 3 on the next page. Note that a switch position of "0" is "OFF" (bottom position) and "1" is "ON" (top position).

Figure 26 Configuration Indicators and Controls

9.2 Configuration DIP Switch Functions

Table 9 Configuration DIP Switch Functions

DIP Switch Position (1-8)	Function Number	Button Operations	Description
0000 0000	00	None	Normal Operation (not in configuration mode)
Features			
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
Initiating Circuits/ Detection Zones			
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	Monitor
0010 1000	28	Yellow	Trouble Only

Table 9 Configuration DIP Switch Functions (Continued)

DIP Switch Position (1-8)	Function Number	Button Operations	Description
Indicating Circuits/Signal Zones			
0011 0000	30	Yellow	Silenceable
0011 0001	31	Yellow	Non-Silenceable
0011 0010	32	Yellow	Silenceable Strobes
0011 0011	33	Yellow	Non-Silenceable Strobes
Relays			
0011 1000	38	None	Show Relay Circuits
Resize System			
0100 0000	40	Yellow and Red	Set Circuit Adder Module Number and Type
Correlations			
0100 0001	41	Yellow	Correlation by Input Circuit
0100 0010	42	Yellow	Correlation by Output Circuit
Default			
0111 1111	7F	Yellow and Red	Restore to Default Configuration
Walk Test			
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 16.), 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[1]). 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[1]). 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[1]). 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 10 Configuration Features

DIP Switch Position (1-8)	Features	Description
0000 0001	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 Restore to Default/Resize (Class A or B) on page 48.
0000 0010	Manual Signal Silence Enable	An illuminated yellow LED (default) indicates that manual silence is enabled.
0000 0011	Fire Drill Enable	An illuminated yellow LED (default) indicates that fire drill is enabled.
0000 0100	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.
0000 0101	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.
0000 0110	Output Circuit Correlations Enabled	An illuminated yellow LED indicates that the output circuits (indicating circuits and indicating) operate according to any set correlations (see Configuring Circuit Correlations on page 53). If the yellow LED is off (default), all output circuits are common alarm; all outputs turn on for any alarm input.
0000 0111	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.
0000 1001	Aux Disc and Programmable Relays	An illuminated yellow LED (default) indicates that correlated relays are disconnected by auxiliary disconnect.
0001 0001	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 10 Configuration Features (Continued)

DIP Switch Position (1-8)	Features	Description
0001 0010	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.
0011 1000	Show Relay Circuits	All display points assigned to relay circuits will be lit.
0000 1010	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
0000 1011	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)	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
0000 1100	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
0000 1101	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
0000 1110	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)
0000 1111	HPR-300/UDACT alarm Transmit Silence Option	An illuminated yellow LED indicates that the alarm transmit signal from the HPR-300 or UDACT 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 HPR-300 or UDACT will not be silenceable.

Table 10 Configuration Features (Continued)

DIP Switch Position (1-8)	Features	Description
0001 0000	AC Power Fail Delay Time	The AC Power Fail trouble signal from the HPR-300 or the UDACT can be delayed when the only trouble on the fire alarm panel is AC power fail. Yellow LED flashes 0 times = No Delay (default) Yellow LED flashes 1 time = 1 Hour Yellow LED flashes 2 times = 2 Hours Yellow LED flashes 3 times = 3 Hours

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 11 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
0010 0000	Normal (Non-Verified Alarm)	**0011 0000**	Silenceable Audible Signal
0010 0001	Verified Alarm	**0011 0001**	Non-Silenceable Audible Signal
0010 0010	Sprinkler Alarm	**0011 0010**	Silenceable Strobe
0010 0100	Non-Latching Supervisory		
0010 0110	General Alarm		
0010 1000	Trouble Only		
0010 0101	Latching Supervisory		
0010 0111	Monitor		

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 Restore to Default/Resize (Class A or B) on page 48.
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 Configuration Features on page 50), 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. urn 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.
- Monitor 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 Configuration Features on page 50), 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 24 on page 35* to see how the first 24 circuits are mapped to display points.

Any configured HRA-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 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: HRA-1000 Remote Annunciator Panels

11.1 HRA-1000 Series

The HRA-1000 Series of remote annunciators are units with electrical modules and enclosures matching the configurations of the HCP 1000 Series Fire Alarm Control Panels. For detailed information see Hochiki Documents HRA-1000 Manual LT-617HOC, HRAM-208 Manual LT-648HOC, HRAM-216 Manual LT-658HOC and HMGD-32 Manual LT-847HOC.

11.1.1 Models

- **HRAM-1032TZDS** Main Annunciator Chassis with common indicators and controls, and 32-circuit capacity (TZ Version has 32 Trouble LEDs)
- **HRAX-1048TZDS** Adder Annunciator Chassis with 48 circuit capacity
- **HRAM-1016TZDS** Non-Expandable Annunciator Chassis with common indicators and controls, and 16-circuit capacity (TZ Version has 16 Trouble LEDs)
- **HRAM-208** Non-Expandable Annunciator Chassis with limited common indicators and controls, and eight-circuit capacity
- **HRAM-216** Non-Expandable Annunciator Chassis with limited common indicators and controls, and 16-circuit capacity
- **HMGD-32** Main Graphic Annunciator Chassis with common indicators and controls, and 32-circuit capacity
- **HAGD-048** Adder Graphic Annunciator Chassis with 48-circuit capacity

11.1.2 Enclosures

- **HBB-1001** with capacity for one annunciator chassis
- **HBB-1002** with capacity for two annunciator chassis
- **HBB-1003** with capacity for three annunciator chassis
- **HBB-1008** with capacity for eight annunciator chassis
- **HBB-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: Device Compatibility List

12.1 HCP 1000 Series UL Listed Two-Wire Smoke Detectors

Notes: Whether mixing different models of compatible smoke detectors or using the same model on the same circuit, total standby current of all detectors must not exceed 3 mA.

The below listed smoke detectors are compatible with initiating circuits having Compatibility Identifier "A".

Smoke Detector Make Model / Base	Compatibility Identifier Head / Base	Rated Standby Current	Maximum # of devices per circuit
Mircom			
MIR-525U	FDT-1	0.10 mA	30
MIR-525TU	FDT-1	0.10 mA	30
Apollo			
55000-225 / 45681-251, -255, -256, -258	225 / 251, 255, 256, 258	0.045 mA	30
55000-325 / 45681-251, -255, -256, -258	325 / 251, 255, 256, 258	0.045 mA	30
Detection Systems Inc.			
DS250	B - N/A	0.10 mA	30
DS250TH	B - N/A	0.10 mA	30
DS282	B - N/A	0.10 mA	30
DS282TH	B - N/A	0.10 mA	30
Edwards			
C2M-PD/CM2M-PD			
EC-103-3/CSBU			
Hochiki			
SOC-24V/NS4-221, NS6-221	HD-3/HB-4	0.059mA	30
SOC-24V/HSC-220R, NS4-220, NS6-220	HD-3/HB-3	0.059mA	30
SOC-24V/HSB-220	HD-3/HB-56	0.059mA	30
SOC-24V/NS4-224, NS6-224	HD-3/HB-5	0.059mA	30
SOC-24V/HSB-224	HD-3/NA	0.059mA	30
SOC-24V/NS4-100, NS6-100	HD-3/HB-55	0.059mA	30
SOC-24V/HSC-224R	HD-3/HB-73	0.059mA	30
SOC-24V/HSB-221	HD-3/HB-54	0.059mA	30
SOC-24VN/NS4-221, NS6-221	HD-3/HB-4	0.059mA	30

Smoke Detector Make Model / Base	Compatibility Identifier Head / Base	Rated Standby Current	Maximum # of devices per circuit
Hochiki continued			
SOC-24VN/HSC-220R, NS4-220, NS6-220	HD-3/HB-3	0.059mA	30
SOC-24VN/HSB-220	HD-3/HB-56	0.059mA	30
SOC-24VN/NS4-224, NS6-224	HD-3/HB-5	0.059mA	30
SOC-24VN/HSB-224	HD-3/NA	0.059mA	30
SOC-24VN/NS4-100, NS6-100	HD-3/HB-55	0.059mA	30
SOC-24VN/HSC-224R	HD-3/HB-73	0.059mA	30
SOC-24VN/HSB-221	HD-3/HB-54	0.059mA	30
DCD-135/NS6-220	HD-3/HB-72	0.035mA	30
DCD-135/NS4-220	HD-3/HB-3	0.035mA	30
DCD-135/HSC-220R	HD-3/HB-3	0.035mA	30
DCD-190/NS6-220	HD-3/HB-3	0.035mA	30
DCD-190/NS4-220	HD-3/HB-3	0.035mA	30
DCD-190/HSC-220R	HD-3/HB-3	0.035mA	30
SIJ-24/NS6-220	HD-3/HB-72	0.040mA	30
SIJ-24/NS4-220	HD-3/HB-3	0.040mA	30
SIJ-24/HSC-220R	HD-3/HB-3	0.040mA	30
SLR-24/NS6-220	HD-3/HB-72	0.045mA	30
SLR-24/NS4-220	HD-3/HB-3	0.045mA	30
SLR-24/HSC-220R	HD-3/HB-3	0.045mA	30
SLR-24H/NS6-220	HD-3/HB-3	0.045mA	30
SLR-24H/NS4-220	HD-3/HB-3	0.045mA	30
SLR-24H/HSC-220R	HD-3/HB-72	0.045mA	30
SLR-835/NS6-220	HD-3/HB-3	0.045mA	30
SLR-835/NS4-220	HD-3/HB-3	0.045mA	30
SLR-835/HSC-220R	HD-3/HB-72	0.045mA	30
SLR-835B-2	HD-6	55µa @ 24VDC	30
Napco			
FW-2	HD-6	55µA @ 24VDC	30
Sentrol - ESL			
429C	S10A - N/A	0.10 mA	30
429CT	S10A - N/A	0.10 mA	30

Smoke Detector Make Model / Base	Compatibility Identifier Head / Base	Rated Standby Current	Maximum # of devices per circuit
Sentrol - ESL continued			
429CST	S11A - N/A	0.10 mA	30
429CRT	S11A - N/A	0.10 mA	30
711U / 701E, 701U, 702E, 702U	S10A - S00	0.10 mA	30
712U / 701E, 701U, 702E, 702U	S10A - S00	0.10 mA	30
713-5U / 701E, 701U, 702E, 702U	S10A - S00	0.10 mA	30
713-6U / 701E, 701U, 702E, 702U	S10A - S00	0.10 mA	30
721U / 702E, 702U	S10A - S00	0.10 mA	30
732U / 702E, 702U, 702RE, 702RU	S11A - S00	0.10 mA	30
721UT / 702E, 702U	S10A - S00	0.10 mA	30
722U / 702E, 702U	S10A - S00	0.10 mA	30
731U / 702E, 702U, 702RE, 702RU	S11A - S00	0.10 mA	30
721UT / 702E, 702U	S10A - S00	0.10 mA	30
721UT / 702E, 702U	S10A - S00	0.10 mA	30
System Sensor			
4451HT / B401	A - A	0.12 mA	25
5451 / B401B	A - A	0.12 mA	25
5451 / B401	A - A	0.12 mA	25
2451 / B401B	A - A	0.12 mA	25
2451 / B406B	A - A	0.12 mA	25
2451 / DH400	A - N/A	0.12 mA	25
2451TH / B406B	A - A	0.12 mA	25
2451 / B401	A - A	0.12 mA	25
2451TH / B401	A - A	0.12 mA	25
4451HT / B401B	A - A	0.12 mA	25
4451HT / B406B	A - A	0.12 mA	25
1100	A - N/A	0.12 mA	25
1151 / B110LP	A - A	0.12 mA	25
1151 / B116LP	A - A	0.12 mA	25
1400	A - N/A	0.10 mA	25
1451 / B401	A - A	0.12 mA	25
1451 / B401B	A - A	0.12 mA	25
1451 / B406B	A - A	0.12 mA	25

Smoke Detector Make Model / Base	Compatibility Identifier Head / Base	Rated Standby Current	Maximum # of devices per circuit
System Sensor continued			
1451DH / DH400	A - A	0.12 mA	25
2100	A - N/A	0.12 mA	25
2100T	A - N/A	0.12 mA	25
2151/ B110LP	A - A	0.12 mA	25
5451 / B406B	A - A	0.12 mA	25
2151 / B116LP	A - A	0.12 mA	25
2400	A - N/A	0.12 mA	25
2400TH	A - N/A	0.12 mA	25
2400AT	A - N/A	0.12 mA	25
2400AIT	A - N/A	0.12 mA	25
2451TH / B401B	A - A	0.12 mA	25
2WTA-B	A - N/A	0.1 mA	1
2WTR-B	A - N/A	0.1 mA	1
2W-B, 2WT-B	A - N/A	0.1 mA	30

12.2 HCP 1000 Series UL Listed Compatible Four-Wire Smoke Detectors

Smoke Detector Make Model / Base	Maximum # of devices per circuit
Mircom	
MIR-545U	30
MIR-545TU	30
Sentrol-ESL	
541C	N/A
541CXT	N/A
709-MV-21	N/A
709-24V-21	N/A
741U WITH 702U or 702E Base	N/A
449AT, 449C, 449CT, 449CRT, 449CST, 449CSTE, 449CSRT, 449CSRH, 449CSST, 449CSSTE, 449CTE, 449CSLT	N/A
System Sensor	
1424	25
6424	30
6424A	30
A77-716B	
DH400ACDCI	8
DH400ACDCP	8
DH400ACDCIHT	8

12.3 HCP 1000 Series UL Listed Compatible Signaling Devices

System Sensor - SpectrAlert	**Wheelock continued**	**Wheelock continued**
P2415	AS-2430C-FW	MT-24-LS-VFR-ULC
P2415W	AS-2475C-FW	MT-24-WS-VFR-ULC
P241575	AS-24100C-FW	AMT-12/24-R-ULC
P241575W	AH-24-R	AMT-24-LS-VFR-ULC
P2475	AH-24-WP-R	MB-G6-24-R
P2475W	NS-2415W-FR	MB-G10-24-R
P24110	NS-241575W-FR	SM-12/24-R
P24110W	NS-2430W-FR	DSM-12/24-R
S2415	NS-2475W-FR	**Mircom**
S2415W	NS-24110W-FR	FH-240R
S241575	NS4-2415W-FR	FH-240W
S241575W	NS4-241575W-FR	FHS-240R
S2475	NS4-2430W-FR	FHS-240R/110
S2475W	NS4-2475W-FR	FHS-240W
S24110	NS4-24110W-FR	FHS-240W/110
S24110W	RS-2415W-FR	FS-240R
H12/24	RSS-241575W-FR	FS-240R/110
H12/24W	RSS-2415W-FR	FS-240W
MDL	RSS-241575W-FR	FS-240W/110
MDLW	RSS-2430W-FR	SDM-240
Wheelock	RSS-2475W-FR	
AS-2415W-24-FR	RSS-24110W-FR	
AS-241575W-FR	RSS-2415C-FW	
AS-2430W-FR	RSS-2430C-FW	
AS-2475W-FR	RSS-2475C-FW	
AS-24110W-FR	RSS-24100C-FW	
AS-2415C-FW	MT-12/24-ULC	

13.0 Appendix C: Specifications

13.1 HMCC-1024-6DS Specifications

Table 12 HMCC-1024-6DS Specifications

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

Table 12 HMCC-1024-6DS Specifications (Continued)

HMCC-1024-6DS Chassis		
Compliance	**System Model**	HCP 1000 Series Fire Alarm Control Panel
	System Type	Local, auxiliary (using HPR-300), remote protected premises station (using HPR-300 or HDACT-9100), central station protected premises (using HDACT-9100).
	Type of Service	A, M, WF, SS
	Type of Signalling	Non-Coded
	Applicable Standards	NFPA 70 and 72, UL 864 R9, ULC S-524, ULC S-527

13.2 HMCC-1024-12DS Specifications

Table 13 HMCC-1024-12DS Specifications

HMCC-1024-12DS Chassis		
General	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 HPR-300 City Tie Module.	
Initiating Circuits	Eight supervised Style B (Class B) or 4 Style D (Class A) initiating circuits; fully configurable. Terminals are labelled **INI**. initiating circuits are Compatibility ID "A". Power Limited: 22 VDC, 3 mA standby, 5 mV ripple, 50 mA max. (alarm)	
Indicating Circuits	Four Style Y or Z (Class B or A) indicating circuits; configurable as strobes or audibles. Terminals are labelled **IND**. Power Limited: 24 VDC unfiltered, 1.7 amps @ 49 C per circuit 5 A maximum	
Aux. Power Supply.	Terminals are labelled **AUX PWR**. Power limited / 24 VDC Filtered (special application) / 1.7 A @ 49° C	
Two Resettable 4-Wire Smoke Supplies	Terminals are labelled **4-WIRE.** Power Limited: 22 VDC, 200 mA each max., 300 mA total max, 5 mV ripple	
RS-485 Connection	1 RS-485 Connection for Remote Annunciators or interface to Audio Systems. Terminals are labelled **RS-485**. Power Limited to 300 mA.	
Electrical ratings	**AC Line Voltage**	120V 60Hz / 240V 50 Hz 4A / 2A primary
	Power supply ratings	12 Amps. max. (secondary)
	For indicating circuits	24VDC unfiltered, 10 Amps. max.
Auxiliary relays (resistive loads)	Must be connected to a listed power limited source of supply. Terminals are labelled "ALARM, TROUBLE, SUPV".	

Table 13 HMCC-1024-12DS Specifications (Continued)

HMCC-1024-12DS Chassis		
	Common alarm	Form C, 1 Amp, 28 VDC
	Common Supv	Form C, 1 Amp, 28 VDC
	Common Trouble	Form C, 1 Amp, 28 VDC
Battery	**Type**	24VDC, Gel-Cell/Sealed Lead-Acid
	Charging capability	17Ah to 40Ah batteries
	Current Consumption	standby: 200 mA alarm: 350 mA
Compliance	**System Model**	HCP 1000 Series Fire Alarm Control Panel
	System Type	Local, auxiliary (using HPR-300), remote protected premises station (using HPR-300 or HDACT-9100), central station protected premises (using HDACT-9100).
	Type of Service	A, M, WF, SS
	Type of Signalling	Non-Coded
	Applicable Standards	NFPA 70 and 72, UL 864 R9, ULC S-524, ULC S-527

13.3 HCP 1000 Expander Chassis and System Modules

Table 14 HCP 1000 Expander Chassis and System Modules

HCP 1000 System Modules and Annunciators		
48 Zone Adder module	Part of the HMCC-1024-12XT	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
HSGM-1004	Signal Adder Module	**Four Class B or A** (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
HRM-1008 **(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 14 HCP 1000 Expander Chassis and System Modules

HCP 1000 System Modules and Annunciators		
HPR-300	Polarity Reversal and City Tie Module	Supervised city tie--not power limited 24VDC unfiltered, 210 mA max., Trip coil: 14 ohms. Terminals are labelled "City Tie". Polarity reversal power limited Terminals are labelled "Polarity Reversal". 24VDC open 12VDC @ 3.5 mA, 8 mA max. (shorted)
	Current Consumption	standby: 35 mA / alarm: 300 mA
HDM-1008	Detection Adder Module	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".
	Power Limited	22VDC, 3 mA standby, 5mV ripple, 50 mA max. (alarm)
	Current Consumption	standby: 80mA alarm: 100 mA
HDACT-9100	Digital Communicator Module	Transmit alarm, supervisory, and trouble to a central monitoring station using Ademco Contact ID and SIA-DCS Protocols.
	Current Consumption	standby: 45 mA / alarm: 120 mA

14.0 Appendix D: 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 toAppendix C: Specifications on page 64 for specifications.

Power Requirements (All currents are in amperes)

Model Number	Description	Qty		Standby	Total Standby	Alarm	Total Alarm
HMCC-1024-6DS	Main Chassis (6 amp)		X	0.200	=	0.350	=
HMCC-1024-12DS	Main Chassis (12 amp)		X	0.200	=	0.350	=
HMCC-1024-12XT	Main + Adder module (48 Circuit Display)		X	0.220	=	0.370	=
HDM-1008	8 initiating circuit Module		X	0.080	=	0.100	=
HRM-1008	4 indicating circuit Module		X	0.035	=	0.150	=
HDACT-9100	Digital Communicator Mod.		X	0.045	=	0.120	=
HPR-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

([STANDBY (A) _____] X [(24 or 60 Hours) ___]**)** + **(**[ALARM (**B**) _____] X [♣Alarm in Hr.] _____**)** = (**C**) _____AH

Main Chassis Selection

Select HMCC-1024-6DS 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 HBBX-1024DS and HBBX-1024XT boxes. BA-124 (24AH) and BA-140 (40AH) will fit into an external battery cabinet BC-160(R)

* 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.

15.0 Warranty

Hochiki America Corp., manufactured equipment is guaranteed to be free of defects in material and workmanship for a period of one (1) year from the date of original shipment. Hochiki will repair or replace, at its option, any equipment which it determines to contain defective material or workmanship. Said equipment must be shipped to Hochiki prepaid. Return freight will be prepaid by Hochiki. We shall not be responsible to repair or replace equipment which has been repaired by others, abused, improperly installed, altered or otherwise misused or damaged in any way. Unless previously contracted by Hochiki, Hochiki will assume no responsibility for determining the defective or operative status at the point of installation, and will accept no liability beyond the repair or replacement of the product at our factory authorized service department.

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