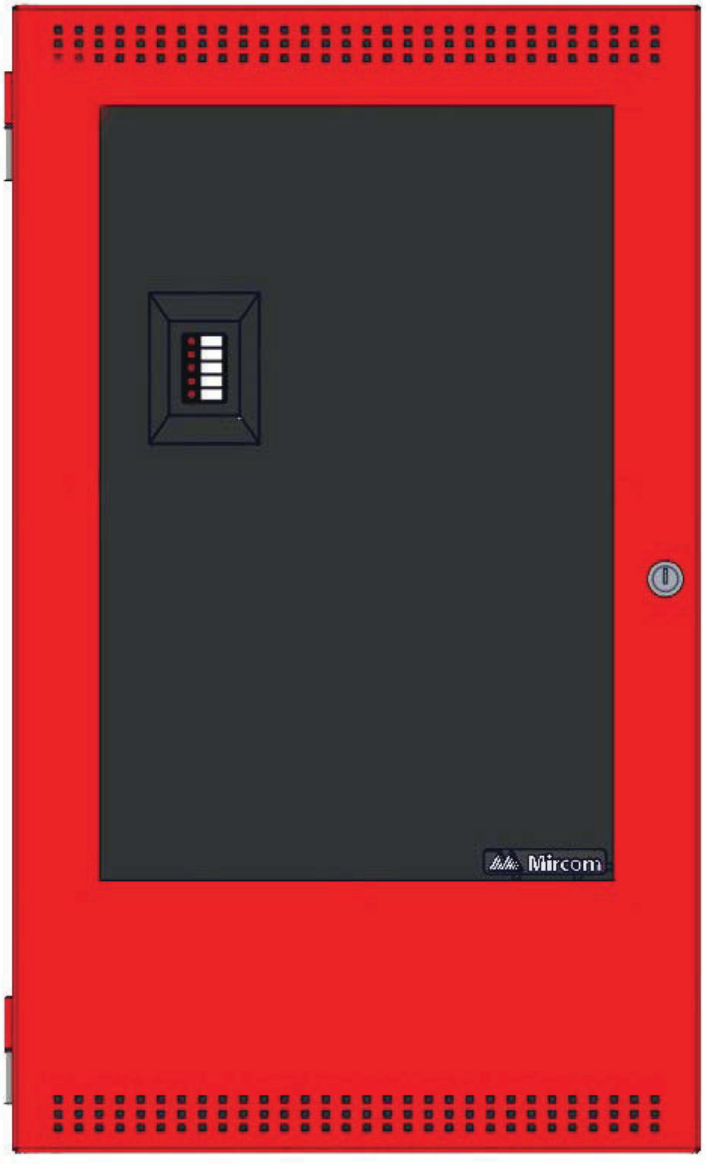
MGC™

INX-10A Series

Intelligent NAC Expander Panel



Installation and Operation Manual

LT-899 Rev. 7
December 2017

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1.0 Introduction

This document provides information for the successful installation, operation and configuration of the INX-10A, the INX-10ADS, and the INX-10AC. Unless specifically mentioned, INX-10A can hereafter be used to refer to any of the INX-10A, the INX-10ADS, or the INX-10AC.

This chapter explains

- Feature Overview

1.1 The INX-10A Intelligent NAC Expander Panel

Mircom's INX-10A is an Intelligent NAC Expander Panel and operates in CLIP (Classic Loop Interface Protocol) mode. Available as a 10 Amp configuration, the INX-10A extends the power capabilities of existing notification appliance circuits and provides power for other ancillary devices.

The INX-10A also has the ability to operate with any UL Listed 24 VDC conventional fire alarm control panel to provide Notification Appliance Circuit expansion.

1.1.1 Compatible Fire Alarm Control Panels

Table 1 Compatible Fire Alarm Control Panels

Manufacturer	Fire Alarm Control Panel Series
Mircom	FleX-Net
	FX-2003-12N
	FX-2017-12N
	FX-2009-12N
	FX-2003-6
	FX-2003-12
	FX-2003S-12
	FX-2017-12A
	FX-2017S-12A
	FX-2009-12
	FX-2009S-12
	FX-3500
	FX-3500RCU
Secutron	MR-2100 / MR-2200 Series
	MR-2900 Series
	MR-3500/3500RCU

1.1.2 Features

- Supports 2 synchronized panels on one node to meet sync timing requirements
- Supports up to 14 panels per node using minimal configuration (7 SLC points per booster)
- Supports up to 6 panels per node using maximum configuration (15 points for extended trouble reporting and two-stage operation).
- Outputs used as power supply outputs do not require panel configuration or SLC addresses
- Utilizes DIP switches for configuration
- DC regulated outputs

- Configurable NAC, Power and Door Holder Outputs
- Configurable AC Power fail delay
- Enable or disable Ground fault
- Separate Relay for Ground Fault and Common Trouble available on terminals
- Enable or disable the Battery Charger on activation
- Class A or B output signals
- Horn/Strobe sync protocols include Mircom, Amseco, Gentex, System Sensor and Wheelock
- Ability to sync outputs for multiple INX-10A units
- 2 wire horn/strobe Sync mode allows audible notification appliances (horns) to be silenced while visual notification appliances (strobes) continue to operate
- Audible signals may be configured for Steady, Temporal Code, California Code and March Time
- Output fault notification to FACP
- Built-in charger for sealed lead acid or gel type batteries up to and including 40 Ah storage capacity.
- Enclosure fits 4 Ah, 7 Ah, and 12 Ah batteries. 18 Ah batteries will fit in the INX-10ADS only. The INX-10A series can charge 40 Ah batteries but they must be placed in an external battery cabinet (BC-160).
- 2.5 Amp max current per output
- 1.7 Amp auxiliary power output
- Unit includes power supply and charger, red enclosure, cam lock, transformer and battery leads
- Compatible with 24VDC fire panels
- Surface or flush-mountable

1.1.3 General Notes

Circuits And Zones

Circuits refers to an actual electrical interface, Input (Detection), NAC Notification Appliance Circuit) which connect audible and visible notification appliances to the fire alarm system control unit (Signal), or Relay.

Wiring Styles

- Input Circuits are configured as Class B (Style B).
- NAC Circuits may be individually wired as Class A (Style Z) or Class B (Style Y) without affecting the number of circuits available.
- Signal Line Circuit Class A (Style 7) and Class B (Style 3).

2.0 INX-10A Overview

This chapter lists the components of the INX-10A.

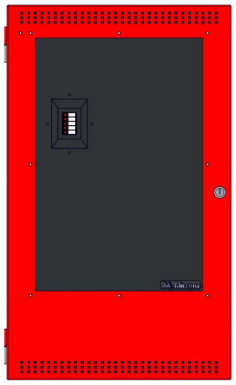
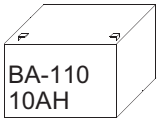
This chapter explains

- INX-10A Components

2.1 INX-10A Components

The following table describes the components of the INX-10A.

Table 2 INX-10A Components

	Model	Description
	**INX-10A**	Intelligent NAC Expander, 10 Amps.
	**INX-10ADS**	Intelligent NAC Expander, 10 Amps. Mounts into the BBX-1024DS.
	**INX-10AC**	Intelligent NAC Expander, 10 Amps Addressable Chassis Mounts into the BB-5008 or BB-5014 enclosure.
 W= 5.94" H= 3.94" D= 3.86"	**BA-104, BA-1065, BA-110, BA-117**	12 VOLT Batteries (4 Ah to 12 Ah). 18 Ah batteries fit in the INX-10ADS only. Maximum 40 Ah batteries with an external enclosure.

3.0 Installation

This chapter describes the installation of the INX-10ADS, INX-10AC, and INX-10A.

This chapter explains

- How to mount the Enclosure
- Main Chassis Board Connections

3.1 Enclosure Dimensions

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

3.2 INX-10ADS Mechanical Installation

The INX-10ADS comes with an BBX-1024DS or BBX-1024DSR enclosure which are suitable for flush or surface mounting, and have a built-in trim ring.

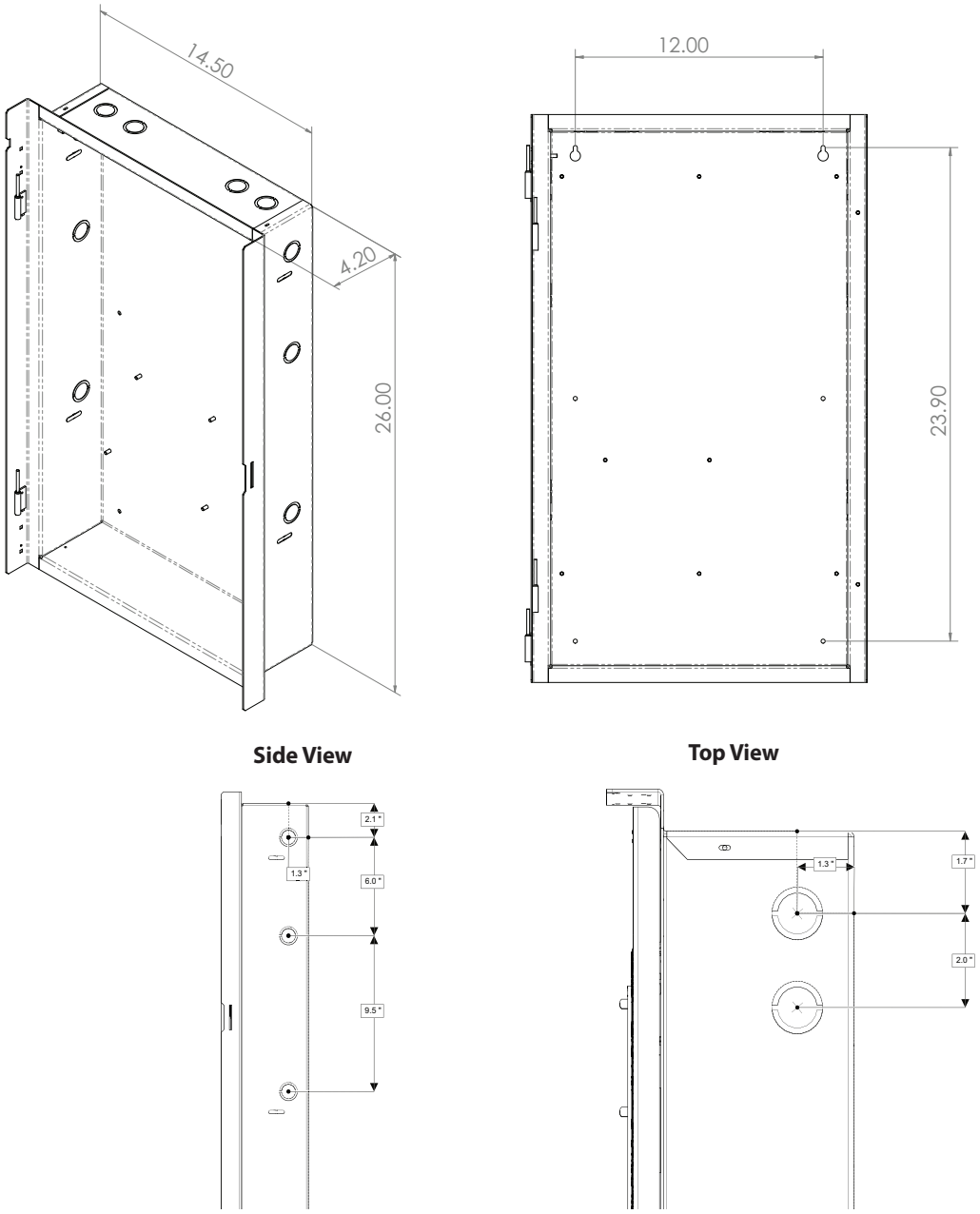


Figure 1 INX-10ADS Installation Instructions and Dimensions

3.2.1 Installation Tips

- Group the incoming wires through the top of the enclosure. Use a wire tie to group wires for easy identification and neatness.
- 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.

Attention: DO NOT install cable through bottom of the box. This space is reserved for Batteries.

3.3 INX-10AC Mounting Instructions

The INX-10AC mounts into the BB-5008 or BB-5014 enclosure as shown in Figure 2.

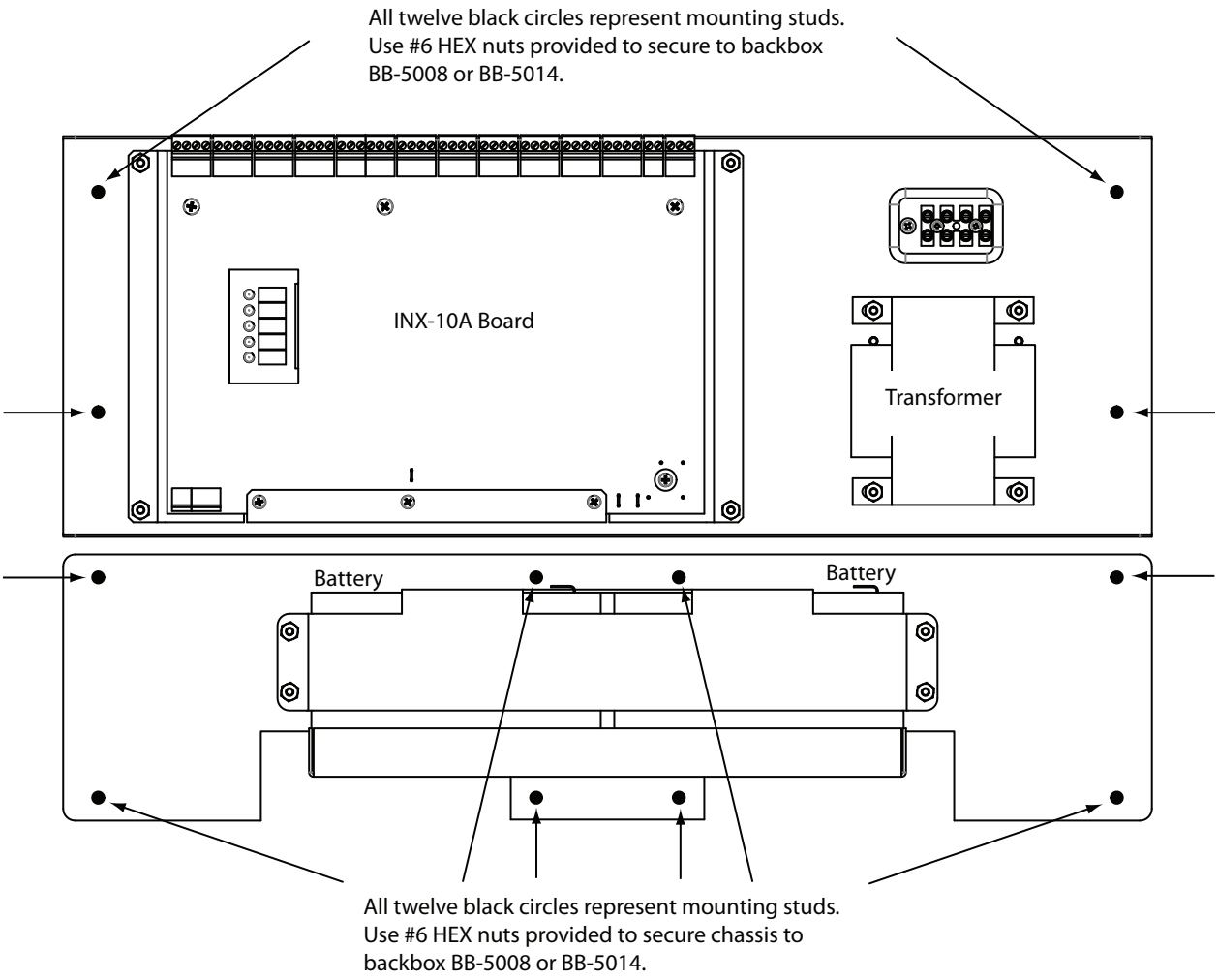


Figure 2 INX-10AC Mounting Instructions

3.4 Enclosure Dimensions

Outer Dimensions	14.23” x 4.42” x 19.85”
Distance between upper mounting screws	11”
Distance between lower mounting screws	11”
Distance between upper and lower mounting screws	14.1”
FA-300TR Dimensions	17” x 22.5”

3.5 Installing the INX-10A Enclosure

The INX-10A can be surface mounted with four screws as shown in Figure 3 or flush mounted as shown in Figure 5 on page 18.

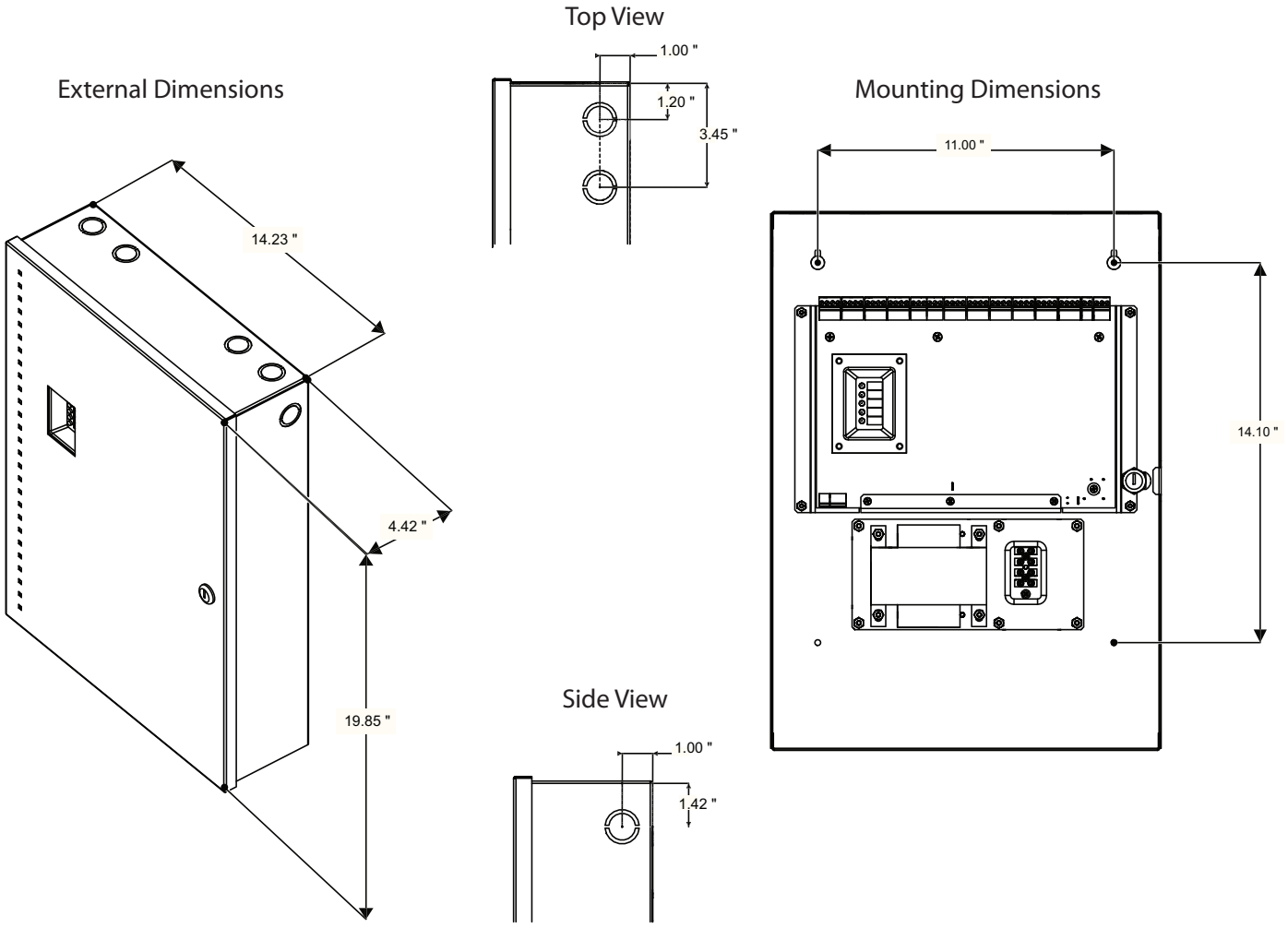


Figure 3 INX-10A Dimensions

To Surface Mount the Enclosure

1. Using the INX-10A back plate as a template, mark the top of the two mounting hole locations 11” apart as shown in Figure 3.
2. Place the screws halfway into the wall in the position shown using a suitable screw.
3. Hang the box onto the two screws.
4. Screw the other two screws at the bottom of the panel.
5. Tighten all four screws into place.

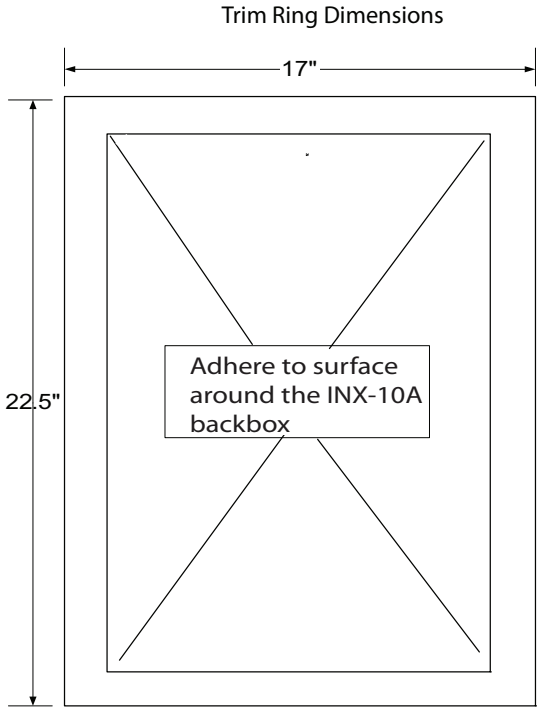


Figure 4 FA-300TR Dimensions

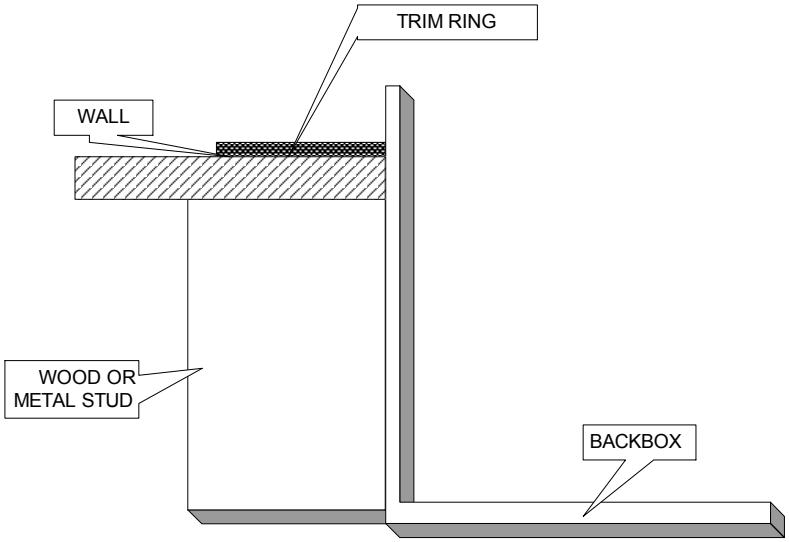


Figure 5 Flush mounting the enclosure

To Flush Mount the Enclosure

1. Unscrew and remove Main Chassis and Transformer from the enclosure.
2. Unscrew the wingnut and remove the door.
3. Mount the backbox into the wall.
4. After the wall is finished, peel the adhesive cover from the trim ring and stick to the wall surface around the backbox.

Note: Figure 3 shows a cross-section of the semi-flush mounted backbox and the trim ring. Allow a minimum depth of 1” above the wall surface for proper door opening.

3.5.1 Installation Tips

- Group the incoming wires through the top of the enclosure. Use a wire tie to group wires for easy identification and neatness.
- 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.

Attention: **DO NOT install cable through bottom of the box. This space is reserved for Batteries.**

3.6 Chassis Board Connections

The Main Chassis is preinstalled in the INX-10A Enclosure as shown in Figure 1. The connections are shown in Figure 6 and are described in Table 3.

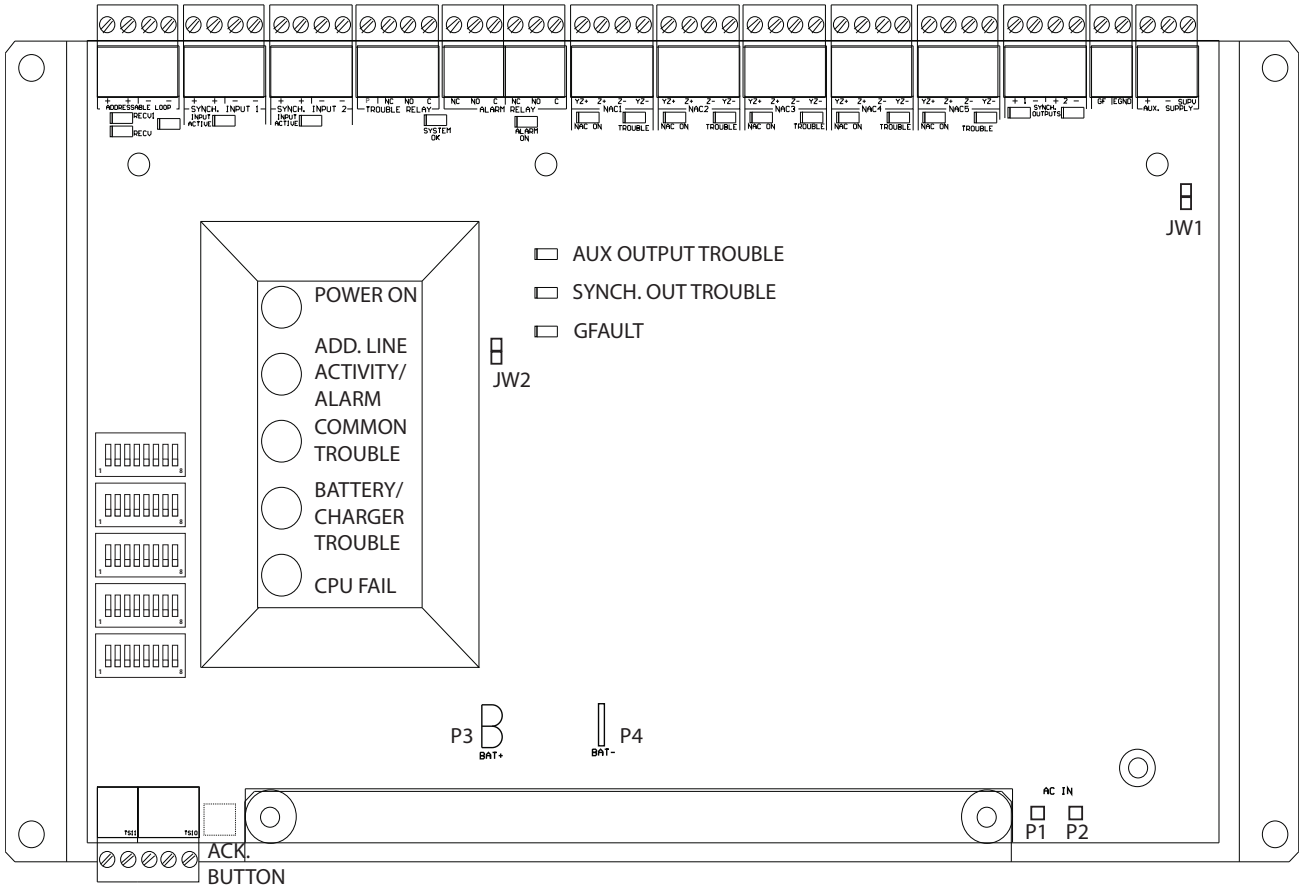


Figure 6 INX-10A Chassis Board Connectors and Jumpers

Table 3 INX-10A Chassis Board Connectors and Jumpers

Connector/Jumper	Description
P1,2	Connection for 29VAC AC In
P3,4	Connection to Battery Red(+) to P3 Black(-) to P4
JW1	Auxiliary Power Supervision. Factory set ON. Leave in place for supervision. Remove for non-supervision.
JW2	Factory set (closed), leave in place

4.0 Indication & Controls

This chapter describes the LED indicators and controls of the INX-10A.

This chapter explains

- Main Chassis Board LED Indicators
- Flash Rates
- Acknowledge button
- DIP switches

4.1 Indication and Controls

The INX-10A has 5 main annunciation indicators located on the main display panel. For troubleshooting purposes there are 3 trouble LED indicators located directly on the main board. There are also other LED's for SLC activity, synchronized input and output activity, and trouble and alarm relay. These indicators are only visible after opening the enclosure. Indicators may be Amber, Red, or Green, and may illuminate continuously (steady), or at the Trouble Flash Rate. For additional information see section 4.1.4 on page 24.

There is one control button, the acknowledge button, located underneath the main display panel. There are also five DIP switches used for configuration. For additional information see section 6.0 on page 31.

Figure 7 displays the LED indicators and the control button on the INX-10A main board.

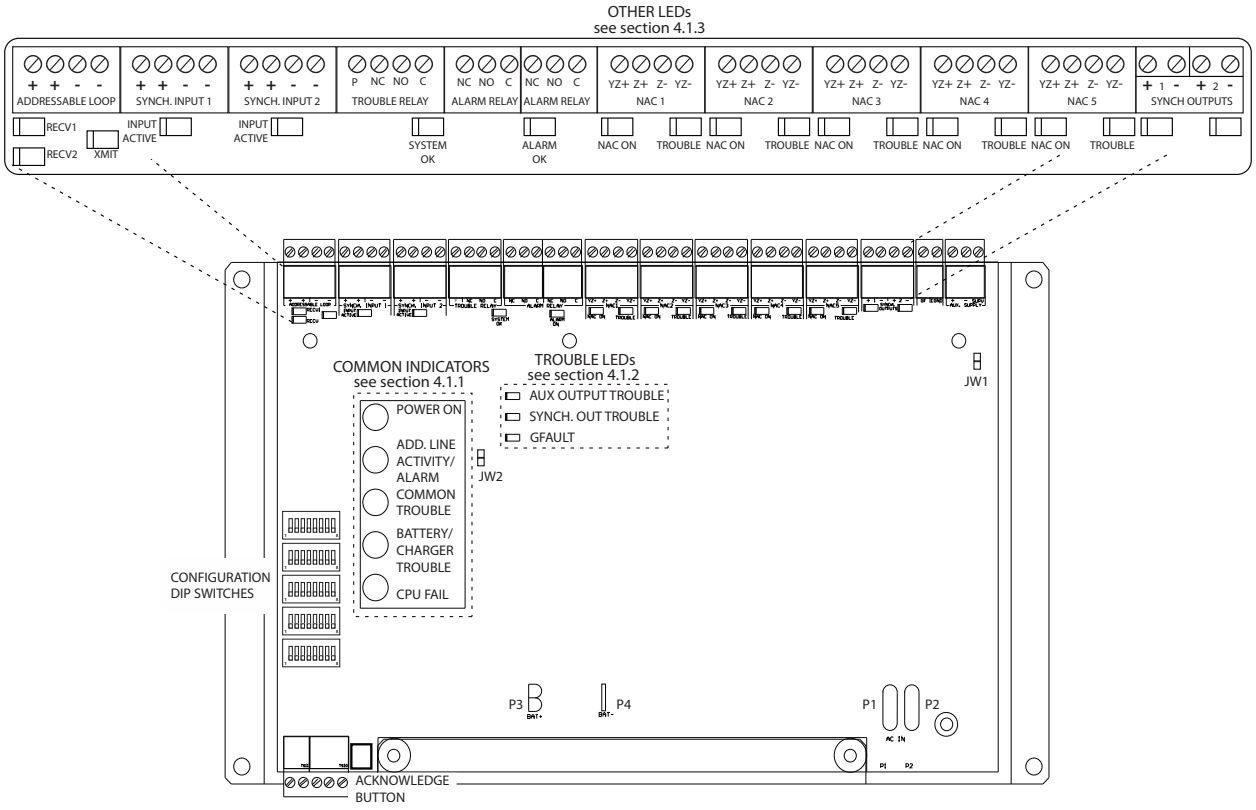


Figure 7 Main Board highlighting Common Indicators, Trouble LED's, Other LED's

4.1.1 Common Indicators

The main display panel has 5 common LED indicators; Power On, Add. Line Activity/Alarm, Common Trouble, Battery / Charger Trouble and CPU fail.

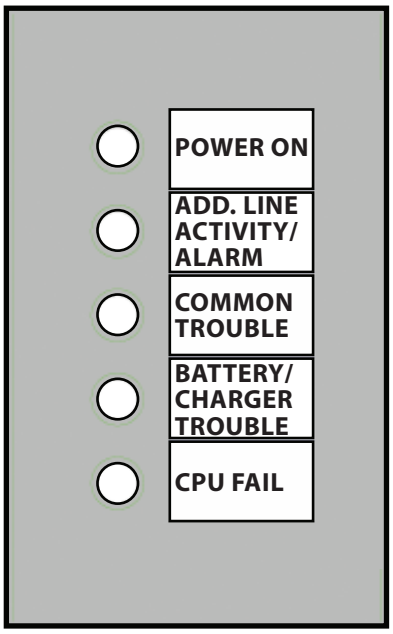


Figure 8 Common Indicators

Power On

The Power On LED Indicator activates steady green while the main AC power is within acceptable levels. It flashes green to display a trouble when the level falls below the power-fail threshold and the panel is switched to standby (battery) power.

Addressable LIne Activity / Alarm (Add. Line Activity / Alarm)

The Addressable Line Activity / Alarm Indicator flashes red whenever there is activity on the addressable circuit(s). It activates steady red when there is an alarm.

Common Trouble

The Common Trouble LED Indicator activates steady amber to indicate any active trouble and flashes for restored troubles. To clear the trouble and reset the panel press the acknowledge button. The additional troubleshooting LED's on the main board can provide more information on what the trouble is. See section 4.1.2 below for a description.

Battery / Charger Trouble

The Battery / Charger Trouble LED Indicator activates steady amber when the Battery is either low (below 20.4 VDC), or the Battery or Charger are disconnected. It flashes amber for a restored trouble. For configuration information see section 6.2.2 on page 37.

CPU Fail

The CPU Fail LED Indicator flashes amber when the processor ceases functioning.

4.1.2 Trouble LEDs

The main board has three onboard LEDs to aid in troubleshooting. The door must be opened in order to view these LEDs.

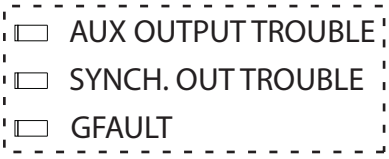


Figure 9 Trouble LEDs

Auxiliary Supply Trouble

Flashes amber when there is a trouble with the auxiliary supply output, check for shorts or excessive load.

Synchronized Output Trouble

Flashes amber when there is a trouble with the synchronized output. Check the circuit for presence of EOL or short.

Ground Fault Trouble

Flashes amber when there is a ground fault trouble. To correct the fault, check for any external wiring touching the chassis. Jumper, a wire loop, must be installed to enable Ground Fault detection. For wiring information see section 7.2.10 on page 84. For configuration information see section 6.2.2 on page 37.

4.1.3 Other LEDs

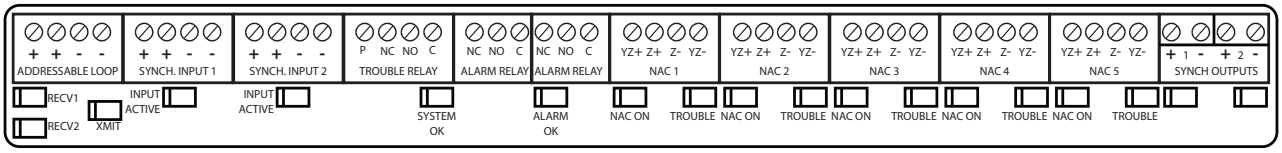


Figure 10 Additional LEDs

Addressable (SLC) Loop Indicators

Three LEDs. Two LED's that flash green for incoming activity for each loop, and one that flashes red for outgoing loop activity.

Synchronized Input Indicators

Two LEDs. One LED on each input that flashes green for incoming activity.

Trouble Relay Indicator

One LED that is steady green for system OK.

Alarm Relay Indicator

One red LED that is steady red when an alarm is activated.

NAC Circuit Indicators

Each NAC Circuit has one red LED that flashes when activated and one amber that activates solid when a trouble occurs. To clear the trouble and reset the panel press the acknowledge button.

Synchronized Output Indicators

Two LEDs. One LED on each output that flashes green for outgoing activity.

4.1.4 Flash Rate

Trouble Flash

20 flashes per minute, 50% duty cycle.

4.1.5 Controls

Acknowledge Button

This button is used to clear any trouble indications on the INX-10A.

Configuration DIP switches

The DIP switches are used for a variety of different configuration settings. For more information see Chapter 6.0 on page 31.

5.0 Operation

This chapter describes operational capabilities of the INX-10A

This chapter explains

- Circuit Types
- Synchronization Modes
- Power Supply Modes
- Evacuation Codes

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES			
This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below.			
Program feature or option	Permitted in UL 864? (Y/N)	Possible settings	Settings permitted in UL 864
Second Stage Enabled	YES	Second Stage Enabled/Disabled (Free loop addresses base +7 to base +11)	Second Stage Enabled
AC Trouble	YES	Return Specific ULC Trouble/Free loop addresses base +2 to base +4	Reporting of ULC Specific trouble is permitted
Battery/Charger Trouble	YES	Return Specific ULC Trouble/Free loop addresses base +2 to base +4	Reporting of ULC Specific trouble is permitted
Ground Fault	YES	Return Specific ULC Trouble/Free loop addresses base +2 to base +4	Reporting of ULC Specific trouble is permitted

5.1 Circuit Types

Any failure on the SLC loop activates any configured NAC Circuits.

Attention: If the INX-10A has configured NAC circuits the Evacuation Rate or Strobe Rate MUST be set via the appropriate DIP switches or a trouble will sound. For more information see section 6.2.3 on page 38 and section 6.2.4 on page 39.

5.1.1 NAC (Output) Circuits Types

Signal

For audible devices such as bells and piezo mini-horns. While sounding, these follow the pattern appropriate for the condition;

- the configured Evacuation Code (default is Temporal Code) during Single-Stage Alarm
- Two-Stage General Alarm
- or the Alert Code during Two-Stage's Alert (First) Stage.

Strobe

For visual devices such as strobes that use no code pattern (they are continuous) and follow input contact.

Synchronized Strobes

For visual devices such as strobes that support Mircom/Amseco, System Sensor, Gentex, Wheelock proprietary code patterns, configure to the appropriate pattern.

DC Power Supply

Uses no code pattern (they are continuous) and cannot be silenced. Configured via DIP switches and is not allocated an SLC address.

5.2 Intelligent NAC Expander (INX) Modes

The INX-10A is capable of synchronizing signal rates internally or receiving the signals externally. The INX-10A also has the ability to synchronize the signal rates for another INX-10A in a Master - Slave relationship.

Attention: When using multiple INX-10A panels in a Master - Slave relationship, always assign a lower address to the master INX-10A panel.

5.2.1 INX Internal Sync Mode

In this mode all signal and sync strobe rates are produced in the INX-10A. When a NAC circuit is commanded by the FACP to turn on, the NAC output signals are produced based on how the DIP switches are configured.

The Sync Outputs will be activated when one of the NAC circuits has been activated. If two stage operation is used, Sync Output1 is to produce the rate for first stage signal and Sync Output 2 is to produce the second stage signal.

To enable this mode set DIP SW3, Bit 8 to zero.

For information on configuring signal and strobe rates see Table 8 on page 39 and Table 9 on page 40.

5.2.2 INX External Sync Mode

When one of the Sync Inputs is activated, the INX-10A outputs follow the signal pattern of the Sync Input. The INX-10A must be configured as a slave to operate in this mode.

All synchronization signals are supplied from the FACP or Master INX-10A.

To enable this mode for Bell Signals set DIP SW3, Bit 8 to one, and set Alert (DIP SW4, Bits 1-3) Evacuation (DIP SW4, Bits 4-6) and Strobe (DIP SW5, Bits 1-3) rates to zero. The NAC and Sync outputs are to follow the Sync Inputs.

To enable this mode for other signals for sync Horn Strobes, set DIP SW3, Bit 8 to one and set Alert (DIP SW4, Bits 1-3) and Evacuation (DIP SW4, Bits 4-6) to use the Strobe Manufacturer Sync Rate (1-0-0) and Strobe (DIP SW5, Bits 1-3) to match the protocol being used in the system. The NAC and Sync Outputs are to follow the Sync Inputs.

If the INX-10A loses synchronization with the FACP during alarm, the INX-10A will default to the internal configured rate. A trouble will be generated back to the FACP. The INX-10A will continue to use the default rate until the FACP is reset.

Attention: External Sync Mode cannot be used in conjunction with Independent Mode.

5.2.3 INX Mode with Redundant Input

The system continuously monitors the SLC loop. If there is no activity for a notable time (80 seconds typical), an SLC trouble will be generated. While SLC trouble is active, if either of the Sync Inputs are activated then all NAC outputs follow.

5.2.4 Independent Mode - Driving Signals and Strobes

The INX-10A can drive Signals and Strobes on separate NAC circuits.

To enabled Independent Mode set SW4 Bit 4-6 to 010, 110, 001, 101, or 011 and set SW5 Bit 1-3 to 100, 110, 001 or 101. When using a Two stage application SW4 bits 1-3 are required to set the alert rate. For a comprehensive description of Independent Mode options see Table 9 on page 40.

5.3 Power Supply Modes

In addition to the operation modes above, some or all of the NAC outputs can be configured as power supply outputs. The circuit ratings are same as the NAC circuits. Three types of power output can be configured as described below:

5.3.1 NAC Outputs as Power Supply Outputs

Any NAC output can be configured as a power supply. SLC and Sync Inputs are ignored for the power supply outputs.

For configuration information see section 6.2.4 on page 39 and section 6.2.5 on page 40.

5.3.2 NAC Outputs for Door Release

Only NAC 4 and/or 5 can configured for this option, NAC 4 or 5 are turned off (cut supply) when any alarm input is active. This is used for devices which must be unpowered during alarm like door releases. The output will also turned off when the primary power to the INX-10A has been lost.

For configuration information see section 6.2.4 on page 39 and section 6.2.5 on page 40.

5.3.3 NAC Outputs for 4 Wire Smoke Supply

Only NAC 4 and/or 5 can configured for this option, NAC 4 and 5 can be selected to turn-off for 4 seconds when an alarm ends (inputs inactive for more than five seconds). This is typically used to reset four wires detectors.

For configuration information see section 6.2.5 on page 40.

5.4 Evacuation Codes

5.4.1 Single stage codes

Continuous

On 100% of the time.

Temporal Code

0.5 second on, 0.5 second off, 0.5 second on, 0.5 second off, 0.5 second on, 0.5, 1.5 second off, then repeat.

March Code

0.5 second on, 0.5 second off.

California Code

5 seconds on, 10 seconds off.

5.4.2 Two-stage codes

Alert Code

0.5 second on, 2.5 seconds off.

General Alarm

Evacuation code as selected from above.

5.5 Horn Strobe Rates

Horn Strobe rates are fixed at the following rates.

5.5.1 Single Stage

Temporal Code

3 of 0.5 second on, 0.5 second off, 1.5 second pause, then repeat.

5.5.2 Two-stage codes

Alert Code

0.5 second on, 2.5 seconds off.

Temporal Code

3 of 0.5 second on, 0.5 second off, 1.5 second pause, then repeat.

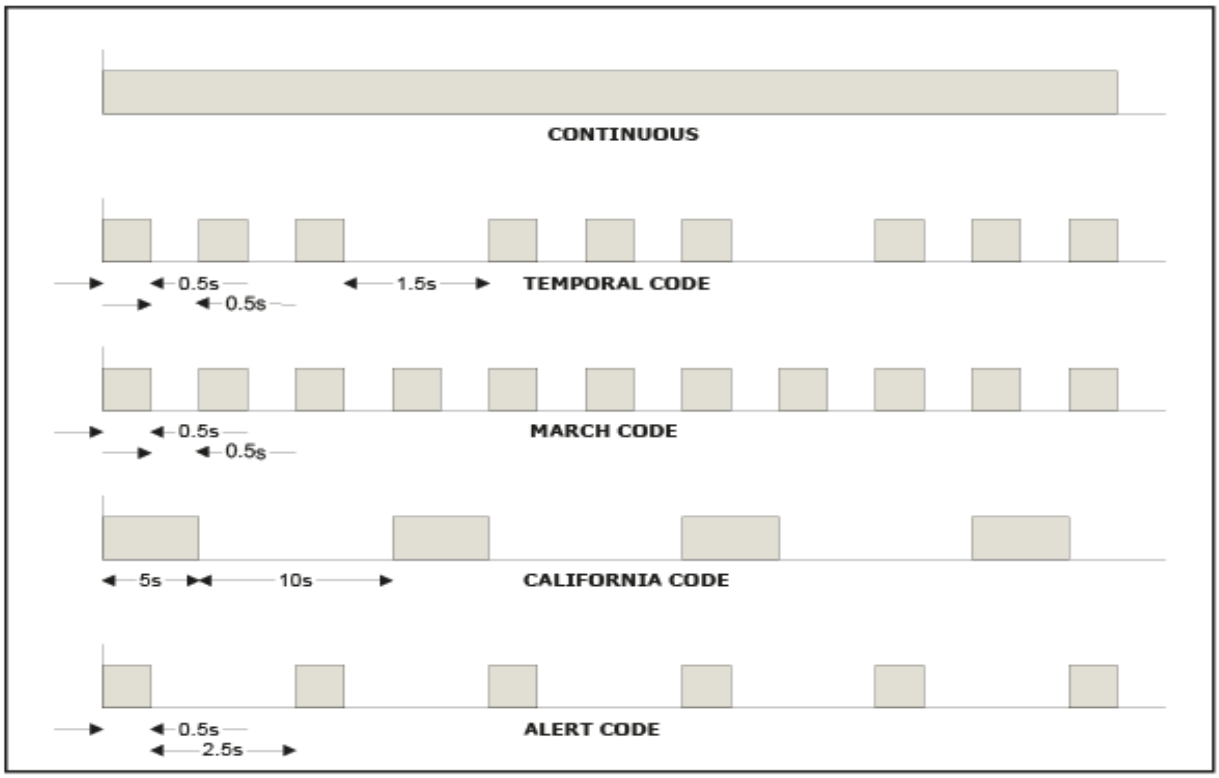


Figure 11 Evacuation Codes

6.0 Configuration

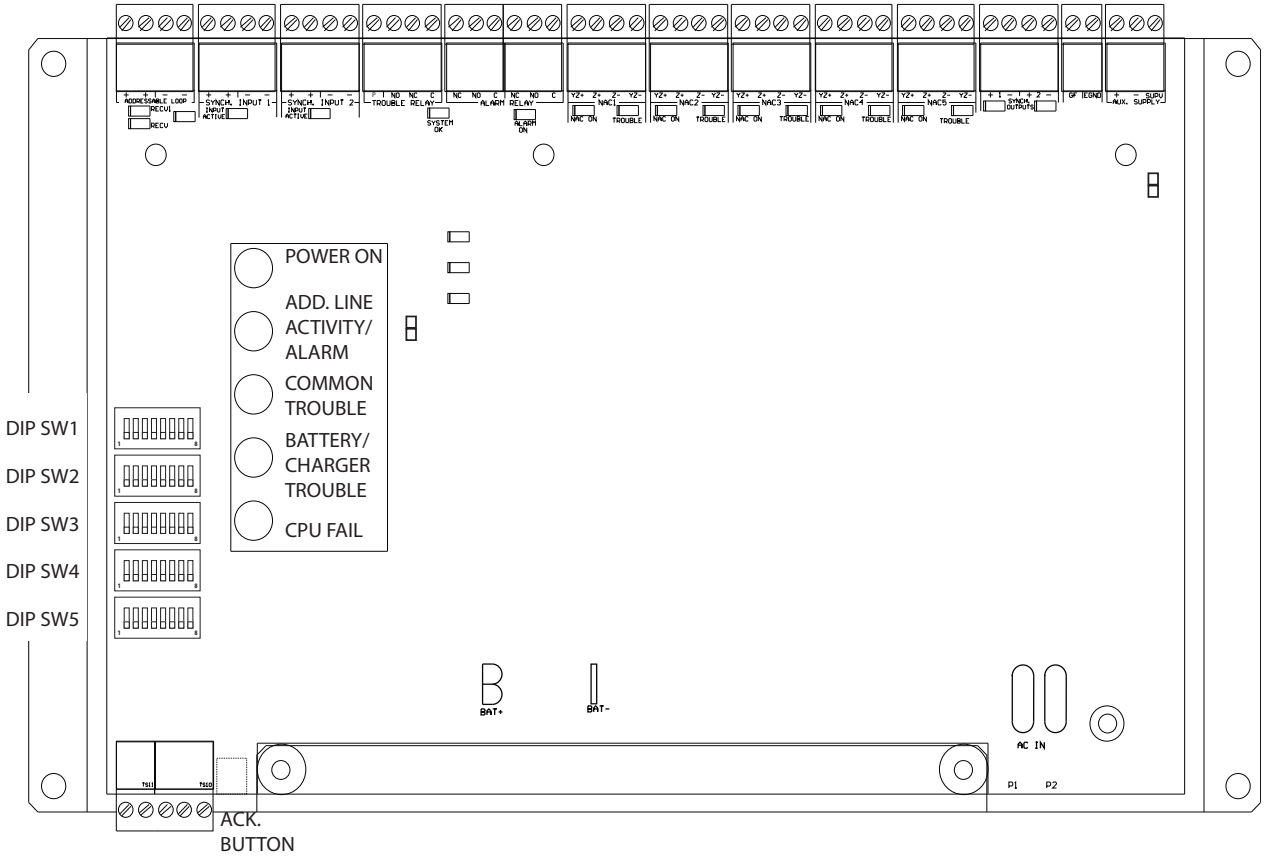
The chapter describes how to configure the INX-10A with the DIP switches located on the main board.

This chapter explains

- Using DIP Switches
- Single Stage and Two Stage Addressing
- Adding Functions in the FX-2000 configurator
- Assigning Protocols
- Trouble Reporting
- AC Fail Delay
- Charger and Battery Settings
- Synchronization Settings
- Configuring NACs
- Alert and Evacuation Rates
- Strobe Types

6.1 DIP Switches

The following diagram displays the five DIP switches used by the INX-10A.



6.1.1 Using the DIP switches

Configuring the INX-10A is done with 5 banks of DIP switches. They are named SW1, SW2, SW3, SW4 and SW5. Each bank has 8 switches, numbered 1 to 8. Flipping a switch up places it in the ON position. **For the purposes of the configuration tables ON = 1 and OFF = 0**. For an illustration of the DIP switch settings see Figure 12.

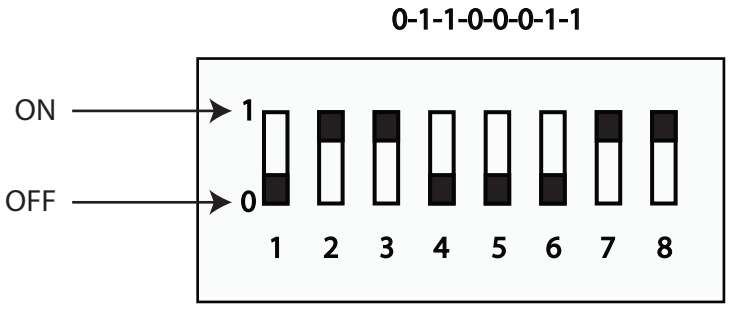


Figure 12 DIP switch positions

6.2 DIP Switch Configuration

Configuration is done via a group a five DIP switches located to the left of the LED display board.

6.2.1 Setting Loop Base Address, Disabling Addressable Loop Interface

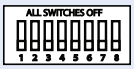
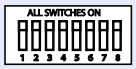
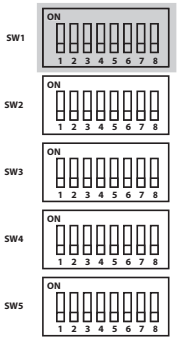
Use DIP switch 1 to

- Enable or disable the addressable loop.
- Set the Base Address of the INX-10A.

To configure the desired address, refer to Figure 13 and Table 5.

To disable, configure all switches to 0.

Table 4 Setting INX-10A Base Address/ Disabling Addressable Loop Interface

DIP switch 1	Bits	Default Setting = 0 	Activated Setting = 1 	Notes/ Additional Diagrams
	**All (1-8)**	Addressable Loop Disabled	Sets the INX-10A base address. For an addressing example see Figure 13.	

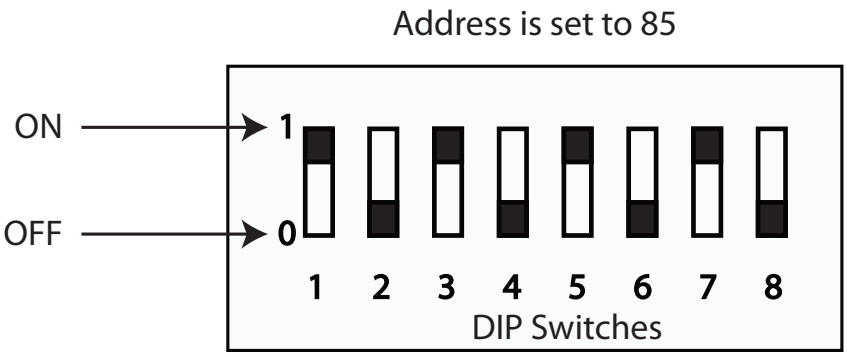


Figure 13 DIP switch address example

Table 5 INX-10A Base Address DIP switch positions

Address	Bit Setting	Address	Bit Setting	Address	Bit Setting	Address	Bit Setting	
1	1000 0000	26	0101 1000	51	1100 1100	76	0011 0010	
2	0100 0000	27	1101 1000	52	0010 1100	77	1011 0010	
3	1100 0000	28	0011 1000	53	1010 1100	78	0111 0010	
4	0010 0000	29	1011 1000	54	0110 1100	79	1111 0010	
5	1010 0000	30	0111 1000	55	1110 1100	80	0000 1010	
6	0110 0000	31	1111 1000	56	0001 1100	81	1000 1010	
7	1110 0000	32	0000 0100	57	1001 1100	82	0100 1010	
8	0001 0000	33	1000 0100	58	0101 1100	83	1100 1010	
9	1001 0000	34	0100 0100	59	1101 1100	84	0010 1010	
10	0101 0000	35	1100 0100	60	0011 1100	85	1010 1010	Two Stage Application with Enhanced Reporting
11	1101 0000	36	0010 0100	61	1011 1100	86	0110 1010	
12	0011 0000	37	1010 0100	62	0111 1100	87	1110 1010	
13	1011 0000	38	0110 0100	63	1111 1100	88	0001 1010	Two Stage Application with Basic Reporting
14	0111 0000	39	1110 0100	64	0000 0010	89	1001 1010	
15	1111 0000	40	0001 0100	65	1000 0010	90	0101 1010	Single Stage Application with Enhanced Reporting
16	0000 1000	41	1001 0100	66	0100 0010	91	1101 1010	
17	1000 1000	42	0101 0100	67	1100 0010	92	0011 1010	
18	0100 1000	43	1101 0100	68	0010 0010	93	1011 1010	Single Stage Application with Basic Reporting
19	1100 1000	44	0011 0100	69	1010 0010	94	0111 1010	
20	0010 1000	45	1011 0100	70	0110 0010	95	1111 1010	
21	1010 1000	46	0111 0100	71	1110 0010	96	0000 0110	
22	0110 1000	47	1111 0100	72	0001 0010	97	1000 0110	
23	1110 1000	48	0000 1100	73	1001 0010	98	0100 0110	
24	0001 1000	49	1000 1100	74	0101 0010	99	1100 0110	
25	1001 1000	50	0100 1100	75	1101 0010			

Attention: When using multiple INX-10A panels in a Master - Slave relationship, always assign a lower address to the master INX-10A panel.

Notes: Shaded addresses are the recommended range of addresses used for a single INX-10A.

Ensure that there are enough addresses for reporting and configured NACs. The highest address that a Single Stage Application with Basic Reporting with 5 configured NACs can be assigned is **93**.

Base Address Offset for the FX-2000/FleX-Net and MR-2100/2200/2900 Series Panels

The FX-2000/FleX-Net and MR-2100/2200/2900 series of panels reserve addresses 101 to 199 for CLIP modules. As a result, you must offset the addresses of INX-10A devices by 100 when you add these devices on the FX-2000 or MR-2100/2200/2900 configurator.

Base Address Offset for the FX-3500/3500RCU and MR-3500/3500RCU Panels

For the FX-3500/3500RCU and MR-3500/3500RCU, CLIP device addresses start at 201. As a result, you must offset the addresses of INX-10A devices by 200 when you configure these devices on the Configurator.

Attention: The FX-3500/3500RCU and MR-3500/3500RCU panels must be configured with a CLIP address space before you can add INX-10A panels to them. See the following procedure for instructions on how to add a CLIP address space to an FX-3500/3500RCU and MR-3500/3500RCU.

To configure an FX-3500/3500RCU and MR-3500/3500RCU loop with a CLIP address space

1. Start the Configurator, and then open your job.
2. Select **Base I/O** from your job tree.

   The **CLIP/Advance Protocol Address Space** configuration window appears. By default, the entire address space is assigned to AP devices and there is no address space reserved for CLIP modules. (That is, **Allowable CLIP Addresses** is set to None for both **Sensors** and **Modules**.) To reserve address space for CLIP devices, you must add the number of CLIP devices to the **AP Start** value.

3. Enter 100 in the **AP Start** column for the loop that your INX-10A is connected to, and then press the Tab key.

   The entries for allowable CLIP addresses for Sensors and Modules change to 1-99 and 201-299, respectively. This allows you to enter 99 CLIP sensors and 99 CLIP modules to

the loop. Your CLIP/Advance Protocol Address window should look similar to Figure 14 (assuming your INX-10A is connected to Loop 2),.

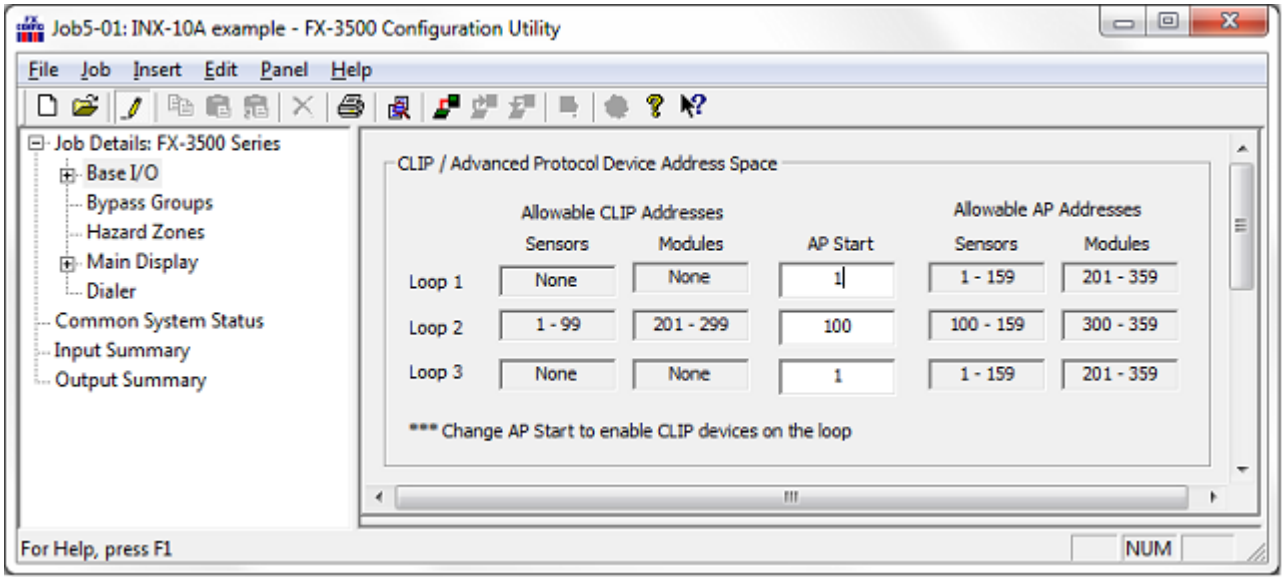


Figure 14 Configurator CLIP/Advance Protocol Device Address Space window

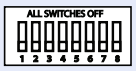
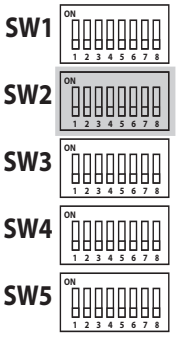
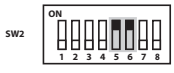
A value of 100 in a loop's AP Start column configures the FX-3500/3500RCU and MR-3500/3500RCU with the maximum address space for CLIP modules (201-299). If you enter a smaller value for AP Start, the address space for CLIP modules and the number of CLIP devices you can add are reduced. For example, if you enter 50 in the AP Start column, the CLIP module address space for the loop changes to 201-249 and you can only configure 49 CLIP modules for that loop.

Note: For all the FX-3500/3500RCU and MR-3500/3500RCU examples in this chapter, the maximum CLIP device address space is assumed. That is, the AP Start is set to 100 and the CLIP modules address space is 201-299.

6.2.2 Setting Protocols, Reporting, Charger, Battery Installed

Use DIP switch 2 to set device protocols, enable second stage reporting, set AC fail reporting, enabling or disabling the Charger, and if a battery is installed.

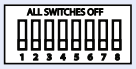
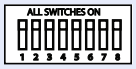
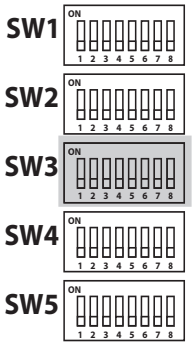
Table 6 Setting Protocols, Enabling Second Stage, Setting AC Fail Reporting, Enabling Charger, Battery Installed

DIP switch 2	Bits	Default Setting = 0 	Activated Setting = 1 	Notes/ Additional Diagrams
	1	Reserve		
	2	Setting for Mircom FACPs	Setting for Secutron and other non-Mircom FACPs	For non-Mircom panels Signal Silence must be configured as a Control module in the proprietary configuration software.
	3	Enable Enhanced Reporting (AC, Battery/ Charger and Earth Ground) *See Board LED's for further trouble shooting*	Free loop addresses base +2 to base +4	Base address is set by SW1
	4	Second Stage Enabled	Free loop addresses base +8 to base +12 or if Enhanced Reporting is enabled frees addresses base +11 to base +15	Base address is set by SW1
	5-6	Configure Report Delay for AC fail The digits below refer to the corresponding bit number i.e. 01 means that bit 5 = 0 and bit 6 = 1 see corresponding diagram		
	5-6	00 = No Delay		
	5-6	10 = One Hour		
	5-6	01 = Two Hours		
	5-6	11 = Three Hours		
	7	Charger Enabled	Charger Disabled	
	8	Battery Installed	No Battery Required and Charger Disabled	

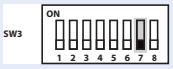
6.2.3 Charger Settings, Synchronization Settings, NAC Input Settings

Use DIP switch 3 to configure charger, synchronization and NAC Input settings.

Table 7 Charger Settings, Synchronization Settings, NAC Input Settings

DIP switch 3	Bits	Default Setting = 0 	Activated Setting = 1 	Notes/ Additional Diagrams
	1	Charger Cut When all NACs activated	Charger Always “ON”	Remember Bit 7 on DIP Switch 2 must be set to “OFF” to enable Charger
	2-6	Reserve		
	7	Independent Mode NAC 1 and 2 = Signals Configured NACs = Sync Strobes	Independent Mode NAC 1 to 3 = Signals Configured NAC’s = Sync Strobes	For a comprehensive description of Independent Mode options see section 6.5 on page 70
		Independent mode is active if SW4 Bit 4-6 Evacuation Rates is set to 010, 110, 001, 101, or 011 **AND** SW5 Bit 1-3 Setting Strobe Manufacturer Type set to 100, 110, 001 or 101.		
	8	Synchronous Signal Master	Synchronous Signal Slave	

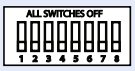
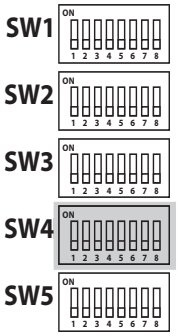
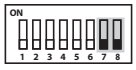
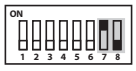
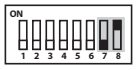
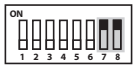
Attention: If Independent Mode is not being used SW3-7 must be set to OFF.



6.2.4 Setting Alert Rates, Evacuation Rates, NAC 5 Output Functions

Use DIP switch 4 to configure Alert and Evacuation Rates, and NAC Output functions.

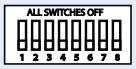
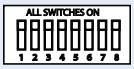
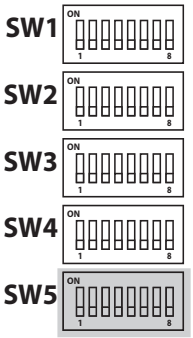
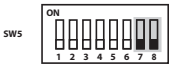
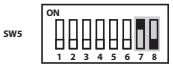
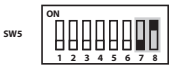
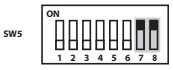
Table 8 Setting Alert Rates, Evacuation Rates, NAC 5 Output Functions

DIP switch 4	Bits	Default Setting = 0 	Activated Setting = 1 	Notes/ Additional Diagrams
	1-3	**Setting Alert Rates (Alert Rates are only used in Two Stage Applications)**		
	1-3	000 - Disable (No Output)		
	1-3	100 - Uses Strobe Manufacturer Sync Rate		
	1-3	010 - Continuous		
	1-3	110 - 0.5s ON, 2.5s OFF, Repeat (20 PPM as in FA-1000 or FX-2000)		
	1-3	001 - 20 PPM, 50% Duty Cycle		
	4-6	**Setting Evacuation Rates**		
	4-6	000 - Disable **If the INX-10A has NAC circuits configured the Evacuation Rate or Strobe Rate MUST be enabled or a trouble will sound.**		
	4-6	100 - Uses Strobe Manufacturer Sync Rate **NOT AFFECTED BY SIGNAL SILENCE**		
	4-6	010 - Continuous		
	4-6	110 - Temporal		
	4-6	001 - March Time		
	4-6	101 - California		
	4-6	011 - 120 PPM, 50% Duty Cycle		
	7-8	**NAC 5 Output Settings**		
	7-8	00 - Normal NAC		
	7-8	10 - Continuous Supply		
	7-8	01 - Cut on Alarm		
	7-8	11 - 4 seconds Cut on Reset		

6.2.5 Setting Strobe Types, NAC 1-3 Supply Settings, NAC 4 Output Function

Use DIP switch 5 to configure Strobe types, NAC 1-3 settings and NAC 4 output functions.

Table 9 Setting Strobe Types, NAC 1-3 Supply Settings, NAC 4 Output Function

DIP switch 5	Bits	Default Setting = 0 	Activated Setting = 1 	Notes/ Additional Diagrams
	**1-3**	**Setting Strobe Manufacturer**		
	1-3	000 - Disable **If the INX-10A has NAC circuits configured the Evacuation Rate or Strobe Rate MUST be enabled or a trouble will sound.**		
	1-3	100 - Mircom/Amseco		
	1-3	010 - Not Used		
	1-3	110 - System Sensor		
	1-3	001 - Secutron/Gentex		
	1-3	101 - Wheelock		
	1-3	011 - System Sensor 2 Alternate Setting		
	4	NAC 1 - NAC	NAC 1 - Continuous Supply	
	5	NAC 2 - NAC	NAC 2 - Continuous Supply	
	6	NAC 3 - NAC	NAC 3 - Continuous Supply	
	7-8	**NAC 4 Output Settings**		
	7-8	00 - NAC		
	7-8	10 - Continuous Supply		
	7-8	01 - Cut on Alarm		
	7-8	11 - 4 seconds Cut on Reset		

6.3 Single Stage Addressing

Address Assignments are done via DIP switch 2(SW2) which is located to the left of the Main LED display board. The addresses for the functions are dependant upon the Base Address of the INX Panel.

There are two types of addressing options

- Basic Reporting
- Enhanced Reporting

In addition, the addressing can be changed by having NACs configured as Power Supplies. For further information on setting the Base Address of the INX Panel see Figure 13.

Attention: Ensure that the configuration is set correctly on the INX-10A DIP switches and the Fire Panel Configuration Software.

6.3.1 Single Stage with Basic Reporting Addressing

To configure the recommended base address

Set DIP switch SW1 as: 1-0-1-1-1-0-1-0

ON-OFF-ON-ON-ON-OFF-ON-OFF

To configure the INX for Single Stage with Basic Reporting in a Mircom system

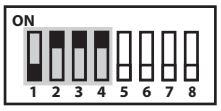
Set DIP switch SW2-1 to SW2-4 as: 0-0-1-1

OFF-OFF-ON-ON

To configure the INX for Single Stage with Basic Reporting in a Secutron system

Set DIP switch SW2-1 to SW2-4 as: 0-1-1-1

OFF-ON-ON-ON



Attention: If NACs are configured the Evacuation Rate must be set on SW2 4-6. For more information see section 6.2.4 on page 39.

Table 10 Configuring Single Stage Functions

Function	Address	Recommended Device Address
Common Trouble	Base Address	93
Signal Silence	Base Address + 1	94
Activate NAC1, return NAC1 line status	Base Address + 2	95
Activate NAC2, return NAC2 line status	Base Address + 3	96
Activate NAC3, return NAC3 line status	Base Address + 4	97
Activate NAC4, return NAC4 line status	Base Address + 5	98
Activate NAC5, return NAC5 line status	Base Address + 6	99

Notes: Table 10 represents all NACs configured as NAC circuits.

Mircom recommends always using the upper range of addresses available for the INX-10A.

When adding devices to FX-2000 and MR-2100/2200/2900 configurations, add 100 to the recommended device address (see Figures 15 and 16).

When adding devices to FX-3500/3500RCU and MR-3500/3500RCU configurations, add 200 to the recommended device address (see Figure 17).

If any NAC circuit is configured as a Power Supply, see 6.3.5 Single Stage with Basic Reporting and Power Supply Output Addressing for an explanation on addressing.

6.3.2 Software Configuration - Single Stage with Basic Reporting Addressing

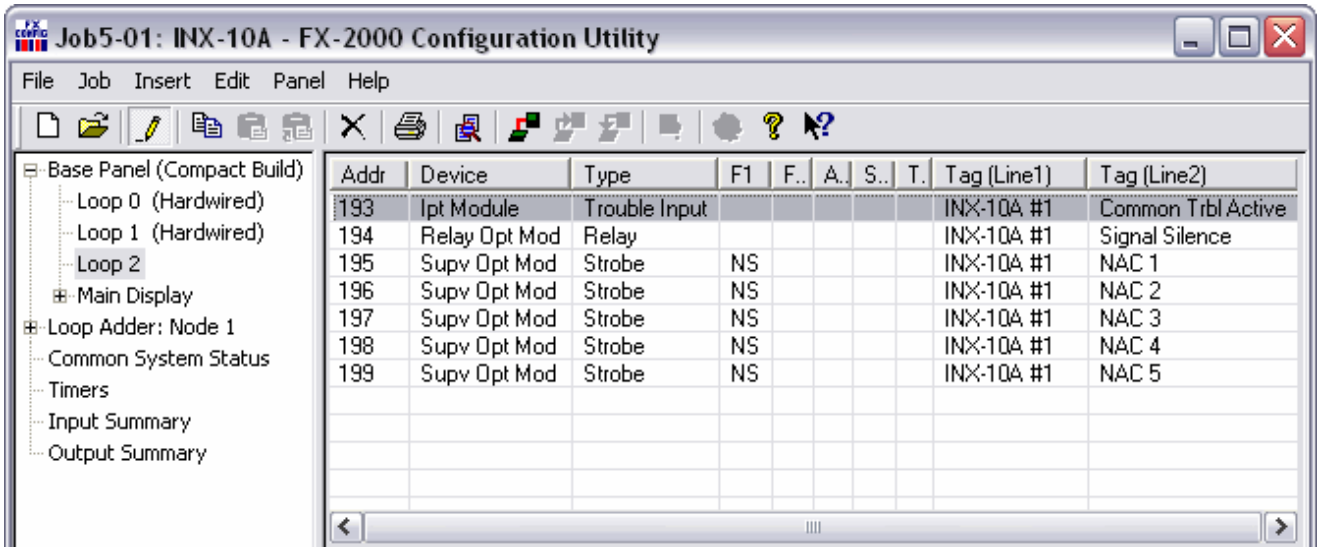


Figure 15 FX-2000 Configurator Settings - INX-10A Single Stage with Basic Reporting

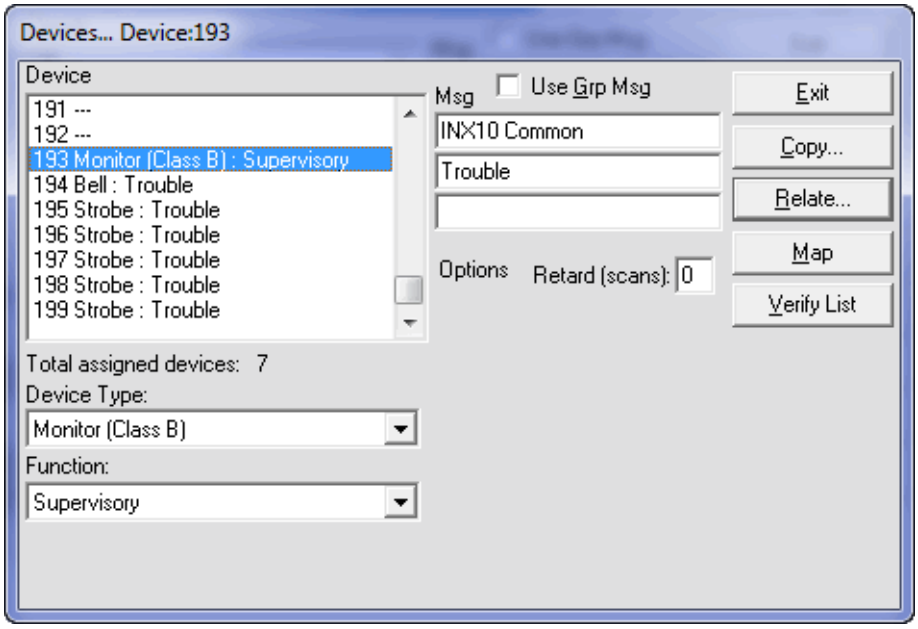


Figure 16 Secutron MR-2100/2200/2900 Configuration Settings - INX-10A Single Stage with Basic Reporting

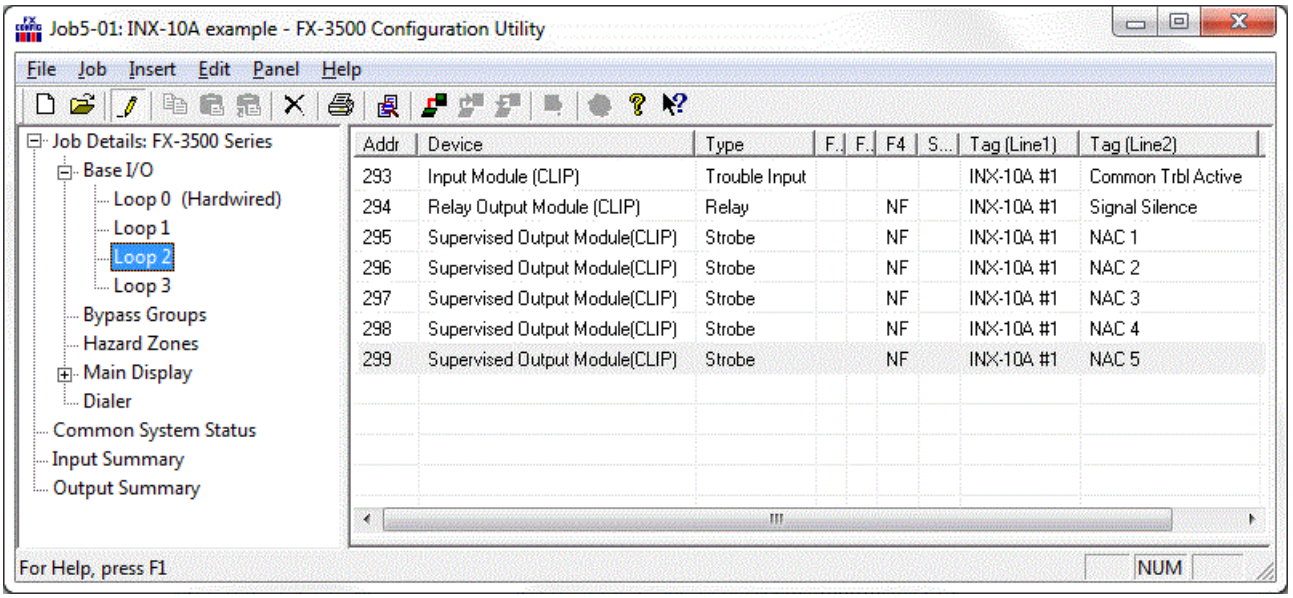


Figure 17 FX-3500/3500RCU/MR-3500/3500RCU Configuration Settings - INX-10A Single Stage with Basic Reporting

6.3.3 Single Stage with Enhanced Trouble Reporting Addressing

To configure the recommended base address

Set DIP switch SW1 as: 0-1-0-1-1-0-1-0

OFF-ON-OFF-ON-ON-OFF-ON-OFF

To configure the INX for Single Stage with Enhanced Trouble Reporting in a Mircom System

Set DIP switch SW2-1 to SW2-4 as: 0-0-0-1

OFF-OFF-OFF-ON

To configure the INX for Single Stage with Enhanced Trouble Reporting in a Secutron System

Set DIP switch SW2-1 to SW2-4 as: 0-1-0-1

OFF-ON-OFF-ON

Attention: If NACs are configured the Evacuation Rate must be set on SW2 4-6. For more information see Setting Alert Rates, Evacuation Rates, NAC 5 Output Functions on page 39.

Table 11 Configuring Single Stage with Enhanced Reporting Functions

Function	Address	Recommended Device Address
Common Trouble	Base Address	90
Signal Silence	Base Address + 1	91
Monitor AC trouble	Base Address + 2	92
Monitor Battery/Charger trouble	Base Address + 3	93
Monitor Earth Ground Fault	Base Address + 4	94
Activate NAC1, return NAC1 line status	Base Address + 5	95
Activate NAC2, return NAC2 line status	Base Address + 6	96
Activate NAC3, return NAC3 line status	Base Address + 7	97
Activate NAC4, return NAC4 line status	Base Address + 8	98
Activate NAC5, return NAC5 line status	Base Address + 9	99

Notes: Table 11 represents all NACs configured as NAC circuits.

Mircom recommends always using the upper range of addresses available for the INX-10A.

When adding devices to FX-2000 and MR-2100/2200/2900 configurations, add 100 to the recommended device address (see Figures 18 and 19).

When adding devices to FX-3500/3500RCU and MR-3500/3500RCU configurations, add 200 to the recommended device address (see Figure 20).

If any NAC circuit is configured as a Power Supply see 6.3.7 Single Stage with Enhanced Reporting and Power Supply Output Addressing for an explanation on addressing.

6.3.4 Software Configuration - Single Stage with Enhanced Trouble Reporting Addressing

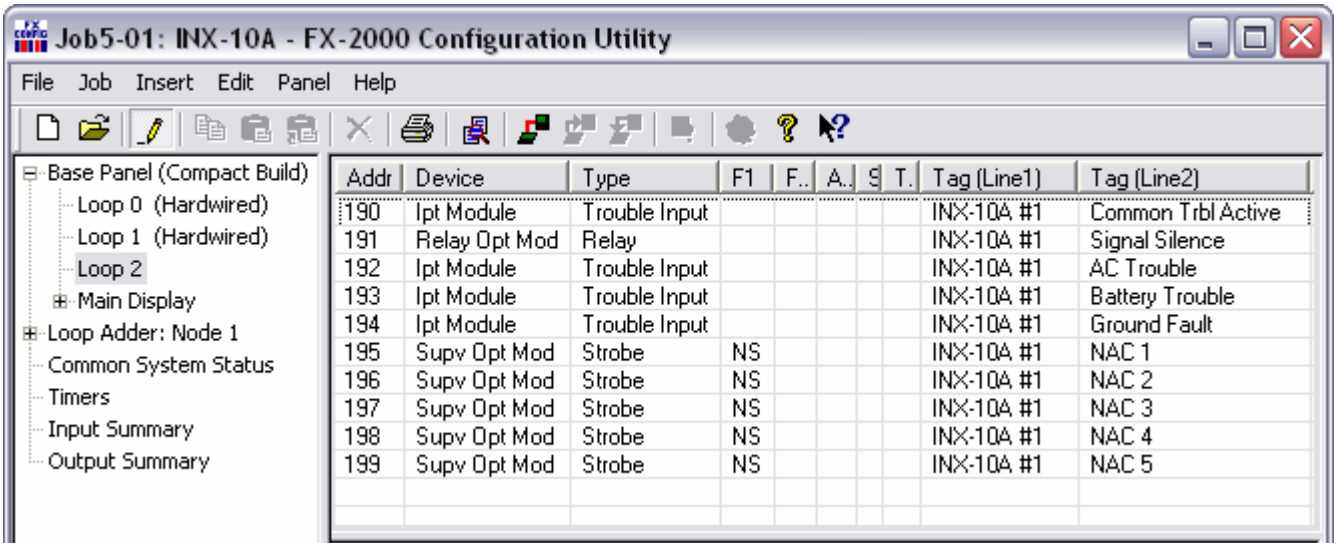


Figure 18 FX-2000 Configurator Settings - INX-10A Single Stage with Enhanced Reporting

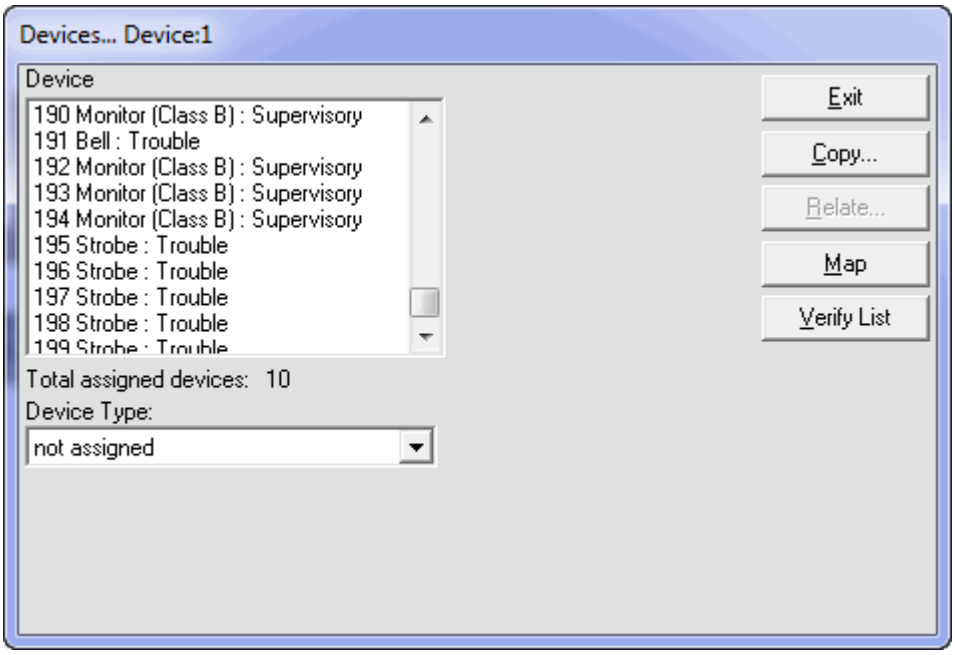


Figure 19 Secutron MR-2100/2200/2900 Configuration Settings - INX-10A Single Stage with Enhanced Reporting

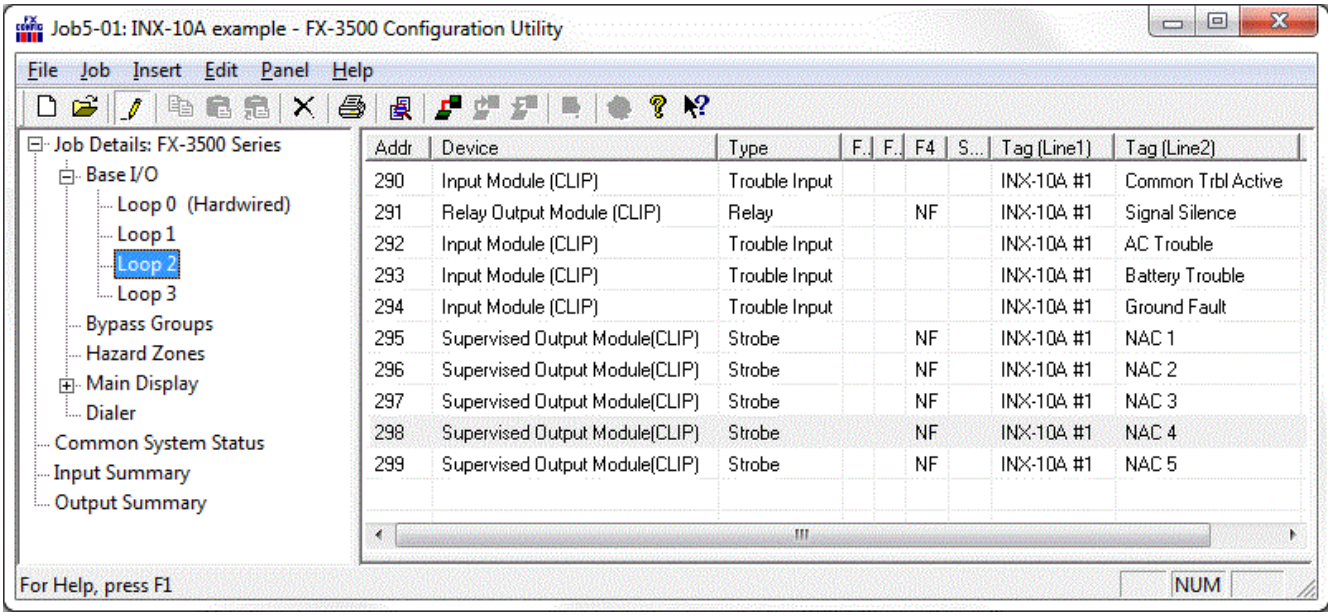


Figure 20 FX-3500/3500RCU/MR-3500/3500RCU Configurator Settings - INX-10A Single Stage with Enhanced Reporting

6.3.5 Single Stage with Basic Reporting and Power Supply Output Addressing

In order to maximize the amount of addresses available, if a NAC circuit is configured as a Power Supply, the next configured NAC Circuit is assigned the address reserved for the previous Circuit.

Example Application

- NAC 5 configured as a Power Supply.
- INX-10A Common Trouble reporting address is 194.

To configure the recommended base address

Set DIP switch SW1 as: 0-1-1-1-1-0-1-0

OFF-ON-ON-ON-ON-OFF-ON-OFF

To configure the INX for Single Stage with Basic Reporting in a Mircom System

Set DIP switch SW2-1 to SW2-4 as: 0-0-1-1

OFF-OFF-ON-ON

To configure the INX for Single Stage with Basic Reporting in a Secutron System

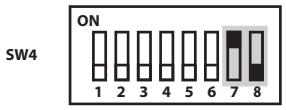
Set DIP switch SW2-1 to SW2-4 as: 0-1-0-1

OFF-ON-OFF-ON

To configure NAC 5 as a Continuous Power Supply

Set DIP switch SW4-7 and SW4-8 as: 1-0

ON-OFF



Attention: If NACs are configured the Evacuation Rate must be set on SW2 4-6. For more information see Setting Alert Rates, Evacuation Rates, NAC 5 Output Functions on page 39.

Table 12 Assigning Addresses - Single Stage with Basic Reporting and Power Supply Output

Function	Address	Recommended Device Address
Common Trouble	Base Address	94
Signal Silence	Base Address + 1	95
Activate NAC1, return NAC1 line status	Base Address + 2	96
Activate NAC2, return NAC2 line status	Base Address + 3	97
Activate NAC3, return NAC3 line status	Base Address + 4	98
Activate NAC4, return NAC4 line status	Base Address + 5	99

Notes: Mircom recommends always using the upper range of addresses available for the INX-10A.

Mircom recommends always using the upper range of NACs (NAC5 then NAC4 then NAC3 etc.) when configuring as a Power Supply.

When adding devices to FX-2000 and MR-2100/2200/2900 configurations, add 100 to the recommended device address (see Figures 21 and 22).

When adding devices to FX-3500/3500RCU and MR-3500/3500RCU configurations, add 200 to the recommended device address (see Figure 23).

6.3.6 Software Configuration - Single Stage with Basic Reporting and Power Supply Output Addressing

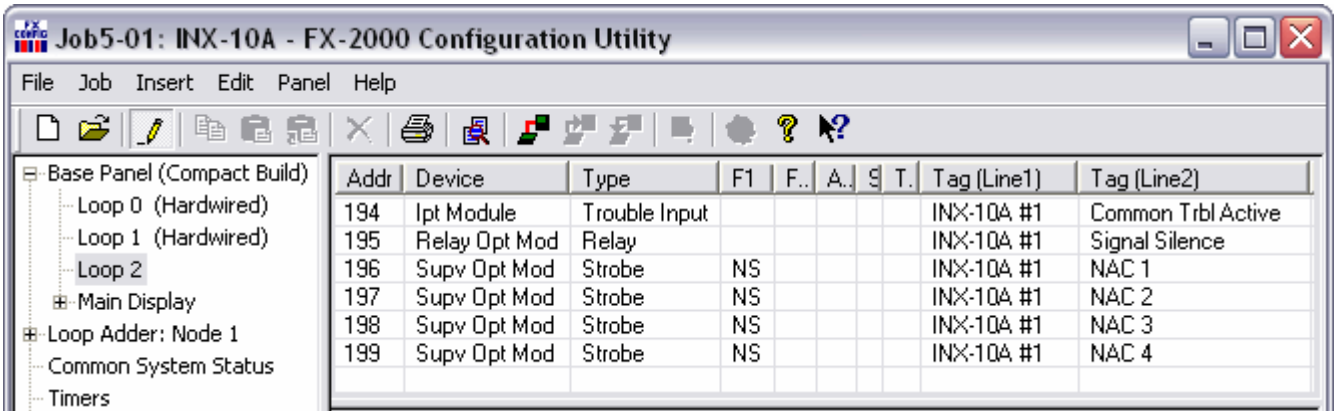


Figure 21 FX-2000 Configurator Settings - INX-10A Single Stage with Basic Reporting and Power Supply Output

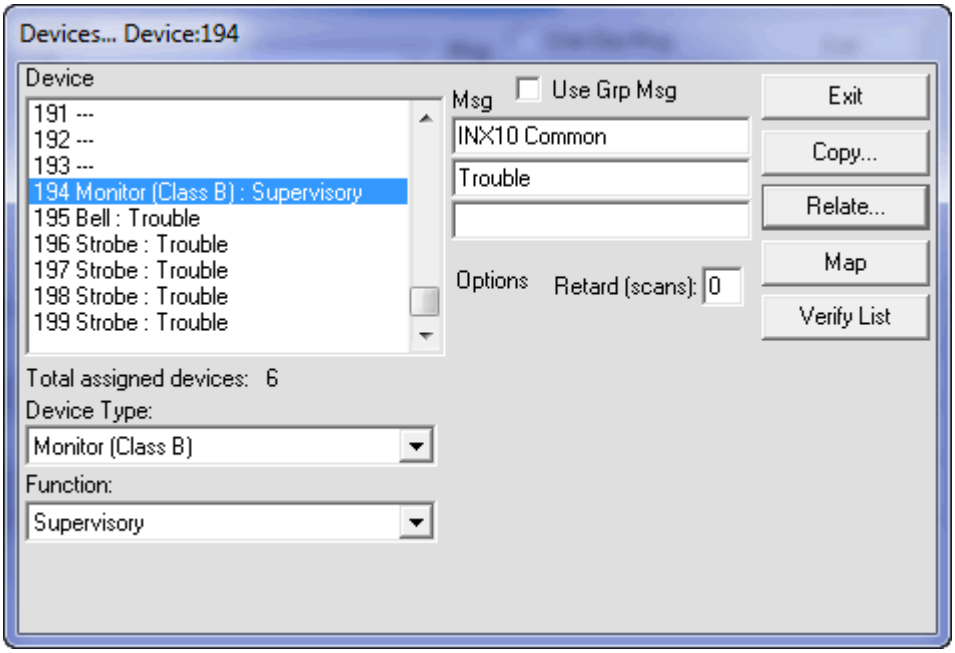


Figure 22 Secutron MR-2100/2200/2900 Configurator Settings - INX-10A Single Stage with Basic Reporting and Power Supply Output

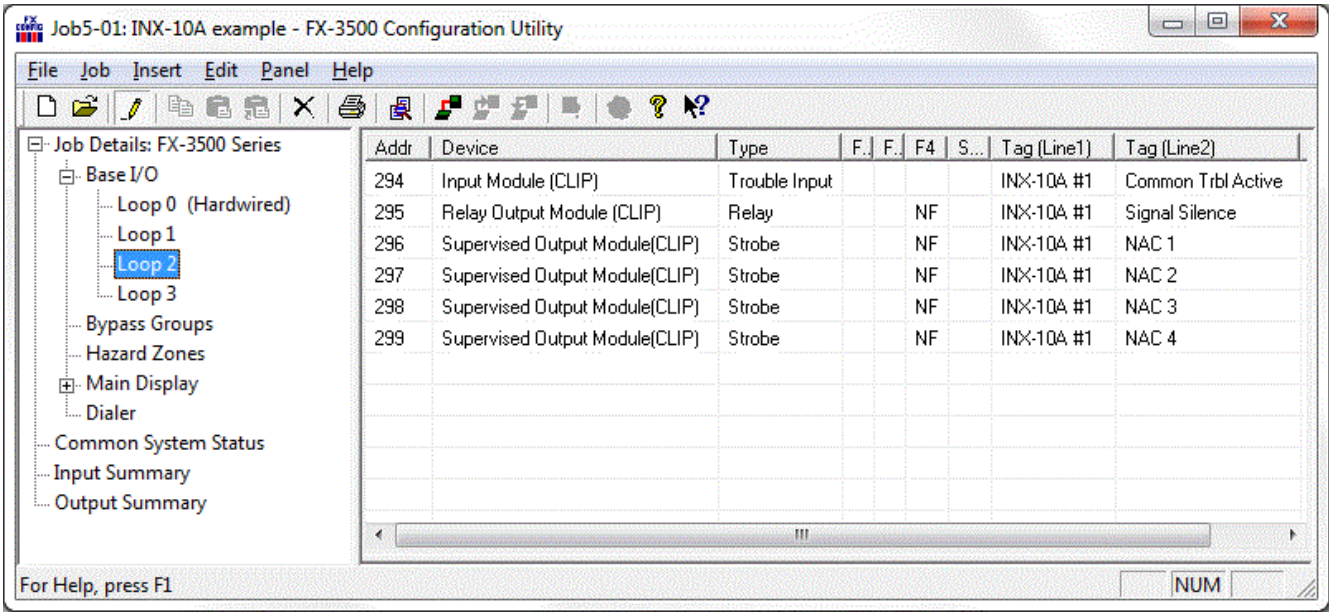


Figure 23 FX-3500/3500RCU/MR-3500/3500RCU Configurator Settings - INX-10A Single Stage with Basic Reporting and Power Supply Output

6.3.7 Single Stage with Enhanced Reporting and Power Supply Output Addressing

In order to maximize the amount of addresses available, if a NAC circuit is configured as a Power Supply, the next configured NAC Circuit is assigned the address reserved for the previous Circuit.

Example Application

- NAC 5 configured as a Power Supply.
- INX-10A Common Trouble reporting address is 194.

To configure the recommended base address

Set DIP switch SW1 as: 1-1-0-1-1-0-1-0

ON-ON-OFF-ON-ON-OFF-ON-OFF

To configure the INX for Single Stage with Enhanced Reporting in a Mircom System

Set DIP switch SW2-1 to SW2-4 as: 0-0-0-1

OFF-OFF-OFF-ON

To configure the INX for Single Stage with Enhanced Trouble Reporting in a Secutron System

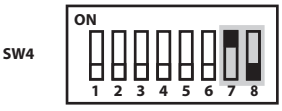
Set DIP switch SW2-1 to SW2-4 as: 0-1-0-1

OFF-ON-OFF-ON

To configure NAC 5 as a Continuous Power Supply

Set DIP switch SW4-7 and SW4-8 as: 1-0

ON-OFF



Attention: If NACs are configured the Evacuation Rate must be set on SW2 4-6. For more information see Setting Alert Rates, Evacuation Rates, NAC 5 Output Functions on page 39.

Table 13 Assigning Addresses - Single Stage Application, 1 Power Supply Output

Function	Address	Recommended Device Address
Common Trouble	Base Address	91
Signal Silence	Base Address + 1	92
Monitor AC trouble	Base Address + 2	93
Monitor Battery/Charger trouble	Base Address + 3	94
Monitor Earth Ground Fault	Base Address + 4	95
Activate NAC1, return NAC1 line status	Base Address + 5	96
Activate NAC2, return NAC2 line status	Base Address + 6	97
Activate NAC3, return NAC3 line status	Base Address + 7	98
Activate NAC4, return NAC4 line status	Base Address + 8	99

Notes: Mircom recommends always using the upper range of addresses available for the INX-10A.

Mircom recommends always using the upper range of NACs (NAC5 then NAC4 then NAC3 etc.) when configuring as a Power Supply.

When adding devices to FX-2000 and MR-2100/2200/2900 configurations, add 100 to the recommended device address (see Figures 24 and 25).

When adding devices to FX-3500/3500RCU and MR-3500/3500RCU configurations, add 200 to the recommended device address (see Figure 26).

6.3.8 Software Configuration - Single Stage with Enhanced Reporting and Power Supply Output Addressing

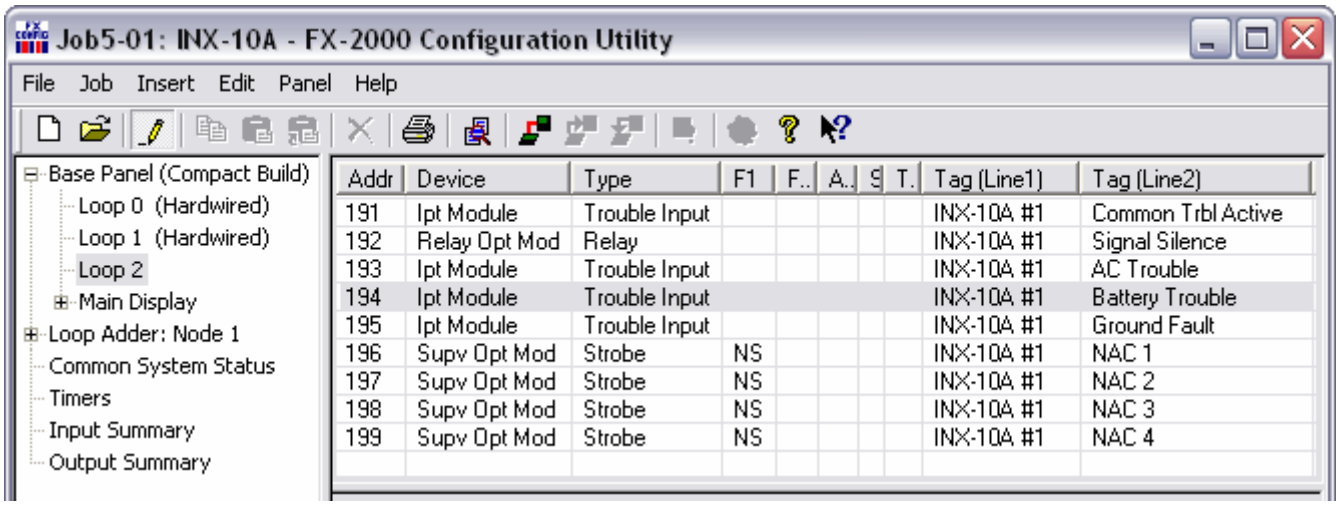


Figure 24 FX-2000 Configurator Settings - INX-10A Single Stage with Enhanced Reporting and Power Supply Output

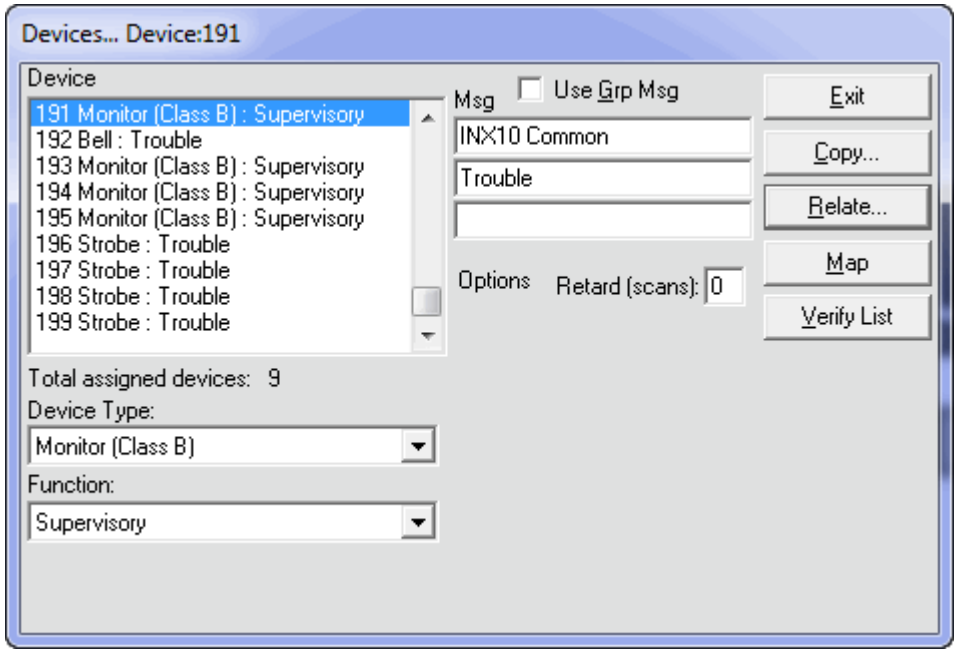


Figure 25 Secutron MR-2100/2200/2900 Configurator Settings - INX-10A Single Stage with Power Supply Output

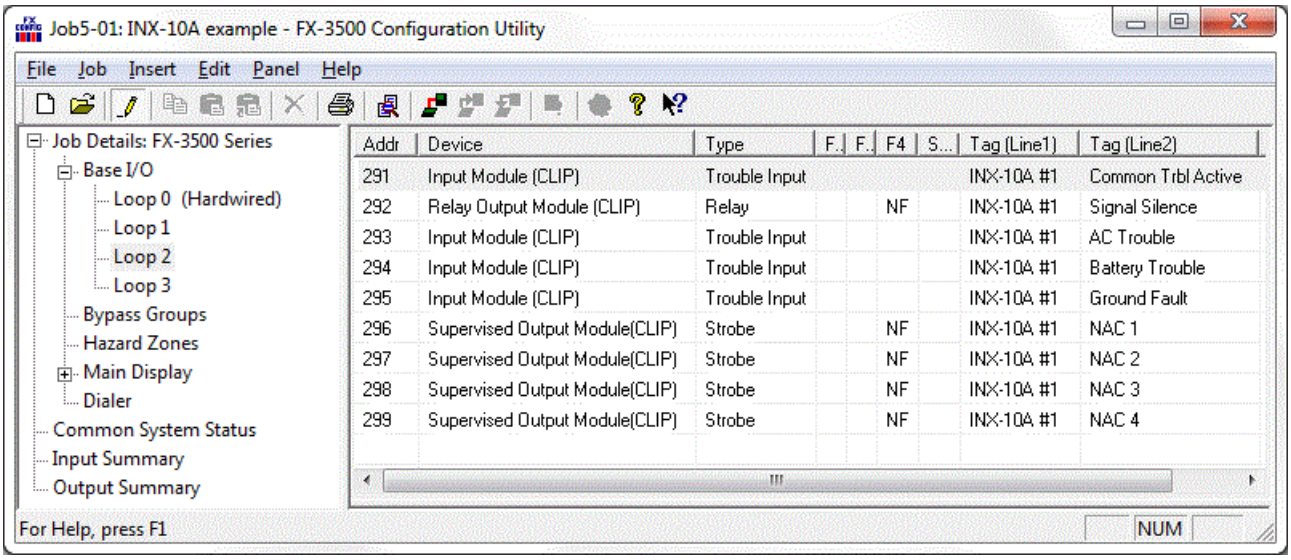


Figure 26 FX-3500/3500RCU/MR-3500/3500RCU Configurator Settings - INX-10A Single Stage with Enhanced Reporting and Power Supply Output

6.4 Two Stage Addressing Options

Address Assignments are done via DIP switch 2(SW2) which is located to the left of the Main LED display board. The addresses for the functions are dependant upon the Base Address of the INX Panel.

For Further information on setting the Base Address of the INX Panel see section Figure 13 on page 33.

Attention: Ensure that the configuration is set correctly on the INX-10A DIP switches and the Fire Panel Configuration Software.

6.4.1 Two Stage with Basic Reporting Addressing

To configure the recommended base address

Set DIP switch SW1 as: 0-0-0-1-1-0-1-0

OFF-OFF-OFF-ON-ON-OFF-ON-OFF

To configure the INX for Two Stage with Basic Reporting in a Mircom system

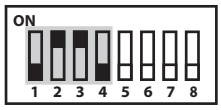
Set DIP switch SW2-1 to SW2-4 as: 0-0-1-0

OFF-OFF-ON-OFF

To configure the INX for Single Stage with Basic Reporting in a Secutron system

Set DIP switch SW2-1 to SW2-4 as: 0-1-1-0

OFF-ON-ON-OFF



Attention: If NACs are configured the Evacuation Rate must be set on SW2 4-6. For more information see Setting Alert Rates, Evacuation Rates, NAC 5 Output Functions on page 39.

Table 14 Configuring Two Stage Functions

Function	Address	Recommended Device Address
Common Trouble	Base Address	88
Signal Silence	Base Address + 1	89
Activate NAC1, return NAC1 line status	Base Address + 2	90
Activate NAC2, return NAC2 line status	Base Address + 3	91
Activate NAC3, return NAC3 line status	Base Address + 4	92
Activate NAC4, return NAC4 line status	Base Address + 5	93

Table 14 Configuring Two Stage Functions

Function	Address	Recommended Device Address
Activate NAC5, return NAC5 line status	Base Address + 6	94
Second Stage NAC1	Base Address + 7	95
Second Stage NAC2	Base Address + 8	96
Second Stage NAC3	Base Address + 9	97
Second Stage NAC4	Base Address + 10	98
Second Stage NAC5	Base Address + 11	99

Notes: Table 14 represents all NACs configured as NAC circuits.

Mircom recommends always using the upper range of addresses available for the INX-10A.

When adding devices to FX-2000 and MR-2100/2200/2900 configurations, add 100 to the recommended device address (see Figures 27 and 28).

When adding devices to FX-3500/3500RCU and MR-3500/3500RCU configurations, add 200 to the recommended device address (see Figure 29).

If any NAC circuit is configured as a Power Supply see 6.4.5 Two Stage with Basic Reporting and Power Supply Output Addressing for an explanation on addressing.

6.4.2 Software Configuration - Two Stage with Basic Reporting Addressing

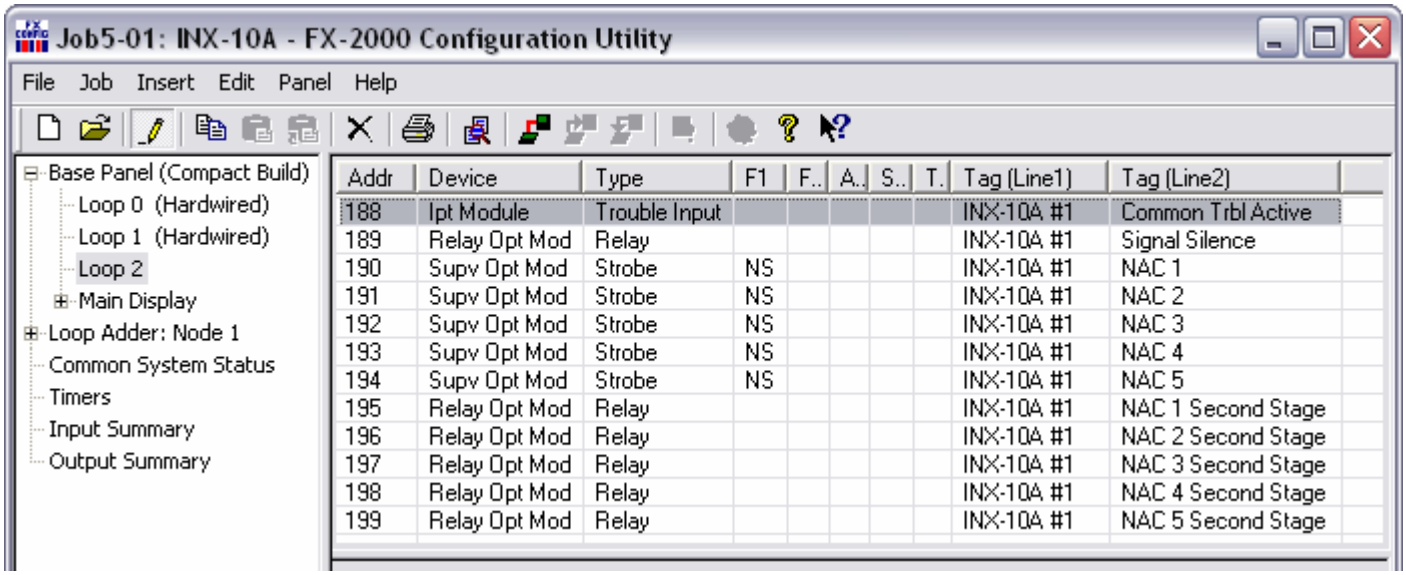


Figure 27 FX-2000 Configurator Settings - INX-10A Two Stage with Basic Reporting

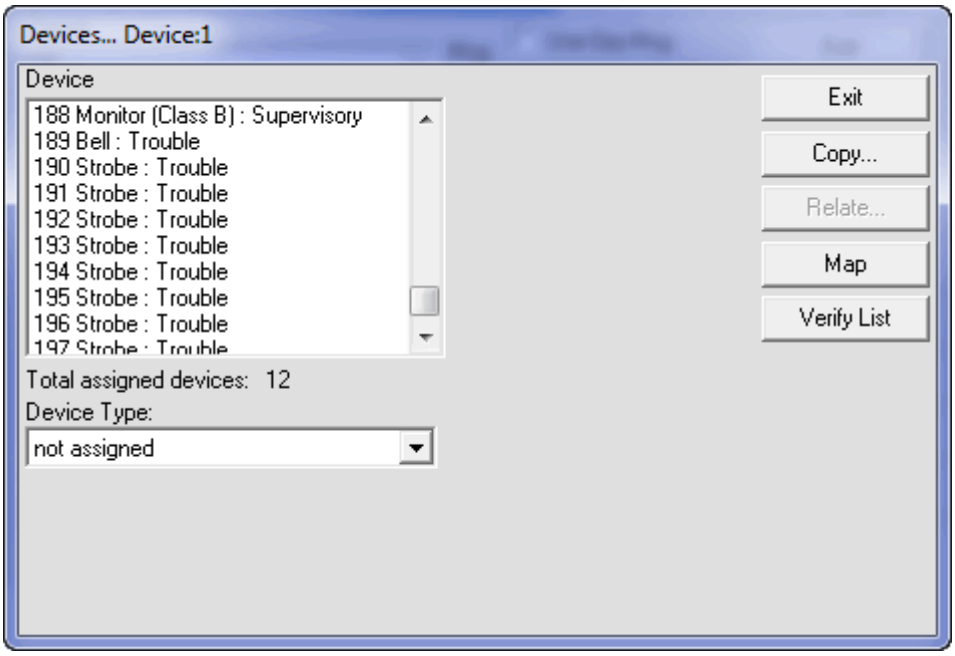


Figure 28 Secutron MR-2100/2200/2900 Configurator Settings - INX-10A Two Stage with Basic Reporting

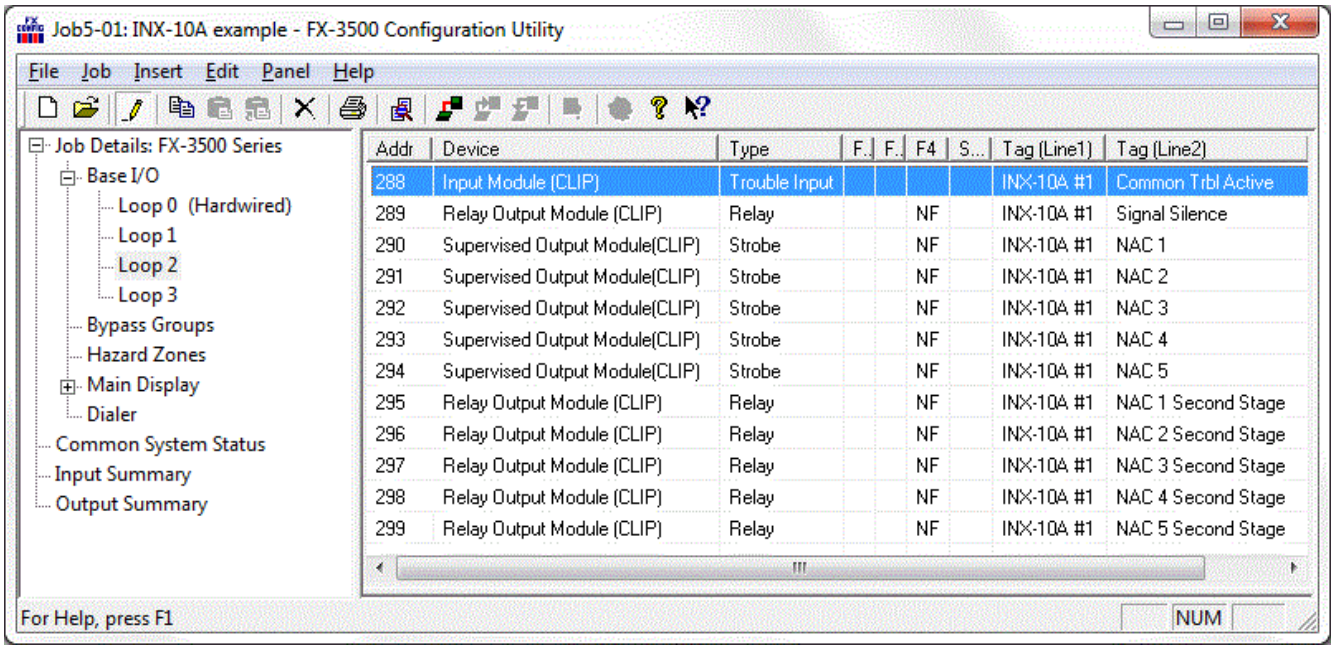


Figure 29 FX-3500/3500RCU/MR-3500/3500RCU Configurator Settings - INX-10A Two Stage with Basic Reporting

6.4.3 Two Stage Address Assignment with Enhanced Trouble Reporting

To configure the recommended base address

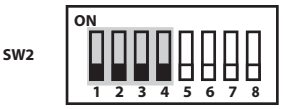
Set DIP switch SW1 as: 1-0-1-0-1-0-1-0

ON-OFF-ON-OFF-ON-OFF-ON-OFF

To configure the INX for Two Stage with Enhanced Trouble Reporting in a Mircom System

Set DIP switch SW2-1 to SW2-4 as: 0-0-0-0

OFF-OFF-OFF-OFF



To configure the INX for Two Stage with Enhanced Trouble Reporting in a Secutron System

Set DIP switch SW2-1 to SW2-4 as: 0-1-0-1

OFF-ON-OFF-ON

Attention: Two Stage Enhanced reporting is mandatory to meet ULC requirements.

Attention: If NACs are configured the Evacuation Rate must be set on SW2 4-6. For more information see Setting Alert Rates, Evacuation Rates, NAC 5 Output Functions on page 39.

Table 15 Configuring Two Stage Address Assignment with Enhanced Trouble Reporting

Function	Address	Recommended Device Address
Common Trouble	Base Address	85
Signal Silence	Base Address + 1	86
Monitor AC trouble	Base Address + 2	87
Monitor Battery/Charger trouble	Base Address + 3	88
Monitor Earth Ground Fault	Base Address + 4	89
Activate NAC1, return NAC1 line status	Base Address + 5	90
Activate NAC2, return NAC2 line status	Base Address + 6	91
Activate NAC3, return NAC3 line status	Base Address + 7	92
Activate NAC4, return NAC4 line status	Base Address + 8	93

Table 15 Configuring Two Stage Address Assignment with Enhanced Trouble Reporting (Continued)

Function	Address	Recommended Device Address
Activate NAC5, return NAC5 line status	Base Address + 9	94
Second Stage NAC1	Base Address + 10	95
Second Stage NAC2	Base Address + 11	96
Second Stage NAC3	Base Address + 12	97
Second Stage NAC4	Base Address + 13	98
Second Stage NAC5	Base Address + 14	99

Notes: Table 15 on the previous page represents all NACs configured as NAC circuits.

Mircom recommends always using the upper range of addresses available for the INX-10A.

When adding devices to FX-2000 and MR-2100/2200/2900 configurations, add 100 to the recommended device address (see Figures 30 and 31).

When adding devices to FX-3500/3500RCU and MR-3500/3500RCU configurations, add 200 to the recommended device address (see Figure 32).

If any NAC circuit is configured as a Power Supply see 6.4.7 Two Stage Address Assignment with Enhanced Trouble Reporting and Power Supply Addressing for an explanation on addressing.

6.4.4 Software Configuration - Two Stage Address Assignment with Enhanced Trouble Reporting

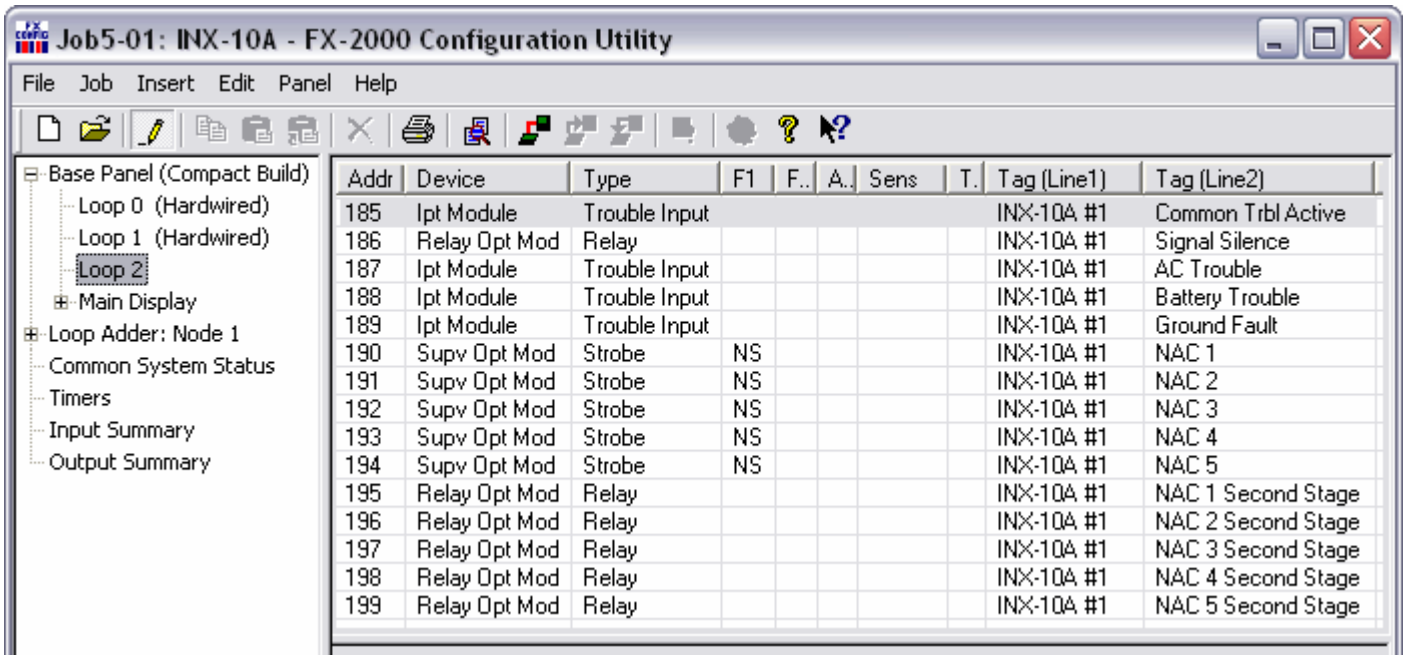


Figure 30 FX-2000 Configurator Settings - INX-10A Two Stage with Enhanced Reporting

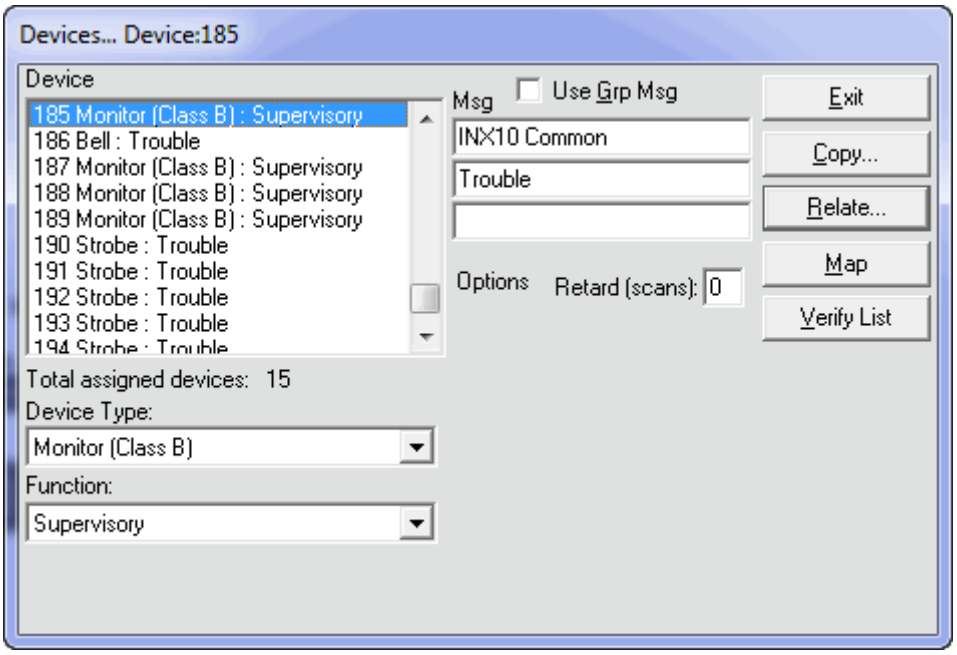


Figure 31 Secutron MR-2100/2200/2900 Configurator Settings - INX-10A Two Stage with Enhanced Reporting

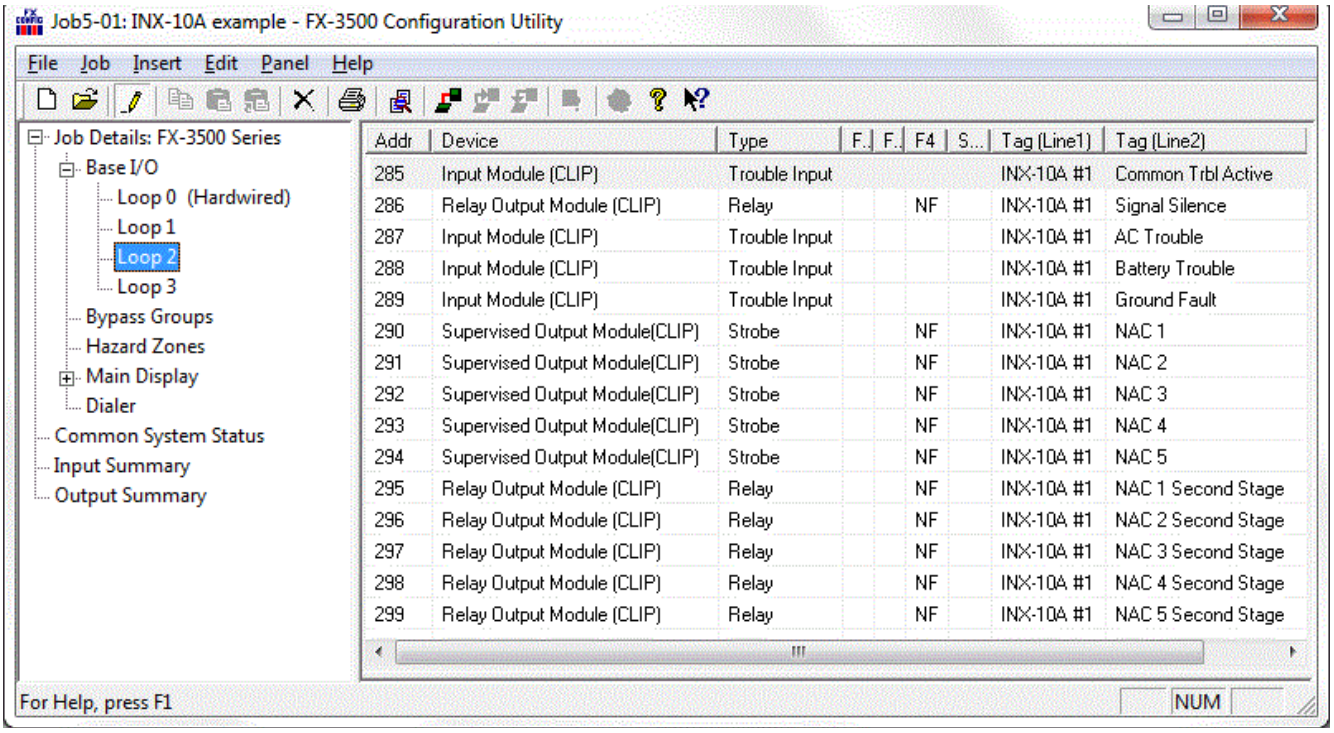


Figure 32 FX-3500/3500RCU/MR-3500/3500RCU Configurator Settings - INX-10A Two Stage with Enhanced Reporting

6.4.5 Two Stage with Basic Reporting and Power Supply Output Addressing

In order to maximize the amount of addresses available, if a NAC circuit is configured as a Power Supply, the next configured NAC Circuit is assigned the address reserved for the previous Circuit.

Example Application

- NAC 5 configured as a Power Supply.
- INX-10A Common Trouble reporting address is 190.

To configure the recommended base address

Set DIP switch SW1 as: 0-1-0-1-1-0-1-0

OFF-ON-OFF-ON-ON-OFF-ON-OFF

To configure the INX for Two Stage with Basic Reporting in a Mircom system

Set DIP switch SW2-1 to SW2-4 as: 0-0-1-0

OFF-OFF-ON-OFF

To configure the INX for Single Stage with Basic Reporting in a Secutron system

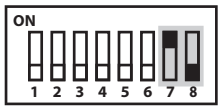
Set DIP switch SW2-1 to SW2-4 as: 0-1-1-0

OFF-ON-ON-OFF

To configure NAC 5 as a Continuous Power Supply

Set DIP switch SW4-7 and SW4-8 as: 1-0

ON-OFF



Attention: If NACs are configured the Evacuation Rate must be set on SW2 4-6. For more information see Setting Alert Rates, Evacuation Rates, NAC 5 Output Functions on page 39.

Table 16 Assigning Addresses - Two Stage Application, 1 Power Supply Output

Function	Address	Recommended Device Address
Common Trouble	Base Address	90
Signal Silence	Base Address + 1	91
Activate NAC1, return NAC1 line status	Base Address + 2	92
Activate NAC2, return NAC2 line status	Base Address + 3	93

Table 16 Assigning Addresses - Two Stage Application, 1 Power Supply Output

Function	Address	Recommended Device Address
Activate NAC3, return NAC3 line status	Base Address + 4	94
Activate NAC4, return NAC4 line status	Base Address + 5	95
Second Stage NAC1	Base Address + 6	96
Second Stage NAC2	Base Address + 7	97
Second Stage NAC3	Base Address + 8	98
Second Stage NAC4	Base Address + 9	99

Notes: Mircom recommends always using the upper range of addresses available for the INX-10A.

When adding devices to FX-2000 and MR-2100/2200/2900 configurations, add 100 to the recommended device address (see Figures 33 and 34).

When adding devices to FX-3500/3500RCU and MR-3500/3500RCU configurations, add 200 to the recommended device address (see Figure 35).

Troubles occurring on a NAC circuit are only reported via the first stage address.

6.4.6 Software Configuration -Two Stage with Basic Reporting and Power Supply Output Addressing

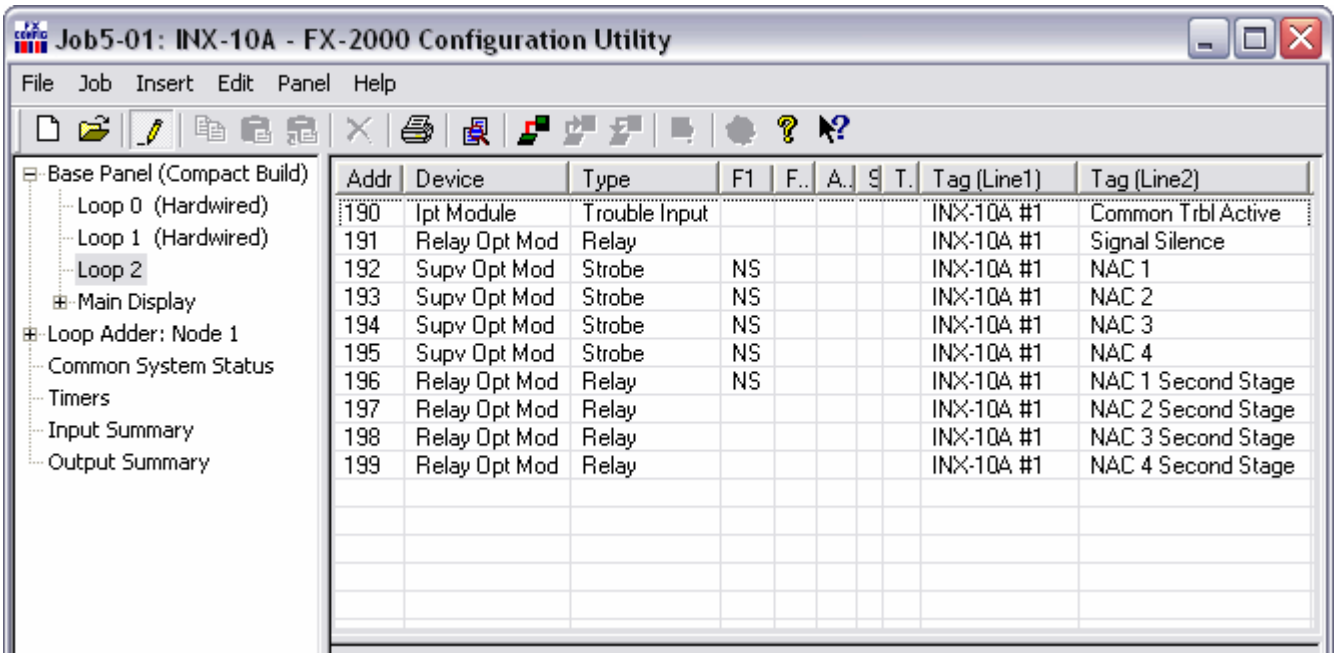


Figure 33 FX-2000 Configurator Settings - INX-10A Two Stage with Power Supply Output

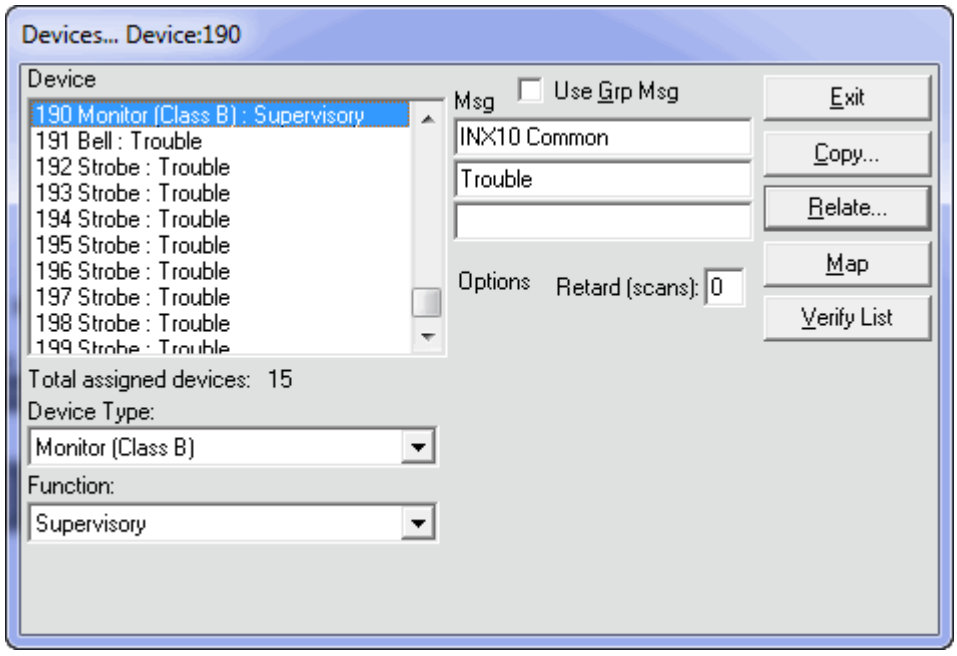


Figure 34 Secutron MR-2100/2200/2900 Configurator Settings - INX-10A Two Stage with Power Supply Output

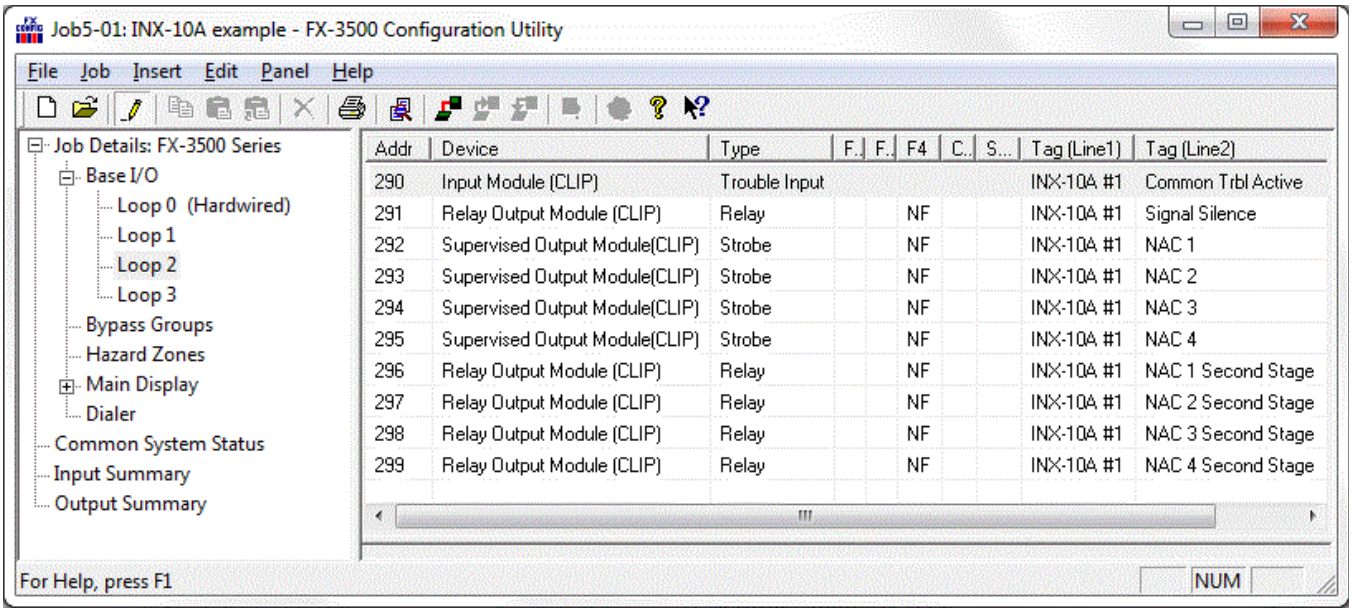


Figure 35 FX-3500/3500RCU/MR-3500/3500RCU Configurator Settings - INX-10A Two Stage with Power Supply Output

6.4.7 Two Stage Address Assignment with Enhanced Trouble Reporting and Power Supply Addressing

In order to maximize the amount of addresses available, if a NAC circuit is configured as a Power Supply, the next configured NAC Circuit is assigned the address reserved for the previous Circuit.

Attention: Two Stage Enhanced reporting is mandatory to meet ULC requirements.

Example Application

- NAC 5 configured as a Power Supply.
- INX-10A Common Trouble reporting address is 194.

To configure the recommended base address

Set DIP switch SW1 as: 1-1-1-0-1-0-1-0

ON-OFF-ON-OFF-ON-OFF-ON-OFF

To configure the INX for Two Stage with Enhanced Trouble Reporting in a Mircom System

Set DIP switch SW2-1 to SW2-4 as: 0-0-0-0

OFF-OFF-OFF-OFF

To configure the INX for Two Stage with Enhanced Trouble Reporting in a Secutron System

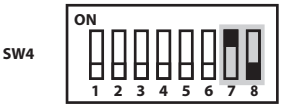
Set DIP switch SW2-1 to SW2-4 as: 0-1-0-1

OFF-ON-OFF-ON

To configure NAC 5 as a Continuous Power Supply

Set DIP switch SW4-7 and SW4-8 as: 1-0

ON-OFF



Attention: If NACs are configured the Evacuation Rate must be set on SW2 4-6. For more information see Setting Alert Rates, Evacuation Rates, NAC 5 Output Functions on page 39.

Table 17 Configuring Two Stage Address Assignment with Enhanced Trouble Reporting and Power Supply Addressing

Function	Address	Recommended Device Address
Common Trouble	Base Address	87
Signal Silence	Base Address + 1	88
Monitor AC trouble	Base Address + 2	89
Monitor Battery/Charger trouble	Base Address + 3	90
Monitor Earth Ground Fault	Base Address + 4	91
Activate NAC1, return NAC1 line status	Base Address + 5	92
Activate NAC2, return NAC2 line status	Base Address + 6	93
Activate NAC3, return NAC3 line status	Base Address + 7	94
Activate NAC4, return NAC4 line status	Base Address + 8	95
Second Stage NAC1	Base Address + 10	96
Second Stage NAC2	Base Address + 11	97
Second Stage NAC3	Base Address + 12	98
Second Stage NAC4	Base Address + 13	99

Notes: Mircom recommends always using the upper range of addresses available for the INX-10A.

When adding devices to FX-2000 and MR-2100/2200/2900 configurations, add 100 to the recommended device address (see Figures 36 and 37).

When adding devices to FX-3500/3500RCU and MR-3500/3500RCU configurations, add 200 to the recommended device address (see Figure 38).

Troubles occurring on a NAC circuit are only reported via the first stage address.

6.4.8 Software Configuration - Two Stage Address Assignment with Enhanced Trouble Reporting and Power Supply Addressing

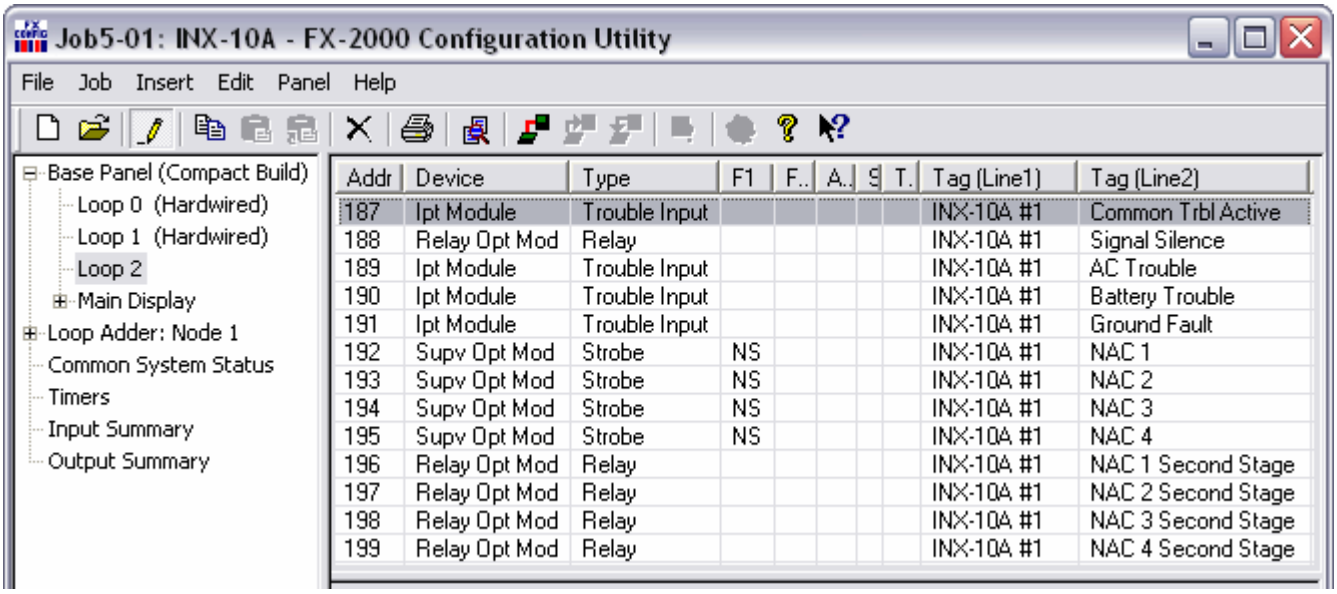


Figure 36 FX-2000 Configurator Settings - INX-10A Two Stage with Enhanced Reporting and Power Supply Addressing

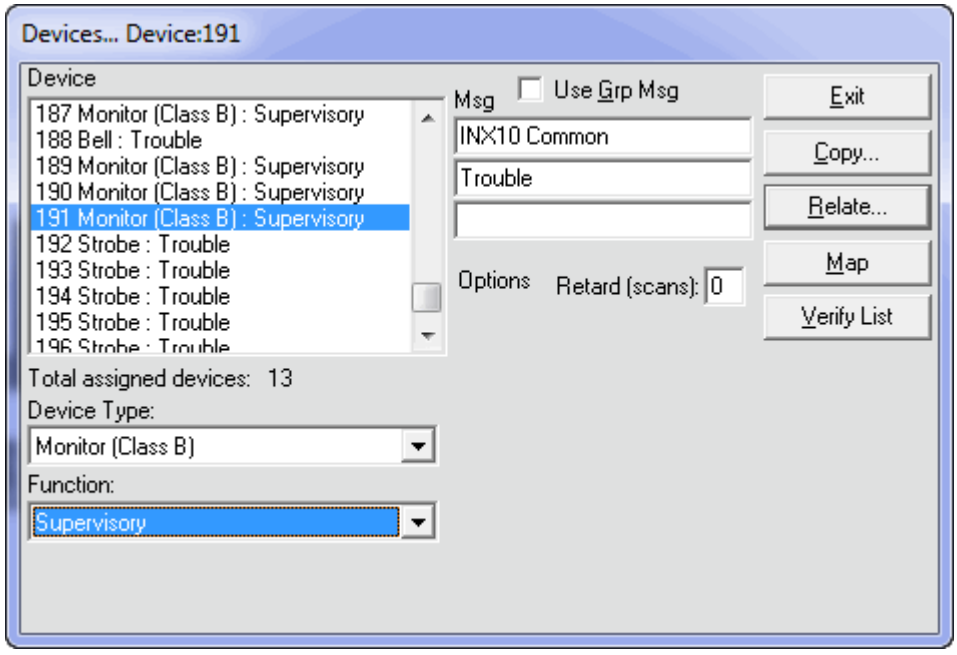


Figure 37 Secutron MR-2100/2200/2900 Configurator Settings - INX-10A Two Stage with Enhanced Reporting and Power Supply Addressing

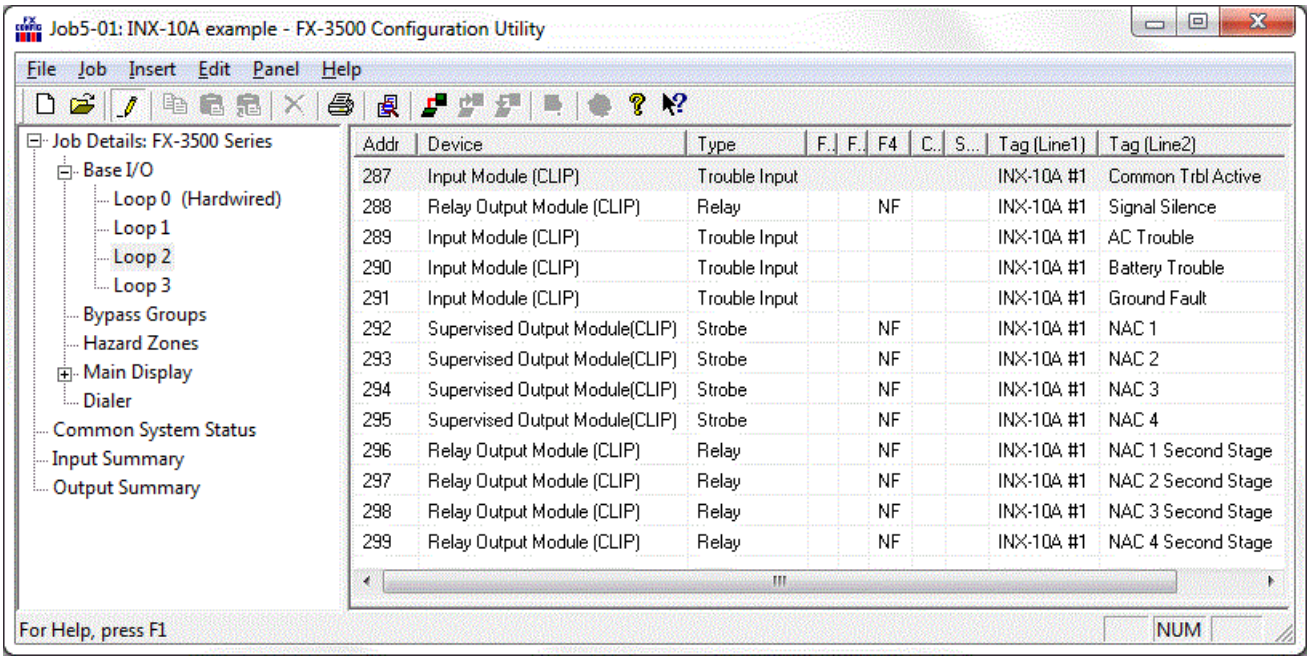


Figure 38 FX-3500/3500RCU/MR-3500/3500RCU Configurator Settings - INX-10A Two Stage with Enhanced Reporting and Power Supply Addressing

6.4.9 Adding Functions in the FX-2000 Configurator Software

1. Open Job in Configurator.
2. Select the appropriate loop.
3. Click **INSERT > ADD DEVICE.**
4. From the Add Devices window, use the drop down menus to select the type of virtual device **Supv Opt Mod**, the base address of the INX panel. how many NAC circuits are being supervised.
5. Click **ADD > CLOSE** to return to the main window.

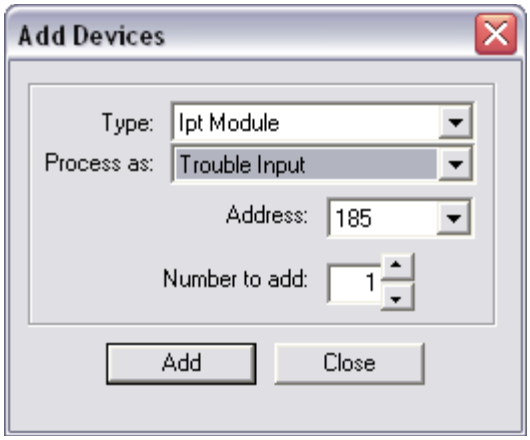


Figure 39 Add Devices Window

6. Add the appropriate TAG(s) to the new devices by double clicking the appropriate cell.
7. To assign correlations to each virtual device right click the device and select **ADD CORRELATIONS** and then select the appropriate items to **ADD**.

6.5 Independent Mode Configuration Options

NAC circuits on the INX-10A can be configured to drive both Signals and Strobes.

6.5.1 NACs 1 and 2 Configured as Signals

To configure NAC1 and NAC2 to drive signals set SW3-7 to 0 (OFF).

Configure the Strobe Manufacturer and Signal Rate by setting SW4-4, SW4-5, SW4-6, SW5-1 SW5-2 and SW5-3 as described in Table 18.

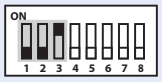
Notes: Using Independent Mode in a Two Stage Application

When driving Signals and Strobes in a Two Stage Application configure the Alert Rate by setting SW4-1, SW4-2 and SW4-3 as follows:

100 - Uses Strobe Manufacturer Sync Rate

010 - Continuous

110 - 0.5s ON, 2.5s OFF, Repeat (20 PPM as in FA-1000 or FX-2000)



001 - 20 PPM, 50% Duty Cycle

Table 18 Independent Mode DIP Switch Settings - NAC1 and NAC2 configured as Signals

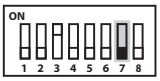
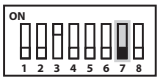
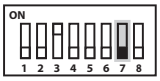
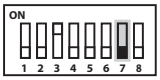
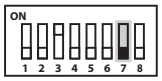
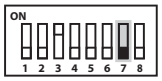
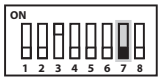
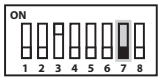
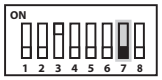
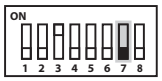
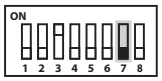
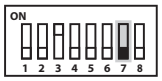
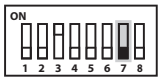
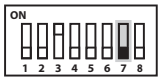
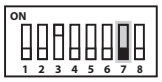
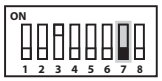
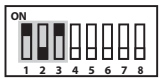
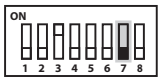
NAC3 NAC4 and NAC5	NAC1 and NAC2	CONFIGURE SWITCHES AS SHOWN		
Strobe Manufacturer (SW5 1-3)	**Signal Rate (SW4 4-6)**	**SW3**	**SW4**	**SW5**
Mircom/Amseco	Continuous			
Mircom/Amseco	Temporal			
Mircom/Amseco	March Time			
Mircom/Amseco	California			
Mircom/Amseco	120 PPM, 50% Duty Cycle			
System Sensor	Continuous			

Table 18 Independent Mode DIP Switch Settings - NAC1 and NAC2 configured as Signals (Continued)

NAC3 NAC4 and NAC5	NAC1 and NAC2	CONFIGURE SWITCHES AS SHOWN		
Strobe Manufacturer (SW5 1-3)	Signal Rate (SW4 4-6)	SW3	SW4	SW5
System Sensor	Temporal			
System Sensor	March Time			
System Sensor	California			
System Sensor	120 PPM, 50% Duty Cycle			
Secutron/Gentex	Continuous			
Secutron/Gentex	Temporal			
Secutron/Gentex	March Time			
Secutron/Gentex	California			
Secutron/Gentex	120 PPM, 50% Duty Cycle			
Wheelock	Continuous			
Wheelock	Temporal			
Wheelock	March Time			
Wheelock	California			
Wheelock	120 PPM, 50% Duty Cycle			

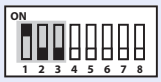
6.5.2 NAC1, NAC2 and NAC3 Configured as Signals

To configure NAC1, NAC2 and NAC3 to drive signals set SW3-7 to 1 (ON).

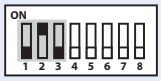
Configure the Strobe Manufacturer and Signal Rate by setting SW4-4, SW4-5, SW4-6, SW5-1 SW5-2 and SW5-3 as described in Table 19.

Notes: Using Independent Mode in a Two Stage Application

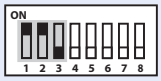
When driving Signals and Strobes in a Two Stage Application configure the Alert Rate by setting SW4-1, SW4-2 and SW4-3 as follows:



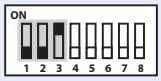
100 - Uses Strobe Manufacturer Sync Rate



010 - Continuous



110 - 0.5s ON, 2.5s OFF, Repeat (20 PPM as in FA-1000 or FX-2000)



001 - 20 PPM, 50% Duty Cycle

Table 19 Independent Mode DIP Switch Settings - NAC1, NAC2 and NAC3 configured as Signals

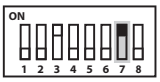
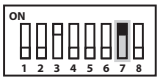
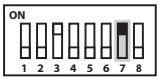
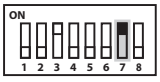
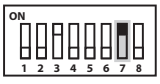
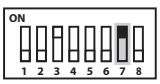
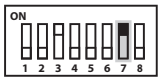
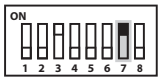
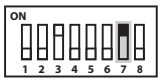
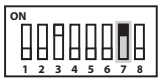
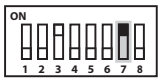
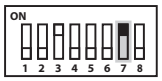
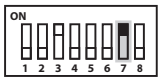
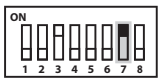
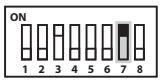
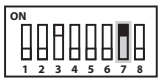
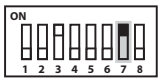
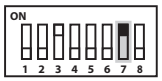
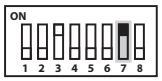
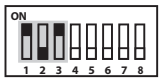
NAC4 and NAC5	NAC1, NAC2 and NAC3	CONFIGURE SWITCHES AS SHOWN		
Strobe Manufacturer (SW5 1-3)	**Signal Rate (SW4 4-6)**	**SW3**	**SW4**	**SW5**
Mircom/Amseco	Continuous			
Mircom/Amseco	Temporal			
Mircom/Amseco	March Time			
Mircom/Amseco	California			
Mircom/Amseco	120 PPM, 50% Duty Cycle			
System Sensor	Continuous			
System Sensor	Temporal			

Table 19 Independent Mode DIP Switch Settings - NAC1, NAC2 and NAC3 configured as Signals (Continued)

NAC4 and NAC5	NAC1, NAC2 and NAC3	CONFIGURE SWITCHES AS SHOWN		
Strobe Manufacturer (SW5 1-3)	**Signal Rate (SW4 4-6)**	**SW3**	**SW4**	**SW5**
System Sensor	March Time			
System Sensor	California			
System Sensor	120 PPM, 50% Duty Cycle			
Secutron/Gentex	Continuous			
Secutron/Gentex	Temporal			
Secutron/Gentex	March Time			
Secutron/Gentex	California			
Secutron/Gentex	120 PPM, 50% Duty Cycle			
Wheelock	Continuous			
Wheelock	Temporal			
Wheelock	March Time			
Wheelock	California			
Wheelock	120 PPM, 50% Duty Cycle			

7.0 Wiring

This chapter describes the proper field wiring for the INX-10A.

This chapter explains

- Maximum wiring distances
- Wiring Terminal Connections
- Wiring Power Supply Connections

7.1 Wiring Tables

Table 20 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.

Table 21 Wiring Table for NAC and Auxiliary Power 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
2.0	70	21	112	34	178	54	285	86	0.9
2.25	62	19	100	30	158	48	250	76	0.8
2.50	56	17	90	27	142	43	230	70	0.72

Notes: Main Board NAC Circuits are rated for 2.5 Amperes each.

Maximum Voltage Drop Should Not Exceed 1.8 Volts

7.2 Main Board Terminal Connections

Wire devices to terminals as shown below. See 7.1 Wiring Tables on page 75, Table 21 Wiring Table for NAC and Auxiliary Power Circuits on page 75 and 9.0 Appendix A - Specifications and Features - for more information.

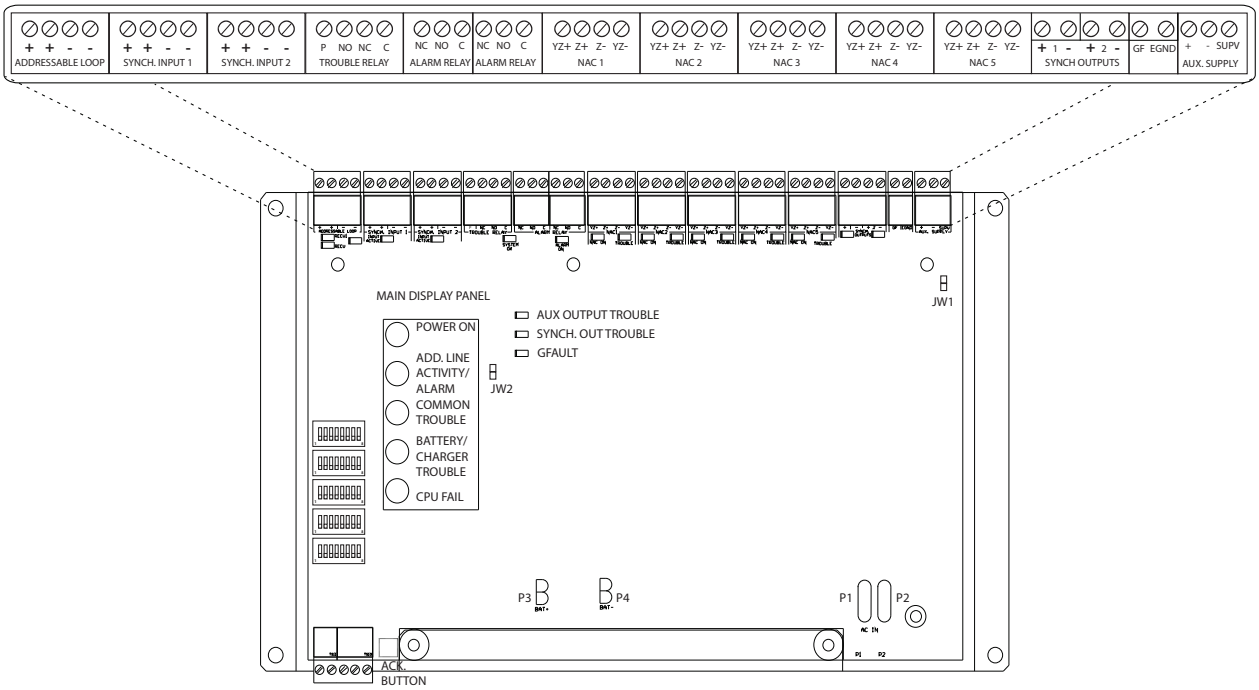


Figure 40 Main Board Terminal Blocks

Attention: DO NOT exceed power supply ratings: Total current including Main Chassis, AUX, and NAC circuits is 10A max.

Ground Fault Detection is required at all times. INX Ground fault detection can only be disabled IF it is interfering the FACPs Ground Fault Detection operation AND the FACP is used to manage the Ground Fault Detection.

Notes: The Terminal Blocks are depluggable for ease of wiring.

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

7.2.1 SLC Loop Wiring - Class B

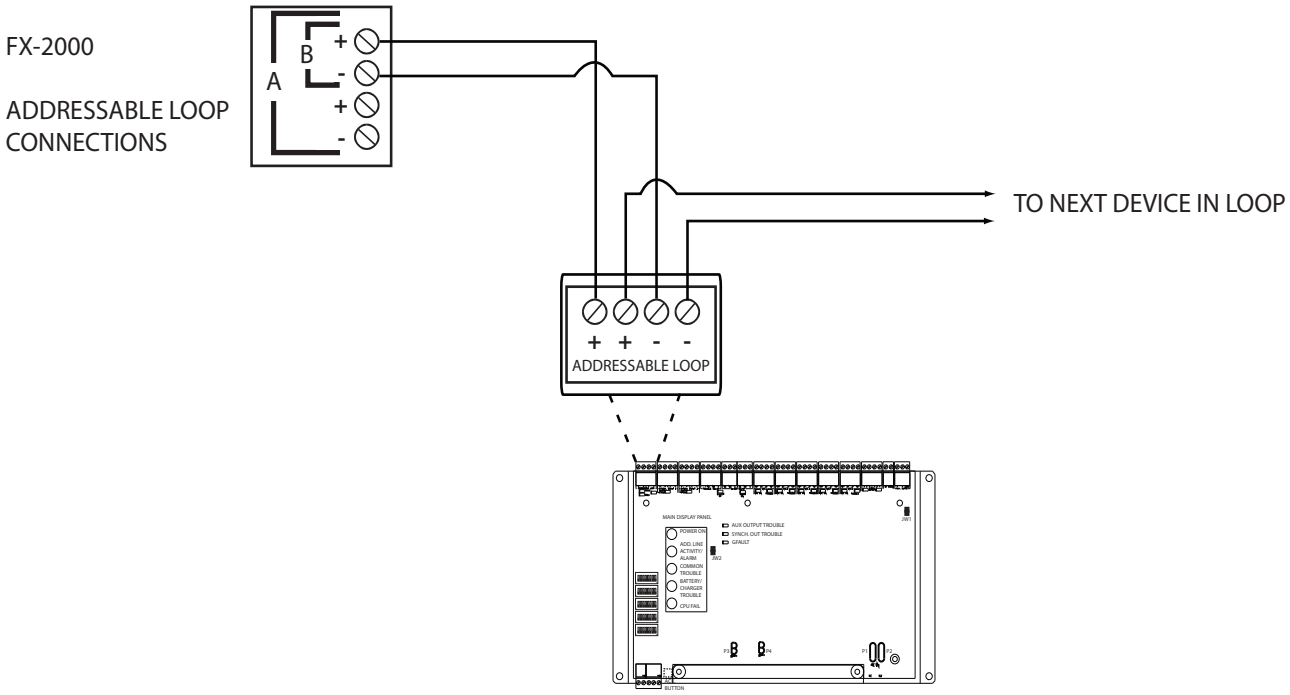


Figure 41 SLC Loop Wiring - Class B

7.2.2 SLC Loop Wiring - Class A

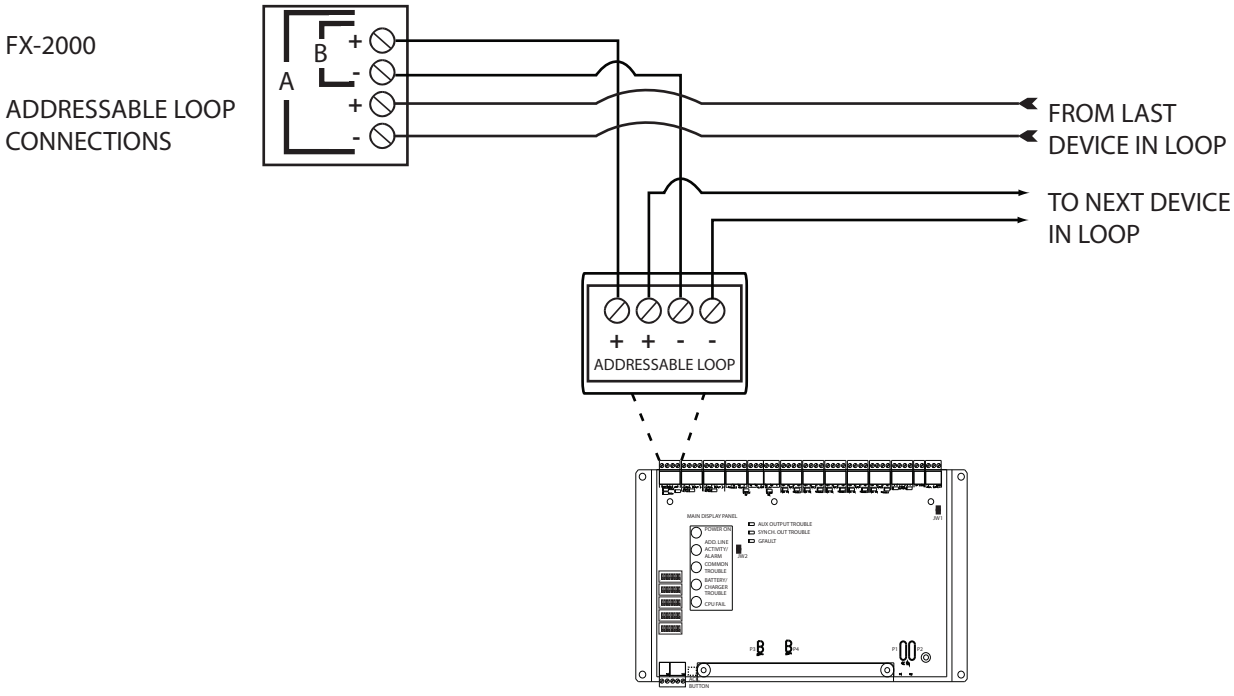


Figure 42 SLC Loop Wiring - Class A

7.2.3 Synchronized Input from FACP Wiring - Class B

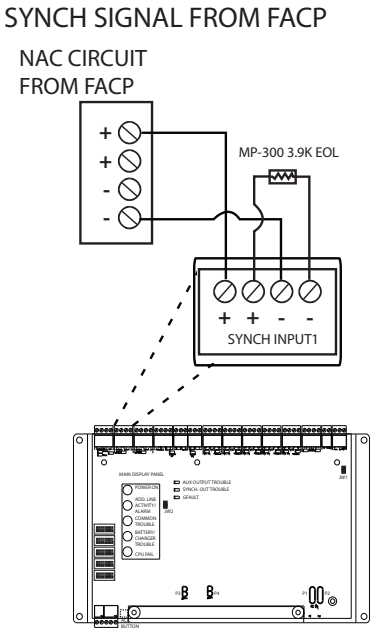


Figure 43 Synchronized Input from FACP Wiring - Class B

Attention: DO NOT USE AN SLC LOOP IN THIS APPLICATION.

7.2.4 Synchronized Input from FACP Wiring- Class A

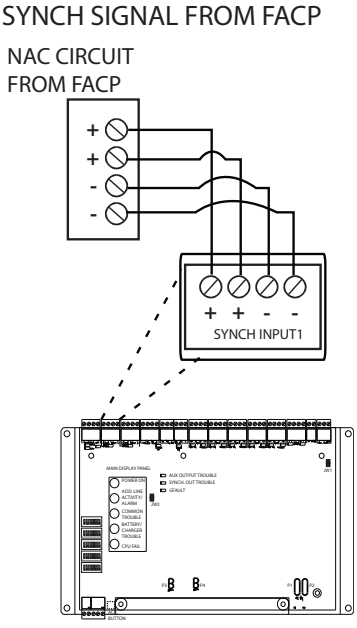


Figure 44 Synchronized Input from FACP Wiring - Class A

Attention: DO NOT USE AN SLC LOOP IN THIS APPLICATION.

7.2.5 Synchronized Input from INX-10A Wiring - Class B Single Slave

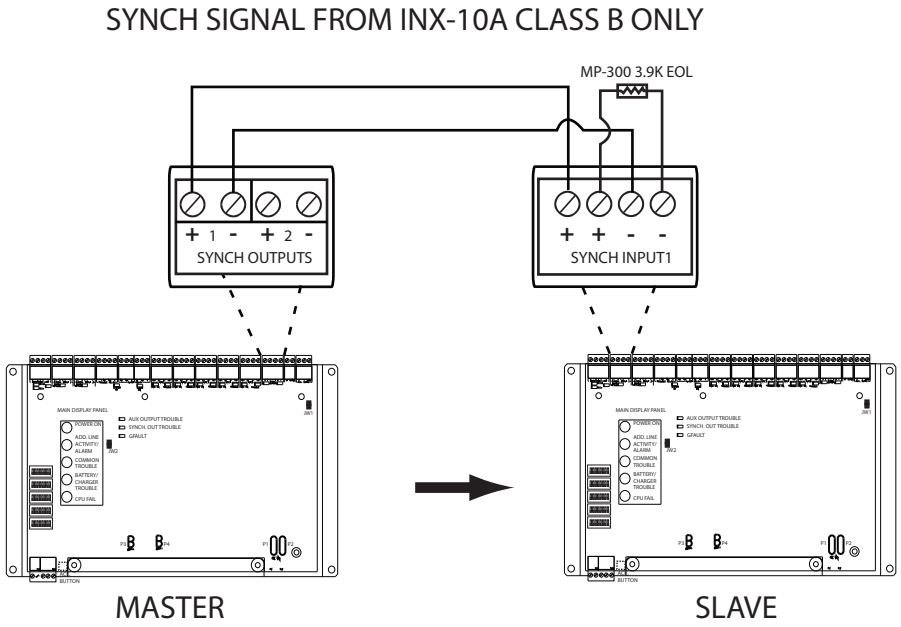


Figure 45 Synchronized Input from INX-10A Wiring - Class B Single Slave

Attention: CLASS B WIRING ONLY

7.2.6 Synchronized Input from INX-10A SIngle Stage Wiring - Class B Multiple Slaves

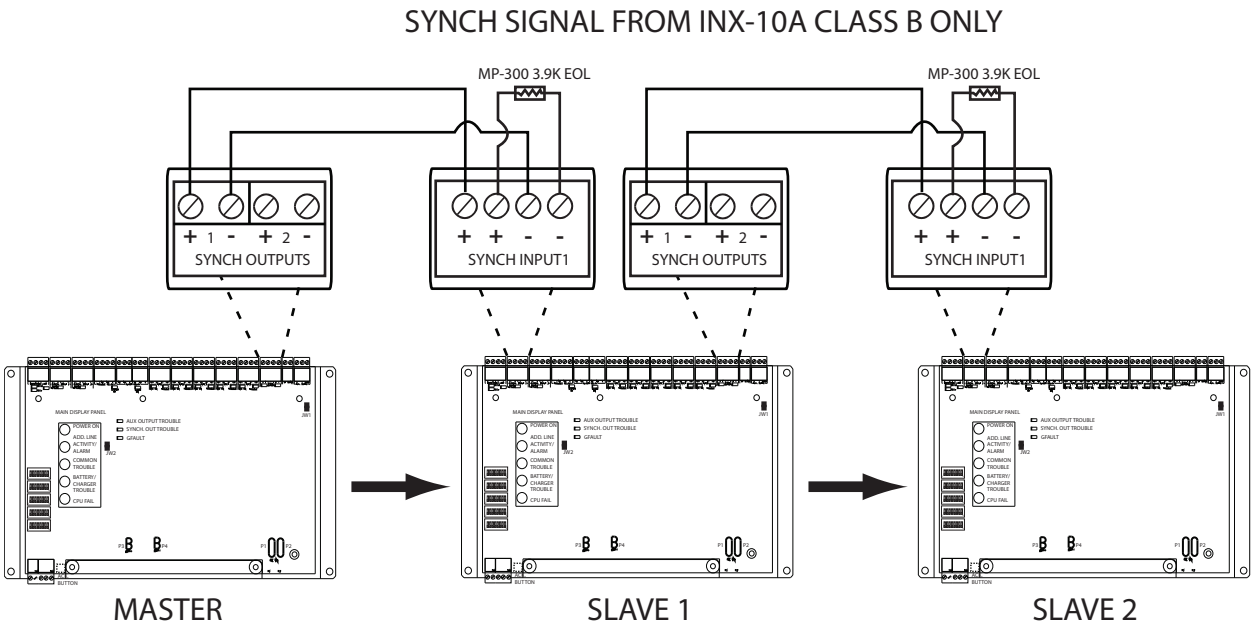


Figure 46 Synchronized Input from INX-10A Wiring - Class B Multiple Slaves

Attention: SYCNHRONIZING SIGNALS FROM THE INX-10A CAN USE CLASS B WIRING ONLY

MIRCOM RECOMMENDED SETUP FOR MULTIPLE SLAVES

7.2.7 Synchronized Input from INX-10A Two Stage Wiring - Class B Multiple Slaves

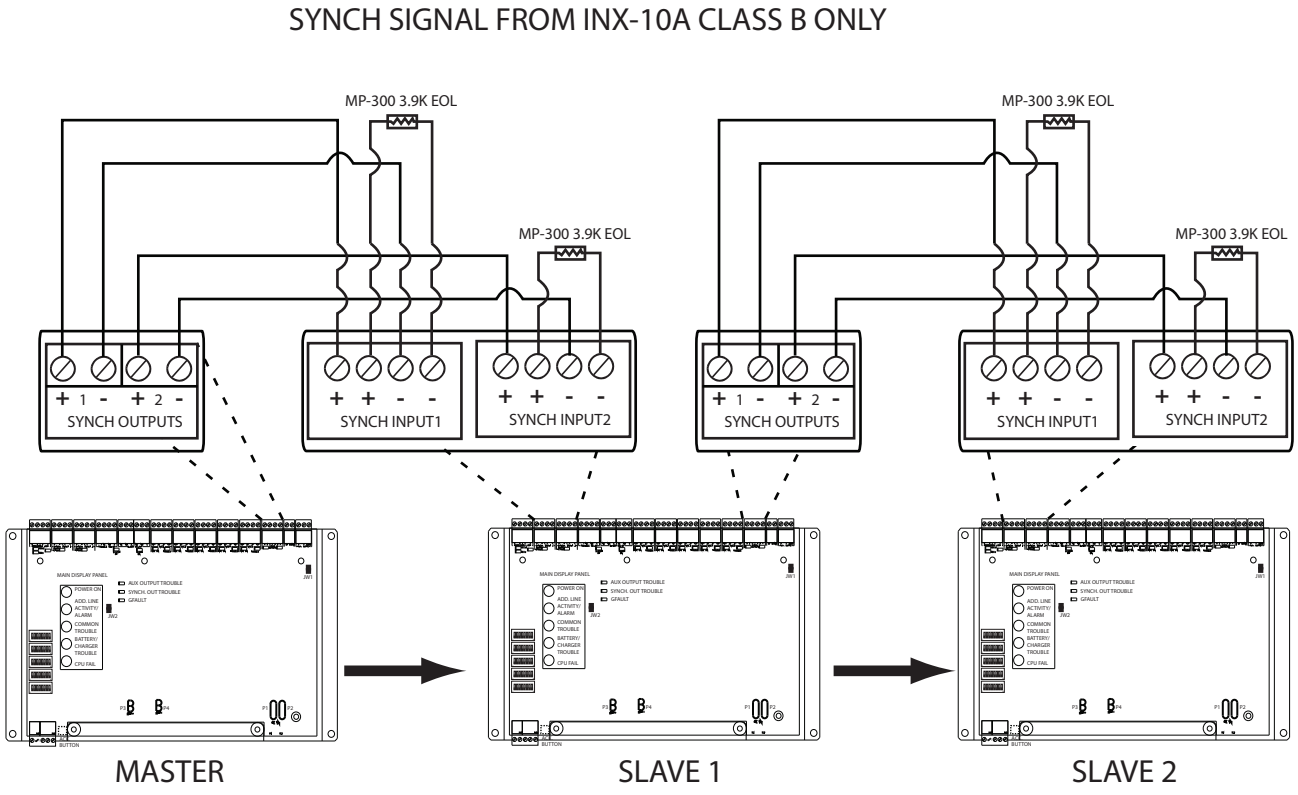


Figure 47 Synchronized Input from INX-10A Wiring - Class B Multiple Slaves

Attention: SYCNHRONIZING SIGNALS FROM THE INX-10A CAN USE CLASS B WIRING ONLY

MIRCOM RECOMMENDED SETUP FOR MULTIPLE SLAVES

7.2.8 Relay Contact Activation from FACP - Single Stage

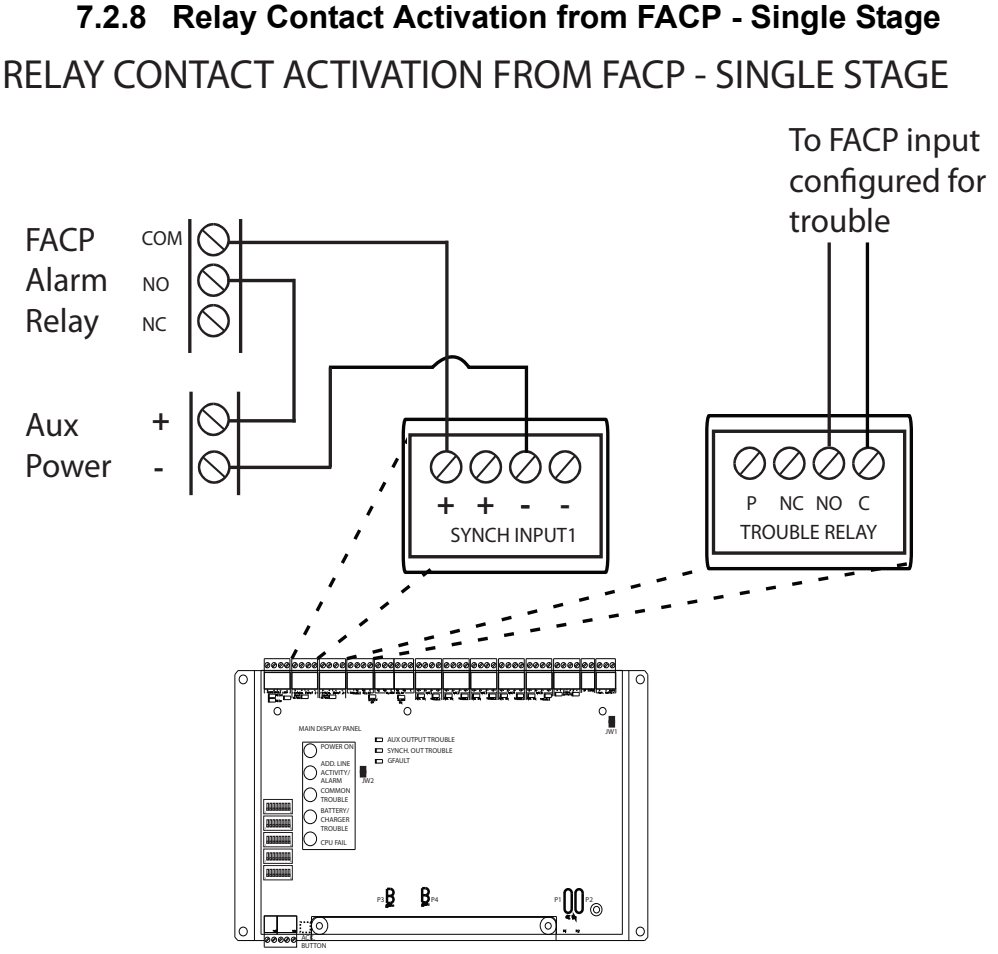


Figure 48 Relay Contact Activation from FACP - Single Stage

Attention: DO NOT USE AN SLC LOOP IN THIS APPLICATION.
Disable the addressable loop by setting DIP switch SW1 to all 0 (OFF).

Table 22 Difference between features provided by SLC Interface and Contact Interface

Feature Description	SLC Interface	Contact Interface
NAC by NAC activation	Yes	No
NAC circuit trouble reporting	Yes	No
Common trouble reporting	Yes	Yes
Enhanced trouble reporting	Yes	No

7.2.9 Relay Contact Activation from FACP - Two Stage

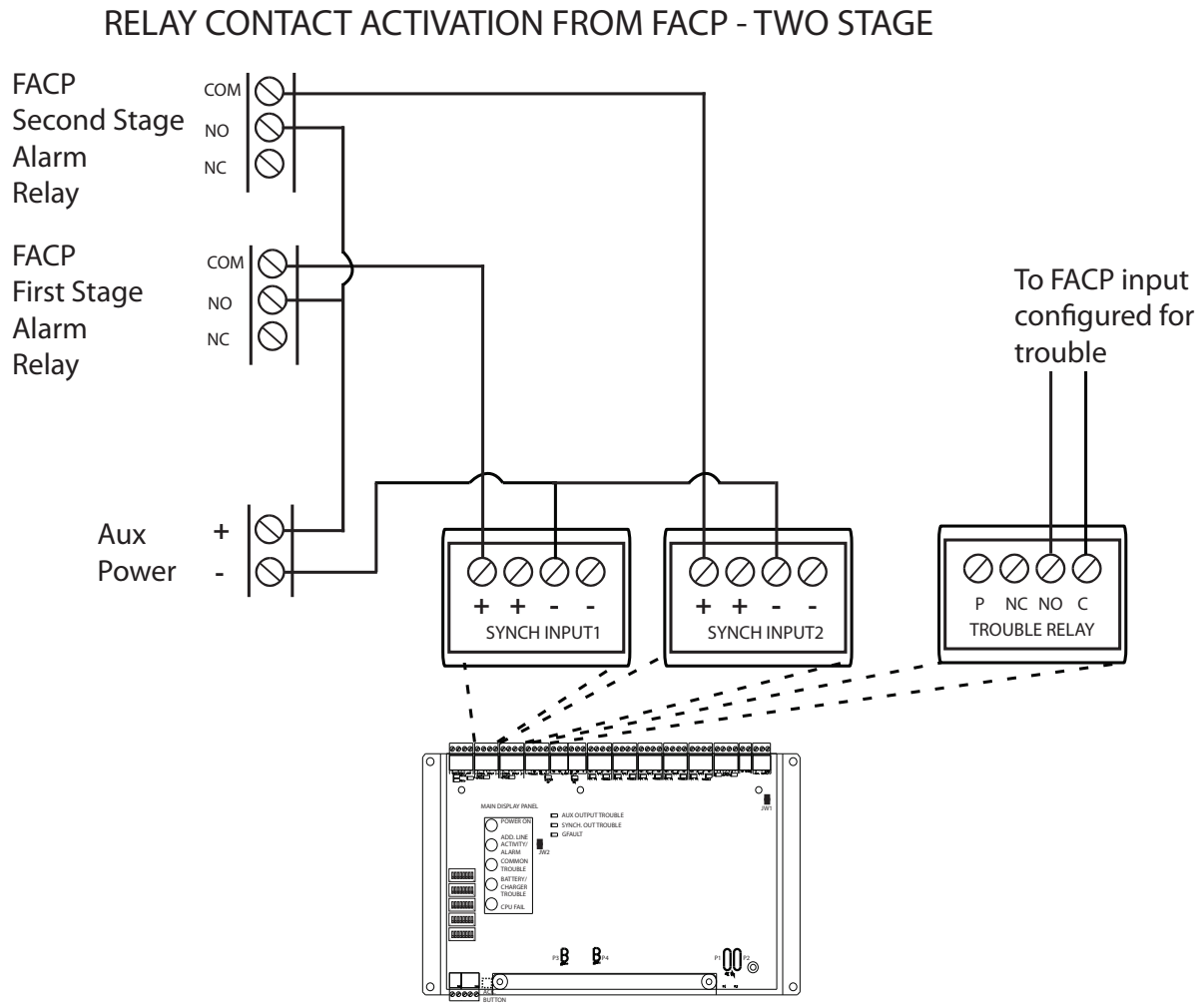


Figure 49 Relay Contact Activation from FACP - Two Stage

Attention: DO NOT USE AN SLC LOOP IN THIS APPLICATION.
Disable the addressable loop by setting DIP switch SW1 to all 0 (OFF).

7.2.10 Relay, Ground Supervision and Auxiliary Supply Wiring

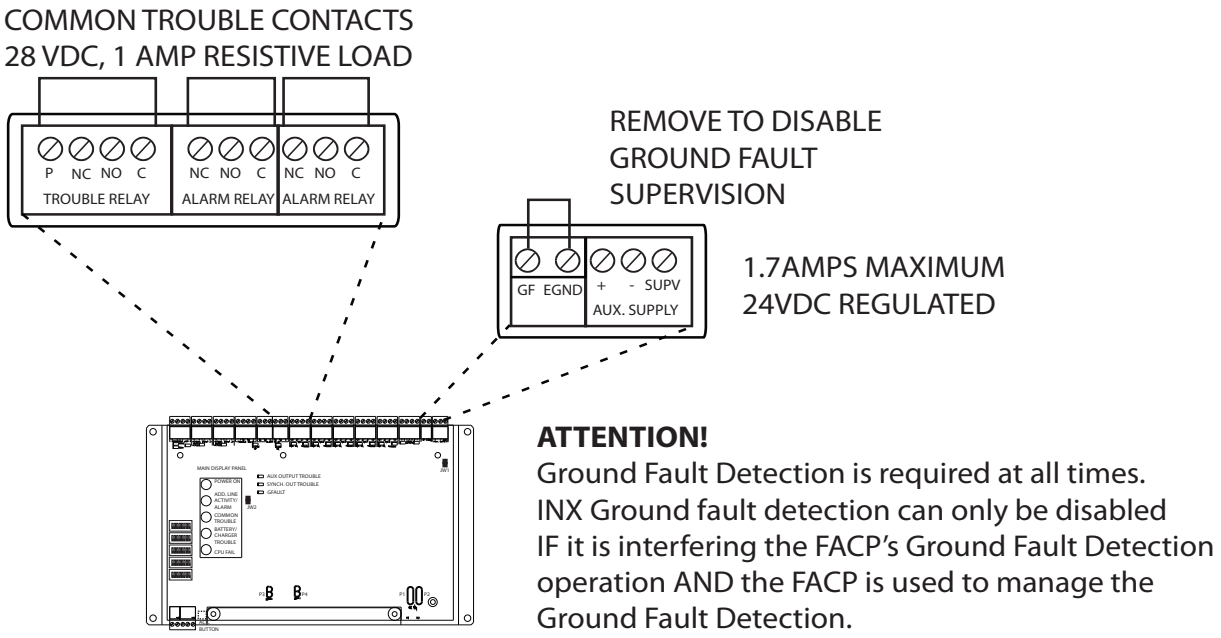


Figure 50 Relay, Ground Supervision and Auxiliary Supply Wiring

7.2.11 Supervision of Auxiliary Supply Wiring

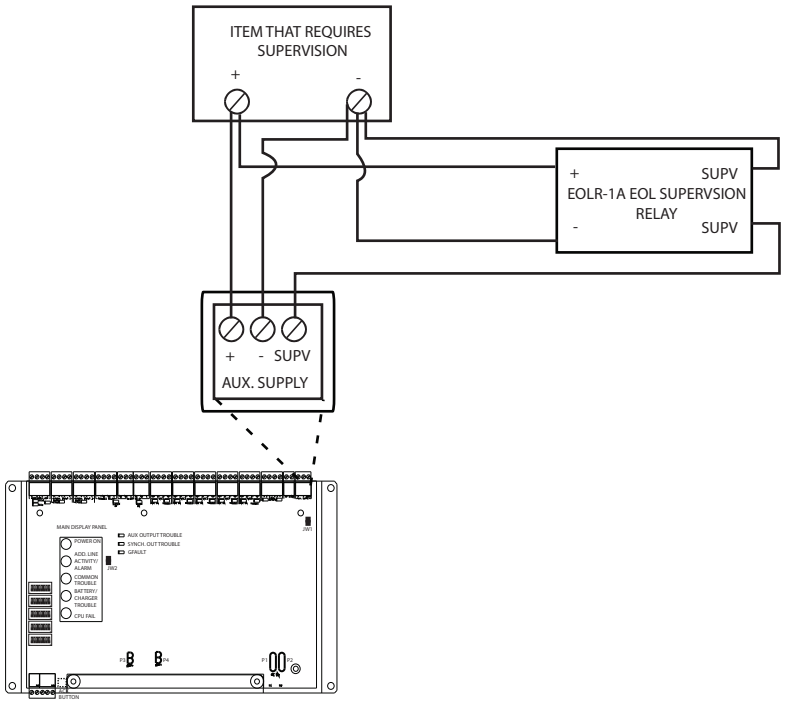


Figure 51 Relay, Ground Supervision and Auxiliary Supply Wiring

7.2.12 NAC CIrcuit Wiring - Class B

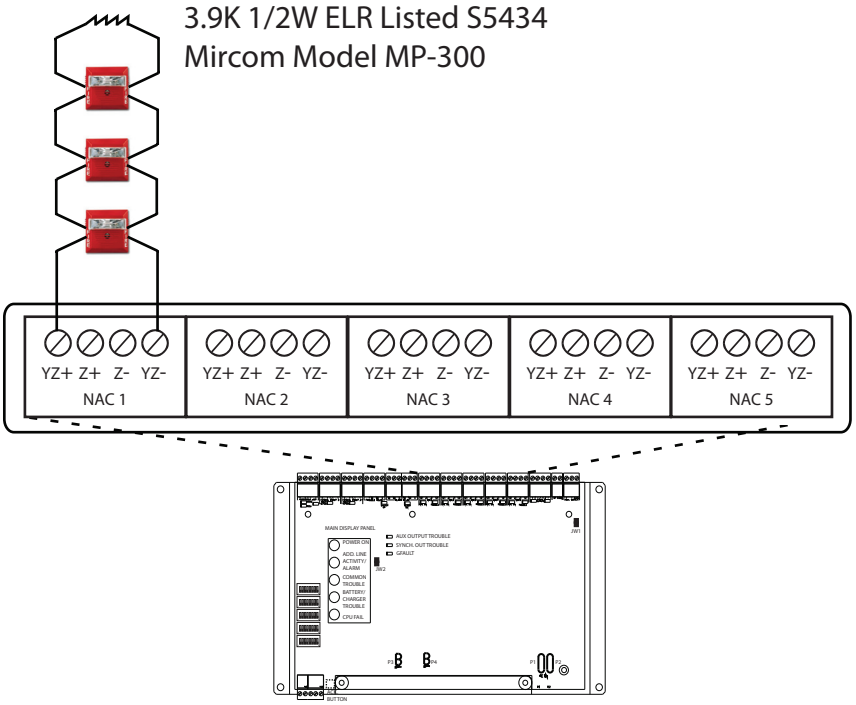


Figure 52 NAC Circuit Wiring - Class B

7.2.13 NAC Circuit Wiring - Class A

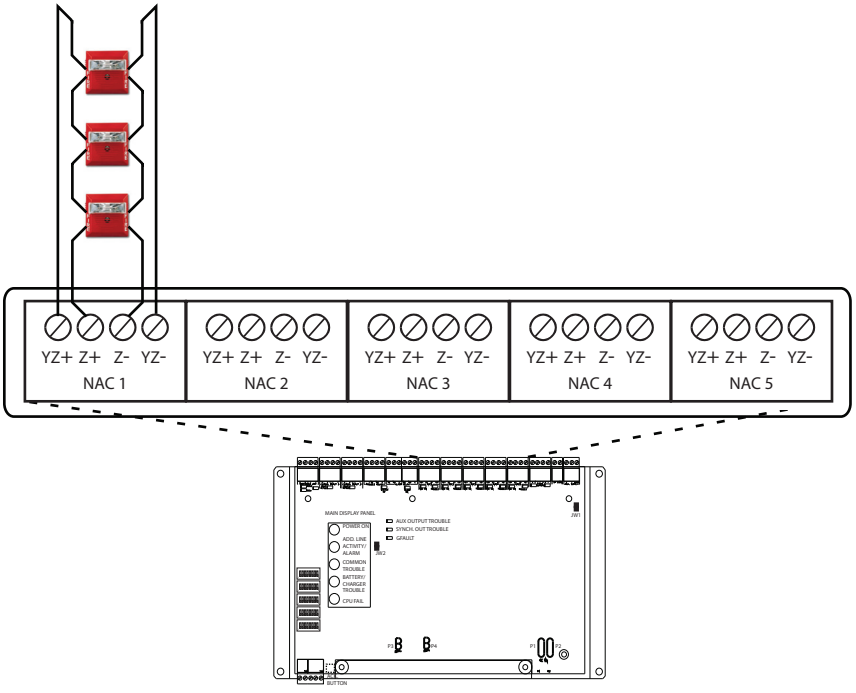


Figure 53 NAC Circuit Wiring - Class A

7.3 Power Supply Connections

The power supply is preinstalled as part of the Main Chassis. The following table displays the electrical ratings. Figure 54 Power Supply Connections shows the proper connections to wire the Power Supply successfully.

Table 23 Power Supply Electrical Ratings

Connector/Jumper	Description
Electrical input ratings	120 VAC, 60 Hz, 2 A / 240 VAC, 50 Hz, 1A
Power supply total current	10 A maximum
Battery Fuse	Replace with WX-058 Battery Cable Assembly

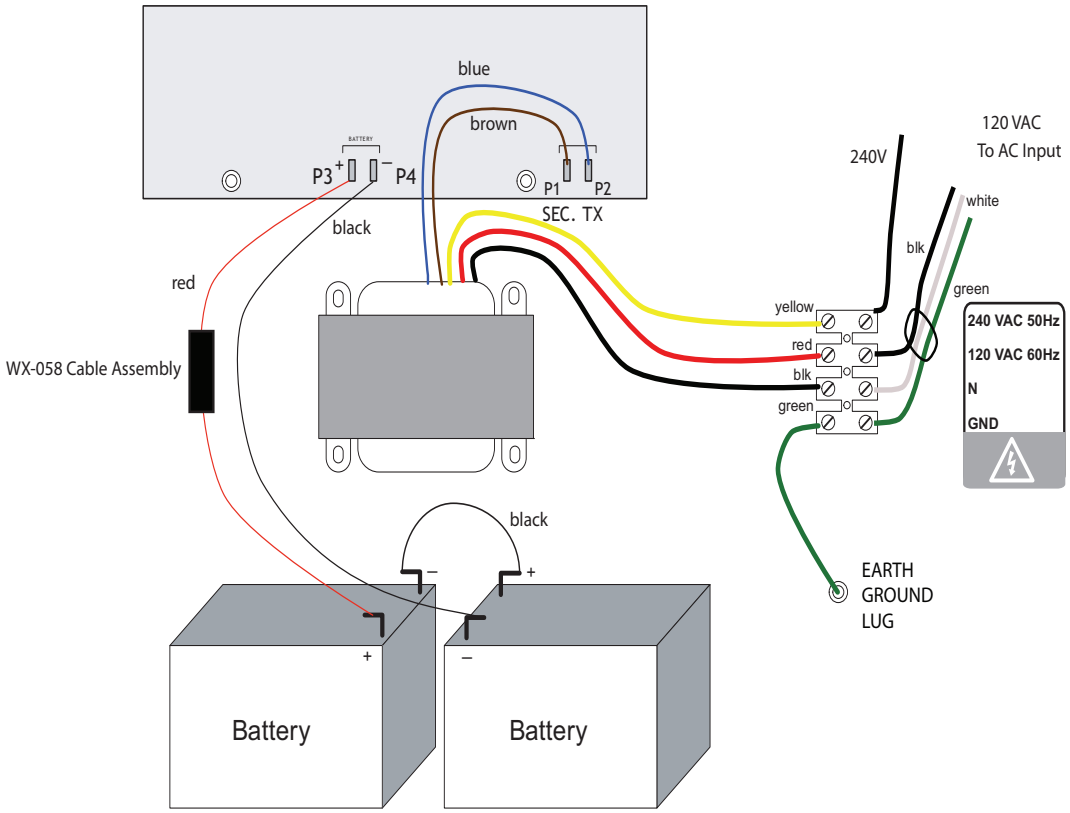


Figure 54 Power Supply Connections

Attention: DO NOT exceed power supply ratings. Wire as shown using proper wire gauges.

Connect batteries after the system main A.C. power is turned on to reduce sparking.

7.4 System Checkout

The following are the recommended steps before and during the powering up of the INX-10A.

7.4.1 Before Turning The Power ON

1. To prevent sparking, DO NOT connect the batteries first. Connecting the batteries is only to be done after the system has been powered from the main AC Supply.
2. Check all field (external) wiring for opens, shorts, and ground.
3. Check that all interconnection cables are secure, and that all connectors are plugged-in properly.
4. Check all Jumpers and Switches for proper setting.
5. Check the AC power wiring for proper connection.
6. Check that the chassis is connected to EARTH GROUND (cold water pipe).
7. Close the front cover plate before powering the system from main AC supply.

7.4.2 Power-up Procedure

1. After completing 7.4.1 Before Turning The Power ON procedures, power-up the panel. The green **AC-ON** LED should illuminate.
2. Since the batteries are not connected, the **Battery Trouble** LED should illuminate, the **Common Trouble** LED should flash and the Trouble Relay (on the main board) will be active.
3. Connect the batteries while observing correct polarity; the red wire is positive (+) and black wire is negative (-).
4. All indicators should extinguish except for normal power **AC-ON** green LED.

7.5 Troubleshooting

The following are common methods to solving Circuit Ground Fault, Battery and Common troubles.

7.5.1 Circuit Trouble

Normally when a circuit trouble occurs, the Common Trouble indicator will be illuminated and the common trouble relay will be active. Additionally, the corresponding LED on the main board will be illuminated. This can be viewed by opening the panel and looking the top of the board. To correct the fault, check for open wiring on that particular circuit loop.

7.5.2 Ground Fault

This panel has a common ground fault detector. To correct the fault, check for any external wiring touching the chassis or other Earth Ground connection.

7.5.3 Battery Trouble

Check for the presence of batteries and their conditions. Low voltage (below 20.4V) will cause a battery trouble. If battery trouble condition persists, replace batteries as soon as possible.

7.5.4 Common Trouble

If only a common trouble is indicated on the main panel and none of those above confirming trouble indicators are on, then check the following for possible fault

- any missing interconnection wiring
- improperly secured cabling

8.0 Warranty and Warning Information

WARNING!

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

NOTE TO ALL READERS:

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

NOTE TO INSTALLERS:

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

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

NOTE TO USERS:

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

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

distances required between devices and suggested placement of wireless devices for optimal functioning.

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

Warranty

Purchase of all Mircom products is governed by:

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

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

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

9.0 Appendix A - Specifications and Features

Table 24 INX-10A, INX-10ADS and INX-10AC Specifications and Features

INX-10A, INX-10ADS and INX-10AC Chassis		
General	Micro-controller based design, fully configurable from DIP Switches on front panel.	
NAC Circuits	5 Style Y or Z (Class B or A) configurable as strobes or audibles. Terminals are labeled “NAC”. Power limited / 24 VDC regulated / 2.5 A @ 49° C per Circuit	
Aux. Power Supply.	Terminals are labelled **AUX PWR**. Power limited / 24 VDC Filtered (special application) / 1.7 A @ 49° C	
Auxiliary relays (resistive loads)	Must be connected to a Listed Power Limited Source of Supply. Terminals are labelled “GROUND” and “TROUBLE”.	
	Ground Fault	Form C, 1 Amp, 28 VDC
	Common Trouble	Form C, 1 Amp, 28 VDC
Electrical ratings	**AC line voltage**	120V 60Hz / 240V, 50Hz
		2 Amps / 1 Amp (primary)
	Maximum allowable current	120V @ 4.25A
		240V @ 2.125A
	NAC Circuits	24VDC regulated, Power Limited
		10A Total, 2.5A maximum per circuit
Battery	**Type**	2 x 12VDC, Gel-Cell/Sealed Lead-Acid
	Charging capability	4 Ah to 40 Ah batteries
	Current Consumption	standby: 200 mA
		alarm: 350 mA
Compliance	**System Model**	INX Addressable NAC Expander
	Applicable Standards	ULC S527-11, UL 864 R9 and UL 1481 R5

10.0 Appendix B - Power Supply & 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 to9.0 Appendix A - Specifications and Features for specifications.

Power Requirements (All currents are in amperes)							
Model Number	**Description**	**Qty**		**Standby**	**Total Standby**	**Alarm**	**Total Alarm**
INX-10A	Main Chassis (10 Amp)		X	0.200	=	0.350	=
INX-10ADS	Chassis (10 Amp)		X	0.200	=	0.350	=
INX-10AC	Chassis (10 Amp)		X	0.200	=	0.350	=
Signal Load (bells, horns, strobes, and etc.)			X				=
Auxiliary Power Supply					=	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

Battery Selection

Multiply (C) by 1.20 to derate battery.

Batteries BA-104(4AH), BA-1065(7AH) and BA-110(12AH) will fit into the INX-10A, BA-117 (18 Ah) fit in the INX-10ADS only

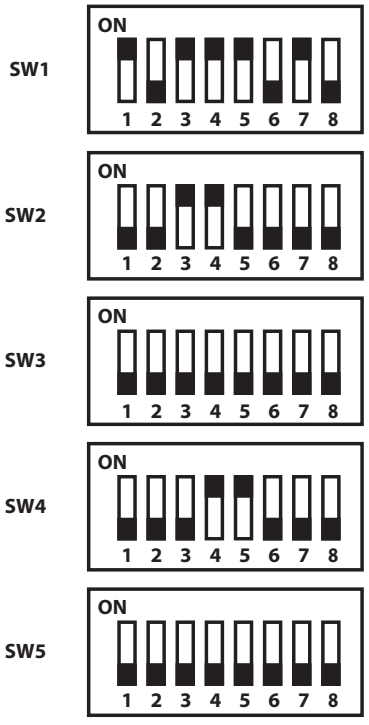
*Use 0.084 for five minutes of alarm or 0.5 for thirty minutes of alarm as a multiplier figure.

11.0 Appendix C - Sample Applications

11.1 Minimal Size Single Stage Addressable System - Factory Default Settings

In a minimal size system the INX-10A will require 7 addresses. The following are the specs for the system.

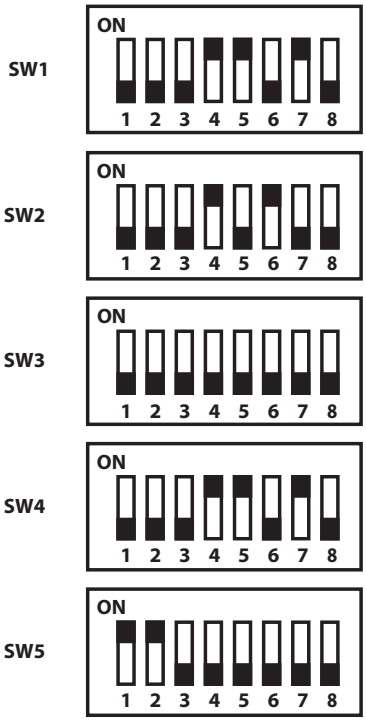
Base Address	193
Protocol	System Sensor
AC Failure Report Delay	No Delay
Charger	Yes
Battery	Yes
Cut Charger when NACs activated	Yes
Alert Rate	N/A
Evacuation Rate	Temporal
Strobe Type	None
NAC 4 Output Settings	NAC
NAC 5 Output Settings	NAC



11.2 Minimal Two Stage Addressable System

In a minimal size system the INX-10A will require 7 addresses. The following are the specs for the system.

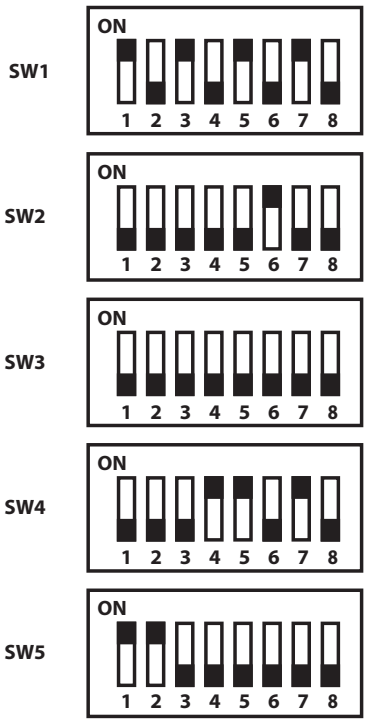
Base Address	188
Protocol	System Sensor
AC Failure Report Delay	2 hour
Charger	Yes
Battery	Yes
Cut Charger when NACs activated	Yes
Alert Rate	Follow Inputs
Evacuation Rate	Temporal
Strobe Type	None
NAC 4 Output Settings	NAC
NAC 5 Output Settings	Continuous Supply



11.3 Minimal ULC Two Stage Addressable System

In a minimal size system the INX-10A will require 7 addresses. The following are the specs for the system.

Base Address	185
Protocol	System Sensor
AC Failure Report Delay	2 hour
Charger	Yes
Battery	Yes
Cut Charger when NACs activated	Yes
Alert Rate	Follow Inputs
Evacuation Rate	Temporal
Strobe Type	None
NAC 4 Output Settings	NAC
NAC 5 Output Settings	Continuous Supply



12.0 Appendix D - FX-2000 and FleX-Net Series ULI Compatible Devices

12.1 Horns and Bells

Table 25 FX-2000 and FleX-Net Series ULI Compatible Horns and Bells

Manufacturer	Device Type	Horn Model	Max. Strobe/NAC
System Sensor -SpectrAlert	Horn	H12/24	n/a
	Horn	H12/24W	n/a
Wheelock	Horn	AH-24-R	n/a
	Horn	AH-24-WP-R	n/a
	Horn	MT-12/24-ULC	n/a
	Horn	AMT-12/24-R-ULC	n/a
	Bell	MB-G6-24-R	n/a
	Bell	MB-G10-24-R	n/a

12.2 Synchronized Strobes

Table 26 FX-2000 and FleX-Net Series ULI Compatible Synchronized Strobes

Manufacturer	Brand	Strobe Model	Max. Strobe/NAC
Amseco/Potter	Mircom	FHS-240-110	15
Gentex Corp.	Secutron	MRA-HS3-24ww	20
SpectrAlert	System Sensor	P1224 MC	25
Wheelock	Wheelock	NS-24 MCW -FW	25

12.3 UL and ULC Listed Compatible Horn/Strobes

Table 27 UL and ULC Listed Compatible Horn/Strobes

Device	Mircom Part #
Horns/Strobes	FH-400-WW, FH-400-RR, FS-400-WW, FS-400-RR, FS-400C-WW, FS-400C-RR, FHS-400-WW, FHS-400-RR, FHS-400C-WW, FHS-400C-RR

12.4 ULI Compatible Horn/Strobes

Table 28 ULI Compatible Horn/Strobes

System Sensor L Series Models	Description
P2RL	HORN STROBE 2W RED WALL
P2WL	HORN STROBE 2W WHITE WALL
P2GRL	HORN STROBE 2W RED WALL, COMPACT
P2GWL	HORN STROBE 2W WHITE WALL, COMPACT
P2RL-P	HORN STROBE 2W RED WALL, PLAIN
P2WL-P	HORN STROBE 2W WHITE WALL, PLAIN
P2RL-SP	HORN STROBE 2W RED WALL, FUEGO
P2WL-SP	HORN STROBE 2W WHITE WALL, FUEGO
PC2RL	HORN STROBE 2W RED CEILING
PC2WL	HORN STROBE 2W WHITE CEILING
SRL	STROBE RED WALL
SWL	STROBE WHITE WALL
SGRL	STROBE RED WALL, COMPACT
SGWL	STROBE WHITE WALL, COMPACT
SRL-P	STROBE RED WALL, PLAIN
SWL-P	STROBE WHITE WALL, PLAIN
SRL-SP	STROBE RED WALL, FUEGO
SWL-CLR-ALERT	STROBE WHITE WALL, CLEAR LENS
SWL-ALERT	STROBE WHITE WALL, AMBER LENS
SCRL	STROBE RED CEILING
SCWL	STROBE WHITE CEILING
SCWL-CLR-ALERT	STOBE WHITE CEILING CLEAR LENS ALERT
HWL	HORN WHITE WALL
HRL	HORN RED WALL

Table 28 ULI Compatible Horn/Strobes (Continued)

System Sensor L Series Models	Description
HGRL	HORN RED WALL, COMPACT
HGWL	HORN WHITE WALL, COMPACT
CHWL	CHIME WHITE WALL
CHRL	CHIME RED WALL
CHSRL	CHIME STROBE RED WALL
CHSWL	CHIME STROBE WHITE WALL
CHSCRL	CHIME STROBE RED CEILING
CHSCWL	CHIME STROBE WHITE CEILING
SPSRL	SPEAKER STROBE RED WALL
SPSWL	SPEAKER STROBE WHITE WALL
SPSRL-P	SPEAKER STROBE RED WALL, PLAIN
SPSWL-P	SPEAKER STROBE WHITE WALL, PLAIN
SPSRL-SP	SPEAKER STROBE RED WALL, FUEGO
SPSWL-ALERT	SPEAKER STROBE WHITE WALL, ALERT
SPSWL-CLR-ALERT	SPEAKER STROBE WHITE WALL CLEAR LENS, ALERT
SPSCRL	SPEAKER STROBE RED CEILING
SPSCWL	SPEAKER STROBE WHITE CEILING
SPSCWL-P	SPEAKER STROBE WHITE CEILING, PLAIN
SPSCWL-SP	SPEAKER STROBE WHITE CEILING, FUEGO
SPSCWL-CLR-ALERT	SPEAKER STROBE WHITE CEILING, ALERT

12.5 ULC Compatible Horn/Strobes

Table 29 ULC Compatible Horn/Strobes

System Sensor L Series Models	Description
P2WLA-P	Horn Strobe 2W White Wall, Plain
P2WLA-F	Horn Strobe 2W White Wall - French "FEU"
P2WLA-E	Horn Strobe 2W White Wall - English "FIRE"
P2WLA	Horn Strobe 2W White Wall - Bilingual "FIRE/FEU"
P2RLA-P	Horn Strobe 2W Red Wall, Plain
P2RLA-F	Horn Strobe 2W Red Wall - French "FEU"
P2RLA-E	Horn Strobe 2W Red Wall - English "FIRE"
P2RLA	Horn Strobe 2W Red Wall - Bilingual "FIRE/FEU"
P2GWLA-F	Horn Strobe 2W White Wall, Compact - French "FEU"
P2GWLA-E	Horn Strobe 2W White Wall, Compact - English "FIRE"
P2GWLA	Horn Strobe 2W White Wall, Compact - Bilingual "FIRE/FEU"
P2GRLA-F	Horn Strobe 2W Red Wall, Compact - French "FEU"
P2GRLA	Horn Strobe 2W Red Wall, Compact - Bilingual "FIRE/FEU"
P2GRLA-E	Horn Strobe 2W Red Wall, Compact- English "FIRE"
HGRLA	Horn Red Wall, Compact
HGWLA	Horn White Wall, Compact
HRLA	Horn Red Wall
HWLA	Horn White Wall
CHRLA	Chime Red Wall
CHSCRLA	Chime Strobe Red Ceiling - Bilingual "FIRE/FEU"
CHSCRLA-E	Chime Strobe Red Ceiling - English "FIRE"
CHSCRLA-F	Chime Strobe Red Ceiling - French "FEU"
CHSCWLA	Chime Strobe White Ceiling - Bilingual "FIRE/FEU"
CHSCWLA-E	Chime Strobe White Ceiling - English "FIRE"
CHSCWLA-F	Chime Strobe White Ceiling - French "FEU"
CHSRLA	Chime Strobe Red Wall - Bilingual "FIRE/FEU"
CHSRLA-E	Chime Strobe Red Wall - English "FIRE"
CHSRLA-F	Chime Strobe Red Wall - French "FEU"
CHSWLA	Chime Strobe White Wall - Bilingual "FIRE/FEU"
CHSWLA-E	Chime Strobe White Wall - English "FIRE"
CHSWLA-F	Chime Strobe White Wall - French "FEU"
CHWLA	Chime White Wall

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