SIEMENS

Installation Instructions
Model ZIC-4A

Zone Indicating Card

P/N 315-033050-16

Siemens Industry, Inc.
Building Technologies Division

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SIEMENS

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INTRODUCTION

The Model ZIC-4A from Siemens Industry, Inc. is a zone indicating card that provides notification appliance circuits for the FireFinder-XLS/Desigo Fire Safety Modular/ Cerberus PRO Modular system. It has 4 outputs that can be configured for Class A or Class B and control of audible and visual notification appliances such as horns, speakers, bells, strobes etc. Its outputs can also be configured as connection to Municipal Tie, Releasing Service per NFPA 13 and 2001 or as a connection to a Leased Line remote monitoring circuit.

Each zone can be configured independently for different usages as programmed in the Zeus tool and can be controlled automatically by program logic or manually using the PMI/PMI-2/PMI-3 (XLS), FCM2041-U2 (Desigo Fire Safety Modular), FCM2041-U3 (Cerberus PRO Modular). During the initial power-up condition, each zone on the ZIC-4A is configured as a steady NAC, Class A configuration with 2A current limit. The ZIC-4A then sends a message to the PMI/PMI-2/PMI-3 (XLS), FCM2041-U2 (Desigo Fire Safety Modular), FCM2041-U3 (Cerberus PRO Modular) indicating that it is unconfigured.

The ZIC-4A supports synchronized and non-synchronized strobes. This selection is available in the Zeus tool under the detail properties for each ZIC-4A circuit. Synchronization across multiple ZIC-4A cards is automatic as a part of the FireFinder-XLS/Desigo Fire Safety Modular/Cerberus PRO Modular operating characteristics. Refer to document P/N 315-096363 for a list of strobes that support synchronization.

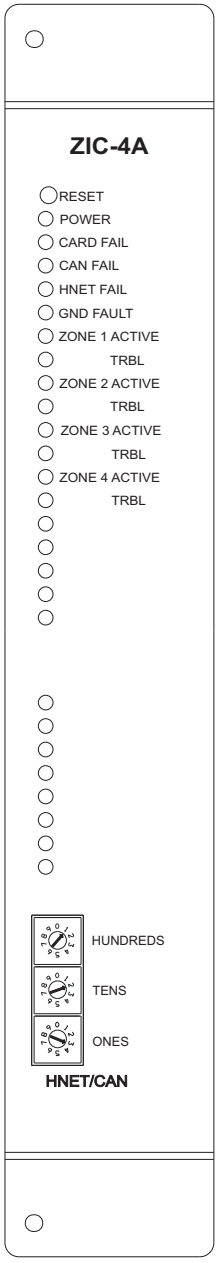

Figure 1
ZIC-4A Zone Indicating Card

Features

ZIC-4A features are as follows:

- Class A / Class B circuit configuration
- Zones can be configured independently
- Can have independent input source for each output
- Zone input voltage supervision
- Zone output supervision
- Intelligent self-restoring power limiting
- Coded signal synchronization capability
- Card level Ground Fault detection
- Communicate H-Net protocol
- Uploadable firmware update
- Ability to pass through up to 3A per circuit

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OPERATION

The ZIC-4A contains four Class A circuits. Each circuit is rated at 3A at 24VDC and has an input connected to the power source and an output where the NAC devices, Municipal Tie, Releasing service and Leased Line remote monitoring device are connected. The zone inputs are isolated from one another and are supervised for the presence of power. This allows the use of different power sources with different ground references. The zone output is supervised for open and short circuit conditions while the zone is inactive and allows different combinations of output configurations (Standard NAC, Releasing, etc.) per card. Each ZIC-4A card occupies any one card slot in the CC-5 cardcage. The ZIC-4A also has the capability to detect ground fault on its zone output as indicated by a diagnostic LED.

Controls and Indicators

The front panel of the ZIC-4A contains one reset switch, thirteen LEDs, and three HNET address switches as shown in Figure 1.

A reset switch is located on the top of the front panel. Pushing the reset switch re-initializes the ZIC-4A operation.

The LEDs follow the reset switch and their functions are defined as follows:

POWER	(Green)	Normally ON. When illuminated, indicates that power for the ZIC-4A is applied to the card.
CARD FAIL	(Yellow)	Normally OFF. When illuminated, indicates that the card microprocessor has failed.
CAN FAIL	(Yellow)	Normally OFF. When illuminated, indicates that the CAN communication with the ZIC-4A has terminated and the card goes into degrade mode (applicable only when card resides in a CAN network). **NOT USED for FireFinder-XLS/Desigo Fire Safety Modular/Cerberus PRO Modular applications.**
HNET FAIL	(Yellow)	Normally OFF. When illuminated, indicates that the HNET communication with the ZIC-4A has terminated and the card goes into degrade mode (applicable only when card resides in the HNET network).
GND FAULT	(Yellow)	Normally OFF. When illuminated, indicates that the ZIC-4A has detected either a negative or positive ground fault on its field wiring.
ZONE 1 ACTIVE	(Red)	Normally OFF. When illuminated, indicates that Zone 1 is active.
TROUBLE	(Yellow)	Normally OFF. When illuminated, indicates that the ZIC-4A has detected a trouble on Zone 1 (open circuit or short circuit).
ZONE 2 ACTIVE	(Red)	Normally OFF. When illuminated, indicates that Zone 2 is active.

TROUBLE	(Yellow)	Normally OFF. When illuminated, indicates that the ZIC-4A has detected a trouble on Zone 2 (open circuit or short circuit).
ZONE 3 ACTIVE	(Red)	Normally OFF. When illuminated, indicates that Zone 3 is active.
TROUBLE	(Yellow)	Normally OFF. When illuminated, indicates that the ZIC-4A has detected a trouble on Zone 3 (open circuit or short circuit).
ZONE 4 ACTIVE	(Red)	Normally OFF. When illuminated, indicates that Zone 4 is active.
TROUBLE	(Yellow)	Normally OFF. When illuminated, indicates that the ZIC-4A has detected a trouble on Zone 4 (open circuit or short circuit).

Three rotary dial switches at the bottom of the front panel are used to set the HNET network address of the ZIC-4A.

PRE-INSTALLATION

The following components must be set prior to inserting the card to the CC-5 (refer to Figure 2):

S1 Primary Bell Follower Select Switch: This switch selects Zone 1 as the Primary Bell Follower. Toggle the S1 switch towards the bottom of the board if Zone 1 is configured as a Primary Bell Follower; otherwise toggle it to the top of the board for normal operation (as shown in Figure 2.)

S2, Leased Line Select Switches: These switches select the zones configured for Leased Line application. Toggle each switch to the ON position if the corresponding zone is configured as Leased Line. If the zone is not configured as a Leased Line application, the corresponding zone switch must be set to the OFF position.

NOTE

During card failure, Zone 1 and Zone 2 outputs will activate if the FireFinder-XLS/Desigo Fire Safety Modular/Cerberus PRO Modular Alarm bus is asserted, Zone 3 outputs will activate the if the FireFinder-XLS/Desigo Fire Safety Modular/Cerberus PRO Modular Trouble Bus is asserted. You must configure each zone to the proper Leased Line remote monitoring circuit.

Silver line on S1 and jumpers P1 and P4 indicates normal operation.

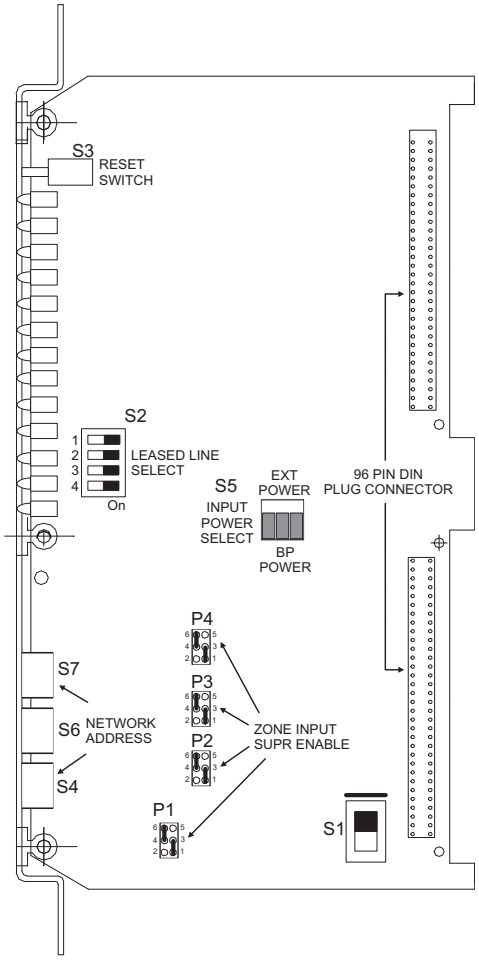


Figure 2
ZIC-4A Switch Location

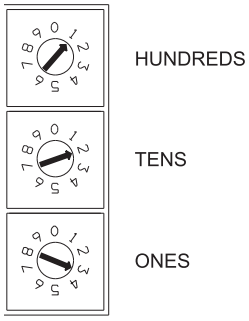
S2-SW1: Set to ON if Zone 1 usage = Leased Line, Alarm Default only

S2-SW2: Set to ON if Zone 2 usage = Leased Line, Alarm Default only

S2-SW3: Set to ON if Zone 3 usage = Leased Line, Trouble Default only

S2-SW4: Set to OFF: Not Used

S3, Reset Switch: Momentarily Closed switch that when pressed will initiate a hard reset to the ZIC-4A (similar to a cold boot).



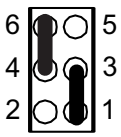
HNET

S4, S6, S7 Network Address Switch: Set the three-digit HNET network address for the ZIC-4A using the three rotary dial address switches located near the bottom of the front panel. (Refer to Figure 1 for the location of the switches.) The address for the ZIC-4A must be the same as the address selected for it in the Zeus Programming Tool. To set the address, turn the pointers on each of the three dials to the numbers for the selected address. For example, if the address is 123, set the pointer for the HUNDREDS dial to "1," set the pointer for the TENS dial to "2," and set the pointer for the ONES dial to "3." The range of allowable addresses is from 001 to 251 (leading zeros must be used).

S5 Input Power Select: This switch selects the source of voltage input to power the ZIC-4A. *BP Power* indicates that the input is derived from the backplane of the CC-2/CC-5 and *EXT Power* indicates that the input is derived from E5/E11 terminal of the CC-2/CC-5, normally connected to non-power limited output of the PSC-12/PSX-12. It is important to take into account the source of the voltage during battery calculations.

P1, P2, P3, P4 Shunt Headers, NAC Input Supervision Enable: These headers select the NAC input zone supervision. If usage application is set for speaker function, place the shunt jumpers of the corresponding zone between 1—2 and between 5—6, otherwise place the shunt jumpers between 1—3 and 4—6.

P1 selects NAC input supervision for Zone 1
P2 selects NAC input supervision for Zone 2
P3 selects NAC input supervision for Zone 3
P4 selects NAC input supervision for Zone 4



Output Zones

The ZIC-4A can be configured for the following usages:

Standard NAC Zone - Configurable as the following NAC zones:

Steady	Strobe (Synchronized or Unsynchronized)
Zone Coding	Temporal Code
	Temporal 4, when used with Audible Base SBGA-34
March Time 120	March Time 60
March Time 30	Horn / Strobe

Releasing Zone - For release of FM-200, Halon, Pre-action & Deluge Sprinklers for Canada or USA. Releasing zone requires an REL-EOL module for proper wire supervision.

Municipal Tie - Configurable as a supervised connection to municipal tie. Municipal Tie usage application requires the LLM-1 interface module.

Leased Line - Configurable as a connection to a remote monitoring system. Leased Line usage application requires LLM-1 interface module.

Bell Follower Primary - Configurable as a Bell Follower Primary (Zone 1 only).

Bell Follower Secondary - Configurable as a Bell Follower Secondary.

ZIC-4A SWITCH AND JUMPER SETTINGS

ZONE USAGE	S1	S2	HEADER POSITION
NAC	Normal	OFF	1 - 3, 4 - 6
Municipal Tie	Normal	OFF	1 - 3, 4 - 6
Releasing Zone	Normal	OFF	1 - 3, 4 - 6
Leased Line	Normal	SW (Zone) - ON	1 - 3, 4 - 6
Bell Follower - Primary (Zone 1 Only)	Off Normal	OFF	1 - 3, 4 - 6
Bell Follower - Secondary	Normal	OFF	1 - 3, 4 - 6
Zone Coding	Normal	OFF	1 - 3, 4 - 6
Coded Bells	Normal	OFF	1 - 3, 4 - 6
Speaker Zone	Normal	OFF	1 - 2, 5 - 6

Programming Options

In order to perform its intended operation, the ZIC-4A card must be programmed using the Zeus Programming Tool. The ZIC-4A card and its Out Ckt properties must be set prior to normal operation.

In the Zeus Programming Tool, highlight the selected ZIC-4A card in the **Physical View** and open the **Detail View - Properties** to modify and/or define the following ZIC-4A card properties:

HNET Address	This address must match the address set in the ZIC-4A hardware.
Slot Location	This defines the location where the ZIC-4A is inserted in the CC-5.
Base Language Custom Message	The message associated with the ZIC-4A card.
Alternate Language Custom Message	The message associated with the ZIC-4A card in an alternate language.
ZIC Card 24V Power Source	Select back plane or screw terminals.

Each ZIC-4A card is subdivided into four output circuits that can be programmed independently of each other. In the Zeus Programming Tool, highlight the selected ZIC-4A Output Ckt in the **Physical View** and open the **Detail View - Properties** to modify and/or define the following ZIC-4A output circuit properties:

Device Address	Shows preset address of ZIC card output.
Base Language Custom Message	The message associated with the ZIC-4A output circuit.
Alternate Language Custom Message	The message associated with the ZIC-4A output circuit in an alternate language.
Device Usage	Signal
ZIC Circuit Usage	Select usage required (see list).

NAC Steady	Leased Line Alrm
NAC Coded	Bell fol Primary
Horn Strobe Sync	Bell fol Secondary
Sil. Horn Only (Horn Strobe)	25V Speaker
Strobe Sync	70V Speaker
Strobe UnSync	100V Speaker
Municipal Tie	Releasing Zone

Degrade Mode Alarm Activation	Determines if Degrade Alarm will activate the ZIC-4A circuit when asserted.

Silenceable	Determines if the circuit is Silenceable or Non-Silenceable.
Wiring Type	Defines if the circuit is Class A or Class B wiring type.
Total Current Drawn	Select actual current load of output circuit (see list).

0.0 Amp	1.5 Amp	3.0 Amp
0.5 Amp	2.0 Amp	3.5 Amp
1.0 Amp	2.5 Amp	4.0 Amp

NOTE

If the zone usage is set in the Zeus Programming tool as "Sil Horn Only (Horn Strobe)," the Silenceable Option is always set and is specific to the Horn of the Horn Strobe device and the strobe is always Non-Silenceable.

Some restrictions apply to certain usage selections (for example, Municipal Tie can only be configured as Class B wiring type) that are enforced by the Zeus tool during Edit mode or Compile time.

Refer to the Zeus Quick Start Manual, P/N 315-033875, or the Zeus self-help index for more information.

WIRING

WARNING

Remove all system power before installation, first battery then AC. (To power up, connect the AC first, then the battery.)

All field wiring to the ZIC-4A is connected to the terminal blocks of the CC-5 card cage slot in which it is installed (Refer to Figure 3).

To Connect External Wiring

1. Loosen the screw of the terminal by turning it counterclockwise.
2. Insert the wire into the side of the terminal block.
3. Tighten the screw of the terminal block by turning it clockwise.

The top terminals (1 through 8 and 9 through 16) are connected to the notification appliance devices such as bells, horns, strobes, speakers, etc. Each zone has four terminal connections: (+), Class A (+), (-), Class A (-). These terminals are power limited.

The bottom terminals (17 through 24) are connected to the input power source of the NAC devices. Each zone has a (+) terminal and (-) terminal. These terminals are not power limited.

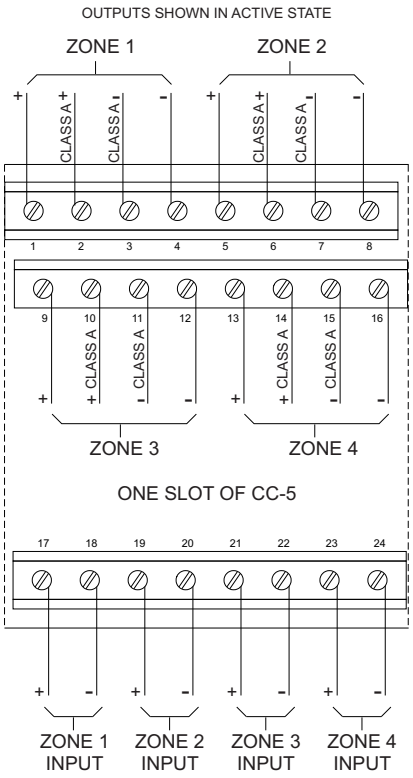


Figure 3
Wiring The 24VDC Power Lines To The ZIC-4A Slot In The CC-5

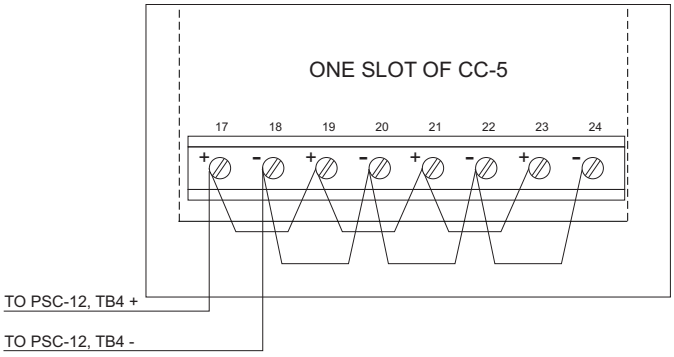
CAUTION

Care must be taken when installing the zone input and zone output field wiring to prevent possible cross wiring.This can cause severe damage to the system when powered up or when zone is activated.

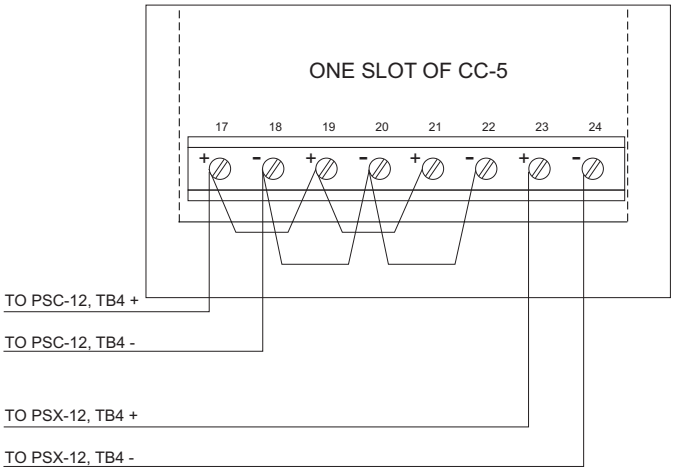
The screw terminals can accommodate one 12-18 AWG or two 16-18 AWG.

NOTE

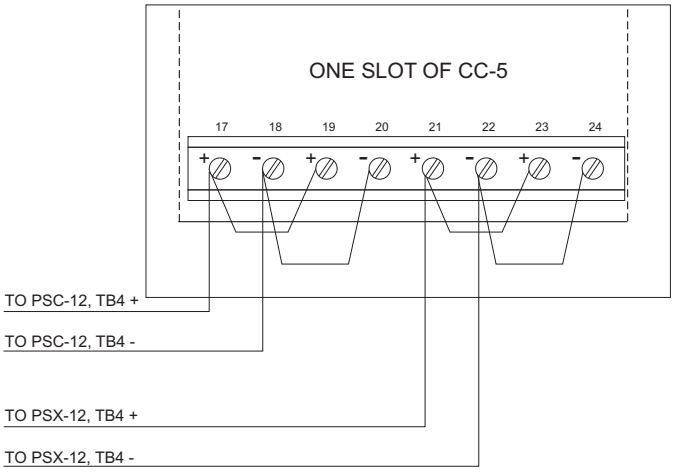
If the total output of all 4 zones exceeds 12 amps, a single PSC-12 cannot be used to supply the ZIC-4A. Refer to the PSC-12 Installation Instructions, P/N 315-033060 for information when the total system load exceeds 12 amps.



USING A SINGLE PSC-12 TO POWER A ZIC-4A



USING A PSC-12 TO POWER INPUTS 1-3 AND A PSX-12 TO POWER INPUT 4



USING A PSC-12 TO POWER INPUTS 1-2 AND A PSX-12 TO POWER INPUTS 3- 4

Figure 4
Using Multiple Power Supplies

INSTALLATION

The ZIC-4A plugs perpendicularly into one slot in the CC-5 card-cage via two 96-pin DIN connectors and can occupy any slot in the card cage. (Refer to Figure 5.)

Insert the ZIC-4A card into the card guides right side up (lettering on the front panel is legible).

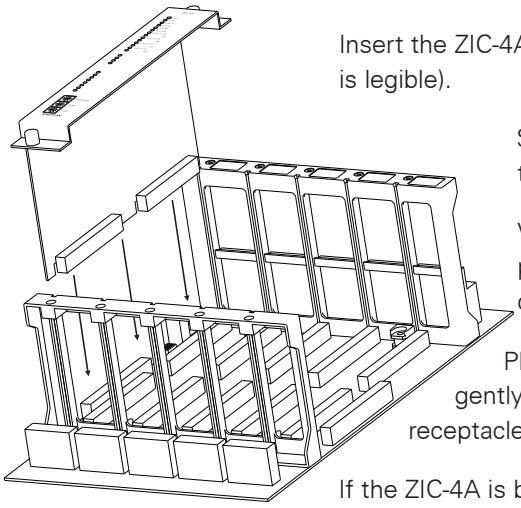


Figure 5
Installing The ZIC-4A

Slide the card in until the card edge connectors contact the receptacles on the motherboard.

Verify that the DIN connectors of the card and the card-cage aligned properly. The card can only plug in one direction to the card cage, if it does not align, DO NOT FORCE the card.

Place thumbs on the front panel adjacent to the captive screws and gently apply even pressure on the card until the connectors seat in the receptacles on the motherboard. Secure with the captive screws.

If the ZIC-4A is being powered from an external source, verify that E5 has the proper voltage and proper terminal connections.

ELECTRICAL RATINGS

24V Back Plane or External Power Current	See NOTE below
Screw Terminal 24V Current	Total Device Current
6.2V Back Plane Current	0
24V Standby Current	89mA

NOTE: The 24V current is dependent on the usage and wiring type of each ZICCkt of the ZIC-4A. Listed below are the required current draws for each zone usage and wiring type.

ZIC-4A Current Requirement		
Zone Usage	**Output Current Requirement**	**Class A Current Requirement**
Not Used	0	0
NAC	17mA	6mA
Strobe - Sync.	17mA	6mA
Strobe - Unsync.	17mA	6mA
Municipal Tie - USA	34mA	0
Municipal Tie - Canada	17mA	0
Releasing Zone	17mA	0
Leased Line - Alarm	17mA	0
Leased Line - Trouble	17mA	0
Leased Line - Supv	17mA	0
Bell Follower - Primary	0	0
Bell Follower - Secondary	17mA	6mA
Speaker Zone	34mA	6mA
NAC - Coded	17mA	6mA

ZIC-4A Standby Current = 89mA

To calculate the maximum current, the following equation should be used:

ZIC-4A Total Current = ZIC-4A Standby Current + [Zone 1 Usage Req. (See Table above) + Class A current (if Class A)]
+ [Zone 2 Usage Req. (See Table above) + Class A current (if Class A)]
+ [Zone 3 Usage Req. (See Table above) + Class A current (if Class A)]
+ [Zone 4 Usage Req. (See Table above) + Class A current (if Class A)]

Example 1: If a ZIC-4A has the following ZICCkt setting:

ZICCkt#1 — Speaker Zone, Class A
ZICCkt#2 — Speaker Zone, Class A
ZICCkt#3 — Speaker Zone, Class A
ZICCkt#4 — Speaker Zone, Class A

By applying the equation above, the maximum current requirement for this card will be determined.

Max Current = 89 + (34 + 6) +(34 + 6) +(34 + 6) +(34 + 6) = 249mA (worst case).

Example 2: If a ZIC-4A has the following ZICCkt setting:

ZICCkt#1 — NAC, Class B
ZICCkt#2 — Strobe Sync, Class A
ZICCkt#3 — NAC-Coded, Class B
ZICCkt#4 — Not Used

Max Current = 89 + (17 + 0) +(17 + 6) +(17 + 0) +(0 + 0) = 146mA.

CONFIGURATIONS

The ZIC-4A zones can be configured for the following usages (Refer to Figures 6 - 16):

- Notification Applicance (NFPA 72)
- Municipal Tie (NFPA 72)
- Leased Line (NFPA 72)
- Releasing Service (NFPA 13 and NFPA 2001)
- Bell Follower
- Single-Channel and Two-Channel Audio
- Single-Channel and Two-Channel Audio and Strobe

Bell Follower

(Refer to Figure 11) When the ZIC-4A zones are configured as a bell follower, it follows a signal that comes from another reverse polarity source. The zones can be set as a *Bell Follower-Primary* or *Bell Follower-Secondary*.

The Bell Follower-Primary receives an input (it can be NAC output of another panel, etc), converts it to a TTL signal and then sends it to the Bell Sync Bus of the CC-5 which is monitored by the card with Bell Follower-Secondary configuration. Bell Follower-Primary can be configured on Zone 1 only. Once Zone 1 is configured as a Bell Follower-Primary, its zone output is not used. There can only be one Bell Follower-Primary per enclosure. CC-5 Sync Bus transfers from card cage to card cage.

The ZIC-4A card monitors the Bell Sync Bus if any one of its zones is configured as Bell Follower-Secondary. Once a HI is detected, the card activates the Bell Follower-Secondary zone and continuously monitors this signal until it goes LO. Then the ZIC-4A card de-activates the Bell Follower-Secondary. The zone inputs of the Bell Follower-Secondary are monitored for presence of input voltage (<20VDC) and its output is supervised for short and open while the zone is in supervision.

NOTES

1. All wiring must be in accordance with Article 760 of NEC or local building codes. Wiring for each zone can either be Class A or Class B.
2. All output circuits are power limited to NFPA 70 per NEC 760.
3. Electrical Ratings: Special Application
   24 VDC
   4mA max @ Supervisory
   3A max @ Alarm
4. EOL resistor , 24k ohms , 1 watt , 5%, P/N 140-033771.
5. Polarity shown in active state.
6. Maximum line resistance is dependent upon the maximum current draw of connected notification appliances when activated. The field wiring resistance cannot exceed the maximum line resistance specified for any given NAC current draw. (See Table)
7. Sync and non-sync notification appliances permitted. Sync is provided across all four tones. Sync is not provided between ZIC-4A cards.
8. For a list of Compatible Notification Appliances, refer to P/N 315-096363.
9. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.
10. Positive or negative ground fault detected at <40K ohms for terminals 1-16.

Current Draw	Max Line Resistance
3.0A	0.8 ohms
2.5A	1.0 ohms
2.0A	1.2 ohms
1.5A	1.9 ohms
1.0A	3.4 ohms
0.5A	7.9 ohms

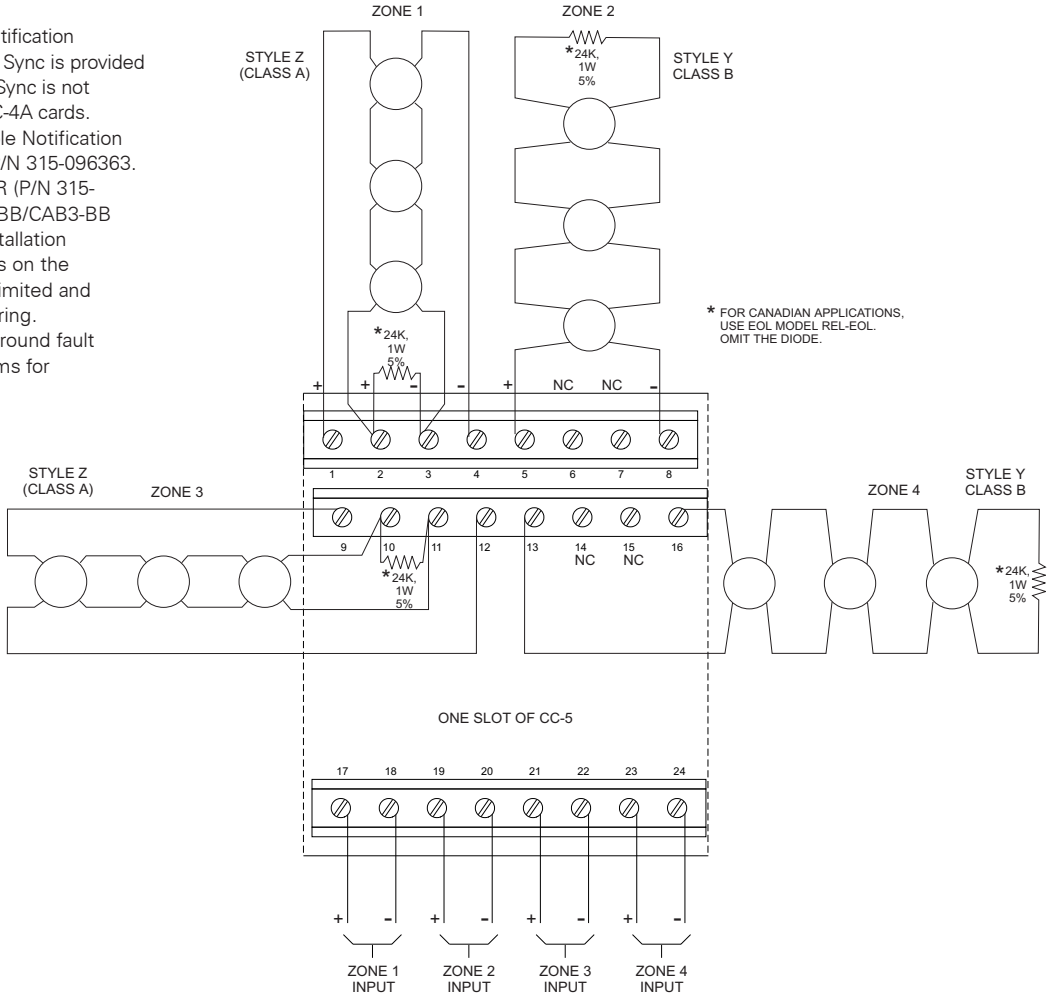
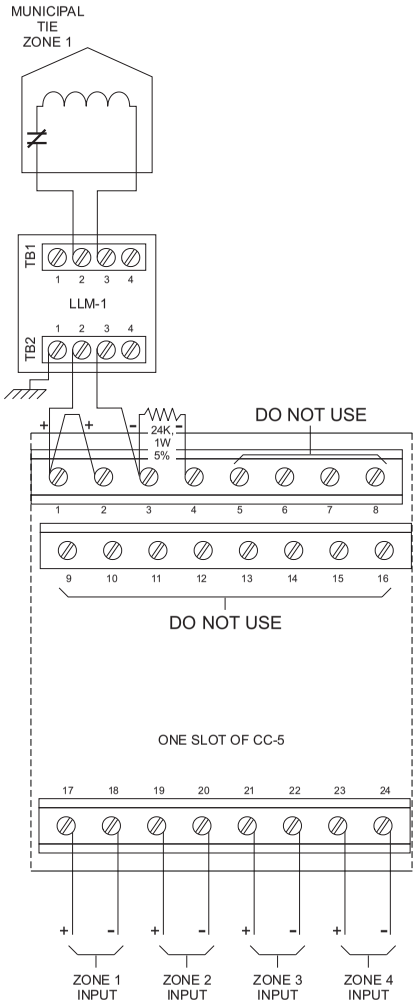


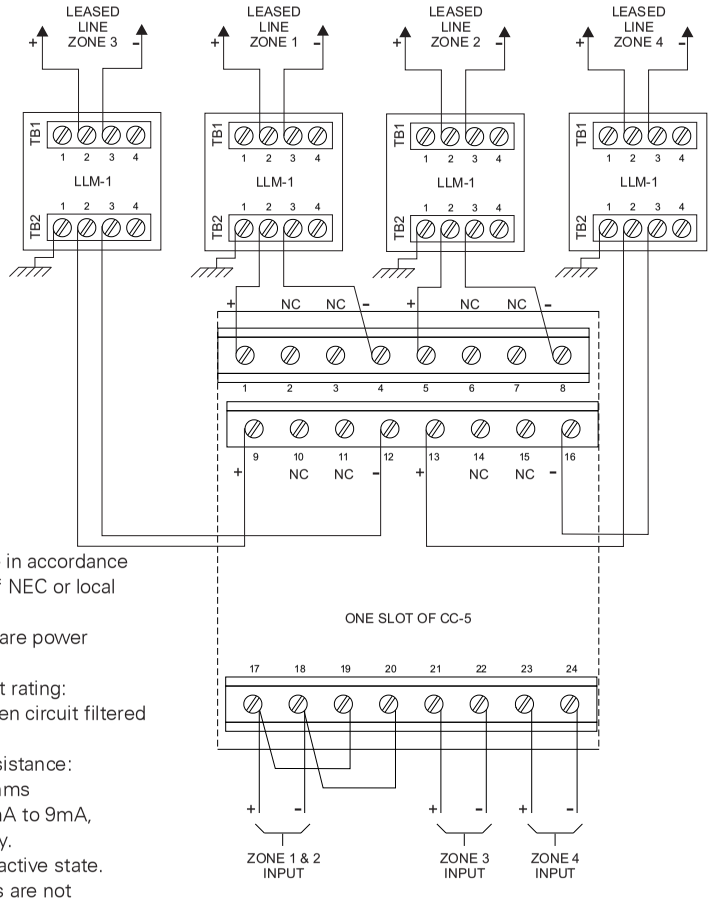
Figure 6
ZIC-4A Supervised Notification Appliance Wiring



NOTES

1. All wiring must be in accordance with Article 760 of NEC or local building codes.
2. All output circuits are not power limited.
3. Electrical Ratings:
   Trip Coil: 14.5 ohms
   Trip Current:
   220mA to 320mA DC
   Supervisory Current:
   1mA DC
   Voltage: 24V nominal
4. EOL resistor, 24k ohms, 1 watt, 5%, P/N 140-820405.
5. Polarity shown in active state.
6. Supervised for open circuit only.
7. LLM-1 module is required. The total loop resistance from the LLM-1 to the Municipal Tie, including the 14.5 ohms in the Municipal Tie, should not exceed 22.5 ohms.
8. Wire jumper must be connected between the positive terminals at the output.
9. Any circuit may be used.
10. Minimum Emergency Power:
    60 hours standby
    5 minute alarm
11. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.
12. Positive or negative ground fault detected at <40K ohms for terminals 1-16.

Figure 7
ZIC-4A Supervised Municipal Tie Wiring



NOTES

1. All wiring must be in accordance with Article 760 of NEC or local building codes.
2. All output circuits are power limited.
3. Leased Line circuit rating:
   24 VDC open circuit filtered full wave
4. External circuit resistance:
   2k to 5k ohms
5. Rated Current: 3mA to 9mA, alarm / supervisory.
6. Polarity shown in active state.
7. Lease Line circuits are not supervised.
8. LLM-1 module is required.
9. Load must be compatible polarity reversal labeled Remote Station Receiver Unit.
10. Input voltage sources can be daisy-chained.
11. Any circuit may be used.
12. Minimum Emergency Power:
    60 hours standby
    5 minute alarm
13. Intended for connection to a polarity reversal circuit of a remote station receiving unit having compatible ratings.
14. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.

Figure 8
ZIC-4A Leased Line Wiring

NOTES

1. All wiring must be in accordance with Article 760 of NEC or local building codes.
2. Electrical Ratings: 24VDC
   2mA max @ Supervisory
   3A max @ Alarm
3. All circuits are power limited to NFPA 72 per NEC 760.
4. EOL resistor, 24k ohms, 1 watt, 5%, P/N 140-820405.
5. Polarity shown in active state for UL compliant wiring only.
6. N/A
7. Releasing is wired for Class B only.
8. Any circuit may be used.
9. Input voltage sources can be daisy-chained.
10. For Compatible Solenoids, refer to table at right.
11. Refer to Zeus Quick Start Guide (P/N 315-033875) for information about programming of releasing service.
12. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.
13. Positive or negative ground fault detected at <40K ohms for terminals 1-16.
14. For FM approved Pre-Action/ Deluge: All initiating devices connected to the system must be wired CLASS A.
15. Wiring diagram shown for 24VDC solenoid.
16. Wiring diagram shown for 12VDC solenoids (2 units in series.)
17. Wiring diagram shown for 6VDC solenoids (4 units in series.)
18. The ZIC-4A circuit must be configured as "NAC Steady." The "Releasing Zone" usage in Zeus is only to be used for legacy UL releasing applications that did not include the REL-EOL.
19. The ZIC-4A circuit must include a UL864 listed Releasing Disconnect Switch such as Siemens Model RSM-5, P/N S54339-F1-A1. The switch position must be monitored using an input module such as the HTRI-M using the second set of contacts.

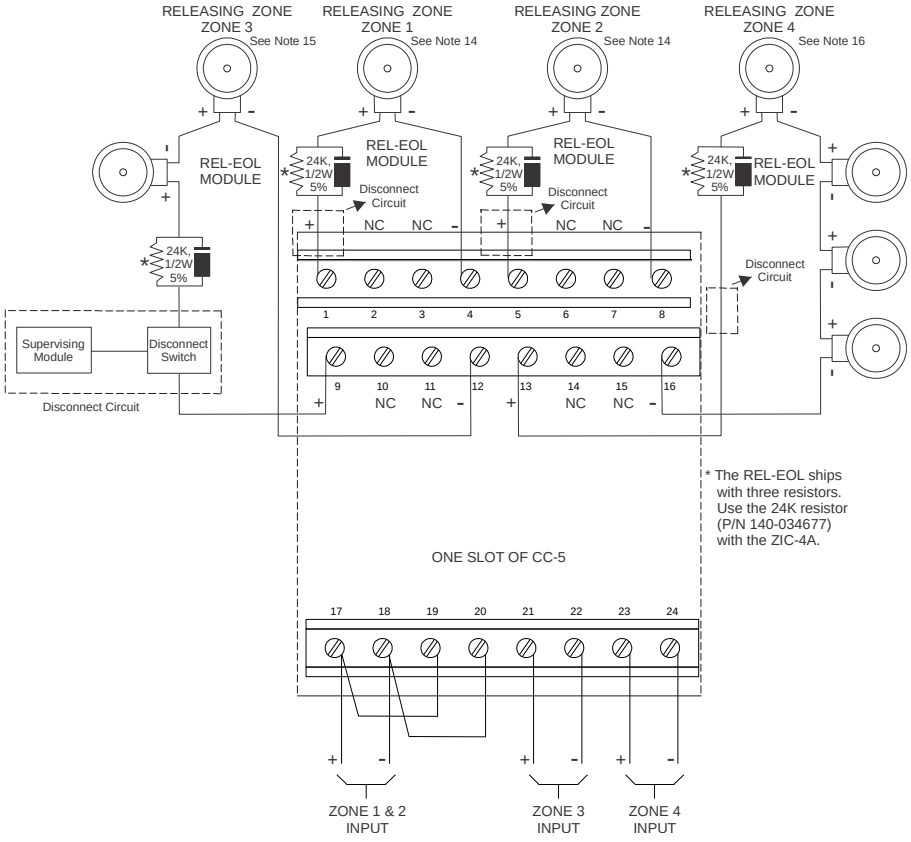


Figure 9
ZIC-4A Releasing Service Wiring

NOTE Refer to the Solenoid Compatibility List, Document ID A6V11620059.

NOTE Initiating devices configured for supervisory signaling are latching by default. If non-latching behavior is required, check the self restoring supervisory checkbox in the node properties for your Zeus configuration.

NOTES

1. All wiring must be in accordance with Article 760 of NEC or local building codes.
2. All output circuits are power limited to NFPA 70 per NEC 760.
3. Electrical Ratings: 24 VDC
   2mA max @ Supervisory
   3A max @ Alarm
4. Maximum line resistance: Refer to table on pages 12 or 16.
5. Use only Pre-Action/Deluge solenoids listed in tables on page 14.
6. For FM Approved Pre-Action/ Deluge: All initiating devices conntected to the system must be wired CLASS A.
7. Refer to Figure 9 for ZIC-4A output soldenoid wiring for Releasing Service. Connect the zone ouput appropriately.
8. Inputs can be daisy-chained provided that the power supply can sustain the power requirement of the output when activated.
9. Refer to Zeus Quick Start Guide (P/N 315-033875) for information about programming of releasing service.
10. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.
11. 90 hour standby power is required to meet FM Approved installation requirements. Refer to PSC-12 Installation Instructions, P/N 315-033060 for battery calculations.

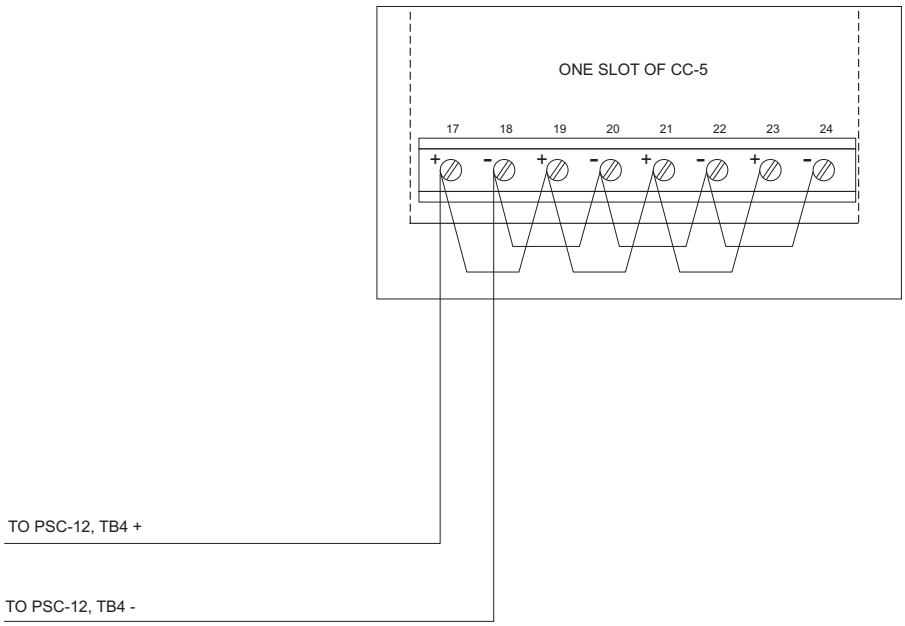


Figure 10
ZIC-4A Releasing Service Wiring With PSC-12 Power Supply

FOR FM APPROVED INSTALLATION ONLY:

Double Interlock Pre-action Systems

A sprinkler system comprised of two interlocks - an interlock which opens when powered by a listed releasing panel and a second interlock which opens when a pressure loss is experienced in the sprinkler pipes between the interlock and the system's sprinkler heads.

Both interlocks must be open at the same time to allow for the flow of water to initiate.

A specific sequence of operation is required with all Siemens panels with listed releasing capabilities.

The FireFinder-XLS/Desigo Fire Safety Modular/Cerberus PRO Modular panel will indicate an alarm if one detector detects an alarm condition. The system will not energize the releasing circuit until an additional detector detects an alarm (any two detectors in the same protection zone covering the sprinkler system) AND the panel receives a low pressure indication from a pressure switch placed in the sprinkler piping between the second interlock and that pipe system's sprinkler heads (indicates that the second interlock is in OPEN position). If this sequence is not followed precisely, the correlating system design may not properly activate the double interlock preaction sprinkler system, therefore, preventing the water from discharging during a true fire incident.

NOTES

1. All wiring must be in accordance with Article 760 of NEC or local building codes.
2. Only Zone 1 can be configured as Bell Follower-Primary. Any other zone can be configured as Bell Follower-Secondary. There can only be one Bell Follower-Primary per enclosure.
3. Electrical Ratings:
   Bell Follower-Primary:
   Input Alarm Current: 6mA max
   Input Voltage: 24 VDC nominal
   No end of line resistor is used.

   Bell Follower-Secondary:
   Input Voltage: 24 VDC nominal
   Output Supervision Current: 4mA max
   Output Alarm Current: 3A max
   Output Voltage: 24 VDC nominal
4. Bell Follower-Primary is not supervised.
5. Bell Follower-Secondary is supervised for input voltage presence, short and open on the output and is power limited. Bell Follower-Secondary can be configured or Class A or Class B wiring.
6. The total output loop resistance must not exceed those stated in table to the right.
7. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.
8. Positive or negative ground fault detected at <40K ohms for terminals 1-16.
9. The use of sync strobes is not allowed on the secondary circuits.

Current Draw	Max Line Resistance
3.0A	0.8 ohms
2.5A	1.0 ohms
2.0A	1.2 ohms
1.5A	1.9 ohms
1.0A	3.4 ohms
0.5A	7.9 ohms

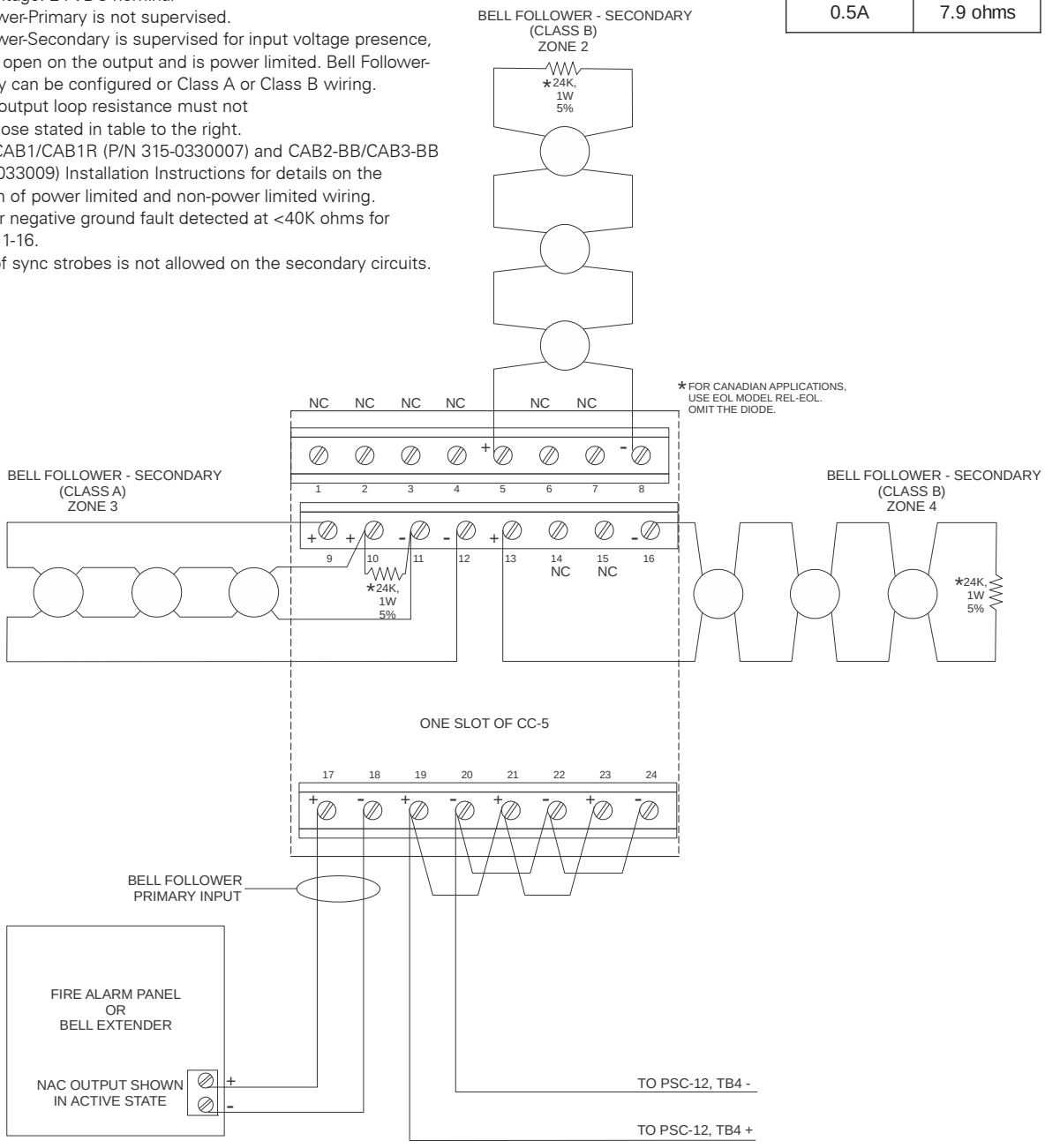
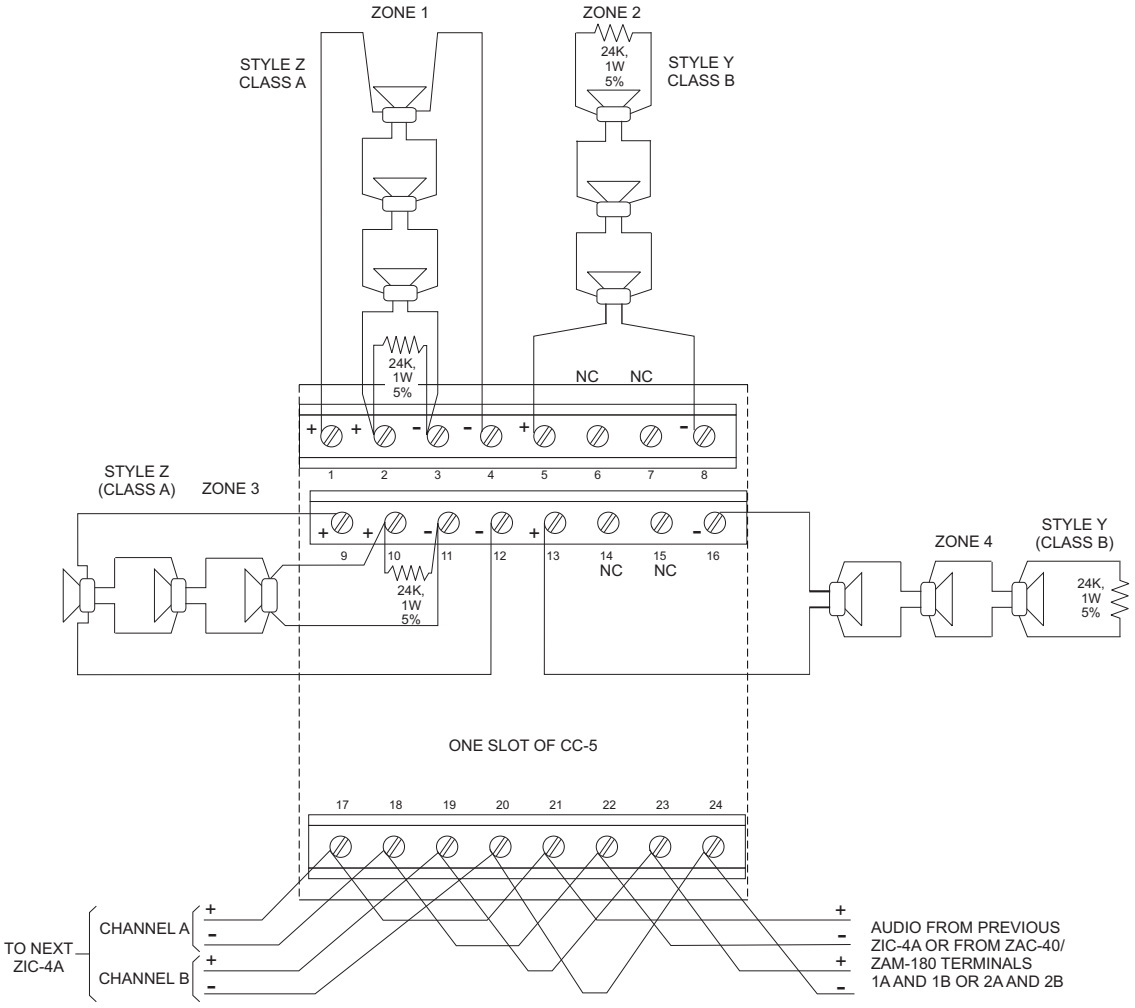


Figure 11
ZIC-4A Bell Follower Circuit Wiring



NOTES
1. All wiring must be in accordance with Article 760 of NEC or local building codes. Wiring for each zone can either be Class A or Class B.
2. All output circuits are power limited to NFPA 70 per NEC 760.
3. Electrical Ratings:
   Output Zone Supervisory: 4mA max
   Output Zone Active: 96 Watts max / zone
4. EOL resistor, 24k ohms, 1 watt , 5%, P/N 140-033771.
5. Polarity shown in active state.
6. Sync and non-sync notification appliances permitted.
7. For a list of Compatible Notification Appliances, refer to P/N 315-096363.
8. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.
9. Verify that P1 - P4 are in the proper location for speaker application.
10. Positive or negative ground fault detected at <40K ohms for terminals 1-16.

Figure 12
ZIC-4A Two-Channel Audio Wiring

NOTES

1. All wiring must be in accordance with Article 760 of NEC or local building codes. Wiring for each zone can either be Class A or Class B.
2. All output circuits are power limited to NFPA 70 per NEC 760.
3. Electrical Ratings:
   Output Zone Supervisory:
   4mA max
   Output Zone Active:
   96 Watts max / zone
4. EOL resistor, 24k ohms, 1 watt , 5%, P/N 140-033771.
5. Polarity shown in active state.
6. For a list of Compatible Notification Appliances, refer to P/N 315-096363.
7. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.
8. Positive or negative ground fault detected at <40K ohms for terminals 1-16.

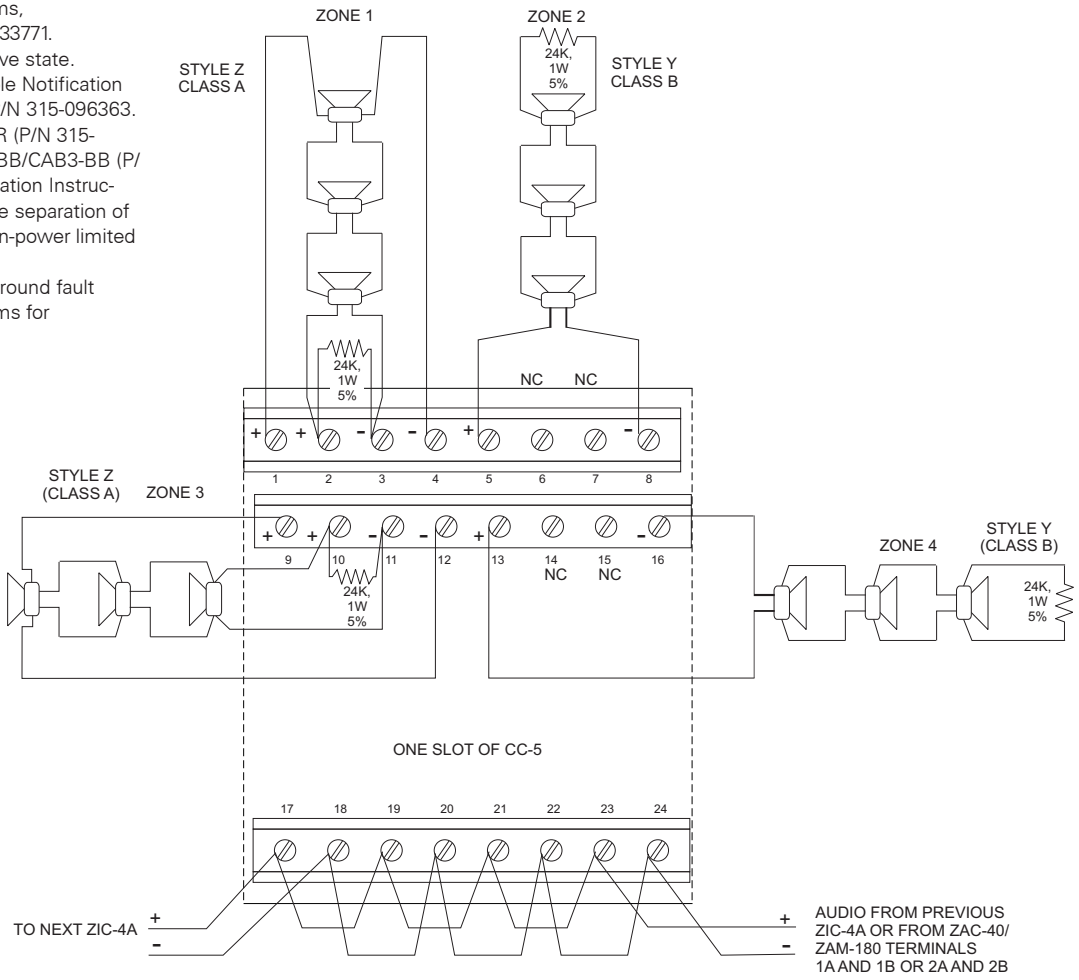
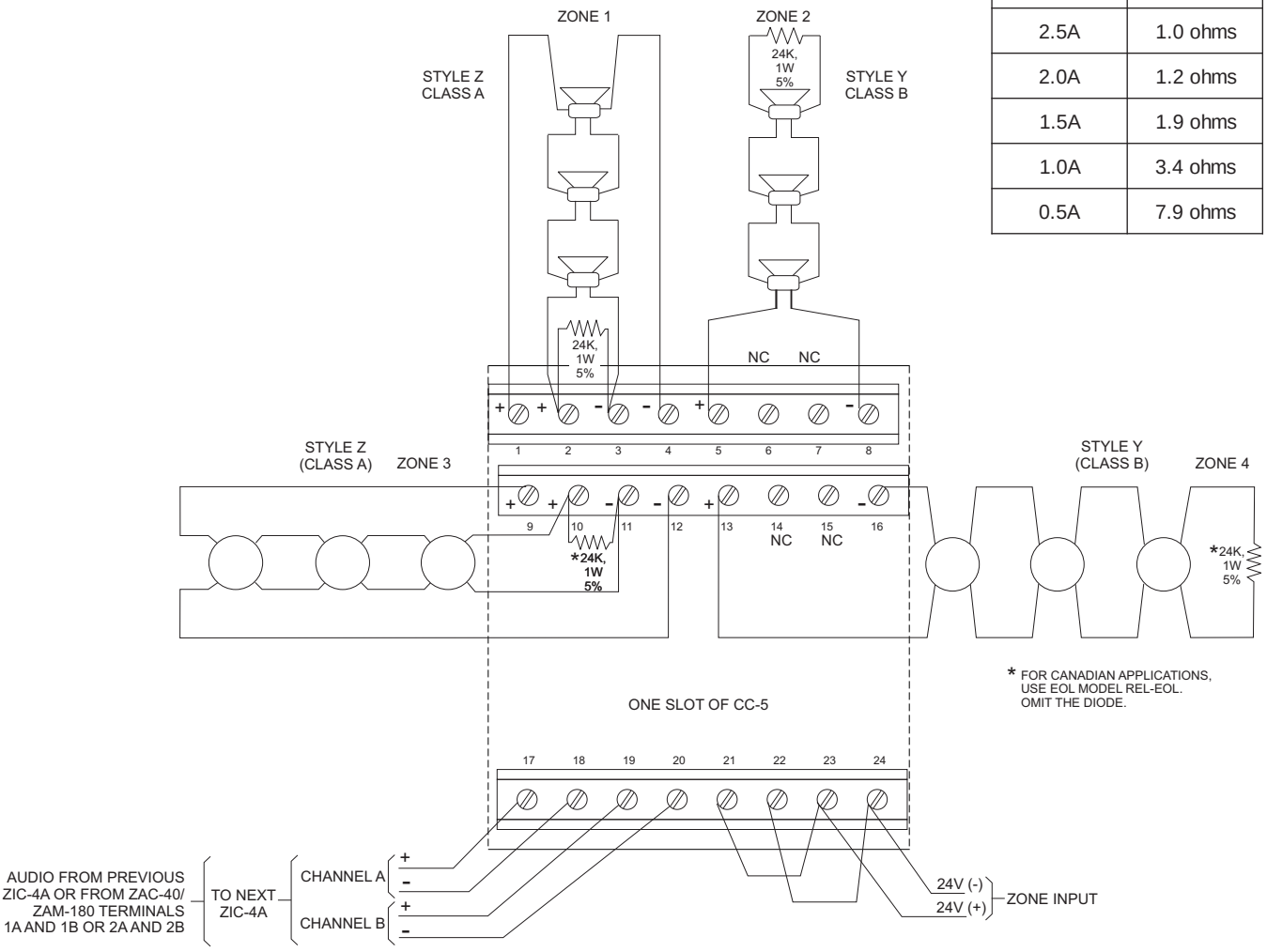


Figure 13
ZIC-4A Single-Channel Audio Wiring

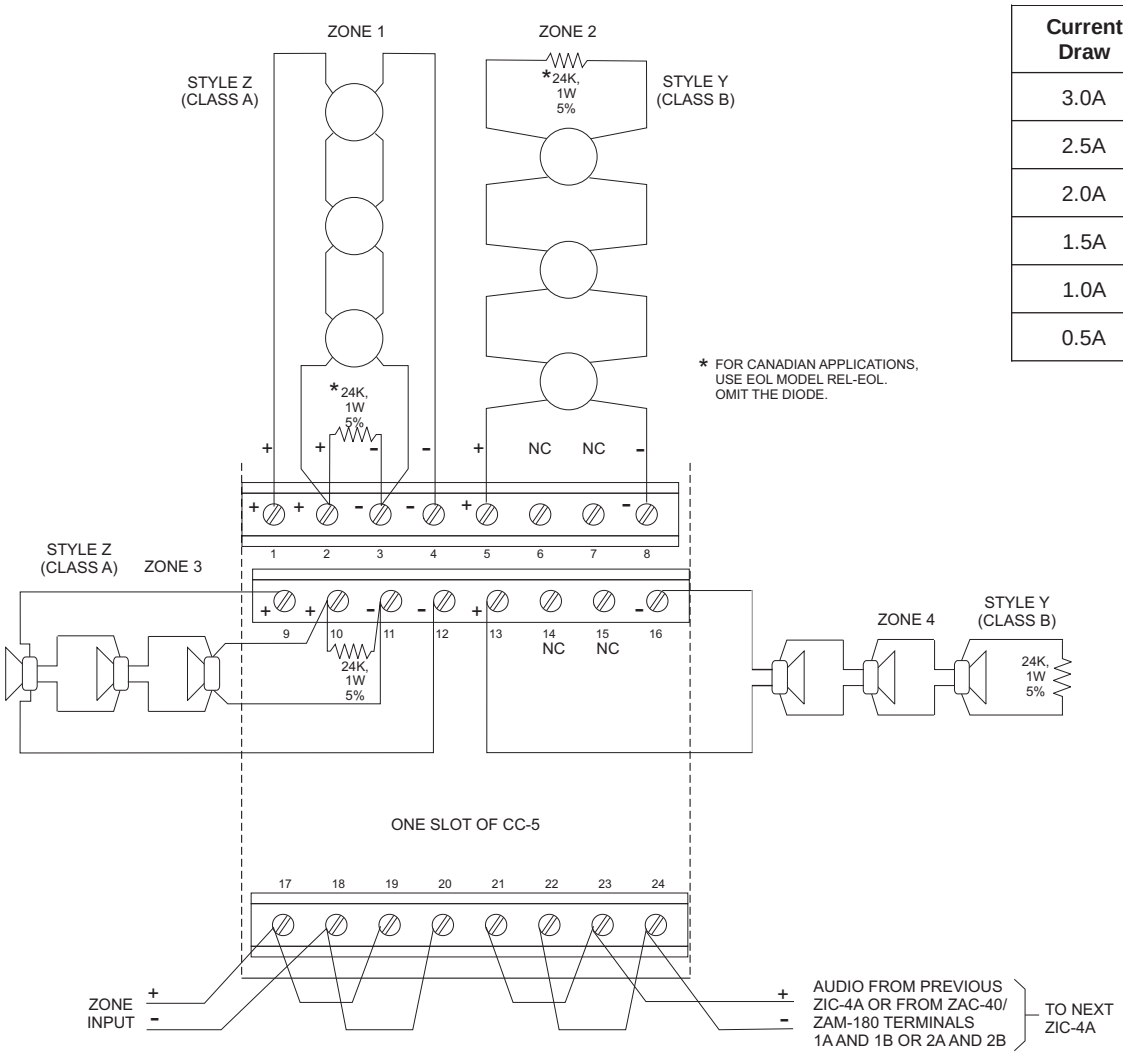
Current Draw	Max Line Resistance
3.0A	0.8 ohms
2.5A	1.0 ohms
2.0A	1.2 ohms
1.5A	1.9 ohms
1.0A	3.4 ohms
0.5A	7.9 ohms



NOTES

1. All wiring must be in accordance with Article 760 of NEC or local building codes. Wiring for each zone can either be Class A or Class B.
2. All output circuits are power limited to NFPA 70 per NEC 760.
3. Electrical Ratings For Speaker Application:
   Output Zone Supervisory: 4mA max @ 24VDC
   Output Zone Active: 96 Watts max / zone
   Electrical Ratings For Special Application: 24 VDC (strobe)
   Output Zone Supervisory: 4mA max
   Output Zone Alarm: 3A max
4. EOL resistor, 24k ohms, 1 watt , 5%, P/N 140-033771.
5. Polarity shown in active state.
6. Sync and non-sync notification appliances permitted.
7. For a list of Compatible Notification Appliances, refer to P/N 315-096363.
8. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.
9. Verify that P1 - P4 are in the proper location for speaker application.
10. Maximum line resistance is dependent upon the maximum current draw of connected notification appliances when activated. The field wiring resistance cannot exceed the maximum line resistance specified for any given NAC current draw. (See Table)
11. Zone Usage pair is interchangeable. Verify proper wiring.
12. Positive or negative ground fault detected at <40K ohms for terminals 1-16.

Figure 14
ZIC-4A Two-Channel Audio And Strobe Wiring



Current Draw	Max Line Resistance
3.0A	0.8 ohms
2.5A	1.0 ohms
2.0A	1.2 ohms
1.5A	1.9 ohms
1.0A	3.4 ohms
0.5A	7.9 ohms

NOTES
1. All wiring must be in accordance with Article 760 of NEC or local building codes. Wiring for each zone can either be Class A or Class B.
2. All output circuits are power limited to NFPA 70 per NEC 760.
3. Electrical Ratings For Speaker Application:
   Output Zone Supervisory: 4mA max @ 24VDC
   Output Zone Active: 96 Watts max / zone
   Electrical Ratings For Special Application: 24 VDC (strobe)
   Output Zone Supervisory: 4mA max
   Output Zone Alarm: 3A max
4. EOL resistor, 24k ohms,
   1 watt , 5%, P/N 140-033771.
5. Polarity shown in active state.
6. Sync and non-sync notification appliances permitted.
7. For a list of Compatible Notification Appliances, refer to P/N 315-096363.
8. Refer to CAB1/CAB1R (P/N 315-0330007) and CAB2-BB/CAB3-BB (P/N 315-033009) Installation Instructions for details on the separation of power limited and non-power limited wiring.
9. Verify that P1 - P4 are in the proper location for speaker application.
10. Maximum line resistance is dependent upon the maximum current draw of connected notification appliances when activated. The field wiring resistance cannot exceed the maximum line resistance specified for any given NAC current draw. (See Table)
11. Zone usage pair is interchangeable. Verify proper wiring.
12. Positive or negative ground fault detected at 40K ohms for terminals 1-16.

Figure 15
ZIC-4A Single-Channel Audio And Strobe Wiring

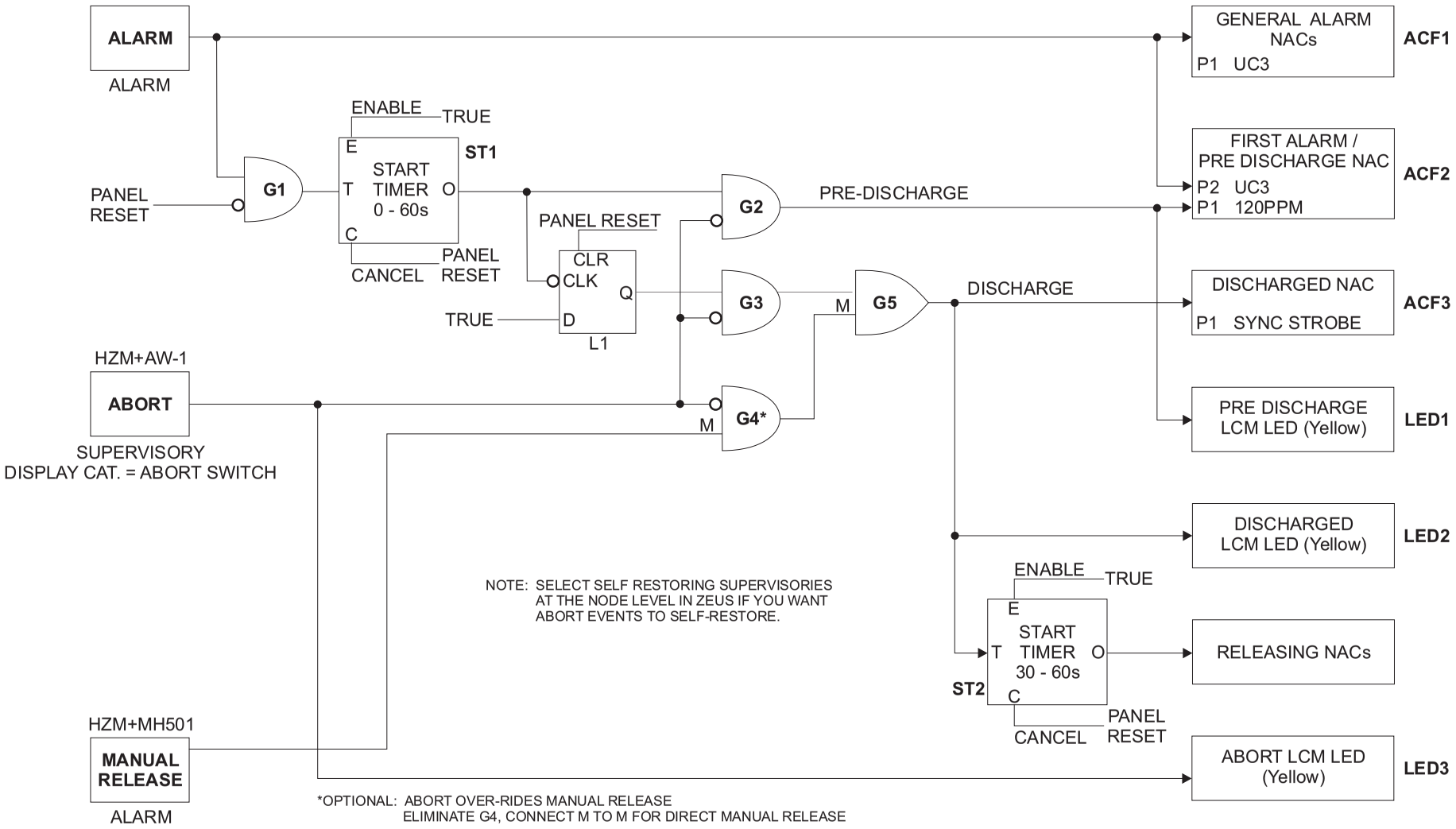


Figure 16
FireFinder-XLS/Desigo Fire Safety Modular/Cerberus PRO Modular Releasing Logic

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For CE applications in Cerberus E100 systems refer to
Installation Instruction A24205-A334-B844 (English) or A24205-A334-A844 (German).

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