Honeywell | Farenhyt™ Series

IFP-100 / IFP-100ECS

Addressable Fire System / Emergency Voice System

Installation and Operation Guide

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Fire Alarm & Emergency Communication System Limitations

While a life safety system may lower insurance rates, it is not a substitute for life and property insurance!

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

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various interoperable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. This document can be found at http://www.systemsensor.com/appguides/. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, chimneys, even wet or humid areas may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets, such as air conditioning vents.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. Heat detectors are designed to protect property, not life.

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

Audible warning devices such as bells, horns, strobes, speakers and displays may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

- An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.
- Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).
- Language and instructional requirements must be clearly disseminated on any local displays.
- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. It is the property owner's responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A life safety system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

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

Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of life safety system malfunction is inadequate maintenance. To keep the entire life safety system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 72 shall be followed. Environments with large amounts of dust, dirt, or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled as required by National and/or local fire codes and should be performed by authorized professional life safety system installers only. Adequate written records of all inspections should be kept.

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Installation Precautions

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

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

CAUTION - System Re-acceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49º C/ 32-120º F and at a relative humidity 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15-27º C/60-80º F.

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

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

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

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

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

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

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

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FCC Warning

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

Canadian Requirements

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

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

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Software Downloads

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product prior to commissioning any system. Contact Technical Support with any questions about software and the appropriate version for a specific application.

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Model IFP-100 Basic Operating Instructions

Model IFP-100ECS Basic Operating Instructions Integrated Voice Operation

Section 1
Introduction

The IFP-100ECS is an intelligent fire alarm control panel combined with an Emergency Communication System that meets the requirements for Mass Notification as described in UL 864 and UL 2572.

1.1 Overview of Basic System

The IFP-100 base system is an addressable system with a built-in annunciator that can also be used to program the system.

1.1.1 Hardware Features

- The IFP-100 has one signaling line circuit (SLC) that supports Intelligent Device Protocol (IDP) devices or SD protocol devices.
- The control panel's SLC supports 99 IDP detectors and 99 IDP modules or 127 SD protocol devices.
- 6.0A of output power is available through 4 sets of terminals for notification appliance circuits or auxiliary applications. Each circuit is power limited per UL 864 and can source up to 3.0A (total output power for all 6 circuits must not exceed 6.0A).
- Built-in dual phone line, digital alarm communicator/transmitter (DACT).
- Reports events to central station by point or by zone.
- UL Listed for pre-action and deluge releasing systems.
- Two general purpose Form C programmable relays.
- One Form C Trouble Relay.
- Can be used with up to 12 Model RA-100 or 12 RA-1000 Remote Annunciators (sold separately).
- Can be used with Model 5865-3, 5865-4, and 5880 in any combination for a total of eight devices on one control panel. See Sections 4.8 and 4.9 for additional information on these models.
- Printing of detector status, event history, and real time event log available through the Model 5824 serial/ parallel printer interface module (sold separately).
- 125 software zones, 125 output groups.
- Add six Flexput circuits with each RPS-1000 Intelligent Power Module (up to 8 RPS-1000s per system).

Note: The system can have a maximum of eight Intelligent Power Modules, 5496 or RPS-1000, combined.

1.1.2 Software Features

- Advanced smoke detector features:
  –Automatic drift compensation
  –Automatic day/night sensitivity adjustment
  –Maintenance alert region
  –Point status meets calibrated smoke test requirements for NFPA 72
- "JumpStart" feature for easy programming
- Non-volatile event history stores 1000 events
- A choice of output patterns available for notification outputs, including ANSI 3.41 temporal signal

- Built-in synchronization appliance support for AMSECO, Faraday, Gentex®, System Sensor®, and Wheelock®

1.1.3 IFP-100ECS Features

- Can Select ECS message as priority over fire alarm
- 15 recordable messages that can be mapped to eight ECS buttons
- Supports up to seven ECS-RCU's. The ECS-RCU meets the requirements for a LOC
- Programmable trigger inputs from an external source, such as a Monaco system, to either the ECS-VCM, ECS-RVM, or 5880. Up to eight inputs available on each 5880 module
- Fire alarm and ECS combined in one easy to program system
- Supports up to eight ECS-50W, ECS-125W, ECS-INT50W or ECS-DUAL50W Addressable Amplifiers for a maximum of 1000 watts per system
- Support for backup audio using the ECS-DUAL50W amplifier

1.2 About this Manual

This manual is intended to be a complete reference for all installation and operation tasks for the IFP-100* / IFP-100ECS. Please let us know if the manual does not meet your needs in any way. We value your feedback!

*All references to IFP-100 throughout this manual also include the IFP-100ECS

1.2.1 Terms Used in this Manual

The following terminology is used with the IFP-100 / IFP-100ECS system:

Term	Description
SLC	Signaling Line Circuit
Module	The term module is used for all hardware devices except for SLC addressable devices and notification appliances. This includes the IFP-100 panel itself.
Input Point	An addressable sensing device, such as a smoke or heat detector or a contact monitor device.
Input Zone	A protected area made up of input points.
Output Point (or Output Circuit)	A notification point or circuit for notification appliances. Relay circuits and auxiliary power circuits are also considered output points.
Output Group (OPG)	A group of output points. Operating characteristics are common to all output points in the group.
Output (or "Cadence") Pattern	The pattern that the output will use, for example, Constant, March Code, ANSI 3.41. Applies to zones and special system events. See Section 7.3.1.4 for additional information.
Mapping	Mapping is the process of specifying which outputs are activated when certain events occur in the system. Section 6.3 explains mapping in detail.
ECS	Emergency Communication System

1.3 Compatible Products

The chart below lists the products available from Silent Knight for use with the IFP-100.

Table 1-1: IFP-100 Compatible Products

Type of Device	Model	Description	
IDP Addressable SLC Devices	See Section 5.1 for a list of compatible devices		
SD Addressable SLC Devices	See Section 5.2 for a list of compatible devices		
Other Modules	5824 Serial/Parallel Printer Interface Module	Allows a printer to be attached for the system for on-site event logging, detector status and event history reports. Two maximum per system.	
	RPS-1000 Intelligent Power Module	Provides additional power, six Flexput™ circuits, and two Form C relays. Max. 8 per system see *Model RPS-1000 Installation Instructions P/N 151024*.	RPS-1000s and 5496s can be used in any combination, up to a total of eight devices on one panel.
	5496 Intelligent Power Module	Add 4 Notification/Auxiliary power circuits with each 5496 Intelligent Power Module (up to 8, 5496s per system).	
	RA-100 Remote Alarm Annunciator	Same operation, and similar appearance to the on-board annunciator. up to 12 RA-100s per system. The RA-100 is red.	RA-100s and RA-1000s can be used in any combination, up to a total of 12 devices on one panel.
	RA-1000 and RA-1000R Remote Alarm Annunciator	Remote Annunciator without a door access, requires a Fireman's key or access code to silence or reset.	
	5860TG and 5860TR Trim Ring Kit	Trim ring kits for surface mounting the RA-1000 annunciator. 5860TG is gray; 5860TR is red.	
	5865-3 and 5865-4 LED Annunciator	LED annunciator can display up to 30 LEDs (15 red and 15 yellow). 5865-4 has key switches for silence and reset, and a system trouble LED.	5865-3, 5865-4, and 5880 can be used in any combination, up to a total of eight devices on one panel.
	5880 LED I/O Module	Driver for up to 40 LEDs. Interfaces with customized annunciator boards. In addition the 5880 has eight generic switch input points.	
	5883 General Purpose Relay Module	Provides 10 Form C relays. Designed to be driven by the 5880. Up to four, 5883s can be used with each 5880 module.	
	VIP-50*	50 watt audio amplifier	
	VIP-125**	125 watt audio amplifier	
Other Module (cont.)	ECS-VCM	Voice Control Module used with the IFP-100ECS.	Refer to the *ECS-Series Installation Manual* P/N 151455 for more information on these accessories.
	ECS-SW24	24 switch expander with the IFP-100ECS.	
	ECS-50W	50 watt audio amplifier	
	ECS-125W	125 watt audio amplifier	
	ECS-CE4	Provides 4 additional audio circuits for the ECS-50W or ECS-125W.	
	ECS-INT50W	50W Internal Amp	
	ECS-RVM	Remote Voice Module used with the IFP-100ECS.	
	ECS-DUAL50W	Dual Channel amplifier	
	ECS-50WBU	Backup daughter card	

Table 1-1: IFP-100 Compatible Products

Type of Device	Model	Description
Misc.	5650/5651Silent Knight Software Suite (SKSS)	For communication and panel programming with a Windows-based computer and *modem (not sold by Silent Knight, see Table 1-2 for compatible modems). Enables remote viewing of detector status and event history.
	5670 Silent Knight Software Suite (SKSS)	Facility management software. For remote viewing of detector status and event history. Requires a modem (not sold by Silent Knight).
	7860 Telephone Cord	RJ31X cord for connecting phone line to the IFP-100.
	RBB	Remote Battery Box for mounting backup batteries that are too large to fit into the main control panel cabinet. Dimensions: 16" W x 10" H x 6" D (40.64 cm W x 25.4 cm H x 15.24 cm D).
*Note: *All references to ECS-50W within this manual will be applicable to VIP-50.*		
*Note: ** All references to ECS-125W within this manual will be applicable to VIP-125.*		

The following modems have been tested by Silent Knight for compatibility with the IFP-100 and the Silent Knight Software Suite software packages:

Table 1-2: Compatible Modems

Manufacturer	Model
US Robotics	28.8
Motorola	LifeStyle
	28.8, 3400 series
	Premier 33.6
MultiTech	MT19321ZDX

Section 2
Agency Listings, Approvals, and Requirements

2.1 Federal Communications Commission (FCC)

The following information must be provided to the telephone company before the IFP-100can be connected to the phone lines:

A	Manufacturer:	Silent Knight by Honeywell
B	Model Number:	IFP-100 and IFP-100ECS
C	FCC registration number:	AC6 USA-34758-AL-E
	Ringer equivalence:	0.8B
D	Type of jack:	RJ31X
E	Facility Interface Codes:	Loop Start: 02LS2
F	Service Order Code:	9.0F

This equipment complies with Part 68 of the FCC rules and the requirements adopted by ACTA. On the inside cover of this equipment is a label that contains, among other information, a product identifier. If requested, this information must be provided to the telephone company.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord (not provided) and modular jack must be utilized with this product. It is designed to be used with a modular jack that is also compliant.

The REN (ringer equivalence number) provided on this installation sheet is used to determine the number of devices that may be connected to the public switched telephone network. This number must not exceed 5.0. Since this product has an REN of .8, the number of devices is limited.

If the IFP-100 or IFP-100ECScauses harm to the telephone network, the telephone company will notify you in advance that the temporarily discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with the IFP-100 or IFP-100ECS, for repair or warranty information, please contact Silent Knight customer service at 800-328-0103 or www.silentknight.com. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the IFP-100until the problem has been resolved.

This product cannot be adjusted or repaired in the field. It must be returned to the factory for service.

This equipment is not designed for use with party line service. Connection to party line service is subject to state tariffs. You may contact the state public utility commission, public service commission or corporation commission for information.

Since the IFP-100 or IFP-100ECS are commercial fire alarm panels, they must be connected upstream of all other equipment utilizing the phone lines. If you have questions about the installation, contact your telephone

company or a qualified installer.

Warning
This device has been verified to comply with FCC Rules Part 15. Operation is subject to the following conditions: (1) This device may not cause radio interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

2.2 Underwriters Laboratories (UL)

2.2.1 Requirements for All Installations

General requirements are described in this section. When installing an individual device, refer to the specific section of the manual for additional requirements. The following subsections list specific requirements for each type of installation (for example, Central Station Fire Alarm systems, Local Protected Fire Alarm systems, and so on). See Section 8.6 for information on releasing operation.

1. All field wiring must be installed in accordance with NFPA 70 National Electric Code.
2. Use the addressable smoke detectors specified in Section 5 of this manual and or conventional detectors listed in the compatibility chart. (See Appendix A.)
3. Use UL listed notification appliances compatible with the IFP-100 from those specified in the Appendix A.
4. A full system checkout must be performed any time the panel is programmed.

Restricted Options:

- The loss of AC signal is defaulted to 3 hours however the system allows settings from 0 - 3 hours. For UL certified installations this number must be set from 1 to 3 hours.
- The system allows the use of non-latching spot type smoke detectors. This feature may not be used in commercial applications whereby a general alarm is sounded. It is intended for elevator recall, door holding applications, and hotel/motel room applications.
- The system allows the Alarm Verification time to be set from 1 to 255 seconds. For UL certified installations the setting must be a minimum of 60 seconds.
- Call forwarding shall not be used.
- When two count is used detector spacing shall be cut in half, you shall not use the alarm verification feature, and no delay shall be used.
- P.A.S(positive alarm sequence) feature shall be used only with automatic detectors.

2.2.2 Requirements for Central Station Fire Alarm Systems

Minimum system requirements are one Silent Knight addressable initiating device.

1. Use both phone lines. Enable phone line monitors for both lines.
2. You must program a phone number and a test time so that the IFP-100 sends an automatic daily test to the central station.
3. The AC Loss Hours option must be set from 1-3 hours.
4. The Attempts to Report option must be set for 5.

2.2.3 Requirements for Local Protected Fire Alarm Systems

At least one UL listed supervised notification appliance must be used. Minimum system requirements are one

Silent Knight addressable initiating device.

2.2.4 Requirements for Remote Station Protected Fire Alarm Systems

Minimum system requirements are one Silent Knight addressable initiating device and either a 5220, Keltron 3158 or the built-in Digital Alarm Communicator Transmitter (DACT).

1. Do not exceed the current load restrictions shown in Section 3.6.4.
2. The AC Loss Hours option must be set from 1-3 hours.

2.2.5 Requirements for Auxiliary Protected Fire Alarm Systems for Fire Alarm Service

The Model 5220 Direct Connect module must be installed (see Section 4.14.3.1 for wiring).

Section 3
Before You Begin Installing

This section of the manual is intended to help you plan your tasks to facilitate a smooth installation. Please read this section thoroughly, especially if you are installing a IFP-100 panel for the first time.

3.1 What's in the Box?

The IFP-100 ships with the following hardware:

- A cabinet with all hardware assembled
- Two keys for the front door
- Ten 4.7K ohm end-of-line resistors
- A battery cable for batteries wired in series

3.2 Environmental Specifications

It is important to protect the IFP-100 control panel from water. To prevent water damage, the following precaution should be FOLLOWED when installing the units:

- Mount indoors in dry locations only
- Do not mount directly on exterior walls, especially masonry walls (condensation)
- Do not mount directly on exterior walls below grade (condensation)
- Protect from plumbing leaks
- Protect from splash caused by sprinkler system inspection ports
- Do not mount in areas with humidity-generating equipment (such as dryers, production machinery)

When selecting a location to mount the IFP-100 control panel, the unit should be mounted where it will NOT be exposed to temperatures outside the range of 0°C-49°C (32°F-120°F) or humidity not exceeding 93% noncondensing.

3.3 Electrical Specifications

Table 3-1 list the terminal block on the IFP-100 as well as a description of the each individual terminal and their respective electrical rating. For location of the terminals refer to Table 3-1.

Table 3-1: Terminal Descriptions and Electrical Specifications

Terminal No.	Label		Description	Rating	
	Group	Individual		Voltage	Current
Terminal Block 1	AC INPUT	B	AC input (hot)	120 VAC, 60 Hz	3.6 A
		Earth	Earth Ground	N/A	N/A
		W	AC input (neutral)	120 VAC, 60 Hz	3.6 A
Terminal Block 2	SLC IN	–	Used for Class A installations	32 VDC	150 mA
		+			
	SLC OUT	–	SLC terminals	32 VDC	150 mA
		+			
	SLC PROG	–	Used for programming SLC Detectors	32 VDC	150 mA
		+			
Terminal Block 3	TELCO 1	RING	Phone Line 1 Telco Ring		
		TIP	Phone Line 1 Telco Tip		
	PHONE 1	RING	Phone Line 1 Phone Ring		
		TIP	Phone Line 1 Phone Tip		
	TELCO 2	RING	Phone Line 2 Telco Ring		
		TIP	Phone Line 2 Telco Tip		
	PHONE 2	RING	Phone Line 2 Phone Ring		
		TIP	Phone Line 2 Phone Tip		
Terminal Block 4	TROUBLE	NC	Normally closed relay contact	24 VDC	2.5 A, resistive
		COM	Common terminal		
		NO	Normally open relay contact		
	RELAY 1	NC	Normally closed relay contact	24 VDC	2.5 A, resistive
		COM	Common terminal		
		NO	Normally open relay contact		
	RELAY 2	NC	Normally closed relay contact	24 VDC	2.5 A, resistive
		COM	Common terminal		
		NO	Normally open relay contact		
	NAC1*	–	Notification Appliance Circuit/ Auxiliary power	24 VDC	3.0 Amp NAC or Aux power
		+			
	NAC2*	–	Notification Appliance Circuit/ Auxiliary power	24 VDC	3.0 Amp NAC or Aux power
		+			
	NAC3*	–	Notification Appliance Circuit/ Auxiliary power	24 VDC	3.0 Amp NAC or Aux power
		+			
	NAC4*	–	Notification Appliance Circuit/ Auxiliary power	24 VDC	3.0 Amp NAC or Aux power
		+			
Terminal Block 5	SBUS	B	SBUS Communication	5 VDC	100 mA
		A			
		+	SBUS Power	24 VDC	1.0 A
		–			
	BATTERY	+	To Positive battery terminal	24 VDC	Up to 35 Ah (see Section 4.3 for details)
		–	To Negative battery terminal		

* Regulated/special application when used for releasing.

3.4 Wiring Specifications

Induced noise (transfer of electrical energy from one wire to another) can interfere with telephone communication or cause false alarms. To avoid induced noise, follow these guidelines:

- Isolate input wiring from high current output and power wiring. Do not pull one multi-conductor cable for the entire panel. Instead, separate the wiring as follows:

High voltage	AC power Terminals
SLC loops	
Audio input/output	Phone line circuits
Notification circuits	NAC1 through NAC4
SBUS	
Relay circuits	

- Do not pull wires from different groups through the same conduit. If you must run them together, do so for as short a distance as possible or use shielded cable. Connect the shield to earth ground at the panel. You must route high and low voltages separately.
- Route the wiring around the inside perimeter of the cabinet. It should not cross the circuit board where it could induce noise into the sensitive microelectronics or pick up unwanted RF noise from the high speed circuits. See Figure 3-1 for an example.
- High frequency noise, such as that produced by the inductive reactance of a speaker or bell, can also be reduced by running the wire through ferrite shield beads or by wrapping it around a ferrite toroid.

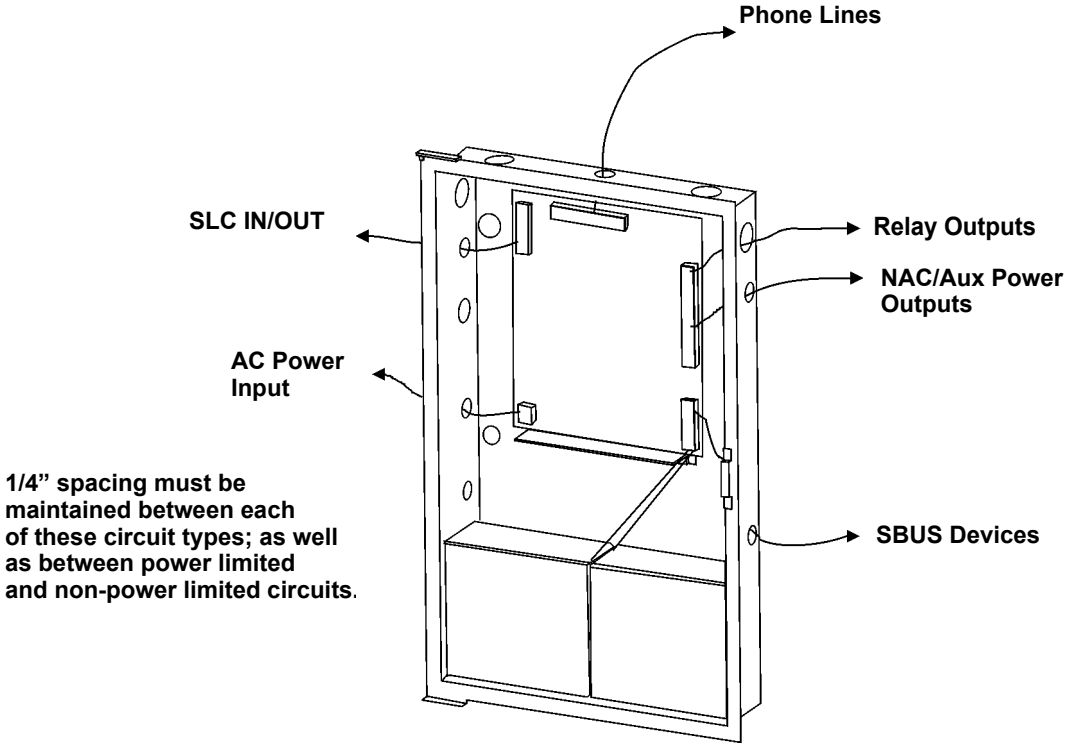


Figure 3-1 Wire Routing Example

3.5 Board Assembly Diagram

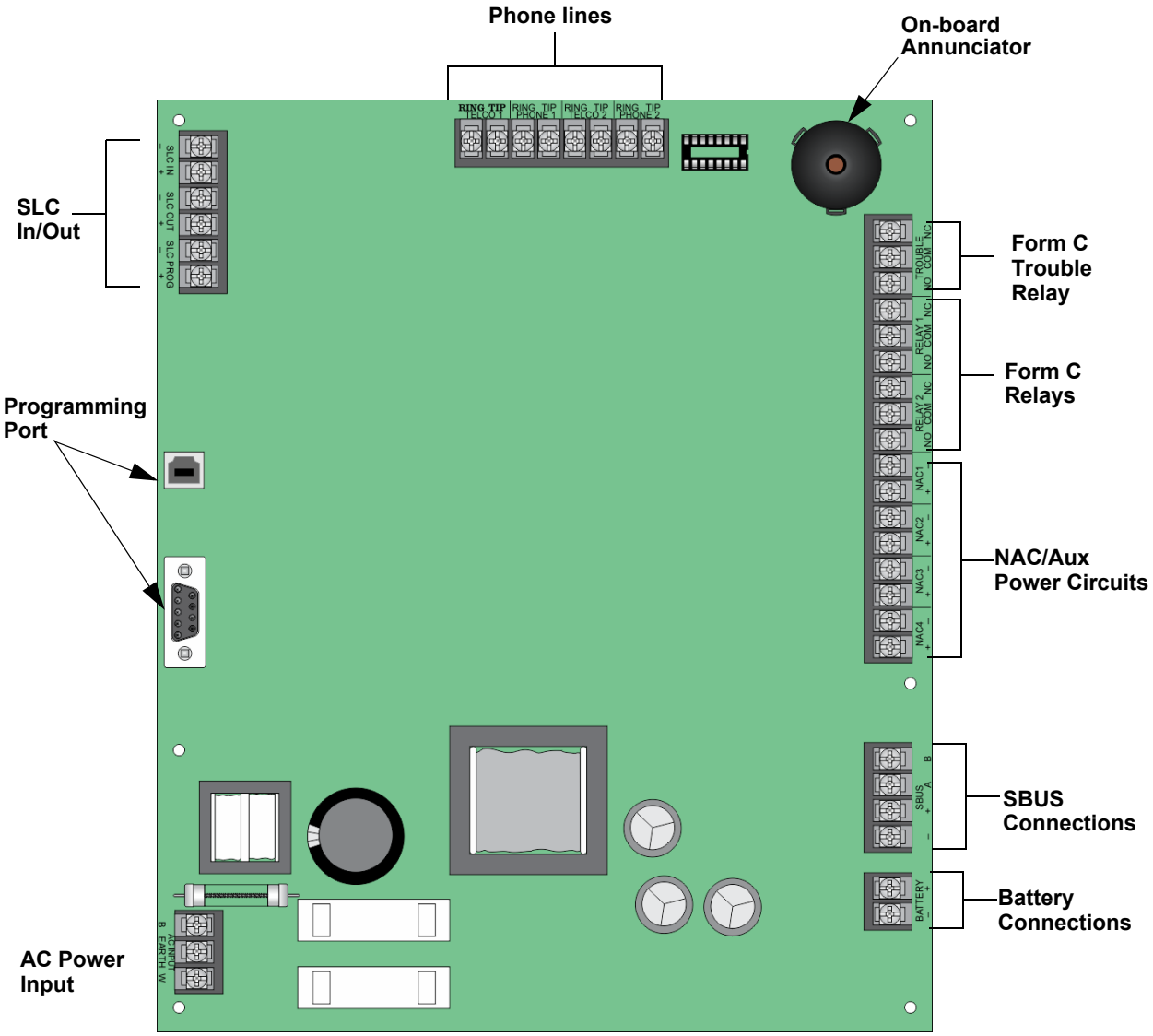


Figure 3-2 Model IFP-100 Assembly

Figure 3-2 shows the circuit board that attaches the IFP-100 assembly to the cabinet. If you should need to remove the board assembly for repair, remove the nine mounting screws (six on the main circuit board and 3 on the heat-sink) which hold the assembly in the cabinet. Then lift the entire assembly out of the cabinet.

3.6 Calculating Current Draw and Standby Battery

This section is for helping you determine the current draw and standby battery needs if you are using IDP addressable devices (Table 3-2) or SD addressable devices
(Table 3-3).

3.6.1 Current Draw Worksheet Requirements

The following steps must be taken when determining IFP-100 current draw and standby battery requirements.

1. Use the Current Draw Worksheet to determine current draw and standby battery requirements. Use Table 3-2 if installing IDP SLC Devices and Table 3-3 if installing SD SLC Devices to determine current draw. For the IFP-100, the worst case current draw is listed for the panel, addressable devices, and all SBUS expanders. Fill in the number of addressable devices that will be used in the system and compute the current draw requirements for alarm and standby. Record this information in the Current Draw Worksheet on Line A.
2. Add up the current draw for all auxiliary devices and record in the table at Line B.
3. Add up all notification appliance loads and record in the table at Line C.
4. For notification appliance circuits and auxiliary devices not mentioned in the manual, refer to the device manual for the current ratings.
5. Make sure that the total alarm current you calculated, including current for the panel itself, does not exceed 6.0 A. This is the maximum alarm current for the IFP-100 control panel.

   If the current is above 6.0 A you will need to use a notification power expander(s) such as the Silent Knight 5496 intelligent power module, to distribute the power loads so that the IFP-100 or the power expanders do not exceed their power rating. Refer to the current draw worksheets provided with the 5496 manual so you do not exceed their power requirements.
6. Complete the remaining instructions in the appropriate Current Draw Worksheet for determining battery size requirements.

3.6.2 Current Draw Worksheet for IDP SLC Devices

Use Table 3-2 to determine current requirements during alarm/battery standby operation when IDP SLC devices are installed. You can install up to 99 IDP detectors *and* 99 IDP modules. (Copy the page if additional space is required.)

Table 3-2: Current Draw Worksheet for IDP SLC Devices

Device	Number of Devices	Current per Device	Standby Current	Alarm Current
For each device use this formula: This column X This column = Current per number of devices.				
Fire Panel (Current draw from battery)	1	Standby: 170 mA	170 mA	
		Alarm: 365 mA		365 mA

Table 3-2: Current Draw Worksheet for IDP SLC Devices

Device	Number of Devices	Current per Device			Standby Current	Alarm Current
Addressable SLC Detectors						
IDP-Photo	(99 max.)[1]	Standby/Alarm:		.30 mA[7]	mA	mA
IDP-Photo-T					mA	mA
IDP-PhotoR					mA	mA
IDP-Heat					mA	mA
IDP-Heat-HT					mA	mA
IDP-Acclimate					mA	mA
IDP-HEAT-ROR					mA	mA
IDP-PHOTO-W/IV		SLC	Standby:	200µA	mA	
			Alarm:	4.5mA		mA
IDP--PHOTO-R-W/IV		SLC	Standby:	200µA	mA	
			Alarm:	4.5mA		mA
IDP--PHOTO-T-W/IV		SLC	Standby:	200µA	mA	
			Alarm:	4.5mA		mA
IDP-HEAT-W/IV		SLC	Standby:	200µA	mA	
			Alarm:	4.5mA		mA
IDP-HEAT-ROR-W/IV		SLC	Standby:	200µA	mA	
			Alarm:	4.5mA		mA
IDP-HEAT-HT-W/IV		SLC	Standby:	200µA	mA	
			Alarm:	4.5mA		mA
IDP-Beam (without integral test)		SLC	Standby/Alarm:	2 mA	mA	mA
		Aux. Pwr	Standby:	2 mA	mA	
			Alarm:	8.5 mA		mA
IDP-Beam-T (with integral test)[4]		SLC	Standby/Alarm:	2 mA	mA	mA
		Aux. Pwr	Standby:	2 mA	mA	
			Alarm:	8.5 mA		mA
DNR[5] (non-Relay)		None, included with IDP-PhotoR				
DNR[6] (with Relay)		None, included with IDP-PhotoR & IDP-Relay				
IDP-CO-Fire		SLC	Standby:	.30 mA	mA	
			Alarm:	7.2 mA		mA

Table 3-2: Current Draw Worksheet for IDP SLC Devices

Device	Number of Devices	Current per Device			Standby Current	Alarm Current
Addressable SLC Devices						
IDP-Monitor	(99 max.)[1]	Standby/Alarm:		.375 mA	mA	mA
IDP-Minimon					mA	mA
IDP-Pull-SA/IDP-Pull-DA					mA	mA
IDP-Monitor-2		Standby/Alarm:		.75 mA	mA	mA
IDP-Monitor-10		Standby/Alarm:		3.5 mA	mA	mA
IDP-Relay-6		Standby/Alarm:		1.45 mA	mA	mA
IDP-Control		SLC	Standby:	375 mA	mA	
			Alarm:	.375 mA		mA
		Aux. Pwr	Standby:	1.7 mA	mA	
			Alarm:	7 mA		mA
IDP-Control-6		SLC	Standby:	2.25 mA	mA	
			Alarm:	2.25 mA		mA
		Aux. Pwr	Standby:	8 mA	mA	
			Alarm:	20 mA		mA
IDP-Relay		Standby/Alarm:		.255 mA	mA	mA
IDP-Relay-6		Standby/Alarm:		1.45 mA	mA	mA
IDP-RelayMon-2	(99 max.)[1]	Standby:		1.3 mA	mA	
		Alarm:		24 mA		mA
IDP-Zone		Aux Pwr	Standby:	12 mA	mA	
			Alarm:	90 mA		mA
		SLC	Standby/Alarm:	2 mA	mA	mA
IDP-Zone-6		Aux Pwr	Standby:	70 mA	mA	
			Alarm: (per zone)	90 mA		mA
		SLC	Standby/Alarm:	2 mA	mA	mA
SLC Accessories						
B200SR/IV Sounder Base	(99 max.)	Aux Pwr	Standby:	.5 mA		
			Alarm:	35 mA		mA
		SLC	Standby:	.3 mA		
B200S/IV Intelligent Sounder Base		Aux Pwr	Standby:	.5 mA	mA	
			Alarm: (high vol)	35 mA		mA
		SLC	Standby:	.3 mA		
B200SR-LF/IV Low Frequency Sounder Base		Aux Pwr	Standby:	1 mA	mA	
			Alarm:	125 mA		mA
B200S-LF/IV Low Frequency Sounder Base		Aux Pwr	Standby	.55 mA	mA	
			Alarm (high vol)	140 mA		mA
		SLC	Standby	.30 mA	mA	
B224RB/IV Relay Base		Standby/Alarm:		.5 mA	mA	mA
RTS151/151 KEY		Alarm:		7.5 mA		mA
RA100Z		Alarm:		10 mA		mA
SLC Isolator Devices						
IDP-ISO (Isolator Module)	(100 max.)	Standby/Alarm:		.45 mA	mA	mA
ISO-6 (6 fault Isolator Module)		Standby: (per circuit)		.45 mA	mA	
		Alarm: (per circuit)		17 mA		mA
B224BI Isolator Base		Standby/Alarm:		.5 mA		

Table 3-2: Current Draw Worksheet for IDP SLC Devices

Device	Number of Devices	Current per Device	Standby Current	Alarm Current
Accessories Modules				
RA-100 Remote Fire Alarm Annunciator	(12 max.)	Standby: 20 mA	mA	
		Alarm: 25 mA		mA
RA-1000 Remote Fire Alarm Annunciator		Standby: 20 mA	mA	
		Alarm: 25 mA		mA
5824 Serial / Parallel Module	(2 max.)	Standby/Alarm: 45 mA	mA	mA
5496 Notification Power Expander	(8 max.)	Standby/Alarm: 10 mA	mA	mA
5865-4 LED Annunciator (with reset and silence switches)	(8 max.)	Standby: 35 mA	mA	
		Alarm: 145 mA		mA
5865-3 LED Annunciator		Standby: 35 mA	mA	
		Alarm: 145 mA		mA
5880 LED I/O Module		Standby: 35 mA	mA	
		Alarm: 200 mA		mA
5883 Relay Interface	(32 max.)	Standby: 0 mA	mA	
		Alarm: 220 mA (22 mA per relay)		mA
VIP-50 Audio Amplifier with/without VIP-CE4	(8 max.)	Standby: 10 mA	mA	
		Alarm: 10 mA		mA
ECS-VCM Voice Control Module	(1 max.)	Standby: 70 mA	mA	
		Alarm: 100 mA		mA
ECS-SW24 Switch Expander	(8 max.)	Standby: 10 mA	mA	
		Alarm: 25 mA		mA
ECS-50W or ECS-125W Audio Amplifier with/without ECS-CE4	(8 max.)	Standby: 10 mA	mA	
		Alarm: 10 mA		mA
ECS-INT-50W Internal Amplifier	(8 max.)	Standby: 52 mA	mA	
		Alarm @ 25V: 275 mA		mA
		Alarm @ 70V: 310 mA		mA
ECS-RPU Remote Paging Unit	(7 max.)	Standby: 70 mA	mA	
		Alarm: 100 mA		mA
ECS-RCU Remote Command Unit (includes RA-100, RVM & SW-24)	(7 max.)	Standby: 100 mA	mA	
		Alarm: 150 mA		mA
ECS-DUAL50W	(8 max.)	Standby/Alarm: 10 mA	mA	mA
ECS-50WBU	(8 max.)	Standby/Alarm: 10 mA	mA	mA
Auxiliary Devices[2]	Refer to devices manual for current rating.			
IPDACT-2 IP Communicator	(1 max.)	Standby: 93 mA	mA	
		Alarm: 136 mA		mA
IPDACT-2UD IP Communicator	(1 max.)	Standby: 98 mA	mA	
		Alarm: 155 mA		mA
		Alarm/Standby: mA	mA	mA
		Alarm/Standby: mA	mA	mA
		Alarm/Standby: mA	mA	mA
		Alarm/Standby: mA	mA	mA
B		**Auxiliary Devices Current**		

Table 3-2: Current Draw Worksheet for IDP SLC Devices

	Device	Number of Devices	Current per Device		Standby Current	Alarm Current
	Notification Appliance Circuits	Refer to devices manual for current rating.				
	5495/5499 Power Supply		24 VDC	One input circuit: 15 mA		mA
				Both input circuits: 30 mA		mA
			Alarm:	mA		mA
			Alarm:	mA		mA
			Alarm:	mA		mA
			Alarm:	mA		mA
C	**Notification Appliances Current**					mA
D	Total current ratings of all devices in system (line A + line B + C)				mA	mA
E	Total current ratings converted to amperes (line D x .001):				A	A
F	Number of standby hours (24 or 60 for NFPA 72, chapter 1, 1-5.2.5):				H	
G	Multiply lines E and F. **Total standby AH**				AH	
H	Alarm sounding period in hours. (For example, 5 minutes = .0833 hours)					H
I	Multiply lines E and H. **Total alarm AH**					AH
J	Add lines G and I.[3] **Total ampere hours required**				AH	

1. Total does not include isolator devices or accessory bases.
2. If using door holders, you do not need to consider door holder current for alarm/battery standby, because power is removed during that time. However, during normal operation, door holders draw current and must be included in the 6.0A total current that can be drawn from the panel.
3. Use next size battery with capacity greater than required.
4. IDP-Beam-T draws a maximum of 500mA from Auxiliary power only when the test feature is used. This should be considered when determining auxiliary power capacity but not calculated into current requirements for day to day operation.
5. The IDP-PhotoR is sold separately from the DNR. Current draw for the DNR + IDP-PhotoR is calculated by increasing the "Number of Devices" column for each IDP-PhotoR used with a DNR.
6. The DNR housing does not include a Relay circuit board. If a relay is needed, be sure to add one to the IDP-Relay & IDP-PhotoR "Number of Devices" column for each DNR used for correct current calculations.
7. The FACP can only support 5 devices w/LED's on. This current draw has been added to the panels alarm current.

3.6.3 Current Draw Worksheet SD for SLC Devices

Use Table 3-3 to determine current requirements during alarm/battery standby operation when SD SLC devices are installed. (Copy the page if additional space is required.)

Table 3-3: Current Draw worksheet for SD Devices

Device	Number of Devices	Current per Device		Standby Current	Alarm Current
For each device use this formula: This column X This column = Current per number of devices.					
IFP-100 Fire Panel (Current draw from battery)	1	Standby:	170 mA	170 mA	
		Alarm:	365 mA		365 mA

Table 3-3: Current Draw worksheet for SD Devices

Device	Number of Devices	Current per Device			Standby Current	Alarm Current
Addressable SLC Devices						
SD500-AIM	(127 max.)[1]	Standby/Alarm:		.55 mA[5]	mA	mA
SD500-MIM					mA	mA
SD500-ARM					mA	mA
SD500-PS					mA	m A
SD505-HEAT					mA	mA
SD500-ANM	(127 max.)[1]	Aux. Pwr	Standby:	8 mA	mA	
			Alarm:	60 mA		mA
		SLC	Standby/Alarm:	.55 mA	mA	mA
SD500-SDM	(127 max.)[1]	SLC	Standby/Alarm:	.55 mA	mA	mA
		Aux. Pwr	Standby:	20 mA	mA	
			Alarm:	106 mA		mA
SLC Accessory Bases						
SD505-6RB	(127 max.)	Standby/Alarm:		.082 mA	mA	mA
SD505-6SB	(127 max.)	Aux. Pwr	Standby:	1 mA	mA	
			Alarm:	32 mA		mA
		SLC	Standby/Alarm	.082 mA	mA	mA
SD505-DUCTR	(127 max.)	Aux. Pwr	Standby:	20 mA[2]	mA	
			Alarm:	62 mA[2]		mA
		SLC	Standby/Alarm:	.5 mA	mA	mA
SD505-DTS-K	(127 max.)		None, included with SD505-DUCTR worst case.			
SD505-DUCT	(127 max.)	SLC	Standby/Alarm:	.5 mA	mA	mA
SLC Isolator Devices						
SD500-LIM	(254 max.)	Standby/Alarm:		.092 mA	mA	mA
SD505-6IB	(127 max.)					
Accessories Modules						
RA-100 Remote Fire Alarm Annunciator	(12 max.)	Standby:		20 mA	mA	
		Alarm:		25 mA		mA
RA-1000 Remote Fire Alarm Annunciator		Standby:		20 mA	mA	
		Alarm:		25 mA		mA
5824 Serial/Parallel Printer Interface	(2 max.)	Standby/Alarm:		45 mA	mA	mA
5865-4 LED Annunciator (with reset and silence switches)	(8 max.)	Standby:		35 mA	mA	
		Alarm:		145 mA		mA
5865-3 LED Annunciator		Standby:		35 mA	mA	
		Alarm:		145 mA		mA
5880 LED I/O Module		Standby:		35 mA	mA	
		Alarm:		200 mA		mA
5883 Relay Interface	(32 max.)	Standby:		0 mA	mA	
		Alarm:		220 mA (22 mA per relay)		mA
VIP-50 Audio Amplifier with/without VIP-CE4	(8 max.)	Standby:		10 mA	mA	
		Alarm:		10 mA		mA
ECS-VCM Voice Control Module	(1 max.)	Standby:		70 mA	mA	
		Alarm:		100 mA		mA
ECS-SW24 Switch Expander	(8 max.)	Standby:		10 mA	mA	
		Alarm:		25 mA		mA

Table 3-3: Current Draw worksheet for SD Devices

	Device	Number of Devices	Current per Device		Standby Current	Alarm Current
	ECS-50W or ECS-125W Audio Amplifier with/without ECS-CE4	(8 max.)	Standby: 10 mA		mA	
			Alarm: 10 mA			mA
	ECS-INT50W Internal Amplifier	(8 max.)	Standby: 52 mA		mA	
			Alarm @ 25V: 275 mA			mA
			Alarm @ 70V: 310 mA			mA
	ECS-RPU Remote Paging Unit	(7 max.)	Standby: 70 mA		mA	
			Alarm: 100 mA			mA
	ECS-RCU Remote Command Unit (includes RA-100, RVM & SW-24)	(7 max.)	Standby: 100 mA		mA	
			Alarm: 150 mA			mA
	ECS-DUAL50W	(8 max.)	Standby/Alarm: 10 mA		mA	mA
	ECS-50WBU	(8 max.)	Standby/Alarm: 10 mA		mA	mA
A			**Total System Current**			
	Auxiliary Devices[3]	Refer to devices manual for current rating.				
	IPDACT-2 IP Communicator	(1 max.)	Standby: 93 mA		mA	
			Alarm: 136 mA			mA
	IPDACT-2UD IP Communicator	(1 max.)	Standby: 98 mA		mA	
			Alarm: 155 mA			mA
			Alarm/Standby: mA		mA	mA
			Alarm/Standby: mA		mA	mA
			Alarm/Standby: mA		mA	mA
			Alarm/Standby: mA		mA	mA
B			**Auxiliary Devices Current**			
	Notification Appliance Circuits	Refer to devices manual for current rating.				
	5495/5499 Power Supply		24 VDC	One input circuit: 15 mA		mA
				Both input circuits: 30 mA		mA
			Alarm: mA			mA
			Alarm: mA			mA
			Alarm: mA			mA
			Alarm: mA			mA
C			**Notification Appliances Current**			mA
D	Total current ratings of all devices in system (line A + line B + C)				mA	mA
E	Total current ratings converted to amperes (line D x .001):				A	A
F	Number of standby hours (24 or 60 for NFPA 72, chapter 1, 1-5.2.5):				H	
G	Multiply lines E and F.		**Total standby AH**		AH	
H	Alarm sounding period in hours. (For example, 5 minutes =.0833 hours)					H
I	Multiply lines E and H.		**Total alarm AH**			AH
J	Add lines G and I. [4]		**Total ampere hours required**		AH	

1. Total does not include isolator devices or accessory bases.
2. If using 24 VDC aux power only. No standby or alarm current for battery calculation if using 24 VAC, 120 VAC or 240 VAC.
3. If using door holders, you do not need to consider door holder current for alarm/battery standby, because power is removed during that time. However, during normal operation, door holders draw current and must be included in the 6.0A total current that can be drawn from the panel.
4. Use next size battery with capacity greater than required.
5. The FACP can only support 2 devices w/LED's on. This current draw has been added to the panels alarm

current.

3.6.4 Maximum Battery Standby Load

The table below shows the maximum battery standby load for the IFP-100 based on 24 and 60 hours of standby. The standby load calculations of line D in the Current Draw Calculation Worksheet (Table 3-2 for IDP devices and Table 3-3 for SD devices) must be less than the number shown in the table below for the battery size used and standby hours required.

Table 3-4: Maximum Battery Standby Load

Rechargeable Battery Size	Max. Load for 24 hrs. Standby, 5 mins. Alarm	*Max. Load for 60 hrs. Standby, 5 mins. Alarm
7 AH	221 mA	85 mA
12 AH	475 mA	190 mA
18 AH	685 mA	270 mA
35 AH	1.1 A	450 mA

* *Required for NFPA 72 Auxiliary Protected Fire Alarm systems for Fire Alarm Service (City Box) and Remote Station Protected Fire Alarm systems (Polarity Reversal) and Digital Alarm Communicator/Transmitter (DACT).*

Warning!

Silent Knight does not support the use of batteries smaller than those listed in table above. If you use a battery too small for the installation, the system could overload the battery resulting in the installation having less than the required 24 hours standby power. Use Table 3-4 to calculate the correct battery amperes/hour rating needed for your installation.

3.7 Installation Tasks Overview

This section provides a chart listing tasks that need to be performed when installing the IFP-100 system. The chart is intended to be a handy way for you to make sure you have completed all necessary tasks. Unless noted, these tasks do not have to be performed in the order they are listed here.

Important: Connect and address SLC devices before running JumpStart.

Task	See Sec. (for more info.)
Main Panel Hardware Installation	
Mount the control panel cabinet.	4.1
Connect AC.	4.2
Connect phone lines.	4.11
Install RA-1000 Remote Fire Alarm Annunciator modules if used.	4.6
Install 5865 or LED Annunciator modules if used.	4.9
Install 5880 LED I/O module if customized LED annunciation will be used.	4.8
Install notification appliances.	4.12
Install auxiliary power devices (if used).	4.12.2
If using a printer, install the 5824 Serial/Parallel Printer Interface Module.	4.7
Connect batteries (typically last step).	4.3
SLC Device Hardware Installation **Perform these steps before running JumpStart.**	
Connect device bases to the loop.	IDP 5.5 SD 5.4

Task	See Sec. (for more info.)
Set device addresses.	IDP 5.6 SD 5.8
Physically connect detectors to their bases. Connect relay and contact monitor modules.	5.4 & see device install instructions
JumpStart	
JumpStart is for initial system programming. JumpStart automatically selects some options for SLC devices. See “Input Point Configuration” section of this chart for other options. JumpStart makes selections for the following options. You can customize options, if necessary.	6.2 & 7.7
Device type (detector or switch) configured by JumpStart.	To change, see 7.5
Program type of detector (heat or photoelectric) selected by JumpStart.	To change, see 7.5
System Software Configuration	
Select low AC hours report time (3 hours by default).	7.6.6.3
Select Auto Test Time (2:00 AM by default).	7.6.1.2
Enable/disable automatic DST adjustment feature (enabled by default).	7.6.6.4
Change clock display format (12-hour with AM/PM by default).	7.6.6.4
Enable/disable day/night sensitivity (disabled by default).	7.6.4
Select holiday schedule (up to 18 days) if installation is using day/night sensitivity.	7.6.5
Set up reporting accounts.	7.6.1
Select options for phone lines.	7.6.2
Select system-wide response to trouble conditions, if desired.	7.6.3
Select system-wide cadence patterns for special conditions (fire drill, Aux1 and Aux2 alarms) if desired.	7.6.3.2
Customize banner message (message that displays on LCD in normal mode) if desired.	7.6.9
Input Point (SLC Device) Configuration	
JumpStart automatically selects some options for SLC devices (see “JumpStart” section of this chart). You can change options selected by JumpStart, if necessary and further customize input point options.	
Select device type (IDP or SD). Only one device type can be used per control panel.	7.6.10
Program type of switch (manual pull, fire drill, and so on), if necessary. (JumpStart assigns all switches as Manual Pull type.)	7.5
If the installation includes duct detectors, program detector type. (JumpStart does not distinguish duct detectors from ordinary smoke detectors.)	7.5
Assign a name (or description) to the point.	7.5.5
Assign input points to zones, if necessary. (JumpStart assigns all input points to Zone 1.)	7.5
Zone Configuration	
Add the zone to the system if it does not already exist. (Zone 1 created by JumpStart.)	7.3.2
Program a name (or description) for the zone.	7.3.1.1
Select alarm delay options (detection characteristics) for zone.	7.3.1.2
Select heat detector trip temperature and/or smoke sensitivity level for photoelectric smoke detectors. (JumpStart selects 150°F for heat detectors and Low sensitivity for smoke detectors.)	7.3.1.2
Output Point Configuration	
Conventional notification circuits (circuits 1-6):	
Enable circuits used for notification appliances through programming, if necessary. (JumpStart enables circuits 1-6 as Notification.)	7.5.3
Conventional relay circuits (circuits 7-8):	
Select options for relay circuits, if desired. Note: Relay circuits will always output continuously (constant pattern), even if assigned to an Output Group that uses a different output pattern.	7.5.3
Auxiliary power circuits (circuits 1-6):	
Enable any circuit used for auxiliary power devices through programming.	7.5

Task	See Sec. (for more info.)
Select type of power (door holder, constant, resettable, or sounder sync)	7.5
Addressable relay modules	
Assign addressable relay modules to output groups through programming. (JumpStart assigns all relay modules to Group 1.)	7.5
LED output points (from the 5880 LED I/O module or 5865/66 LED Annunciator)	
Assign LED modules to output groups through programming.	7.5.3
All output circuits (1-8):	
Disable (set to UNUSED) any unused circuits. If you do not disable unused output circuits, they will cause a trouble condition (unless an EOL resistor is used).	7.5
Select a name for the point, if desired.	7.5.5
Output Group Configuration	
Add the group to the system if it does not already exist.	7.4.2
Assign output points to the group.	7.5
Program a name (or description) for the group, if desired.	7.4.1.1
Select "group properties" (see below).	
Latching / non-latching	7.4.1.2
Silencing option	7.4.1.2
Select options for activation with system switches.	7.4.1.2
Map zones to output groups that will activate when zone goes into alarm.	7.3.1.2
Select a cadence pattern for outputs in the zone.	7.3.1.3
Emergency Communication System	
ECS Super User	9.3
ECS Priority Table & Rules	9.8.3
Voice Command Mapping	9.13
ECS Device Priority	9.6
ECS System Options	7.10.3
ECS-VCM Maintenance	7.10.1

Section 4
Control Panel Installation

Caution!

To avoid the risk of electrical shock and damage to the unit, power should be OFF at the control panel while installing or servicing.

4.1 Mounting the Control Panel Cabinet

Read the environmental specifications in Section 3.2 before mounting the IFP-100 panel. The IFP-100 cabinet dimensions are:

16" W x 26.4" H x 3.5" D (40.64 cm W x 67.06 cm H x 8.89 cm D).

The IFP-100 panel should be located within a secured area, where it is accessible to main drop wiring runs and where it can be easily tested and serviced. End-users responsible for maintaining the panel should be able to hear alarms and troubles. When selecting a location, keep in mind that the panel itself is the main source of alarm and trouble annunciation.

When mounting on interior walls, use appropriate screw anchors in plaster. When mounting on concrete, especially when moisture is expected, attach a piece of 3/4 inch plywood to the concrete surface and then attach the IFP-100 to the plywood. Also mount any other desired components to the plywood.

DO NOT flush-mount the IFP-100 cabinet in a wall designated as a fire break.

4.1.1 Preventing Water Damage

Water damage to the fire system can be caused by moisture entering the cabinet through the conduits. Conduits that are installed to enter the top of the cabinet are most likely to cause water problems. Installers should take reasonable precautions to prevent water from entering the cabinet. Water damage is not covered under warranty.

4.1.2 Removing the IFP-100 Assembly from the Housing

If it should ever be necessary to remove the control panel assembly from the cabinet for repair, do so by removing the screws that hold the control panel in to the cabinet. Do not attempt to disassemble the circuit boards.

4.2 AC Connection

At installation, connect the AC terminals to the power source as shown in Figure 4-1. It may be necessary for a professional electrician to make this connection.

Warning

To reduce the risk of electric shock, this product is provided with a grounding type power supply cord. Connect product to a grounding receptacle.

The AC terminals are rated at 120 VAC, 60 Hz, 3.6A.

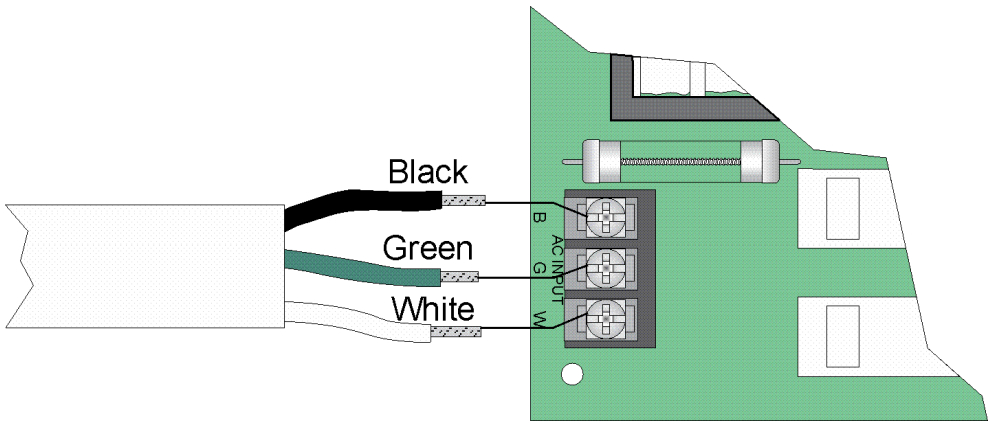


Figure 4-1 120VAC Power Connection

4.3 Battery Connection

The control panel battery charge capacity is 7.0 to 35 AH. The main control cabinet can house batteries up to 18 AH, larger capacity batteries can be housed in a RBB (see Section 4.3.1 for details). Use 12V batteries of the same AH rating. Determine the correct AH rating as per your current load calculation (see Section 3.6).

Wire batteries in series to produce a 24-volt equivalent. Do not parallel batteries to increase the AH rating.

The following steps and diagram explain how to connect the batteries.

1. Connect the black wire from the control panel negative (–) battery terminal to the negative (–) side of Battery #2.
2. Connect the jumper wire provided (P/N 140694) from the positive (+) side of Battery #2 to the (–) negative side of Battery #1.
3. Connect the red wire from the control panel positive (+) terminal to the positive (+) side of Battery #1.

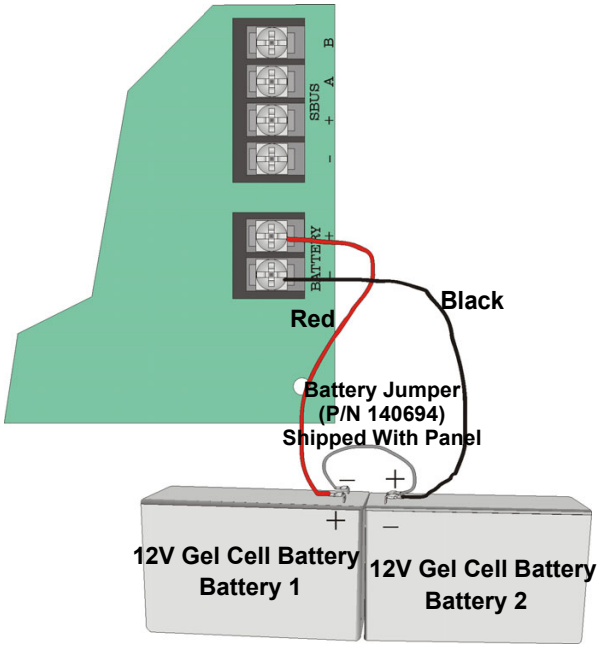


Figure 4-2 Battery Connection

4.3.1 RBB Accessory Cabinet

The Model RBB Accessory cabinet can be used when your backup batteries requirements use backup batteries that are too large to fit into the main control panel cabinet. The RBB cabinet holds batteries up to the 35 AH size. The RBB dimensions are 16" W x 10" H x 6" D (40.64 cm W x 25.4 cm H x 15.24 cm D).

4.3.1.1 Installing the RBB Accessory Cabinet and Batteries

To properly install the accessory cabinet and backup batteries, follow these steps:

1. Mount the accessory cabinet. See figure Figure 4-3 for the four cabinet mounting holes.
   - If mounting onto drywall the accessory cabinet must be mounted onto 3/4-inch plywood. This is necessary because the weight of the batteries inside the accessory cabinet could cause the cabinet to pull away from the drywall.
   - When mounting on concrete, especially when moisture is expected, attach a piece of 3/4-inch plywood to the concrete surface and then attach the RBB cabinet to the plywood.
   - If using the battery cable extenders provided (P/N 140643), mount the RBB cabinet no more than 18" away from the main control panel cabinet. This will ensure that the battery cables reach the battery terminals.

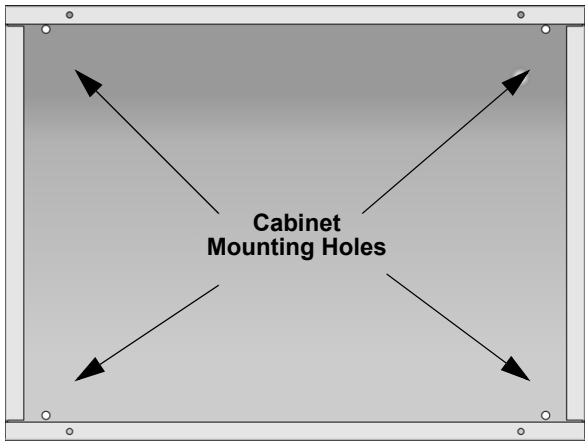


Figure 4-3 RBB Cabinet Mounting Holes

2. Connect the main control panel battery cables to the battery cable extenders as shown in Figure 4-4.

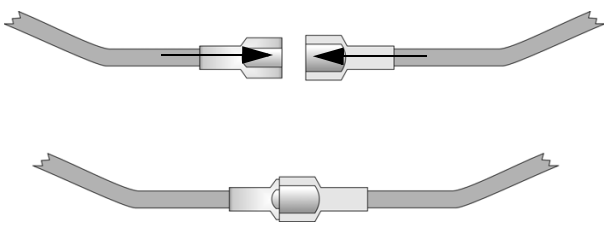


Figure 4-4 Splicing Control Panel Battery Cable to RBB Battery Cable Extenders

3. Run extended battery cable from control panel cabinet through conduit to RBB cabinet. See Figure 4-5.

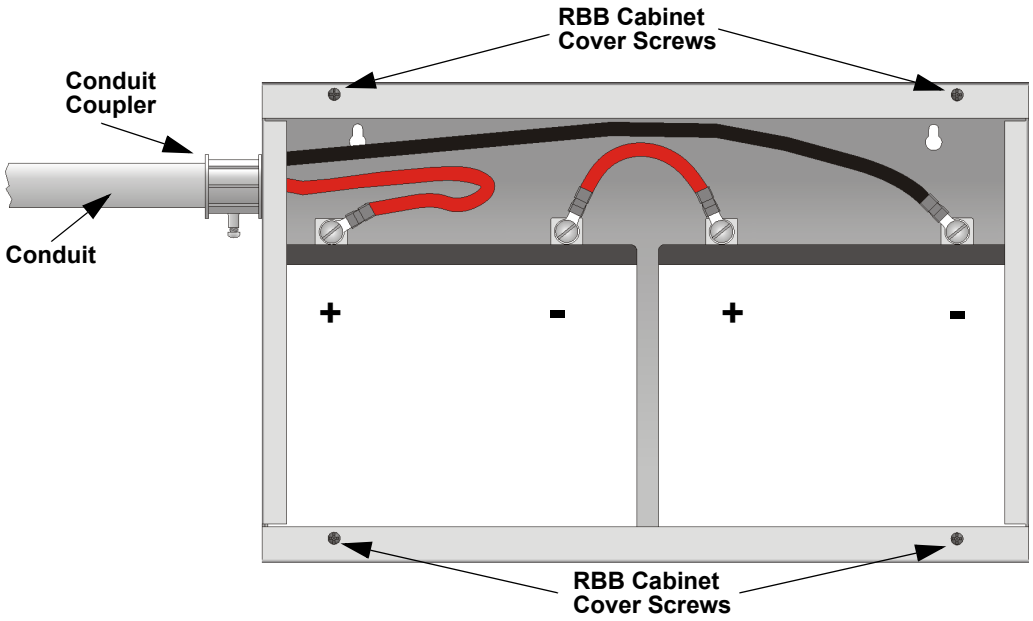


Figure 4-5 Battery Connections in the RBB Cabinet

Note: Figure 4-5 is an example of how the wire connections can be routed. However, any other cabinet knock-outs (on either the main control panel or the RBB cabinet), that are not previously being used may be utilized to connect conduit between the two cabinets.

4. Connect battery leads to the backup battery terminals. See Figure 4-5.

   Observe the proper polarity to prevent damage to the batteries or the control panel.

5. Insert the RBB cover screws into the cover mounting holes (see Figure 4-5).

   Screw the cover screw 3/4 of the way into the cover mounting hole.

6. Align the cover plate mounting keyhole over the cover mounting screws. See Figure 4-6.

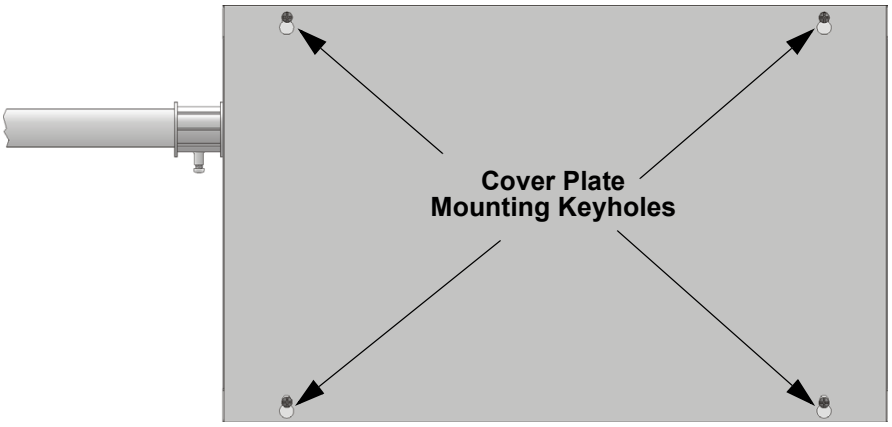


Figure 4-6 Cover Plate Mounting Keyholes and Cover Mounting Screws Alignment

7. Slide the cover into place and tighten the cover mounting screws. See Figure 4-6.

4.4 SBUS Wiring

This section contains information on calculating SBUS wire distances and the types of wiring configurations (Class B).

4.4.1 Calculating Wiring distance for SBUS modules

The following instructions will guide you in determining the type of wire and the maximum wiring distance that can be used with control panel SBUS accessory modules.

To calculate the wire gauge that must be used to connect SBUS modules to the control panel, it is necessary to calculate the total worst case current draw for all modules on a single 4-conductor bus. The total worst case current draw is calculated by adding the individual worst case currents for each module. The individual worst case values are shown in the table below.

Note: Total worst case current draw on a single SBUS cannot exceed 1 amp. If a large number of accessory modules are required, and the worst case current draw will exceed the 1 amp limit, then the current draw must be distributed using Power Expanders. Each Power Expander provides an additional SBUS, with an additional 1 amp of SBUS current. Wiring distance calculations are done separately for each, and separately for the control panel itself.

Model Number	Worst Case Current Draw
RA-100 or RA-1000 Fire Annunciator	.100 amps
5824 Serial/Parallel Printer Interface Module	.040 amps
5880 LED I/O Module	.250 amps
5865 LED Fire Annunciator	.200 amps
5496 Intelligent Power Supply	.010 amps
RPS-1000 Intelligent Power Supply	.010 amps
ECS-50W	.010 amps
ECS-125W	.010 amps
ECS-DUAL50W	.010 amps
ECS-DUAL50W with ECS-50WBU	.010 amps
ECS-VCM / ECS-VCM with ECS-SW24* **	.105 amps / .130 amps
ECS-RCU / ECS-RCU with ECS-SW24* **	.105 amps / .130 amps

Refer to Table 3-3 if using SD SLC devices and Table 3-2 if using IDP SLC devices for maximum number of each type of device that can be used per system.

After calculating the total worst case current draw, Table 4-1 specifies the maximum distance the modules can be located from the panel on a single wire run. The table insures 6.0 volts of line drop maximum. In general, the wire length is limited by resistance, but for heavier wire gauges, capacitance is the limiting factor.

* All devices must use the same SBUS and VBUS.

** When doing wire calculations, use .105 amps per device with .130 amps for the last device.

These cases are marked in the chart with an asterisk (*). Maximum length can never be more than 6,000 feet,

regardless of gauge used. (The formula used to generate this chart is shown in the note below).

Table 4-1: Wiring Distances Per Wire Gauge Using Copper Wire

Wiring Distance: SBUS Modules to Panel				
Total Worst Case Current Draw (amps)	**22 Gauge**	**18 Gauge**	**16 Gauge**	**14 Gauge**
0.100	1852 ft.	4688 ft.	* 6000 ft.	* 6000 ft.
0.200	926 ft.	2344 ft.	3731 ft.	5906 ft.
0.300	617 ft.	1563 ft.	2488 ft.	3937 ft.
0.400	463 ft.	1172 ft.	1866 ft.	2953 ft.
0.500	370 ft.	938 ft.	1493 ft.	2362 ft.
0.600	309 ft.	781 ft.	1244 ft.	1969 ft.
0.700	265 ft.	670 ft.	1066 ft.	1687 ft.
0.800	231 ft.	586 ft.	933 ft.	1476 ft.
0.900	206 ft.	521 ft.	829 ft.	1312 ft.
1.000 (Max)	185 ft.	469 ft.	746 ft.	1181 ft.

Note: The following formulas were used to generate the wire distance chart:

$$\text{Maximum Resistance (Ohms)} = \frac{6.0 \text{ Volts}}{\text{Total Worst Case Current Draw (amps)}}$$

$$\text{Maximum Wire Length (Feet) (6000 feet maximum)} = \frac{\text{Maximum Resistance (Ohms)}}{\text{Rpu}} * 500$$

where: Rpu = Ohms per 1000 feet for various Wire Gauges (see table below)

Table 4-2: Typical Wire Resistance Per 1000 ft. Using Copper Wire

Wire Gauge	Ohms per 1000 feet (Rpu)
22	16.2
18	6.4
16	4.02
14	2.54

Wiring Distance calculation example:

Suppose a system is configured with the following SBUS modules:

2 - Module RA-1000 Fire Annunciator

1 - 5496 Notification Power Expander

1 - 5865 LED Fire Annunciator

1 - 5824 Serial/Parallel Printer Interface Module

The total worst case current is calculated as follows:

RA-1000 Current Draw	= 2 x .100 amps	= .200 amps
5496 Current Draw	= 1 x .010 amps	= .010 amps
5865 Current Draw	= 1 x .200 amps	= .200 amps
5824 Current Draw	= 1 x .040 amps	= .040 amps
Total Worst Case Current Draw		= .450 amps

Using this value, and referring to the Wiring Distance table, it can be found that the available options are:

370 feet maximum using 22 Gauge wire

938 feet maximum using 18 Gauge wire

1493 feet maximum using 16 Gauge wire

2362 feet maximum using 14 Gauge wire

4.4.2 Wiring Configurations

Figure 4-7 illustrates Class B configuration.

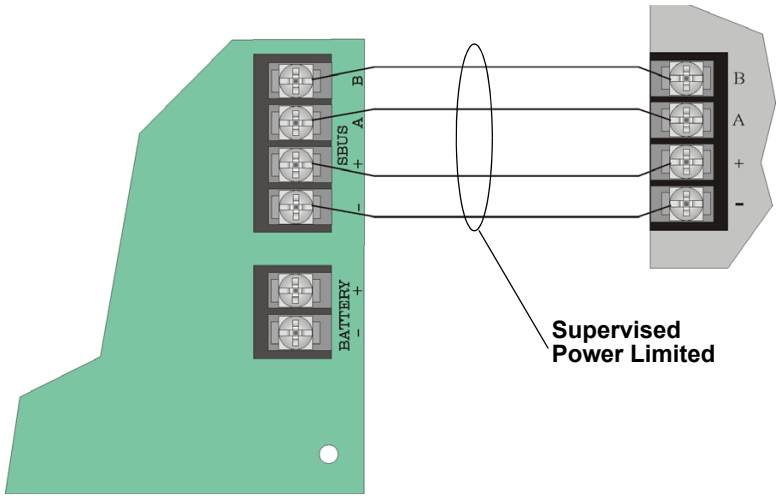


Figure 4-7 SBUS Class B Wiring

4.5 RA-100 Remote Annunciator Installation

The optional Model RA-100 Remote Annunciator, shown in Figure 4-8, performs the same functions as the on-board annunciator as well as initiate and end fire drills with a single key press and view event history by alarms, supervisories, or troubles. The RA-100 can be surface or flush mounted.

Up to 12 RA-100s can be added to the IFP-100 system.

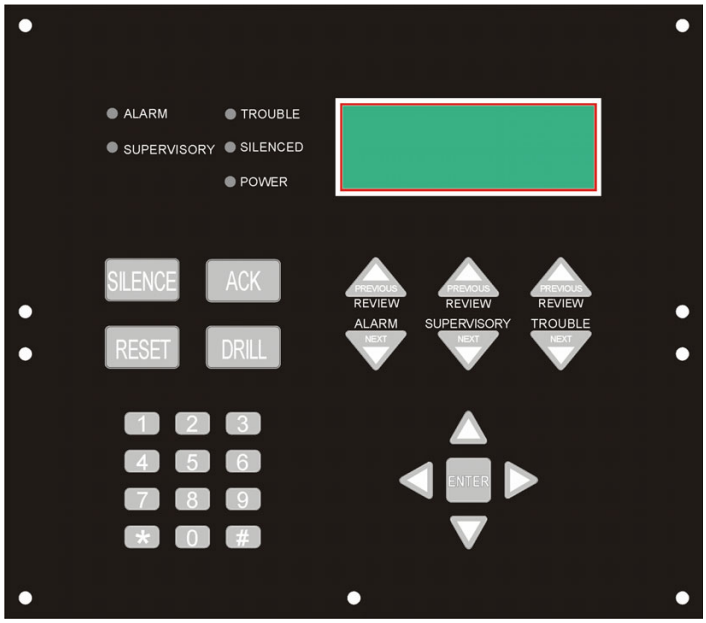


Figure 4-8 Model RA-100 Remote Annunciator, Front View

RA-100 installation involves the following steps:

1. Make sure power is off at the panel.
2. Mount the RA-100 in the desired location (see Section 4.5.1).
3. Connect the RA-100 to the panel (see Section 4.4.2).
4. Use the DIP switches on the back of the RA-100 to assign an ID# to the RA-100 (see Section 4.10.1).
5. The new RA-100 module must be added to the system through programming. JumpStart will add the module automatically (see Section 6.2). You can also add it manually (see Section 7.2.2). Select a name, if desired (see Section 7.2.1.1).

4.5.1 Mounting the RA-100

This section of the manual describes mounting the remote annunciator. The annunciator can be flush- or surface-mounted.

4.5.1.1 Flush Mounting

This section of the manual describes flush mounting.

Follow these steps to flush mount the RA-100

1. The back box dimensions are 9-9/32” w x 8-3/8” h. The minimum depth 2". The back box can be mounted prior to the complete installation of the RA-100 using any of the mounting holes shown in Figure 4-9.

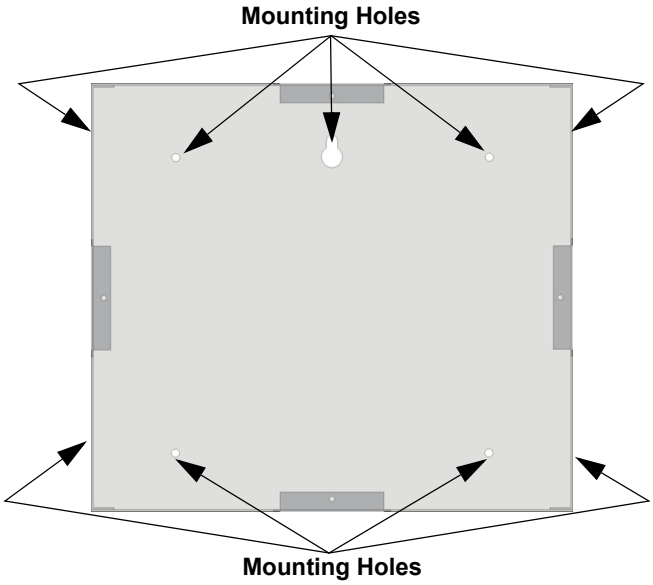


Figure 4-9 Back Box Mounting Holes

2. Remove knockout holes as needed for wires. See Figure 4-10 for backbox knockout locations

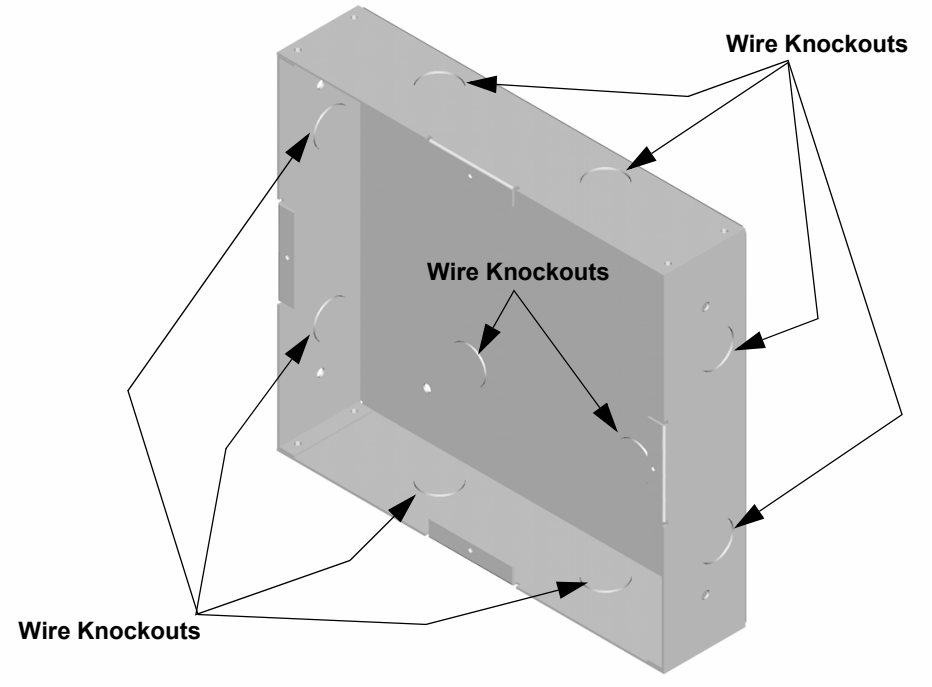


Figure 4-10 Back Box Knockout Locations

3. Wire the Annunciator board to the main control panel. See Figure 4-7.

4. Attach the annunciator and door assembly to back box as shown in Figure 4-11 using the supplied screws.

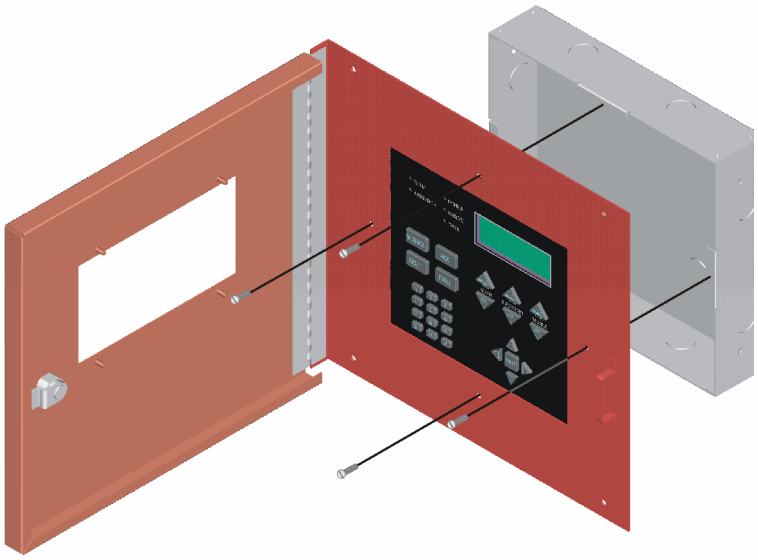


Figure 4-11 Attaching Annunciator/Door Assembly to Backbox

4.5.1.2 Surface Mounting

The optional Model RA-100TR trim ring kit is available for use when surface mounting.

1. Remove the desired knock out. See Figure 4-10.
2. To properly mount the back box, insert a single screw into the key shaped mounting hole. Do not tighten all the way. See Figure 4-12. Place a level on top of the back box, with the back box level insert the rest of the mounting screws.

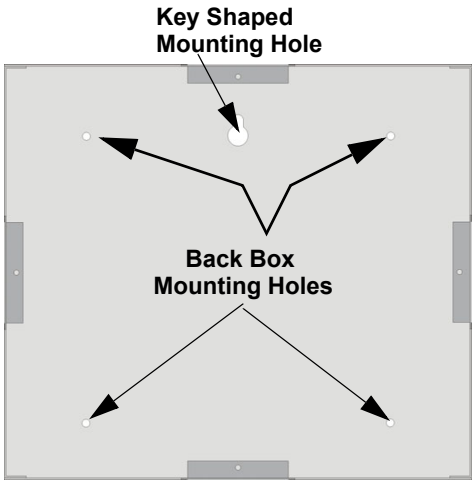


Figure 4-12 Back Box Surface Mount Holes

3. Run wires to the control panel.

4. Place the trim ring over the back box as shown in Figure 4-13.

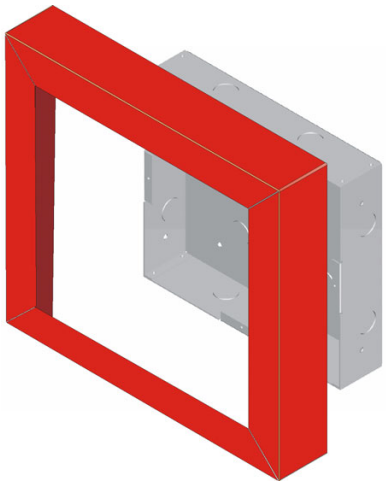


Figure 4-13 Installing Trim Ring

5. Attach the Door assembly to the back box using screws provided.
6. After the annunciator wiring to the panel has been completed (described in Section 4.5), replace the electronic assembly in the back box. Place the bezel over the back box and tighten the set screws on the bezel.

4.6 RA-1000 Remote Annunciator Installation

The optional Model RA-1000 is a remote annunciator that utilizes a fireman's key or access code to reset or silence. Up to 12 annunciators can be added to the IFP-100 system.

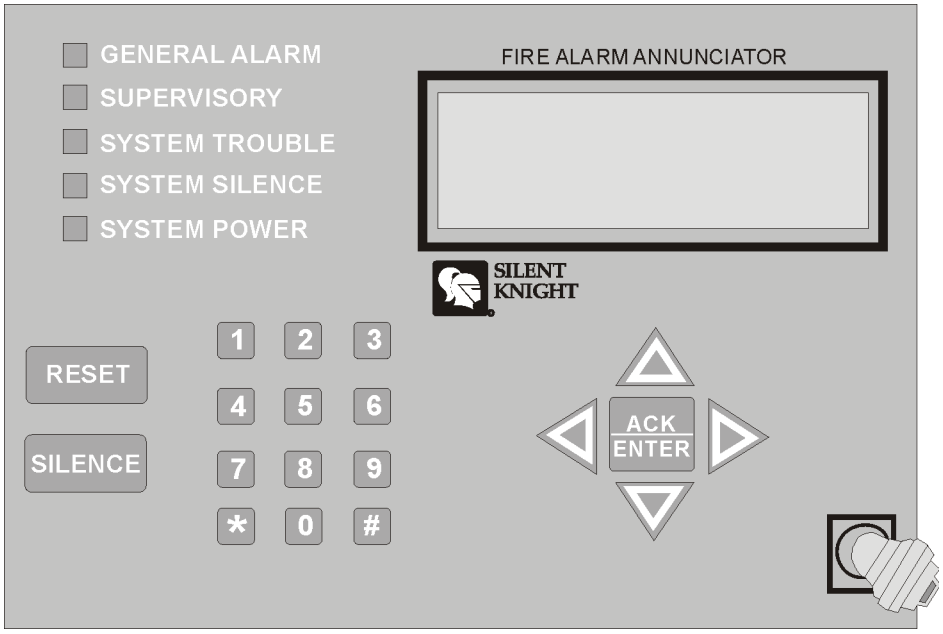


Figure 4-14 Model RA-1000 Remote Annunciator, Front View

RA-1000 installation involves the following steps:

1. Make sure power is off at the panel.

2. Mount the RA-1000 in the desired location (see Section 4.6.1).
3. Connect the RA-1000 to the panel (see Section 4.6.2).
4. Use the DIP switches on the back of the RA-1000 to assign an ID# to the RA-1000 (see Section 4.10.1).
5. The new RA-1000 module must be added to the system through programming. JumpStart will add the module automatically (see Section 6.2). You can also add it manually (see Section 7.2.2). Select a name, if desired (see Section 7.2.1.1).

4.6.1 Mounting the RA-1000

This section of the manual describes mounting the remote annunciator. The annunciator can be flush- or surface-mounted. Figure 4-15 shows the parts of the annunciator. Instructions for disassembling and mounting appear on the following pages.

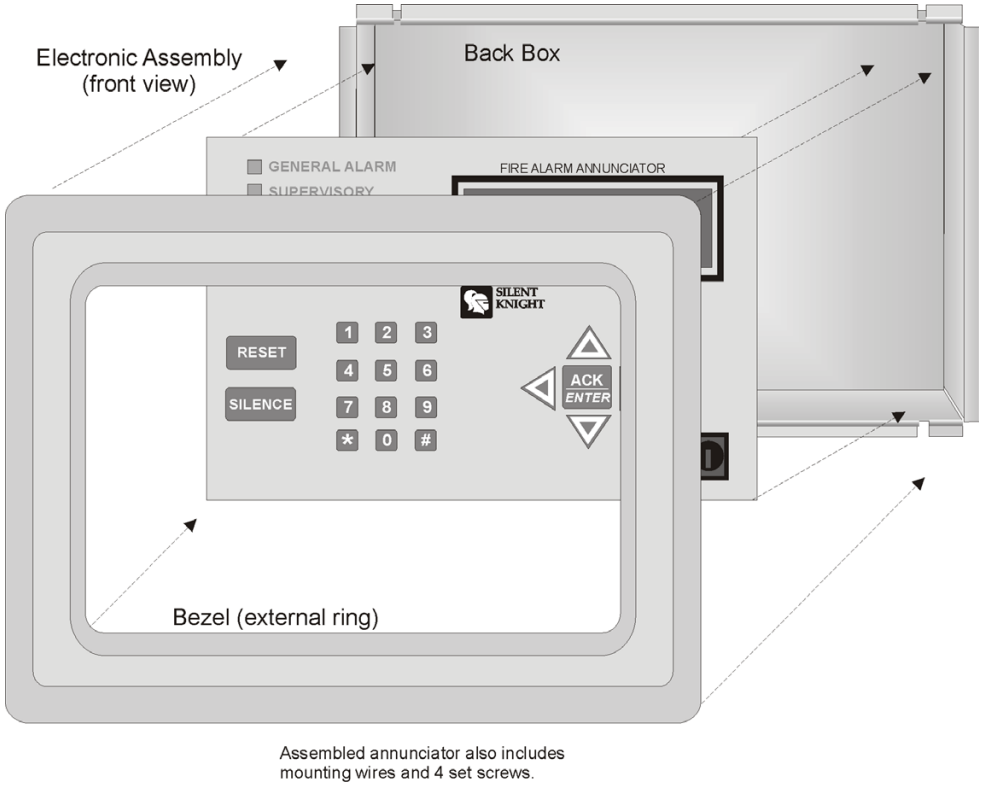


Figure 4-15 Annunciator Parts

The RA-1000 comes from the factory fully assembled. You must disassemble it for mounting. To disassemble the annunciator, use a 5/64 hex wrench to remove the set screws, located on the bottom of the annunciator bezel.

(See Figure 4-16 for location of the set screws.)

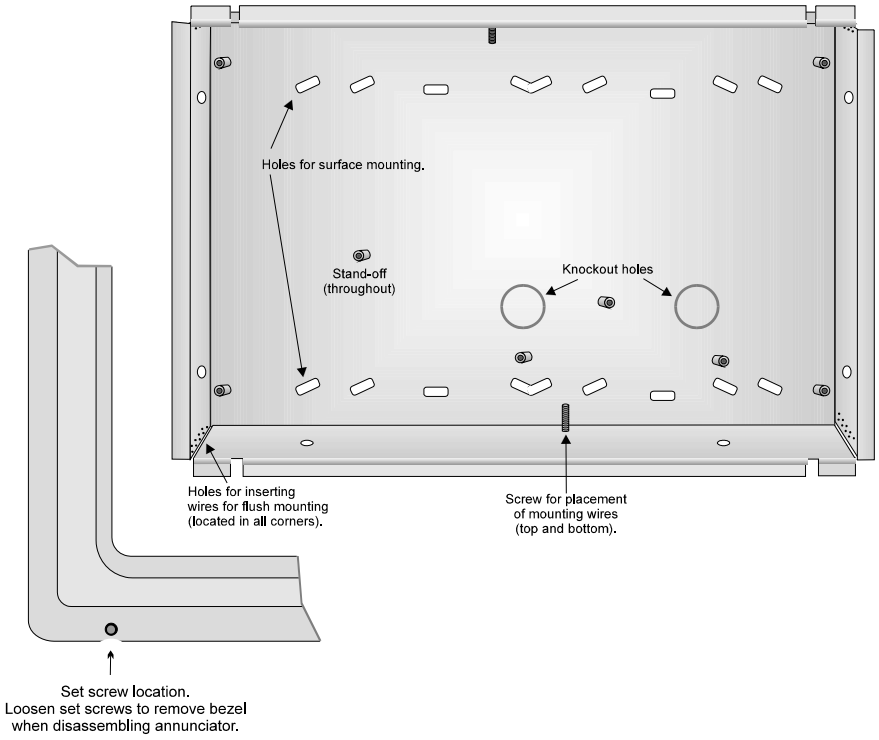


Figure 4-16 Annunciator Back Box and Bezel Details

4.6.1.1 Flush Mounting

This section of the manual describes flush mounting. You can flush-mount with or without an electrical box.

Flush Mounting with an Electrical Box

The RA-1000 annunciator can be used with the following types of electrical boxes: 4S, single-gang, and double-gang.

If an electrical box is used, the box must be 1-3/8” back from the face of the wall to accommodate the annunciator. Studs used with an electrical box must be two by fours (or larger).

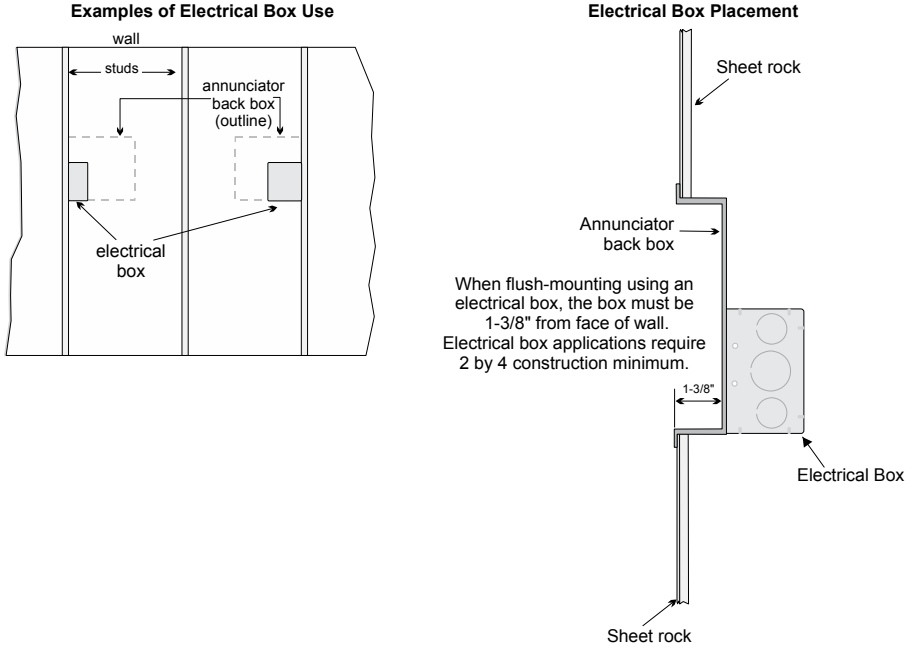


Figure 4-17 Placement of Electrical Box for Flush Mounting

Flush Mounting Steps

1. Cut a hole in the sheet rock to the following dimensions: 8-1/4” w x 6-5/8” h. If an electrical box is used, the box must be 1-3/8” back from face of wall to accommodate the annunciator (see Figure 4-17).
2. Remove knockout holes as needed for wires.
3. Fit the annunciator back box into the hole and stabilize with mounting wires. Angle the mounting wires into the first hole past the sheet rock. Secure the wires behind the screws as shown in Figure 4-18. When all four wires are in place, the back box should fit snugly into the hole in the sheet rock.
4. After the annunciator wiring to the panel has been completed (described in Section 4.6.2), replace the electronic assembly in the back box. Place the bezel over the back box and tighten the set screws on the bezel.

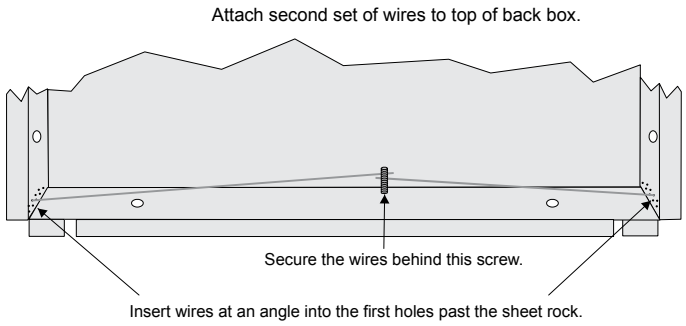


Figure 4-18 Flush Mounting the Back Box

4.6.1.2 Surface Mounting

The RA-1000 can be mounted directly to a surface or can be attached to a single, double, or four-square electrical box. The Model 5860TG/TR trim ring kit is available for use when surface mounting.

1. Drill holes in the surface to match the screw holes on the back box.
2. Fit the trim ring over the back box.
3. Attach the back box to the surface using screws provided.
4. After the annunciator wiring to the panel has been completed (described in Section 4.6.2), replace the electronic assembly in the back box. Place the bezel over the back box and tighten the set screws on the bezel.

4.6.2 Connecting the RA-1000 to the Panel

Connect the RA-1000 to the panel as shown in Figure 4-19.

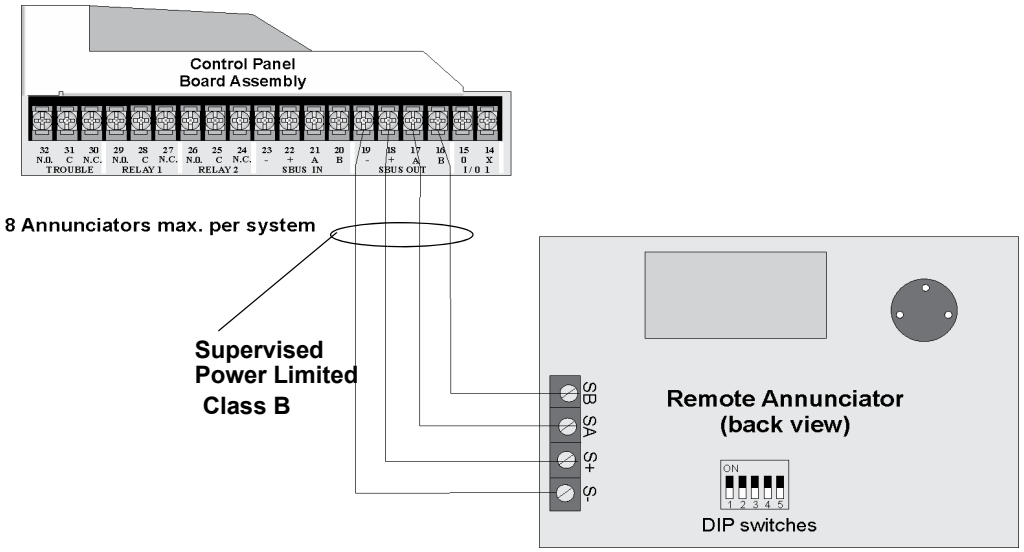


Figure 4-19 Model RA-1000 Connection to the Panel

4.7 5824 Serial/Parallel Printer Interface Module Installation

The 5824 serial/parallel printer interface module allows you to connect a printer to the panel, so you can print a real-time log of system events, a report of detector status, and event history. Instructions for installing the 5824 appear below.

The 5824 and the printer connected to the 5824 Parallel port is ancillary, the serial port can be used for primary fire signaling. The printer must be a UL 864 listed printer.

To install the 5824:

1. Make sure power is off at the panel.
2. Connect the 5824 to the panel as shown in Figure 4-20.

Note: Two 5824s per panel maximum.

3. Use the DIP switches on the back of the 5824 board to assign an ID# to the 5824 (see Section 4.10.1).
4. Configure the 5824 device through programming. See Section 4.7.1.
5. Connect a printer to the 5824 as shown in Figure 4-21.

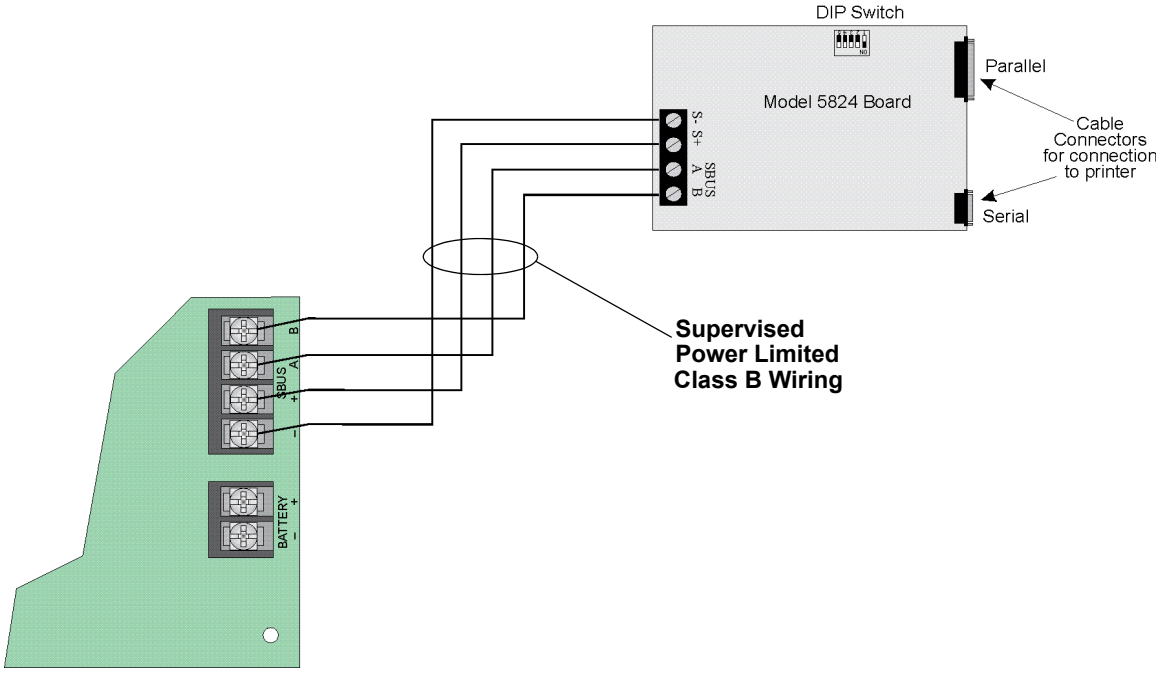


Figure 4-20 5824 Connection to the Panel

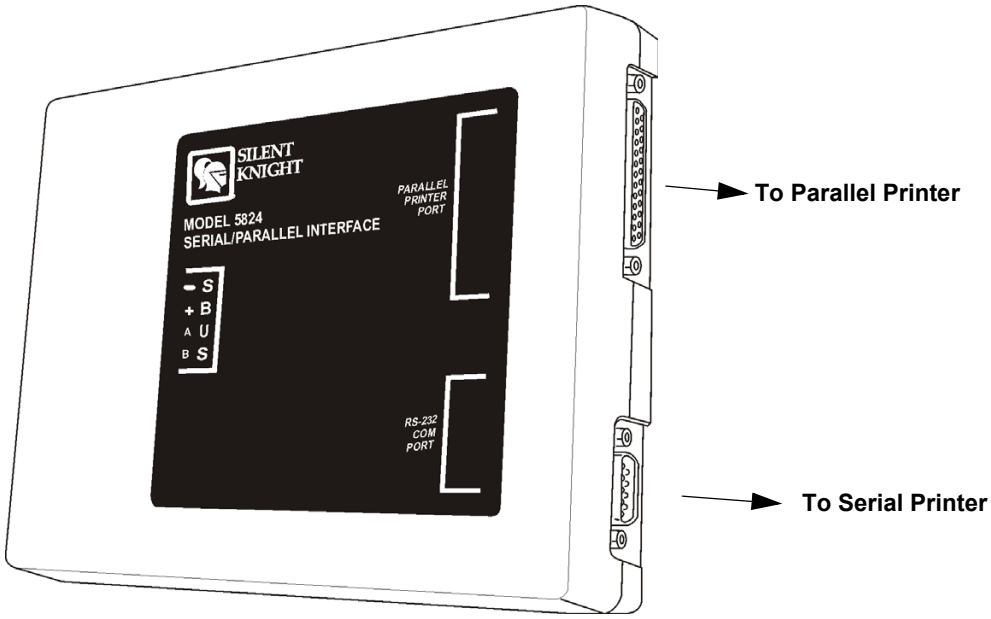


Figure 4-21 Printer Connection

4.7.1 Selecting 5824 Options

Configuring the 5824 includes the following steps:

- Add the module to the system. JumpStart will add the module automatically (see Section 6.2). You can also add it manually (see Section 7.2.2).
- Select a name, if desired (see Section 7.2.1.1).
- Select options for the printer and the output port. See below.

Printer and Output Port Options

The printer is for ancillary use only.

1. From the Main Menu, select 7 for Program Menu.
2. Select 1 for Module.
3. Select 1 for Edit Module.
4. From the list that displays, select the 5824 module you want to configure.
5. Press ENTER to bypass the next two screens. A screen similar to the one shown in Figure 4-22 will display.

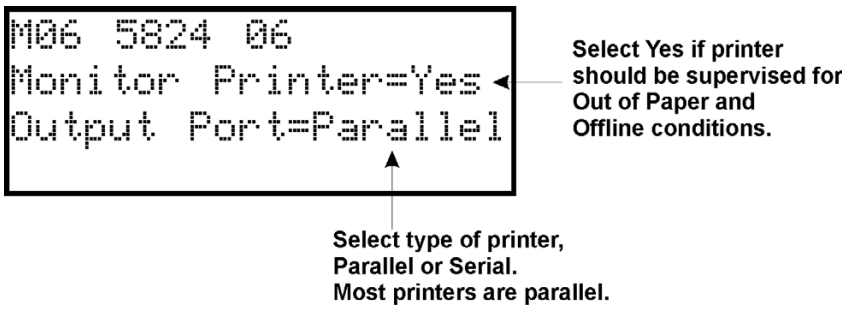


Figure 4-22 Selecting Printer and Output Port Options

6. Select options for the printer as needed for your installation. Most printers are parallel.
7. If you are using a serial printer, use the next screen to select serial port options as required for your printer. Refer to your printer manual if you need more information.

Option	Choices
Baud Rate:	75 - 19200
Data Bits:	5 - 8
Stop Bits:	.5, 1, 2
Parity:	None, Even, Odd

4.8 5880 LED I/O Module

The 5880 is an LED driver board that can be used in a wide variety of applications, including as an interface with most customized floor plan annunciator boards. The 5880 can drive up to 40 LEDs and has one PZT controller. The 5880 also has eight inputs for dry contact monitoring. The following sub-sections describe hardware installation. Refer to Section 6 for programming information.

4.8.1 5880 Board Layout

Figure 4-23 is a picture of the 5880 board showing locations of screw terminals for connection to the panel and contact monitor wiring; pin connectors for connecting LEDs; and the DIP switch for selecting an SBUS ID number.

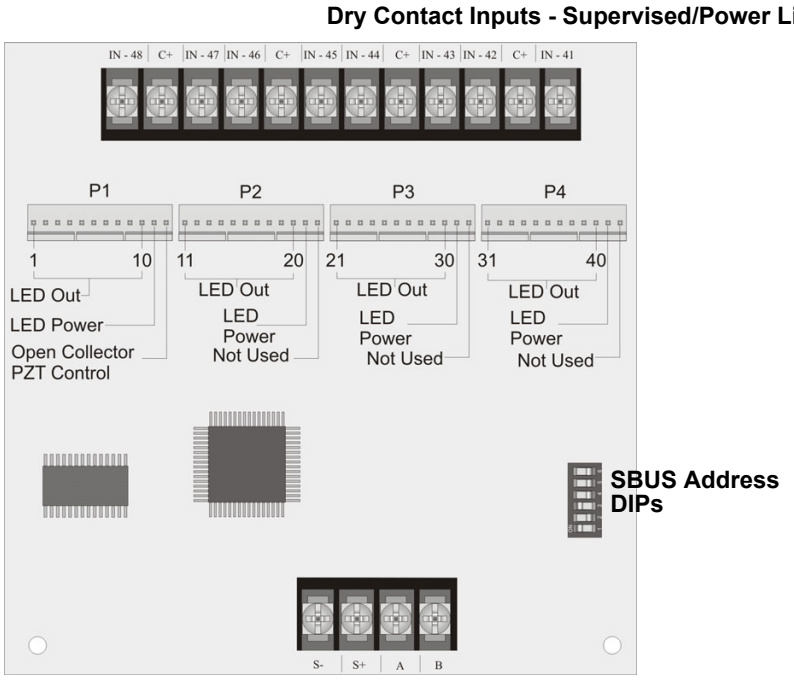


Figure 4-23 5880 Board Layout

4.8.2 FACP Connection

The 5880 connects to the panel via the SBUS. Make connections as shown in Figure 4-24. After the 5880 is connected to the panel, it must be added to the system. This programming step is described in Section 4.10.

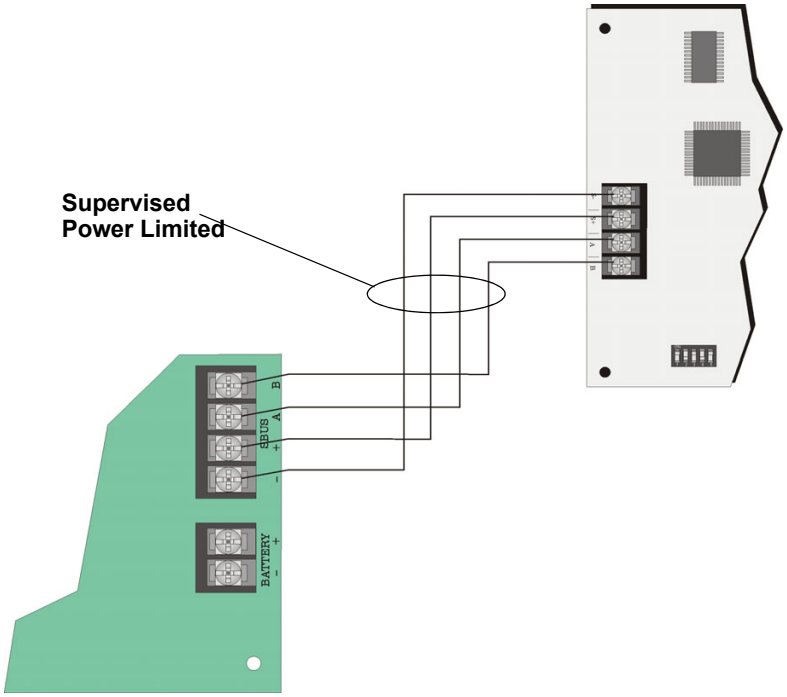


Figure 4-24 5880 Connection to Main Control Panel Assembly

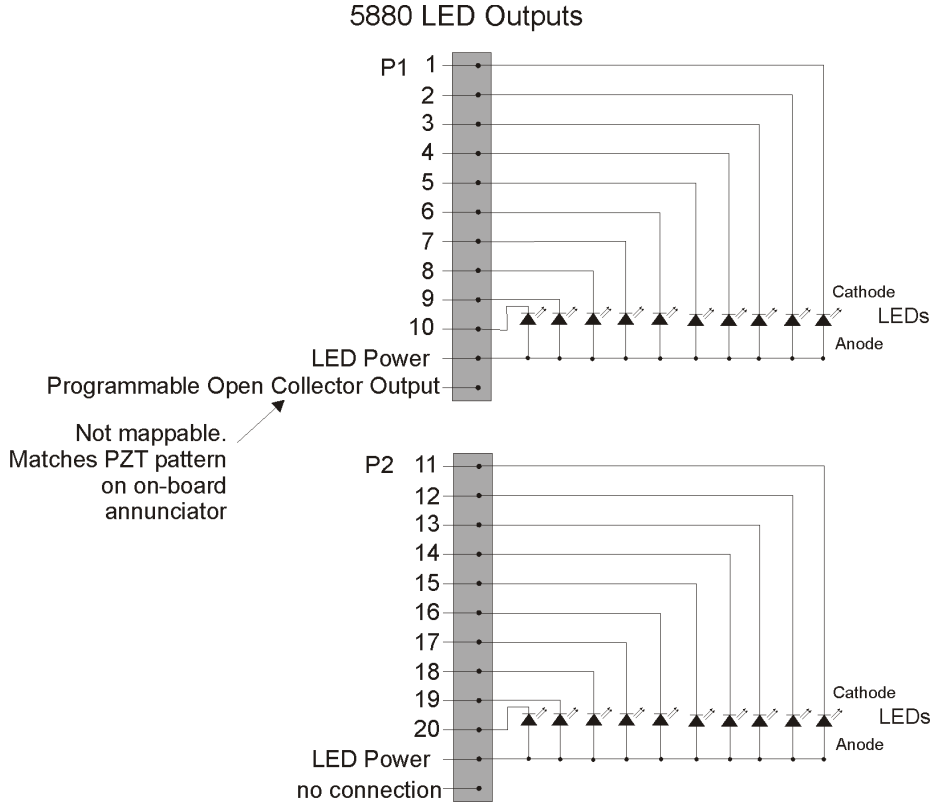
4.8.3 LED Wiring

There are four 12-pin connectors on the 5880 board for connecting LEDs. Each LED gets its power from Pin 11. Internal resistors are sized so that there is approximately 10 mA of current for each LED, no series resistors are required. LED outputs can be mapped to output circuits. See Section 6 for programming details.

Wire the LEDs as shown in Figure 4-25.

On connector P1, Pin 12 is a common open collector output for controlling a PZT. If used, the 5880 PZT will match the PZT pattern of the on-board (or RA-1000) annunciator.

Note: The circuit connected to common "Open Collector Output" (last pin on P1) must be current limited so that no more than 100 mA of current is allowed to flow into the open collector transistor.



Connectors P3 and P4 wired same as P2.

Figure 4-25 5880 Board Layout

4.8.4 Dry Contact Wiring

The 8 input circuits on the 5880 board are for monitoring switch inputs-any type of switch supported by the control panel can be used with the 5880. For example, you can use a 5880 to monitor pull stations, water flow, tamper, reset, or silence switches.

Wire dry contacts as shown in Figure 4-26. Notice grouping of terminals; power terminals are shared by two inputs.

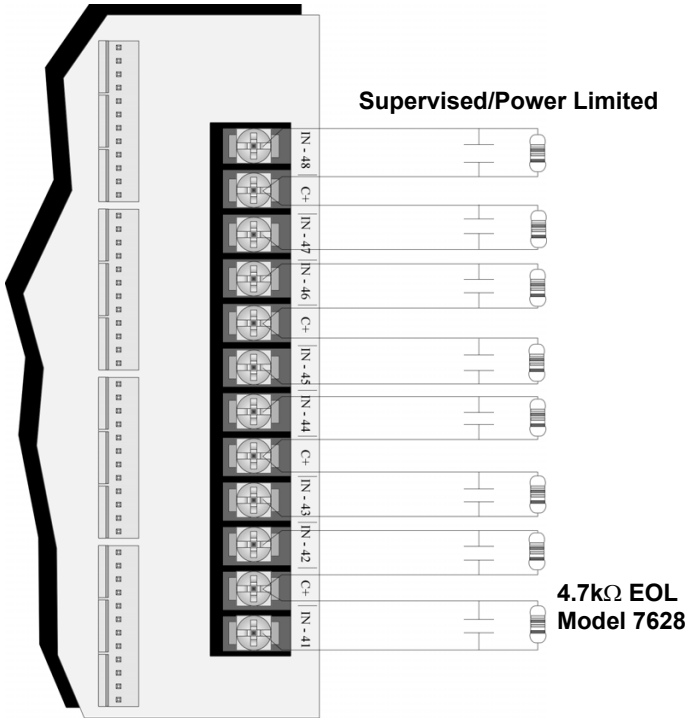


Figure 4-26 Dry Contact Wiring

4.9 5865-3 / 5865-4 LED Annunciator Installation

The 5865-3 and 5865-4 are LED annunciators. The 5865-4 has 30 mappable LEDs, remote silence and reset key switches, and a general system trouble LED. The 5865-3 has 30 mappable LEDs only. These are arranged as 15 pairs of red (typically used for alarm) and yellow (typically used for trouble) LEDs.

Installation of the 5865-3 and 5865-4 is identical. The key switches and the trouble LED follow the behavior of other system annunciators and do not require any installation steps. The following sub-sections describe how to install the 5865-3 and 5865-4 hardware. Refer to Section 6 for programming information.

Note: This manual uses "5865" when referring to aspects of the 5865-3 and 5865-4 that are common to both models.

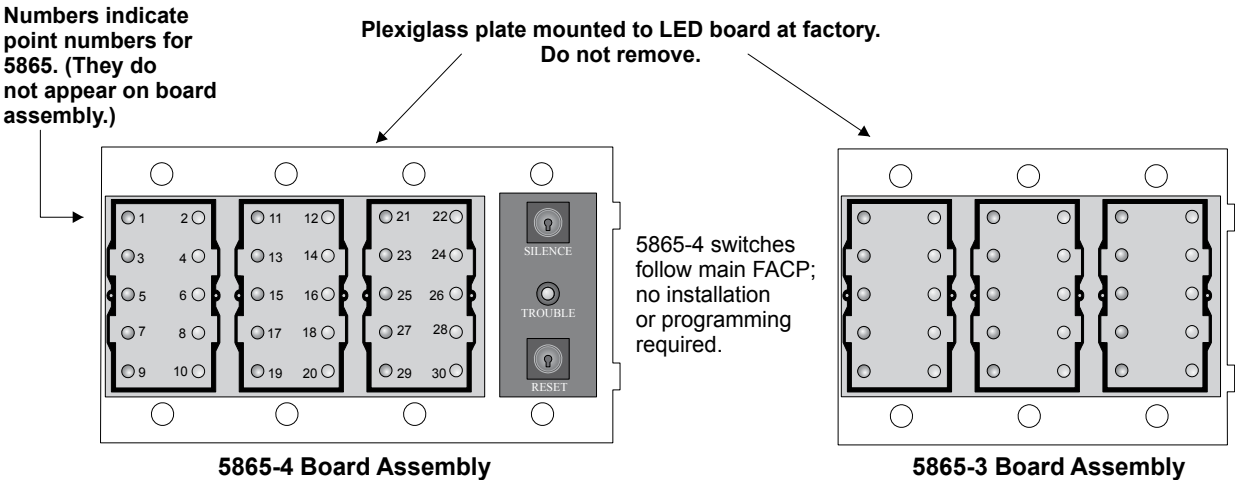


Figure 4-27 5865-3 and 5865-4 Assembly (front view)

4.9.1 FACP Connection

The 5865 connects to the panel via the SBUS. Make connections as shown in Figure 4-28. After the 5865 is connected to the panel, it must be added to the system. This programming step is described in Section 4.10.

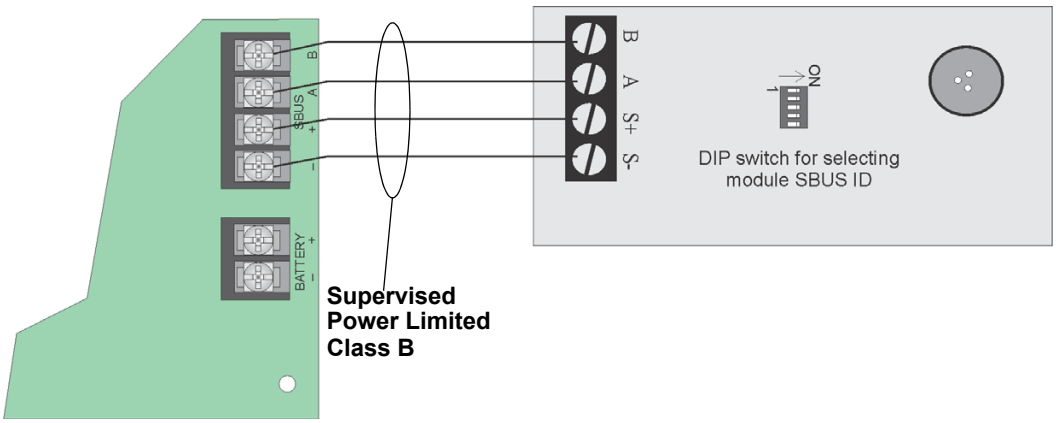


Figure 4-28 5865 Connection to the FACP

4.9.2 5865 Mounting

Mount the 5865-4 to a standard 4-gang electrical box. Mount the 5865-3 to a standard 3-gang electrical box. In Figure 4-29, the 5865-4 attached to a 4-gang box is used as an example.

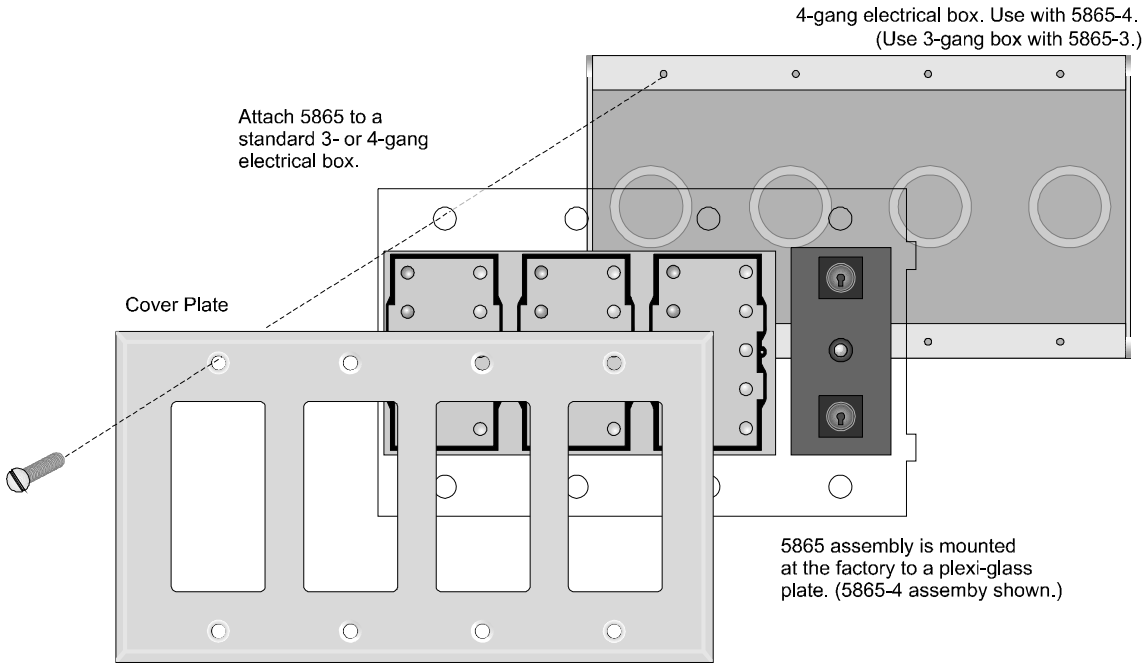


Figure 4-29 5865 Mounting Example

The 5865 ships with a set of zone description labels that can be inserted into the 5865 board assembly. These labels can be used in a typewriter or can be written on by hand. Slide the labels under the plexiglass as shown in Figure 4-30. The LEDs will show through the label when illuminated.

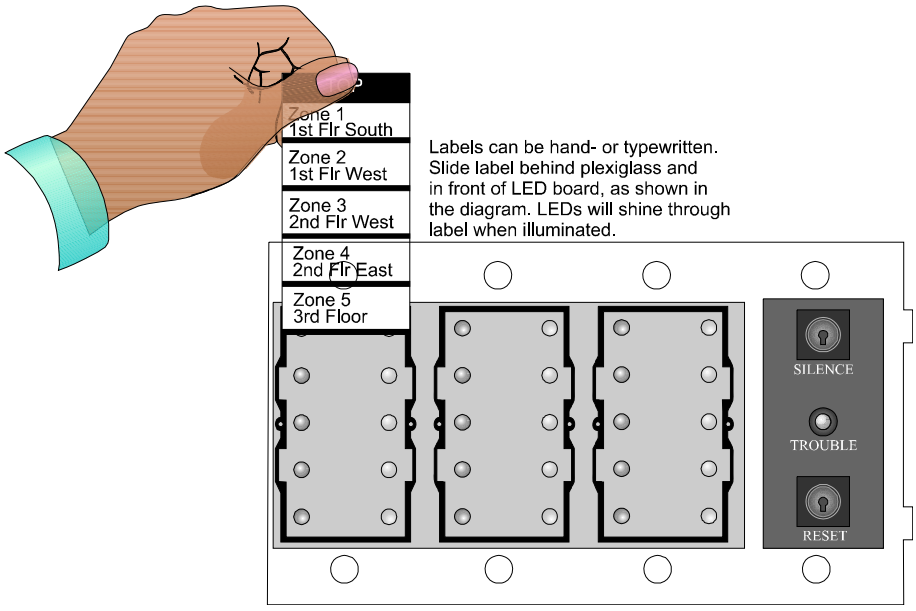


Figure 4-30 Inserting Zone Description Labels

4.10 Configuring Modules

This section describes how to configure any system hardware modules that have been added to the system.

4.10.1 Assigning Module IDs

When installing a hardware module (such as, 5824, RA-1000, RA-100, 5496, RPS-1000, 5865-3 or 5865-4), you must use the DIP switches on the module to assign an ID# to the module.

Figure 4-31 shows all possible DIP switch positions and their correlation to a numerical ID. For example, to select ID 2, place DIP switch 2 in the up position.

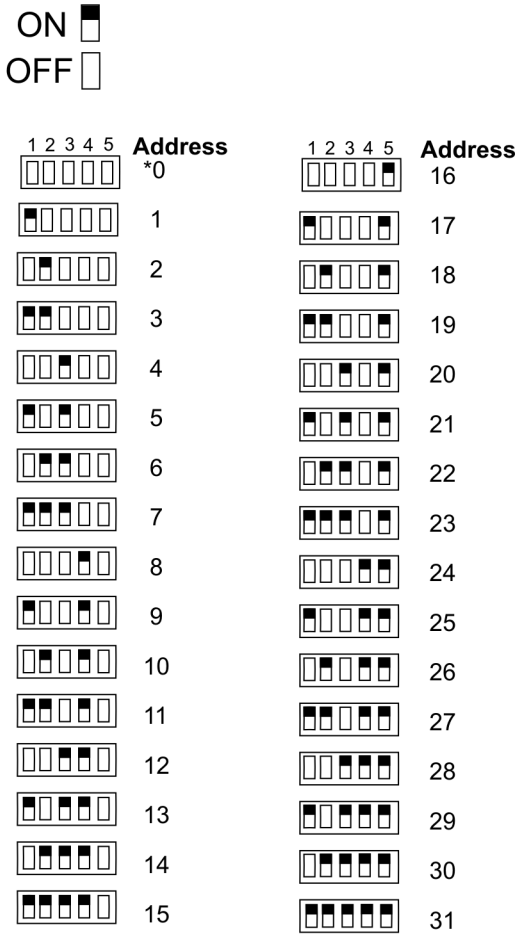


Figure 4-31 Possible module addresses

Refer to Section 7.2 to edit, add, delete, and view module list.

4.11 Telephone Connection

Connect the telephone lines as shown in Figure 4-32. The Model 7860 phone cord is available from Silent Knight for this purpose.

A number of programmable options are available for customizing telephone lines. These options are described in Section 7.6.

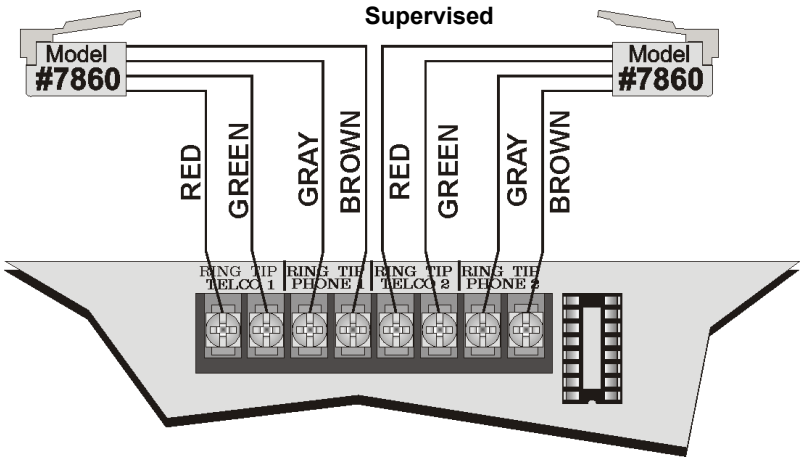


Figure 4-32 Connection of Telephone Lines

4.12 Notification Appliance/Auxiliary Power Circuits

Note: These circuits are considered regulated unless used for releasing type service, in which case they are considered special applications.

Four outputs are built-in to the IFP-100 FACP which can be programmed to be used as NACs (Class A or Class B) or as Aux power.

This section of the manual explains how to install conventional notification appliances and how these terminals can be used for auxiliary power.

4.12.1 Conventional Notification Appliance

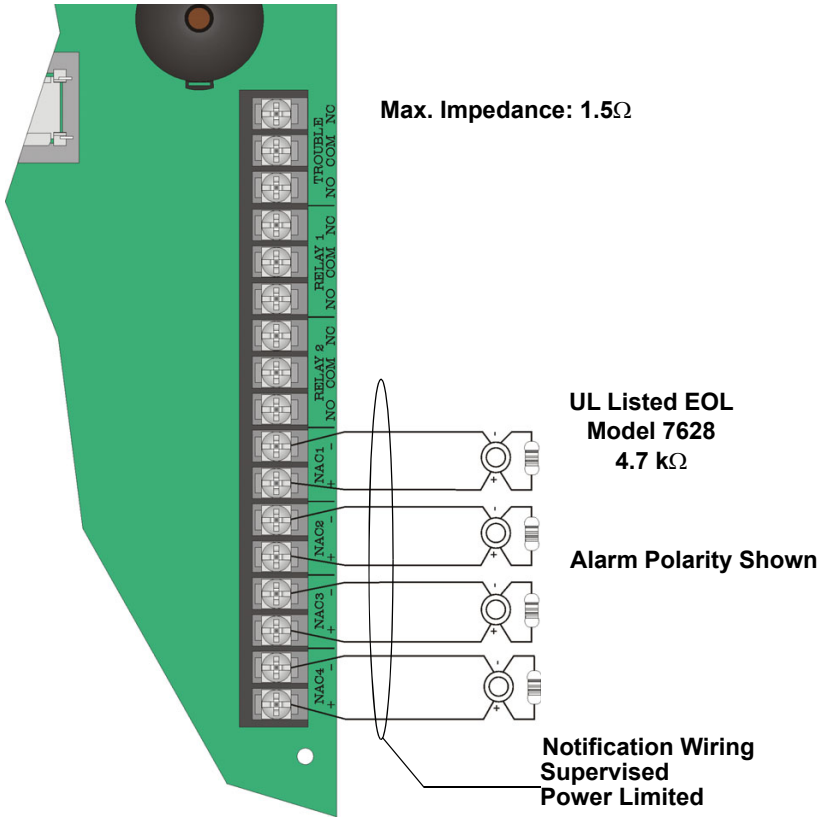
This sub-section of the manual explains how to install conventional notification appliances for Class A (Style Z) and Class B (Style Y) configurations.

4.12.1.1 Class B Notification Wiring

You must use an appliance from the list of compatible appliances in Appendix A.

To install a Class B notification appliance circuit:

1. Wire Class B Notification appliances as shown in Figure 4-33.
2. Configure the circuit through programming (see Section 7.5).



All Circuits are Synchronized (Regulated). Rated at 27.4 VDC @ 3A Max.

Figure 4-33 Class B Notification Appliance Circuit Wiring

4.12.1.2 Class A Notification Wiring

You must use an appliance from the list of compatible appliances in Appendix A.

To install a Class A notification appliance circuit:

1. Wire the Class A notification appliances as shown in Figure 4-34.

Caution
For proper system supervision do not use looped wire under terminals marked + and – of the Flexput connectors. Break wire runs to provide supervision of connections.

2. Configure the circuit for Class A in programming (see Section 7.5).

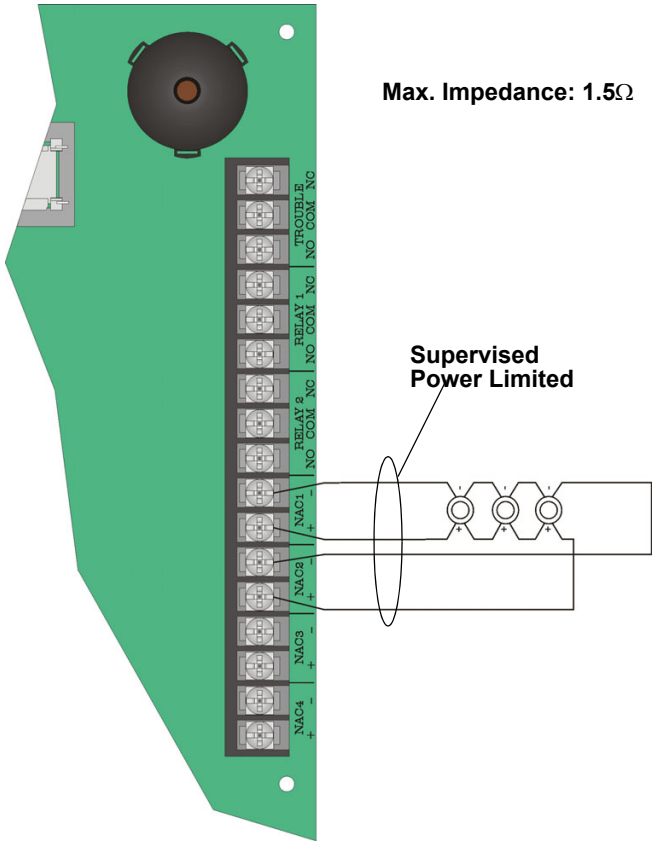


Figure 4-34 Class A Notification Appliance Circuit Configuration

4.12.2 Auxiliary Power Installation

NAC Circuits 1-4 on the control panel can be used as auxiliary power circuits. The four types of auxiliary power available are:

- Door Holder (see section 4.12.2.1)
- Constant (see section 4.12.2.2)
- Resettable Power (see section 4.12.2.3)
- Sounder Sync Power (see Section 4.12.2.4)

Auxiliary power circuits are power limited. Each circuit can source up to 3A (total current for all NAC circuits

must not exceed 6A).

To install an auxiliary power circuit:

1. Wire the NAC circuit(s) that will be used for auxiliary power. See Figure 3-2 for location of NAC circuits.
2. Configure the auxiliary power output through programming (see section 7.5).

4.12.2.1 Door Holder Power

Door holder power is intended for fire door applications. When there are no alarms in the system and the panel has AC power, door holder circuits have 24-volt power present at their terminals. Any alarm will cause power to disconnect. Power will be re-applied when the system is reset. If AC power is off for more than 15 seconds, the auxiliary door holder power will be disconnected to conserve the battery backup. When AC power is restored, power is immediately restored to the door holder circuits.

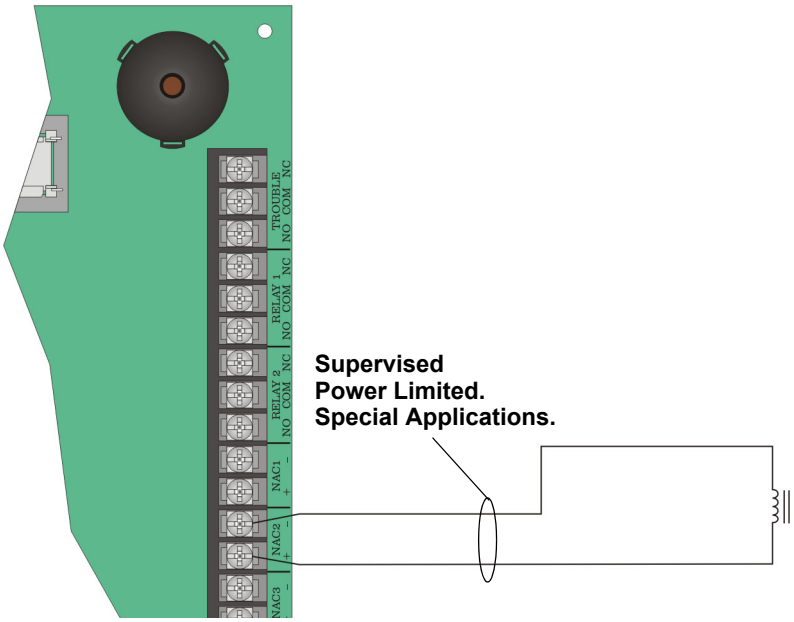


Figure 4-35 Example of an Auxiliary Power For Door Holder

Note: Figure 4-35 uses UL listed door holder Model 1400 from Door Control International as an example.

4.12.2.2 Constant Power

Use constant power for applications that require a constant auxiliary power source. Power is always present at Constant circuits.

4.12.2.3 Resettable Power

Resettable power is typically used to power beam detectors, flame detectors and conventional 4-wire smoke detectors. For circuits selected as Resettable, 24-volt power is always present at the terminals unless a system reset occurs. If a system reset occurs, power is disconnected from the terminals for 30 seconds, then re-applied.

4.12.2.4 Sounder Sync Power

Sounder Sync Power continuously outputs the System Sensor synchronization pattern and is intended for use with B200S sounder bases.

4.13 On-Board Relays (Conventional)

The control panel has two built-in programmable relays and a built-in trouble relay. All relays are Form C rated at 2.5 A @ 24 VDC (resistive).

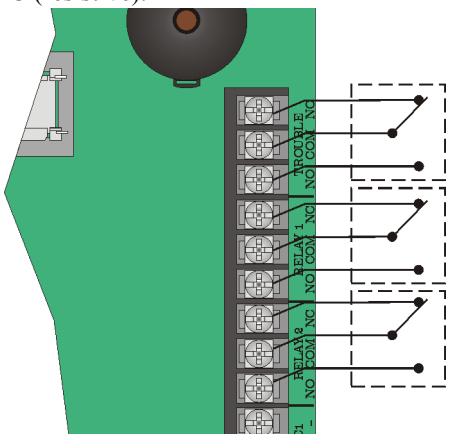


Figure 4-36 Location of Conventional Relay Circuits

Note: The N.C. contact is the relay contact that is closed when the panel has power and there are no alarm or trouble conditions.

4.13.1 Trouble Relay

The control panel has a dedicated common Form C trouble relay built into terminals labeled TROUBLE. The relay provides a normally open and a normally closed contact. The trouble relay will deactivate under any trouble condition.

4.13.2 Programmable Relays

The control panel has two Form C programmable relays built into terminals labeled RELAY 1 and RELAY 2. Each relay provides a normally open and a normally closed contact.

To install one or two programmable relays, follow these steps.

1. Wire Relay 1 and/or Relay 2 as needed for your application. See Figure 4-36 for the location of the relay terminals.
2. Configure the relay through programming (see section 7.5).

4.14 Remote Station Applications

4.14.1 Keltron Model 3158 Installation

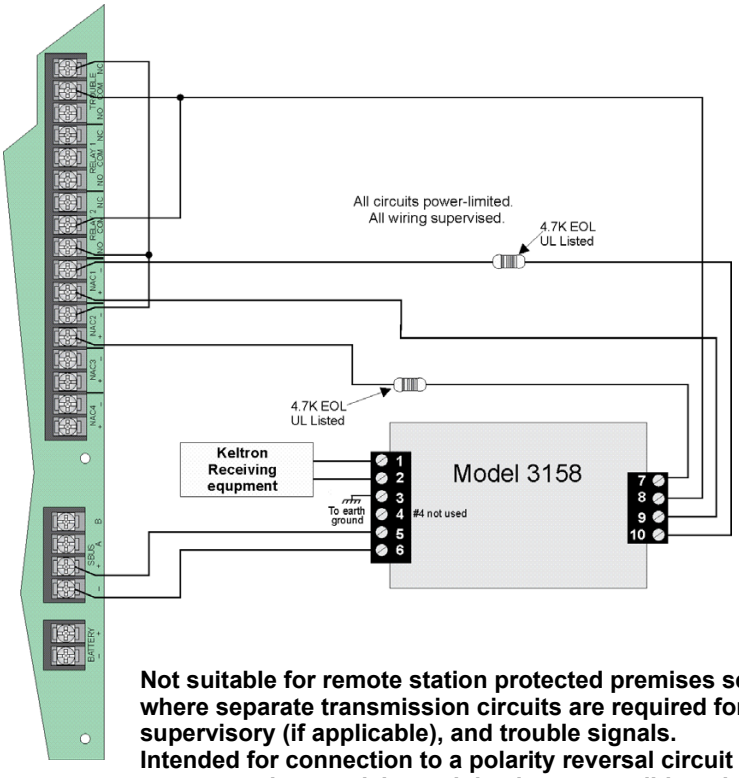
The control panel is compatible with Keltron Model 3158, used for direct connection to a Keltron receiver. The 3158 reports alarms, supervisories, and troubles.

The steps for connecting the 3158 to the control panel. Refer to the 3158 installation instructions for complete information.

1. Wire the 3158 to the control panel as shown in the connection list and Figure 4-37.
2. Wire the 3158 within 20 feet of the control panel. Wiring must be enclosed in conduit.
3. Program control panel Relay 2 for alarm.

4. Program NAC circuit 2 for alarm.
5. Program NAC circuit 1 for supervisory non latching.

Note: NACs must be programmed for continuous and non-silencing.



Not suitable for remote station protected premises service where separate transmission circuits are required for fire supervisory (if applicable), and trouble signals.
Intended for connection to a polarity reversal circuit of a remote station receiving unit having compatible ratings.

Figure 4-37 Keltron 3158 Connection to Control Panel

4.14.2 City Box Connection Using the 5220 Module

This section describes how to connect the control panel to a municipal fire alarm box or "city box" as required by NFPA 72 Auxiliary Protected Fire Alarm systems for fire alarm service. The city (master) box is an enclosure that contains a manually operated transmitter used to send an alarm to the municipal communication center which houses the central operating part of the fire alarm system.

City Box Standby Current: 0 (Notification supervision current accounted for in control panel draw.)

Alarm Current: 1 Amp for 1 second

The maximum coil and wire resistance (combined) must not exceed 30 ohms.

To install the 5220 for city box connection:

1. Use one of the knockouts on the right side of the control panel to connect the 5220 using a short piece of conduit (must not exceed 20 feet in length).
2. Wire the 5220 to the control panel as shown in Figure 4-38. This drawing also shows how to connect the city box coil to terminals 3 and 4 on the 5220. Do not install an EOL resistor in the terminals of the NAC circuit used for this application.
3. Connect earth ground wire to the 5220 chassis with mounting screw.
4. Program the NAC circuit used as a continuous and non-silencing. Refer to Section 7.5 for point programming, Section 7.4 for group settings, and Section 7.3 for zone settings and mapping. It is not possible to reset the remote indication until you clear the condition and reset the control panel.

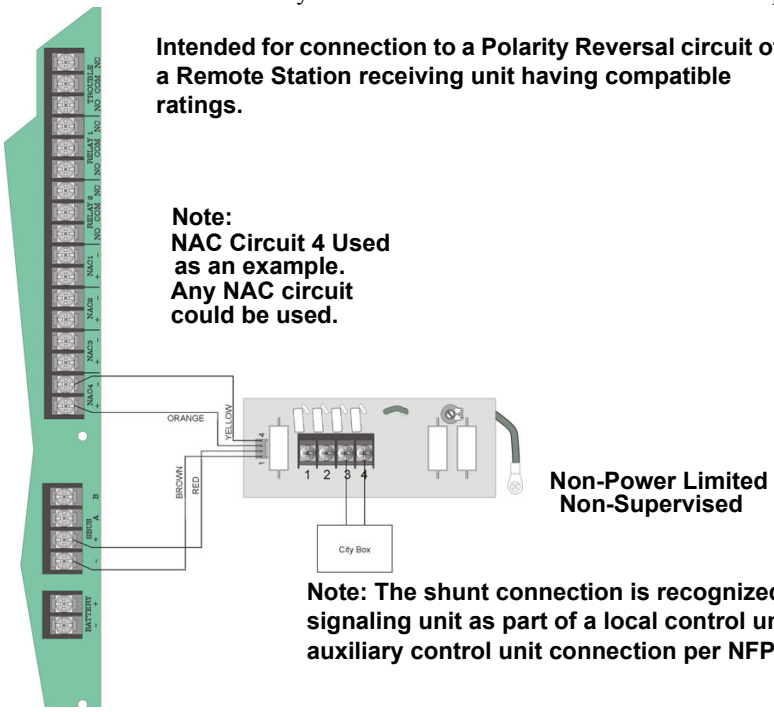


Figure 4-38 City Box Connection

4.14.3 NFPA 72 Polarity Reversal

Note: Intended for connection to a polarity reversal circuit of a control unit at the protected premises having compatible rating.

4.14.3.1 Using the 5220 Module

When the 5220 is wired and programmed for polarity reversal, it reports alarm and trouble events to a remote site. Alarms will override trouble conditions and it will not be possible to reset the remote indicator until the condition is cleared and the control panel is reset.

If an alarm condition occurs, the alarm relay will close, overriding the trouble condition.

Standby Current:	100 mA, 24 VDC
Alarm:	100 mA, 24 VDC

To install the 5220 for polarity reversal, follow the steps below:

1. Locate the knockout on the right side of the control panel cabinet to connect the 5220 using a short piece of conduit (must not exceed 20 feet in length).
2. Wire the 5220 to the control panel using the four-wire pigtail provided as shown in Figure 4-39. This diagram also shows how to connect the 5220 to the remote indicator. Do not install an EOL resistor in the terminals of the NAC circuit used for this application.
3. Connect earth ground wire to the 5220 chassis with mounting screw.
4. Program the NAC circuit used as continuous and non-silencing. Refer to Section 7.5 for point programming, Section 7.4 for group settings, and Section 7.3 for zone settings and mapping. It is not possible to reset the remote indication until you clear the condition and reset the control panel.

5. If necessary, adjust loop current using the potentiometer (R10) on the 5220 board. Normal loop current is 2-to-8 mA with a 1k ohm remote station protected premise unit. Maximum loop resistance is 3k ohm.

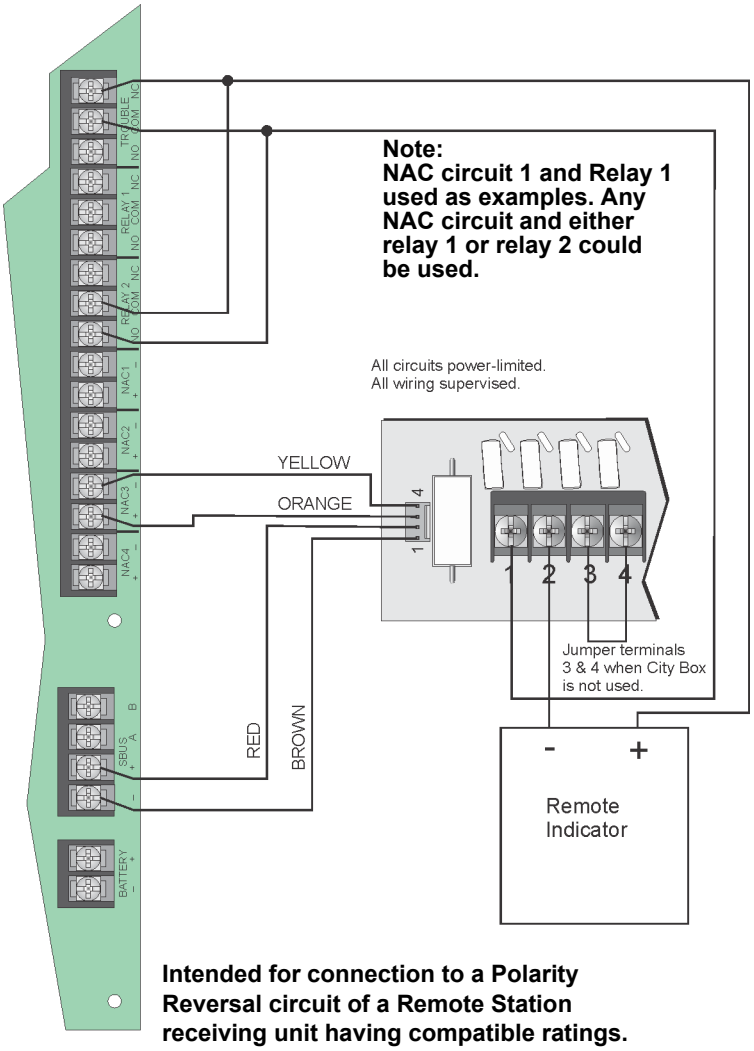


Figure 4-39 Polarity Reversal Connection Using the 5220 Module

4.14.3.2 Using the 7644-L8* Module

When the 7644 is used for polarity reversal, it allows alarm and trouble events to be reported to a remote site. Alarms will override trouble conditions and it will not be possible to reset the remote indicator until the condition is cleared and the control panel is reset.

To install the 7644-L8 for polarity reversal:

1. Wire the 7644-L8 to the control panel as shown in Figure 4-40. Do not install an EOL resistor on the terminals of the NAC circuit used.

   Note: Use only NAC circuits on the control panel for reverse polarity.

2. Program the NAC circuit as a notification circuit. See Section 7.5.2.
3. Map the group to activate constant on from the zone event. See Section 7.3.1.3.
4. Program the output group characteristics as non-silenceable and reverse polarity. See Section 7.4.1.2.

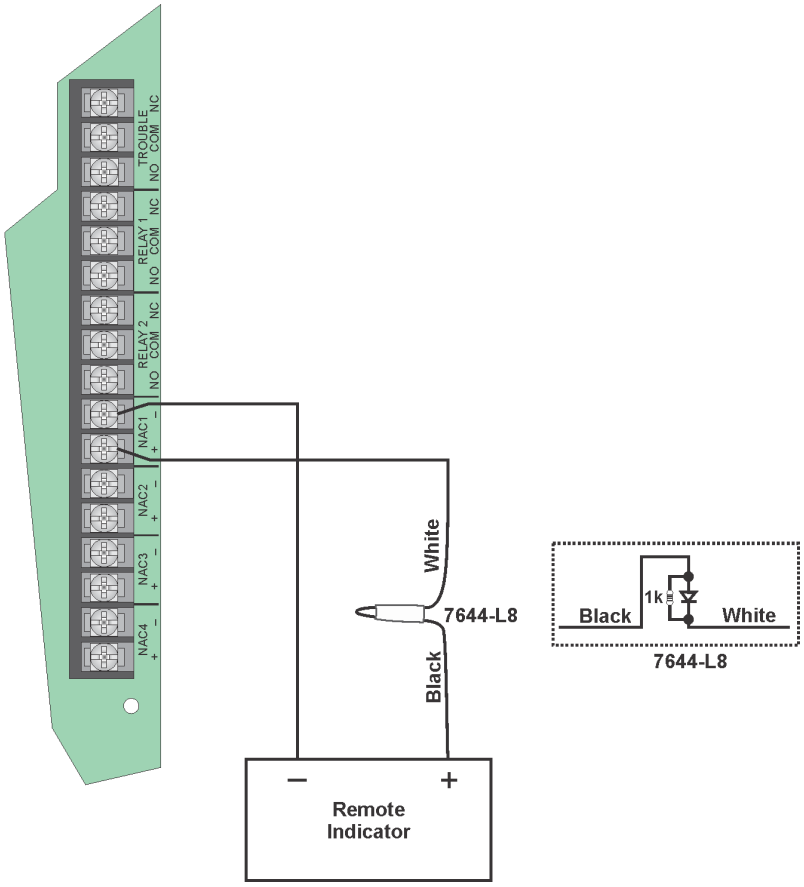


Figure 4-40 Polarity Reversal Connection Using the 7644-L8

*Note: *When ordering this part, request as P/N 7644-L8*

4.14.4 Using the SD500-ARM Addressable Relay Module

When the SD500-ARM is wired for polarity reversal, it reports alarm and trouble events to a remote site. Alarms will override trouble conditions and it will not be possible to reset the remote indicator until the condition is cleared and the control panel is reset.

Relay 2 must be programmed for Alarm (default).

Note: If you need to transmit supervisories or trouble conditions, additional SD500-ARM modules must be added. Use relay 1 to transmit supervisory conditions. Use the trouble relay to transmit trouble conditions.

Wire the SD500-ARM as shown in Figure 4-41.

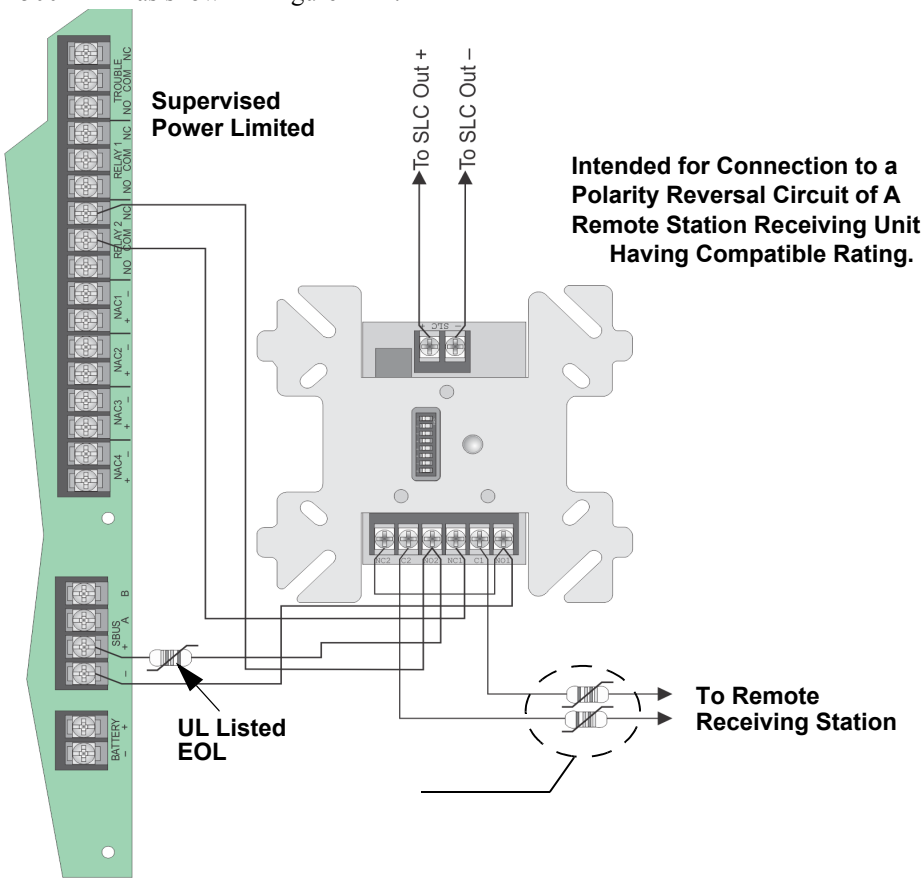


Figure 4-41 Polarity Reversal Connection Using the SD500-ARM Module

4.14.5 Using a MR-201/T Control Relay From Air Products

When the MR-201/T control relay is wired for polarity reversal, it reports alarm and trouble events to a remote site. Alarms will override trouble conditions and it will not be possible to reset the remote indicator until the condition is cleared and the control panel is reset.

If an alarm condition occurs, the alarm relay will close, overriding the trouble condition.

Current:	15 mA max.
Operating Voltage:	24 VDC nominal
Resistance:	4 KΩ

To install the MR-201/T for polarity reversal, follow the steps below:

1. Wire the MR-201/T as shown in Figure 4-42.

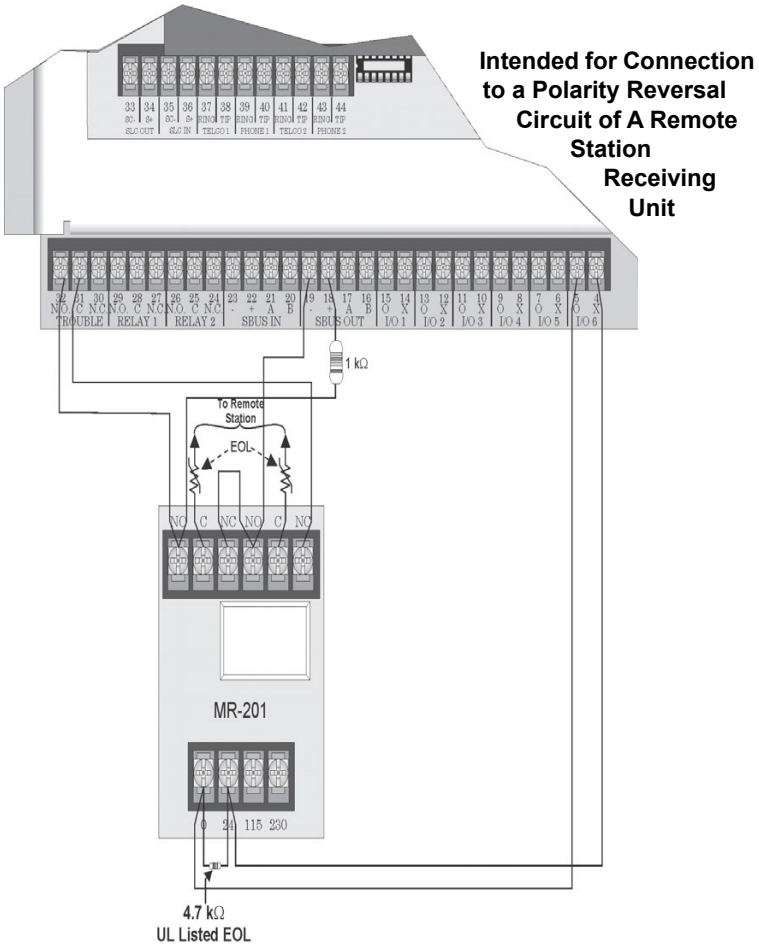


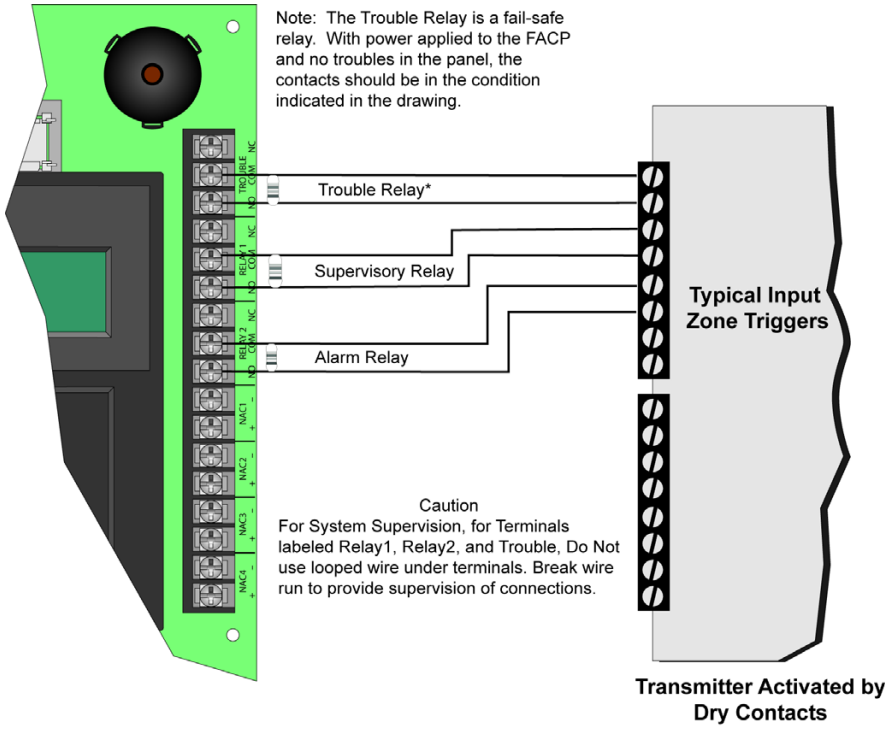
Figure 4-42 Polarity Reversal Connection Using the MR-201/T Relay

2. Program the NAC circuit for non silence NAC circuit (see Section 7.4.1).

Note: If you need to transmit supervisories or trouble conditions, additional relay modules must be added. Use relay 1 to transmit supervisory conditions. Use the trouble relay to transmit trouble conditions.

4.14.6 Transmitter Activated by Dry Contacts

This section describes the connection of a UL 864 listed remote station transmitter to the IFP-100 FACP dry contacts. The FACP contacts must be supervised by the remote station transmitter module using end-of-line resistors (ELRs) with a value determined by the transmitter manufacturer. Power is also provided by the remote station transmitter manufacturer. Refer to the remote station transmitter manufacturer's manual for details.



Section 5
IDP and SD SLC Device Installation

Caution!

To avoid the risk of electrical shock and damage to the unit, power should be OFF at the control panel while installing or servicing

5.1 List of IDP SLC Devices

The following IDP SLC devices can be used with the control panel. See the appropriate section number in this manual or the device installation instructions (packaged with the device) for more information.

IDP Part Number	Model Name/Description	Section/ Install Sheet PN
IDP-Photo	Photoelectric smoke detector	I56-3611-000
IDP-Photo-T	Photoelectric smoke detector with thermal (135°F)	
IDP-PhotoR	Photoelectric replacement smoke detector with remote test capability in DNR	I56-3569-000
IDP-Acclimate	Multi criteria photoelectric smoke detector with thermal (135°F)	I56-3611-000
IDP-Beam	Reflected beam smoke detector without test feature	I56-2735-00
IDP-Beam-T	Reflected beam smoke detector with test feature	
DNR/DNRW	Duct smoke detector housing. Non-relay (PhotoR sold separate)	I56-3051-00
IDP-Heat	Fixed temperature thermal detector (135°F)	I56-3608-00
IDP-Heat-ROR	Rate-of-rise thermal detector with 135° fixed temperature	
IDP-Heat-HT	Fixed high temperature thermal detector (190°F)	
IDP-Pull-SA	Addressable single action pull station	I56-3606-00
IDP-Pull-DA	Addressable dual action pull station	I56-3605-00
IDP-ISO	Fault isolator module	I56-2729-00
ISO-6	Six Fault isolator module	I56-4096-00
IDP-Monitor	Monitor module	I56-3603-00
IDP-Minimon	Mini monitor module	I56-3604-00
IDP-Monitor-2	Dual input monitor module	I56-3614-00
IDP-Monitor-10	10 input monitor module	I56-2731-00
IDP-Relay	Addressable relay module	I56-3601-00
IDP-Relay-6	Six relay control module	I56-2732-00
IDP-RelayMon-2	Multiple Module with 2 Relay Outputs and 2 Monitor Inputs	I56-3734-00
IDP-Zone	Addressable zone interface module	I56-3602-00
IDP-Zone-6	Six zone interface module	I56-2733-00
IDP-Control	Supervised control module	I56-3600-00
IDP-Control-6	Six circuit supervised control module	I56-2734-00
IDP-FIRE-CO	CO Smoke Detector	I56-3946-00
B200S/IV	Intelligent sounder base. White or Ivory	I56-3387-00
B200SR/IV	Intelligent sounder base. White or Ivory	I56-3392-00
B210LP	6" mounting base	I56-
B224BI/IV	6" isolator base. White or Ivory	I56-0725-00
B224RB/IV	6" relay base. White or Ivory	I56-3737-00
B501	4" mounting base	I56-3738-00

B200SR-LF/IV	Low Frequency Sounder Base. White or Ivory	I56-4152-00
B200S-LF/IV	Low Frequency Sounder Base. White or Ivory	I56-4151-00
B200S/IV	Intelligent sounder base. White or Ivory	I56-3387-00
IDP-PHOTO-W/IV	Photoelectric smoke detector. White or Ivory	I56-6531-00
IDP-PHOTO-R-W/IV	Photoelectric replacement smoke detector with remote test capability in DNR. White or Ivory	I56-6532-00
IDP-PHOTO-T-W/IV	Photoelectric smoke detector with thermal (135°F) White or Ivory	I56-6534-00
IDP-HEAT-W/IV	Fixed temperature thermal detector (135°F). White or Ivory	I56-6533-00
IDP-HEAT-ROR-W/IV	Rate-of-rise thermal detector with 135° fixed temperature. White or Ivory	I56-6533-00
IDP-HEAT-HT-W/IV	Fixed high temperature thermal detector (190°F). White or Ivory	I56-6533-00

5.2 List of SD SLC Devices

The following SD SLC devices can be used with the control panel. See the appropriate section number in this manual or the device installation instructions (packaged with the device) for more information.

Note: The control panel supports the use of either SD SLC devices or IDP SLC devices. You cannot install both SLC device types on this control panel.

Model Number	Model Name/Description	Installation Instructions PN
SD505-PHOTO	Photoelectric smoke detector	150955
SD505-HEAT	Absolute temperature heat detector. Trip point range from 135°F–150°F (0°C–37°C)	
SD505-6AB	6" base for use with the SD505-AHS, SD505-AIS, and SD505-APS	150955
SD505-6IB	6" short circuit isolator base for use with the SD505-AHS, SD505-AIS, and SD505-APS	151175
SD505-6RB	6" relay base for use with the SD505-AHS, SD505-AIS, and SD505-APS	151192
SD505-6SB	6" sounder base for use with the SD505-AHS, SD505-AIS, and SD505-APS SLC devices	151191
SD505-DUCT	Duct Smoke Detector. Duct Housing including the SD505-APS Analog Photoelectric Smoke Sensor. Intake tubing for duct available in three lengths: SD505-T2 (2.5 foot); SD505-T5 (5 foot); SD505-T10 (10 foot)	1700-09882
SD505-DUCTR	Duct Detector housing with relay base. Duct housing with relay base including SD505-APS Analog Photoelectric Smoke detector pre-installed	
SD500-PS/-PSDA	Single or dual action addressable pull station	151177
SD500-AIM	Addressable input module (switch input), standard size, DIP switch configured	151071
SD500-MIM	Mini input monitor module (switch input), small size, DIP switch configured. Fits in single-gang box with manual pull station switch	151071
SD500-ANM	Addressable notification module	151109
SD500ARM	Addressable relay module DIP switch configured	151091
SD500-SDM	Addressable smoke detector module. Use to assign an address to a loop of conventional devices	151193
SD500-LIM	Line isolator module. Fits in a double gang box.	151125
SD505-DTS-K	Remote test switch & LED indicator for the SD505-DUCTR	1700-09882

5.3 Maximum Number of Devices

The IFP-100 supports IDP or SD devices on one IFP system. The maximum number of devices per system varies depending on device protocol. Device support is as follows:

- IDP Devices–An IFP system can support a total of 99 IDP detectors *and* 99 IDP modules.

  OR

- SD Devices–An IFP system can support a total of 99 SD SLC detectors and modules, in any combination.

5.4 Wiring Requirements for SLC Devices

The following information applies to all SLC devices. Refer to the section that describes the type of device you are installing for details.

5.4.1 Wiring SLC in Style 4 (Class B) Configuration

No special wire is required for addressable loops. The wire can be untwisted, unshielded, solid or stranded as long as it meets the National Electric Code 760-51 requirements for power limited fire protective signaling cables. Wire distances are computed using copper wire.

Maximum wiring resistance is 40 ohms for IDP device and 50 ohms for SD devices.

Maximum loop length depends on the wire gauge. See Table 5-1 and Table 5-2.

Table 5-1 Maximum wiring distance for IDP Devices

Wire Gauge	Max. Distance for IDP
22 AWG	1200 feet
18 AWG	3100 feet
16 AWG	4900 feet
14 AWG	7900 feet
12 AWG	10,000 feet

Table 5-2 Maximum wiring distance for SD Devices

Wire Gauge	Max. Distance for SD
22 AWG	1500 feet
18 AWG	3900 feet
16 AWG	6200 feet
14 AWG	10,000 feet

Figure 5-1 and Figure 5-2 show how wire length is determined for out-and-back tap and T-tap style wiring.

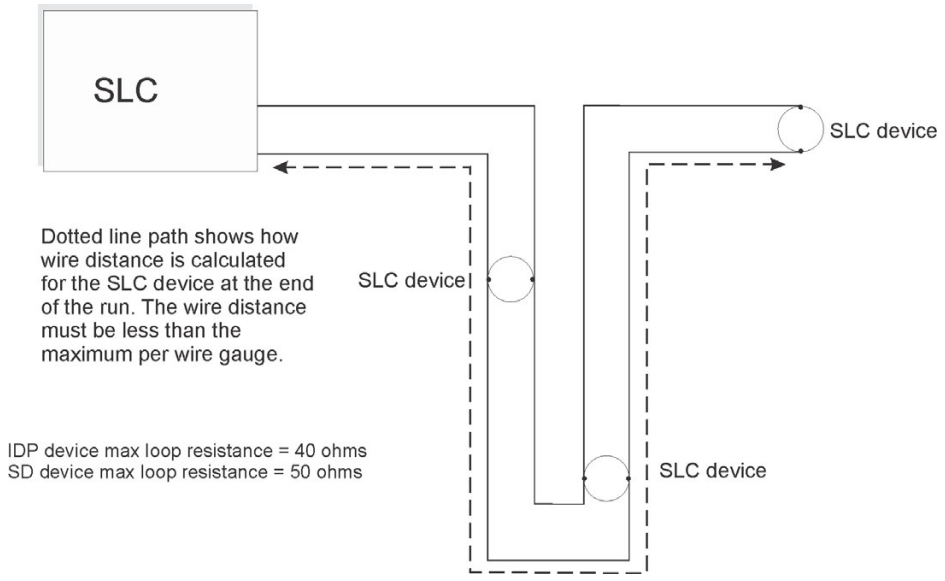


Figure 5-1 Calculating wire run length for a simple out and back tap

When using T-taps, the total length of all taps and the main bus must not exceed 40,000 feet. This requirement must be met in addition to the maximum distance requirements for the various wire gauges.

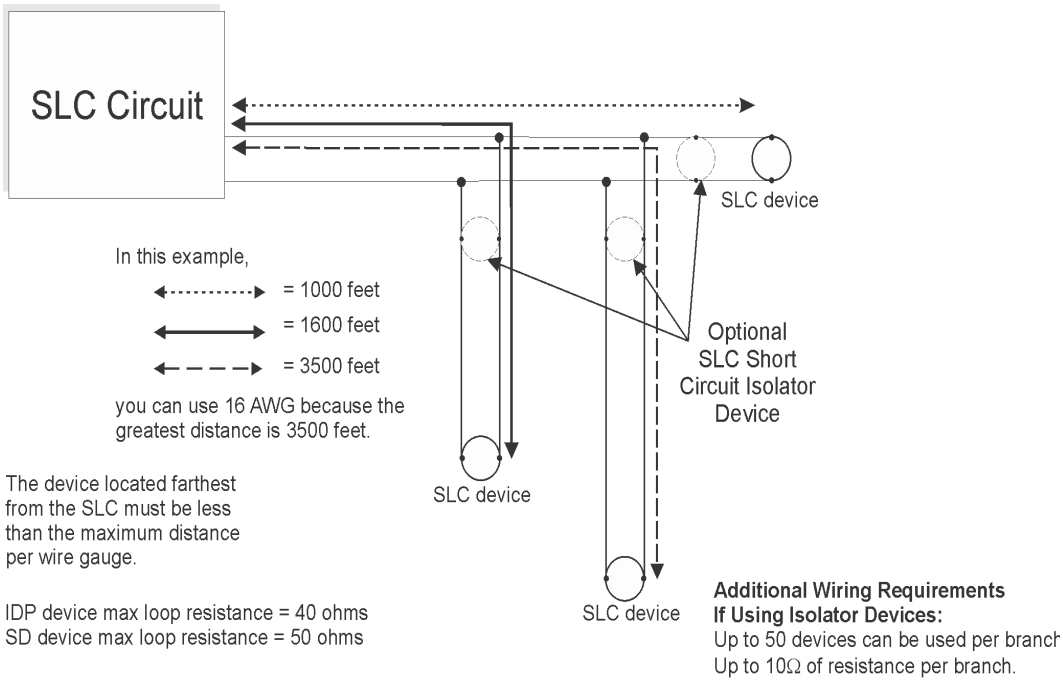


Figure 5-2 Calculating Wire Run Length for a T-tap

5.4.2 Wiring SLC in Style 6 & 7 (Class A) Configuration

Figure 5-3 illustrates how to wire the SLC loop for Style 6 or Style 7 Class A installations.

Note: Style 6 does not use short circuit isolator devices.

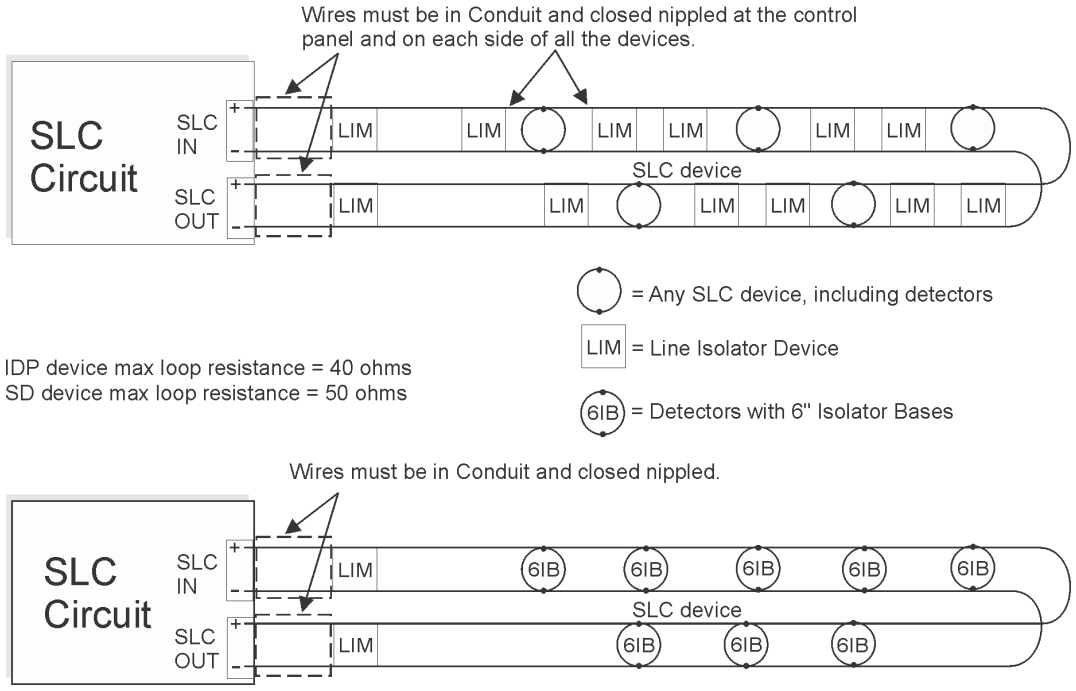


Figure 5-3 Class A SLC Configuration

Note: No t-taps allowed on class A SLC loops

5.5 Wiring IDP SLC Detectors

Caution
For proper system supervision do not use looped wire under terminals marked SLC + and – of the SLC device connectors. Break wire runs to provide supervision of connections.

This section describes how to install IDP heat and smoke detectors. All detectors ship with installation instructions. Refer to the detector's installation instructions for more detailed information.

To wire IDP detectors:

1. Wire device bases as shown in Figure 5-4.

2. Set the address for each device as described in Section 5.6.

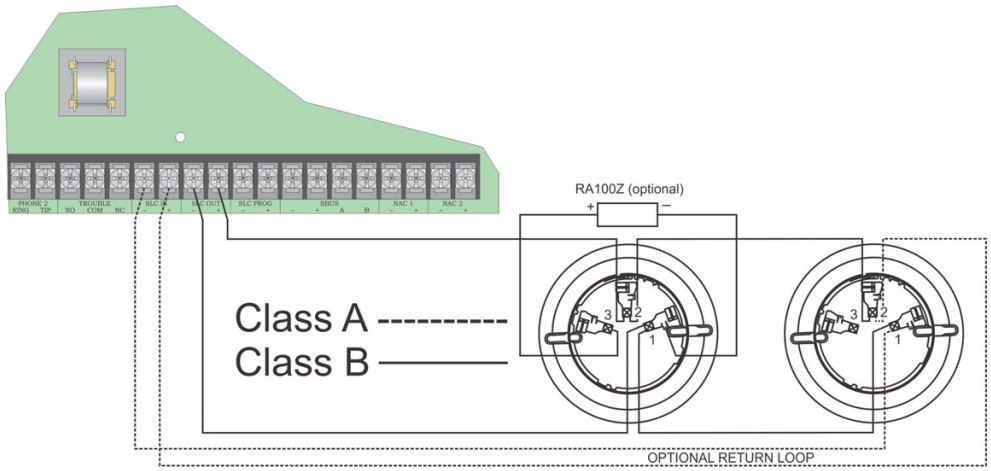


Figure 5-4 Heat and Smoke Detector Connection to the Panel.

5.6 Addressing IDP SLC Devices

All IDP devices are addressed using the two rotary dials that appear on the device board. Use the *ONES* rotary dial to set the ones place in a one or two digit number, and use the *TENS* rotary dial to set the tens place in a two digit number.

IDP device addresses are handled differently than SD device addresses. The control panel recognizes when an IDP detector or IDP module is installed. For this reason, IDP detectors can be assigned any unique address from 1 to 99, and IDP modules can be assigned any unique address from 1 to 99. Unlike SD detectors and modules which share addresses 1 through 99, there can be an IDP detector using address 1 and an IDP module using address 1. 0 is an invalid address.

Example 1: To select device address 1, turn the *ONES* rotary dial to **1** and the *TENS* rotary dial to **0** as shown in Figure 5-5.

Example 2: To select device address 42, turn the ONES rotary dial to **2** and the TENS rotary dial to **4** as show in Figure 5-5.

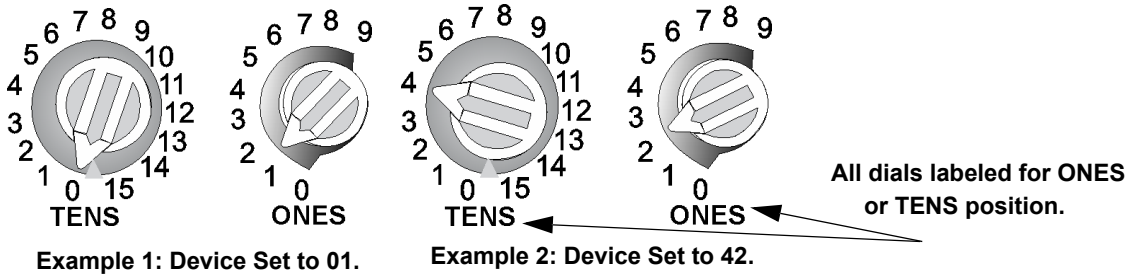


Figure 5-5 IDP SLC Device Addressing Using Rotary Dials

5.7 Wiring SD Detectors

The information in this section applies to the following SD models: SD505-HEAT Heat Detector and SD505-PHOTO Photoelectric Smoke Detector.

To Wire SD Detectors

1. Wire device bases as shown in Figure 5-6.
2. Set the address for each device as described in Section 5.8.

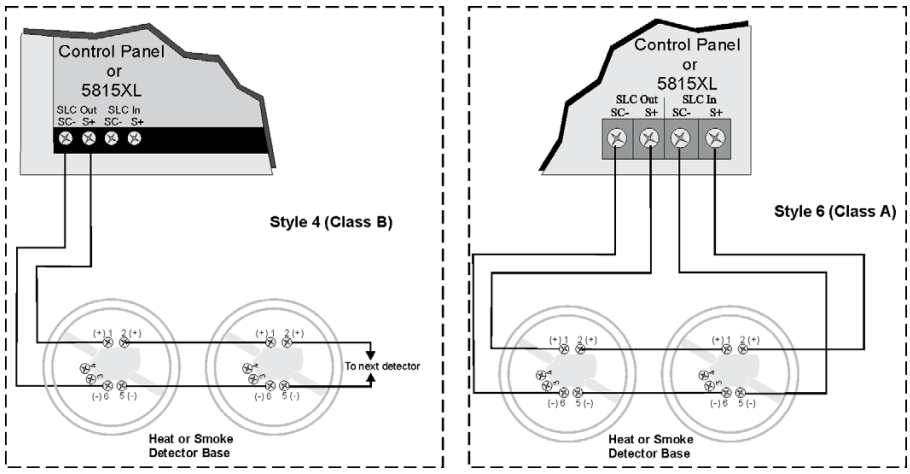


Figure 5-6 Heat or Smoke Detector Connection to the FACP

5.8 Addressing SD Devices

This section tells how to address detectors and modules.

5.8.1 SD505-PHOTO or SD505-HEAT

The SD505-PHOTO photoelectric smoke detector and SD505-HEAT heat detector are easily addressed at the FACP. The Installer Code is required to perform this task.

To address a SD505-PHOTO or SD505-HEAT:

1. Connect a detector base temporarily to the programming terminals as shown in Figure 5-7. (You can use the same base for each detector.)

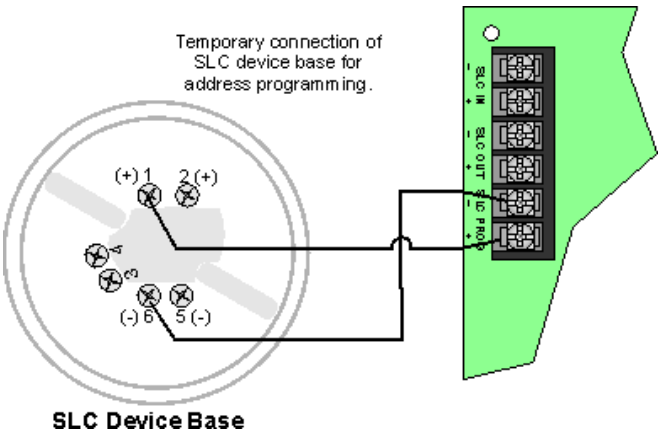


Figure 5-7 Temporary Connection of Detector Base to Panel for Addressing

2. Enter the Installer code, then press ENTER.
3. Select 2 for Point Functions.
4. Select 3 for Set SLC Dev Addr.

5. Select “Yes” by pressing the up arrow, then press ENTER. (The panel will go into trouble at this point. You can use the SILENCE key to stop the PZT. The trouble will clear automatically when the panel reinitializes when you finish programming.)
6. When the wait message clears, the following options display:

   1- for Read Address. Use to read (or check) a single detector’s address.

   2- for Write Address. Use to program a single detector’s address.

   3- for Seq. Programming. Use to program more than one detector in sequential order.
7. If you are changing addresses, write the programmed address on the back of the device.
8. To exit press left arrow until fully exited.

5.8.2 SLC Devices with DIP Switches

Input and relay module addresses are set using the DIP switches on the module board. The chart below shows the available addresses. For example, to select address 3, place DIP switches 1 and 2 in the up position. The range of valid addresses is 1-127. 0 is an invalid address.

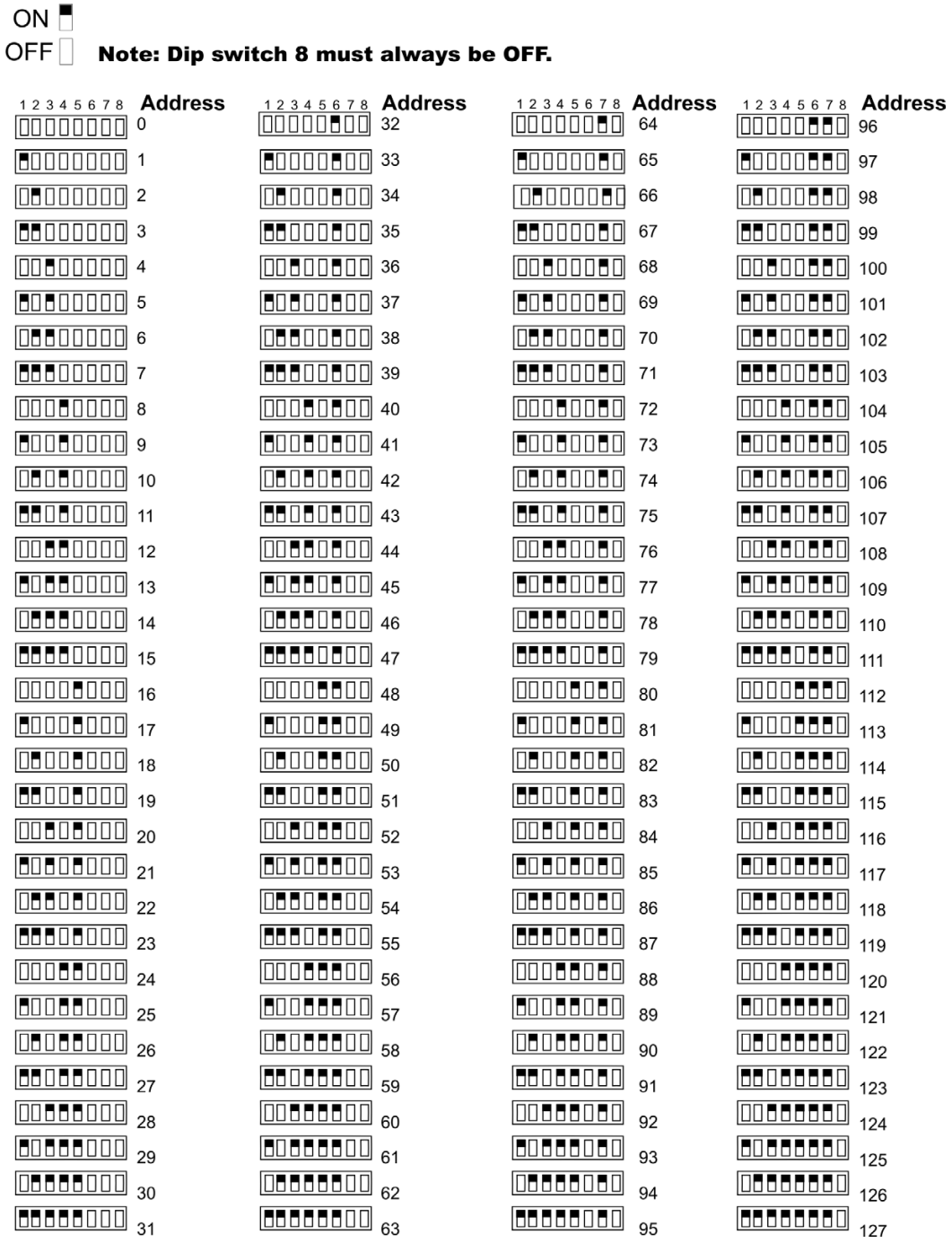


Figure 5-8 SD SLC Device Addressing Using DIP Switches

Section 6
Programming Overview

This section of the manual is intended to give you an overview of the programming process. Please read this section of the manual carefully, especially if you are programming the control panel for the first time.

The JumpStart feature automates many programming tasks and selects default options for the system. You will run JumpStart at least once when you are installing the system. See Section 6.2 for details. After you run JumpStart, you may need to do some additional programming depending on your installation. Section 7 of this manual covers manual programmable options in detail.

Programming the panel can be thought of as a three part process. You must program:

- System options. These are options that affect general operation of the panel (see Section 7.7 for details).
- Options for input points and zones. These are primarily options that control detection behavior of devices (see Section 7.3 and 7.5 for details).
- Options for output points and groups. This includes selecting characteristics for output groups and mapping output circuits to output groups (see Section 7.4 and 7.5 for details).

6.1 Security and Data Protection

Communication Security - Level 1

Stored Data Security - Level 0

Physical Security - Level 1

Access Control Security - Level 1

6.2 JumpStart AutoProgramming

The JumpStart feature allows for faster system setup. When you run JumpStart (immediately after addressing SLC devices), the system scans devices on all SLC loops and determines device type (for example, ionization smoke detector or heat sensor) and selects some system options based on the device type. This saves the installer from having to program options for each device. Depending on the application, the installer may need to make some changes after JumpStart completes.

See Section 6.2.3 for complete details about running JumpStart.

IMPORTANT
JumpStart is intended to be run one time only, immediately after SLC devices have been addressed and connected. JumpStart will reset all manually programmed options to default settings. Do not run JumpStart after you have configured the system.

6.2.1 Input Points

JumpStart will determine the number and type of input points (detectors or contact monitor modules) on each SLC loop. JumpStart assigns the correct detector type (heat, ionization or photoelectric), so the installer does not need to edit device type for detectors. Any contact monitor modules on the system will be assigned type “Manual Pull.” The installer will need to manually change the switch type if manual pull is not correct.

JumpStart creates one zone (Zone 1) and assigns all input points to Zone 1. Zone 1 is mapped to Output Group 1. If the system has an ECS-50W, ECS-125W, ECS-INT50W or ECS-DUAL50W, then Output Group 2 will also be

created and all input points will be mapped to both Group 1 and Group 2. After JumpStart completes, you can re-map to configure a multiple zone/output group system (see Section 7.4.1.2). For a general explanation of mapping, see Section 6.3.

6.2.2 Output Points

JumpStart creates three output groups and assigns output circuits as follows:

Circuits 1-4:
Configured as Notification and assigned to Group 1. JumpStart automatically programs Zone 1 to activate Group 1 using constant on output when an alarm condition occurs.

Circuit 5 (Relay 1):
Assigned to Group 124. JumpStart automatically programs Zone 1 to activate Group 124 using constant on output when a supervisory condition occurs.

Circuit 6 (Relay 2):
Assigned to Group 125. JumpStart automatically programs Zone 1 to activate Group 125 using constant on output when an alarm occurs.

Addressable output points (Relay modules, NAC Modules, Sounder Bases, Relay Bases):
All addressable relay devices will be configured as "Output Pt" (general purpose output point) and assigned to Group 1.

Note: Relay output is constant even if the zone activating the relay is programmed with an output pattern.

6.2.3 Running JumpStart

Run JumpStart immediately after you have addressed and connected all input devices (detectors, pull stations, and so on) and output devices (notification appliances, relays, and so on).

Note: If you need to install a few devices after you have run JumpStart, you can install them manually. Follow instructions in Section 7 for configuration.

To run JumpStart, follow these steps.

1. Press ENTER to view the Main Menu.
2. From the Main Menu Select 7 for the Program Menu.
3. From the next menu, select 6 for JumpStart.
4. The message "WARNING Will DELETE all system options" displays on the LCD. Select Yes to continue. A series of messages displays for the next several seconds. JumpStart scans the SLC loops for devices. This can take several minutes, depending on the number of devices attached.
5. When the message, "SLC FAMILY" message appears, select IDP or SD; depending on the type of SLC devices the panel is using, and press ENTER to accept.
6. When the message "Configuring System Done" displays, press any key to continue.

7. Select one of the following options from the menu that displays.

1- Review System	Press 1 if you need to review the JumpStart configuration.
2- Repeat JumpStart	Press 2 if you need to rerun JumpStart for any reason.
3- Accept Configuration	1. If you are ready to make the JumpStart configuration permanent, select 3. 2. The system will ask you if the installation contains duct detectors. If there are none, select 2 for No and skip to Step 8. If the system contains duct detectors, select 1 for Yes and continue with Step 3. 3. From the list that displays, select the SLC device that contains the duct detectors. 4. The first photoelectric or ionization detector on the system will display. Select 1 for DUCT and 2 for NonDUCT. 5. Press ▲ to select the next detector. Select 1 for DUCT and 2 for NonDUCT. Continue until all duct detectors have been selected. (Note: You can move backwards through the list with ▼). 6. When you reach the last detector on this device, press ◀. 7. The system will ask you if there are more duct detectors in the system. If there are, select 1 for Yes and repeat from Step 3. If there are no more duct detectors, select 2 for No and continue with Step 8. 8. The system will restart in 10 seconds. You can press 1 to restart immediately. 9. After the system resets, it will use the new JumpStart configuration.

6.3 Mapping Overview

This section of the manual is an overview of mapping. Details about how to select mapping options appear in the appropriate subsections in Section 7.

Mapping is an important concept with the control panel. In general terms, mapping is assigning or linking events to outputs that should activate when events occur. You do this by assigning input points to input zones, output points to output groups and then linking or mapping zones and output groups.

Figure 6-1 is a brief overview of the concept of mapping. The next several pages of the manual show these subjects in detail.

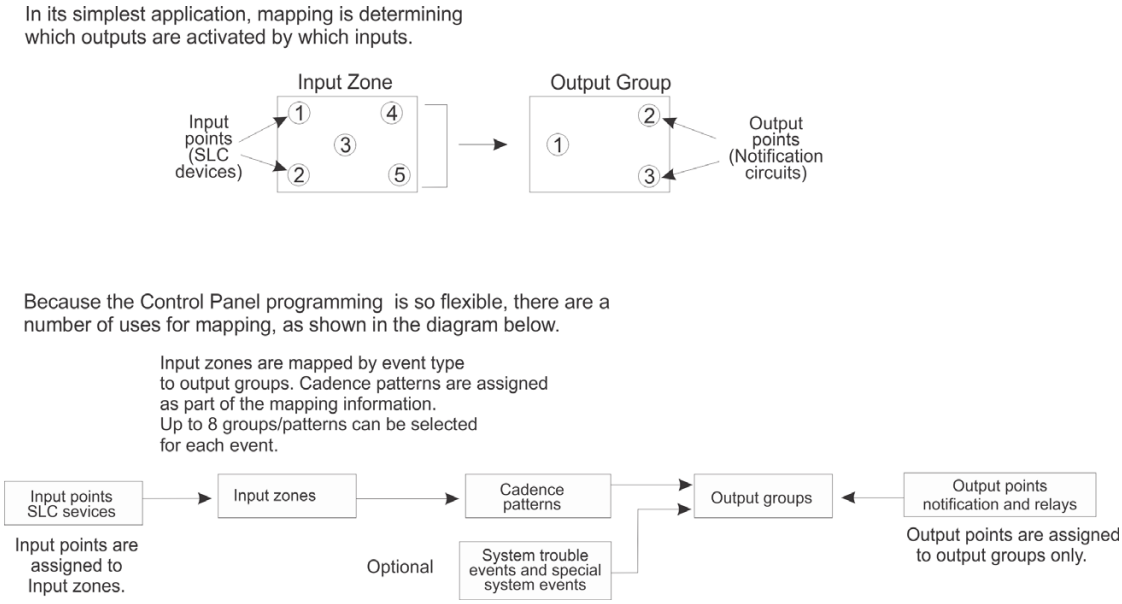


Figure 6-1 Mapping Overview

6.3.1 Input Point Mapping

Input points are assigned to input zones. Any input point can be assigned to any input zone. (Input points can be assigned to one zone only. An input point can be designated as “Unused,” which means it has not been assigned to a zone.)

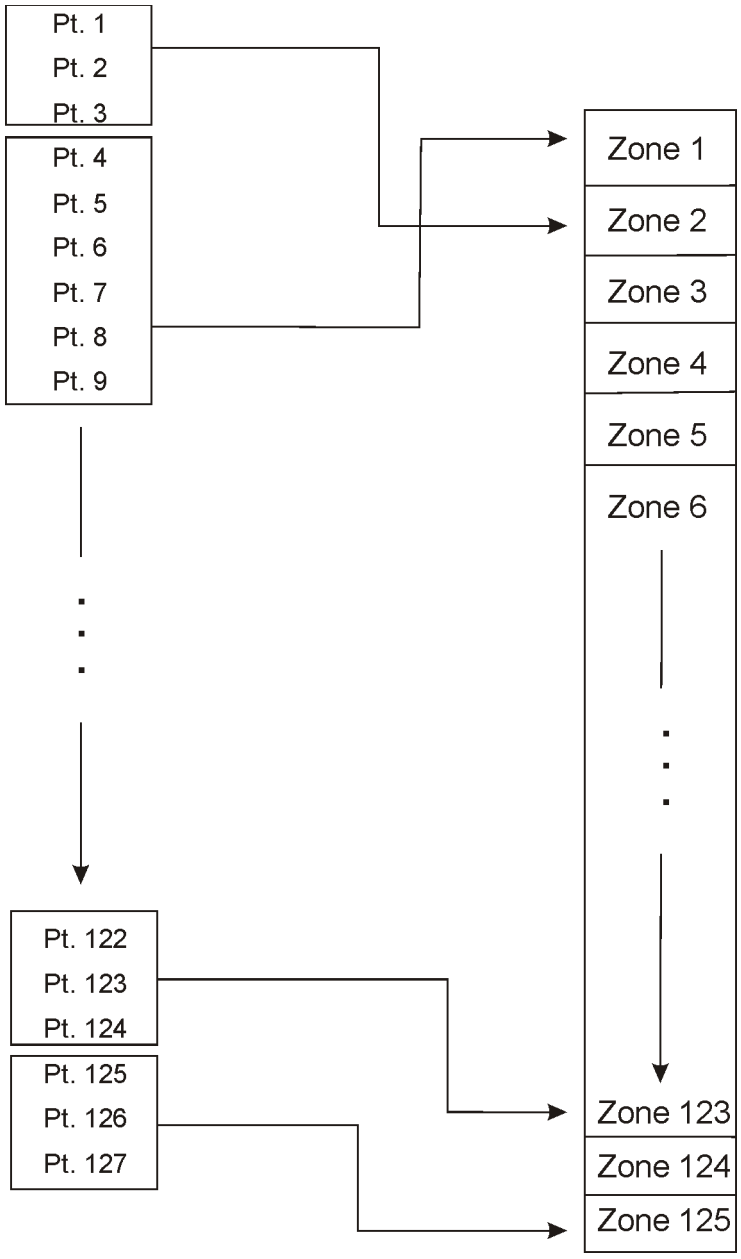


Figure 6-2 Input Point Assignment Example

6.3.2 Output Circuit Mapping

Figure 6-3 is a simple example showing how to assign notification and relay output circuits to groups. For an example of a simple floor above/floor below application, see Figure 6-5.

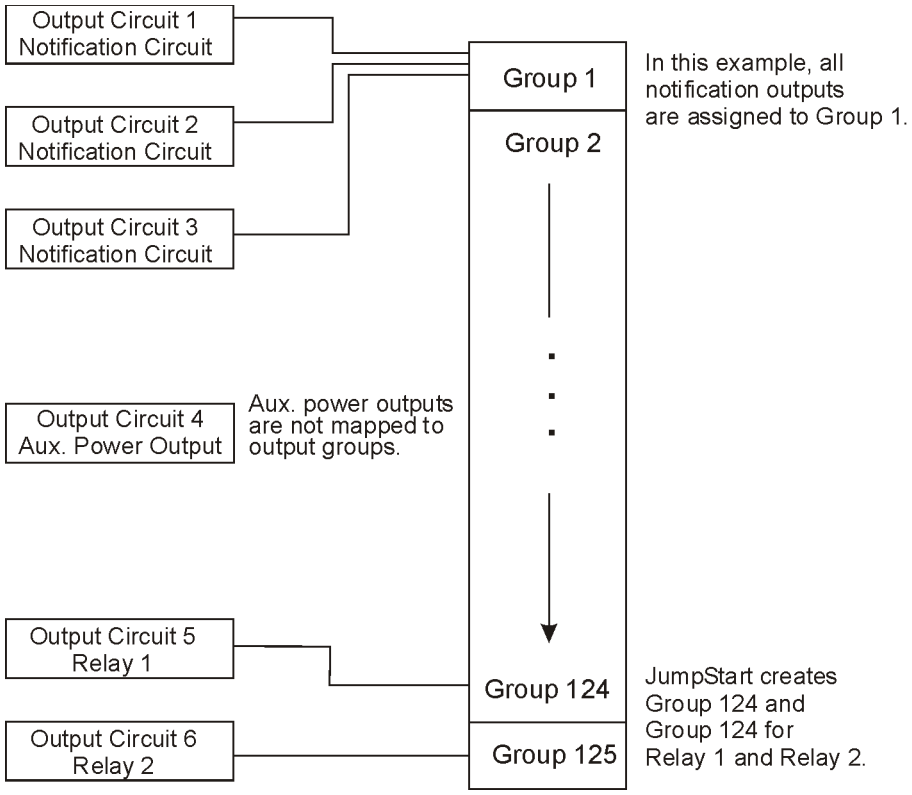


Figure 6-3 Assigning Output Circuits to Groups (Example)

6.3.3 Zone Event Mapping

There are 11 types of events that can occur in zones (see below). For each event type, you can activate up to 8 output groups and patterns. If it is necessary to map to more than 8 output groups, an output group template may be used (see Section 7.4.5 for information on output group templates). Event types are:

- Manual Pull Alarm
- Water Flow Alarm
- Detector Alarm (heat or smoke detectors)
- Aux 1 and Aux 2 Alarm (user-specified alarm types)
- Pre-alarm
- Supervisory
- Trouble
- Status Point
- CO Alarm
- CO Supervisory

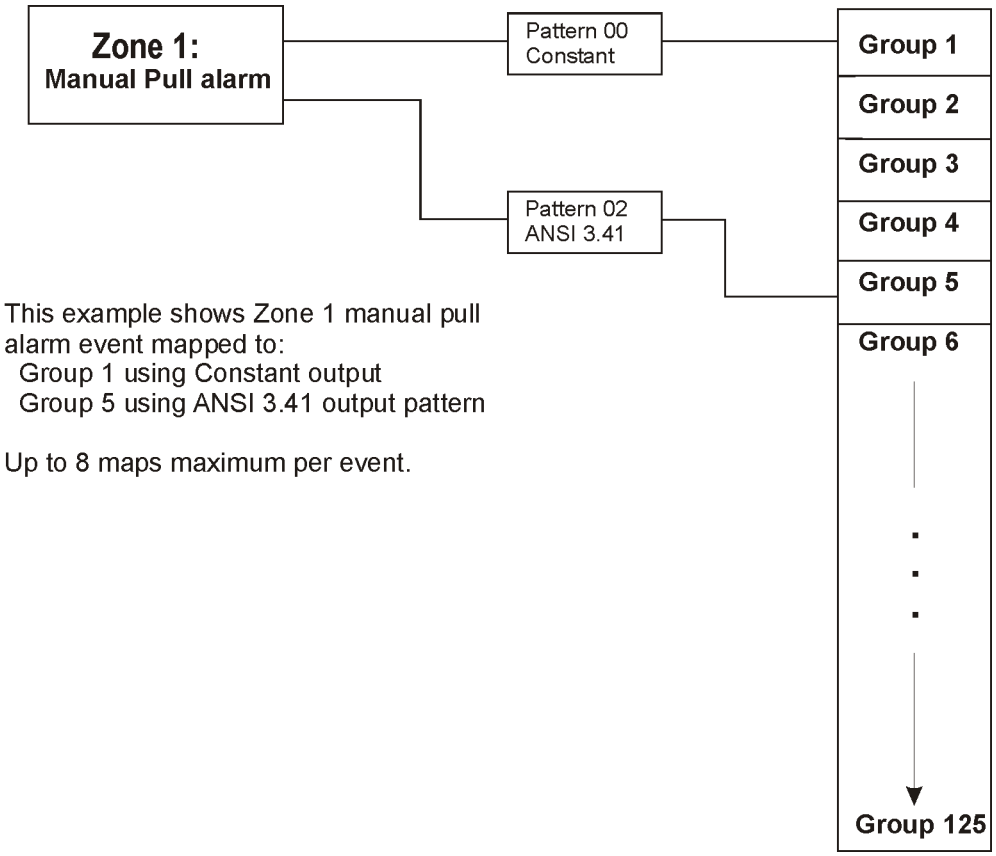


Figure 6-4 Example of Zone Events Mapped to Output Groups and Patterns

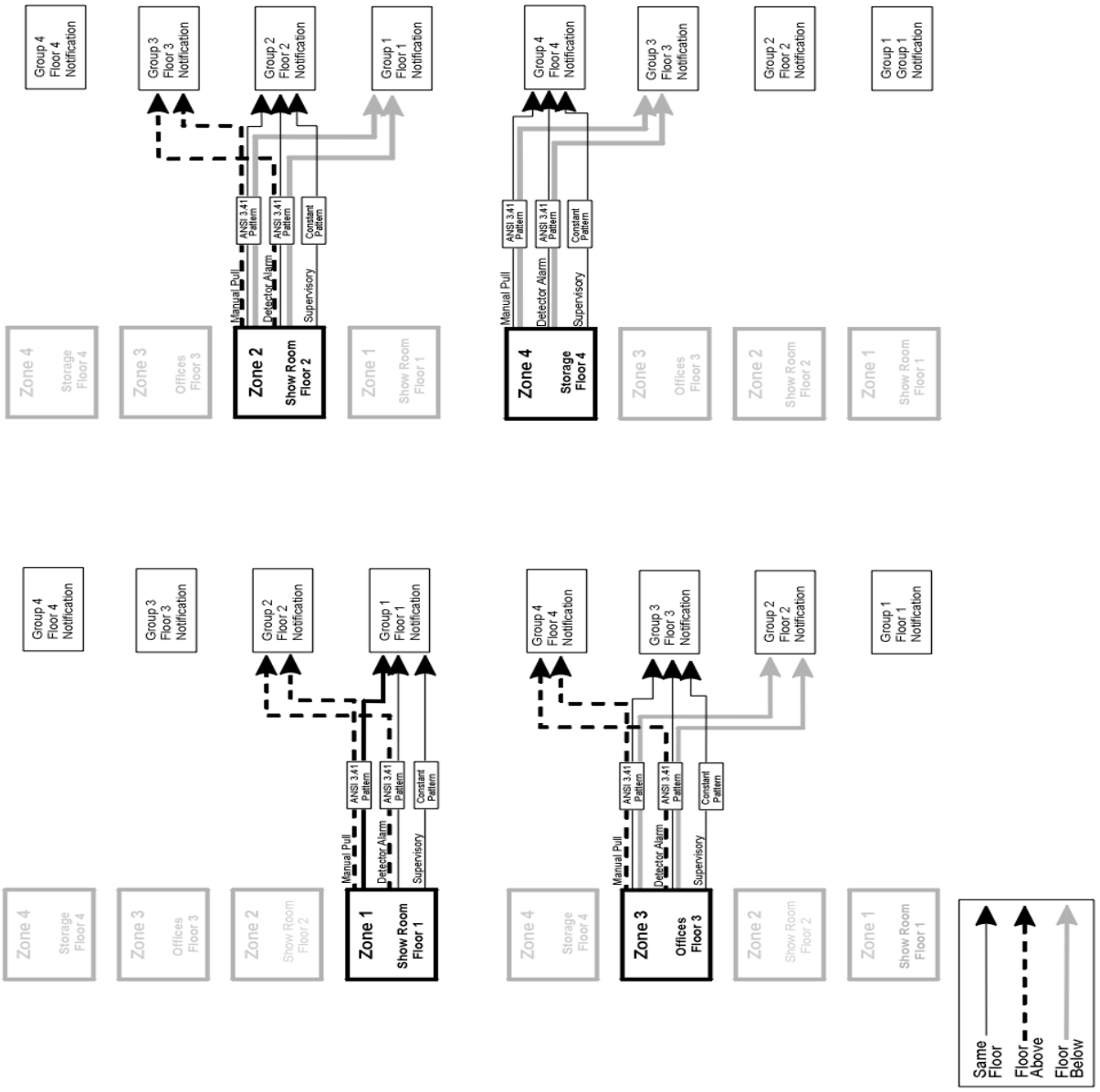


Figure 6-5 Example of Zone Events Mapped to Output Groups and Patterns

6.3.4 Mapping LED Points

Figure 6-6 is a simple example showing how LED points are mapped to zones and output groups. Typically you would create two output groups for each zone, one for alarms and one for troubles. (LED points are available when Models 5865-3/4 and/or 5880 are used with the system.)

Mapping LEDs to Zones and Output Groups

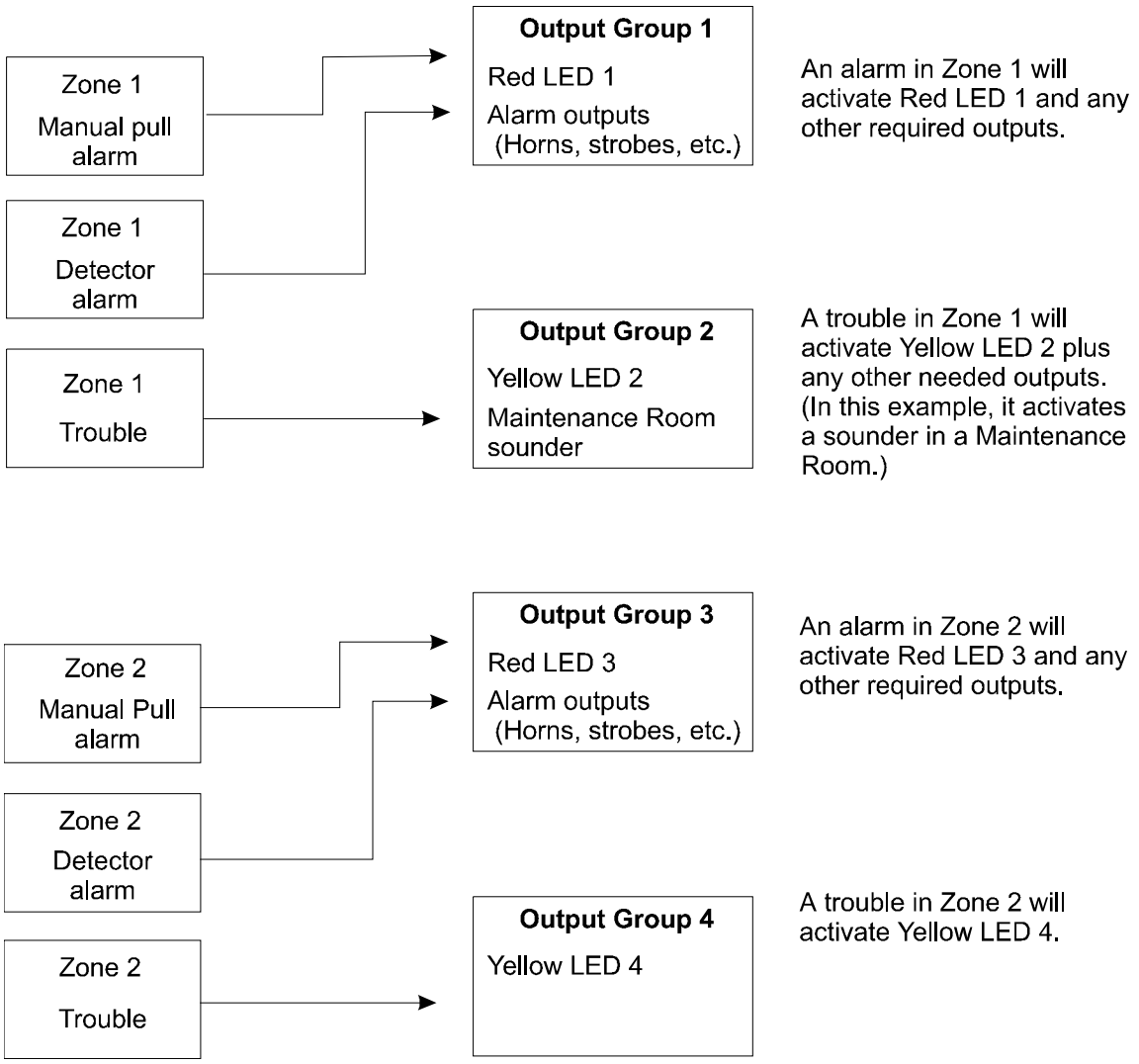


Figure 6-6 Example of LED Points Mapped to Output Groups (applies to Models 5865-3/4 and 5880)

6.4 Programming Using the 5650/5651 Silent Knight Software Suite

You can use the 5650/5651 Silent Knight Software Suite (SKSS) to program the control panel onsite or remotely. SKSS is an optional software package that lets you easily program the control panel using a Windows-based computer and a modem* (not sold by Silent Knight). When using SKSS, you can set up the programming options for the panel, save the options in a file, then download the file to the panel. You connect to the control panel

directly using the control panel's onboard USB or serial port or remotely using a modem. If you need to connect to an older control panel that does not have a USB port, and your laptop does not have a serial port, use a USB to serial converter. SKSS is available Online. See the SKSS manual (PN 151239) for more information.

* *See Section 1.3 for a list of modems that have been tested for compatibility with the control panel and SKSS.*

6.5 Programming Using an Annunciator

You can program the control panel from a system annunciator, using either the control panel's on-board annunciator or a remote annunciator.

The following subsections describe programming basics, including a description of editing keys available for programming and how to move through programming menus. Section 7 contains specific information about individual programming options.

6.5.1 Entering / Exiting the Programming Menu

To enter the Programming Menu:

1. Press ENTER key to bring up the Main Menu (see Figure 6-7).
2. Enter the Installer Code (factory programmed default code is 123456) if prompted.

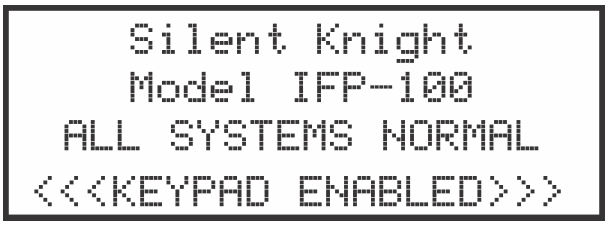


Figure 6-7 Keypad Enabled Screen

3. press 7. The menus described in Section 7 of this manual will display. Section 6.6 of this manual is a quick reference listing all programmable options and JumpStart defaults.

To exit the programming menu:

When you have completed working with the menus, press left arrow several times until you are exited from programming mode. Two prompts will display. The first prompt is to make sure you intended to leave the Program Menu (select Yes or No as appropriate). The second prompt is for accepting all changes. If you select No, any changes you have made since you entered the Program Menu will have no effect.

6.5.2 Moving through the Menus

Figure 6-8 shows how to move through Program Menu screens, using the System Options screen as an example.

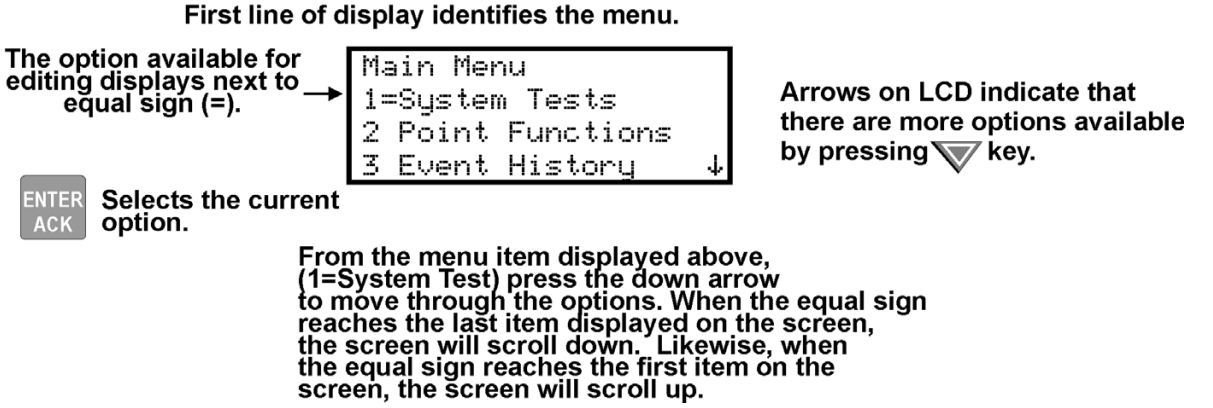


Figure 6-8 Moving through Program Menu

6.5.3 Selecting Options and Entering Data

There are several ways to make programming selections using the control panel depending on which screen you are currently using. The chart below is a generic explanation.

To	Press
Select from a menu	Enter the number of the option.
Enter numeric data	Press the appropriate number on the annunciator.
Enter text (alphanumeric data)	Enter each character individual by using the ▲ or ▼ arrow keys until the one you wish to select displays. Then press right arrow to select the character.
Select from a scrolling list	Use up arrow and down arrow to move through a list of available options. When the option you want to select is displayed, press ENTER.

6.5.4 Editing Keys

The keys shown in Figure 6-9 are available for use when you are in the Program Menu.

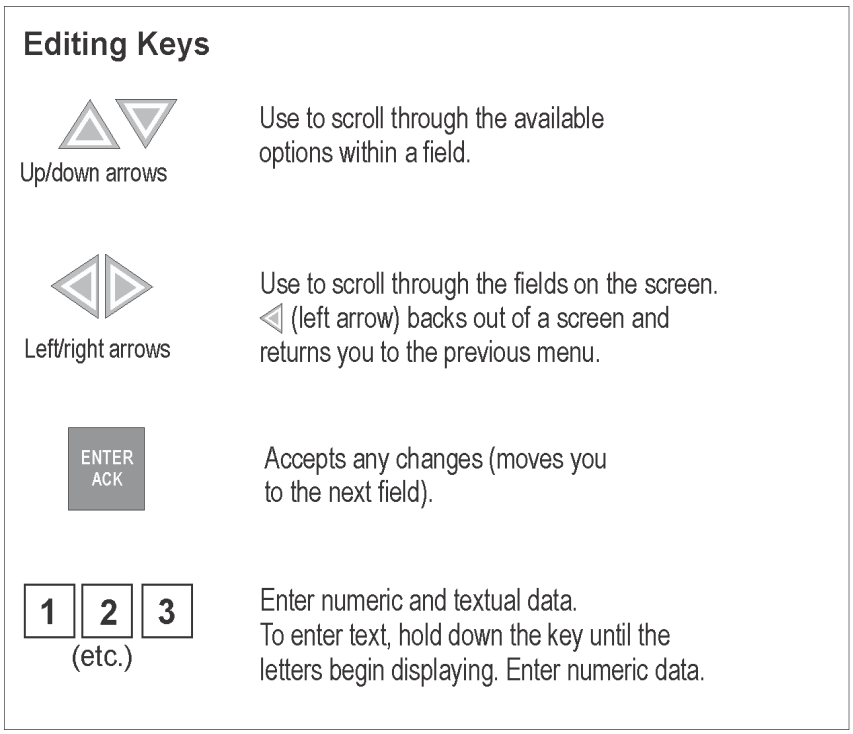


Figure 6-9 Editing Keys Available from Program Menu

6.6 Programming Menu Quick Reference

This section of the manual lists all Program Menu options in the order they appear on the sub-menus. Default settings are indicated in text or marked with an asterisk. The comments column provide quick information and a

reference to a section (if applicable) which has more detailed in information.

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Module	Edit Module	Select Module	Enter Module ID	Enter Module Name	Edit Module Settings (If applicable)	Section 7.2.1
	Add Module	RA-1000 Keystat.				Section 7.2.2
		RA-100 Keystation				
		RPS-1000 Pwr Sup				
		5824-Ser/Par/IO				
		5496 NAC Expand				
		5880-LED/IO Dev				
		5865-LED Annunc				
		ECS-50W[1] Voice Amplifier				
		ECS-125W[1] Voice Amplifier				
		ECS-INT50W[1] Internal Amplifier				
		ECS-DUAL50W[1] Voice Amplifier				
		ECS-VCM[1] Voice Control Module				
		ECS-RVM[1] Remote Voice Module				
	Delete Module	List of Modules				Section 7.2.3
	View Module List	List of Modules				Section 7.2.4
Note:	*1. If upgrading the FACP to application Version 11 or above on an older VIP system, the VIP references are replaced by the ECS titles relating to any VCM, RM or Amplifier expander assembly.*					
Zone	Edit Zone	Select Zone to Edit	Edit Zone Name			Section 7.3.1.1
			Zone Properties	Verification Type	*1 Count	Section 7.3.1.2
					2 Count	
					Alarm Ver.	
					PAS	
					SNGL ILOCK	
					DBL ILOCK	
				Heat Temp Set	135° to 150°F*	SD devices. Section 7.3.1.2
					135° to 190°F, 150° F*	IDP devices. Section 7.3.1.2
				Smoke Sensitivity	*Low, Med, or High	Section 7.3.1.2
				Smoke Sensitivity Day	*Low, Med, or High	
				Smoke Sensitivity Night	Low, *Med, or High	

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Zone	Edit Zone	Select Zone to Edit	Zone Outputs	Manual Pull (MP)	*Groups 01 & 125, (and 02 if voice); Pattern 00	Section 7.3.1.3 Section 7.3.1.4
				Water Flow (WF)		
				Detector Alarm (DE)		
				Aux 1 (A1)	*No Group	
				Aux 2 (A2)		
				Pre-alarm (PR)		
				Fire Supervisory (SU)	*Group 124, Pattern 00	
				Trouble (TR)	*No Groups	
				Status Point (SP)		
				CO Alarm (CO)	*Groups 01, 125; Pattern 00	
				CO Supervisory (Sco)	*Groups 124; Pattern 00	
			Zone Accessory Opt	Cadence	00-16, 23; *02	SD Devices Section 7.3.1.4. Section 7.3.1.5
				Fire Cadence	00, 01, *02, 23	IDP Devices. Section 7.3.1.4. Section 7.3.1.5
				CO Cadence	00, 01, 02, *23	
				Local Zone	Yes or *No	Section 7.3.1.5
	Add Zone	Adds next available zone number.				Section 7.3.2
	Delete Zone	Select Zone to be Deleted				Section 7.3.3
	View Zone Points	Select Zone to View				Section 7.3.4
Group[2]	Edit Group	Select Group	Group Name			Section 7.4.1.1
			Group Properties	Latching Options	*Non-Latching (NL)	Section 7.4.1.2
					Latching (LA)	
				Silencing Options	*Silenceable	
					Non-Silenceable (NON-SIL)	
					Auto Unsilence (AUT UNSIL)	
					Silence After Inhibit Delay (SIL-INHIB)	
					Auto Shutdown (SHUT-DOWN)	
				Polarity	*NO RP	
					RP-TRB	
					RP-NTR	
				Group Activates for all Man. Pull	Y or *N	Section 7.4.1.2
				Group Activates for Fire Drill	*Y or N	Section 7.4.1.2
				Group Activates for Aux 1	Y or *N	Section 7.4.1.2
				Group Activates for Aux 2	Y or *N	Section 7.4.1.2
				Ignore Global Cadence	Y or *N	Section 7.4.1.2

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Group[2]	Edit Group	Select Group	Group Properties	Voice EVAC Only	Y or *N (Default Voice Group 2: *Y)	Section 7.4.1.2
				Allow Override ECS Only	*Y or N	
				Voice Switch #	*00-40 (Voice Group: *01)	
				Override Cadence Pattern	*00-21, 23	
				Delay	05-60 minutes (*15)	
	Add Group					Section 7.4.2
	Delete Group	Select Group to Delete				Section 7.4.3
	View Group Points	Select Group				Section 7.4.4
	Edit OPG Template	Select Template Number	Select Group			Section 7.4.5
			Include in template	Y or *N		
			Select Pattern	*00-21, 23		Section 7.3.1.4 Section 7.4.5
Point	Internal and External 5815XL, IDP Devices	Sensor Point #	UNUSED			Section 7.5.1
			DETECTOR/SUP DET	PHOTO, ION, HEAT, ACCLIMATE, HEAT HT PHOT-HEAT, BEAM	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					*NO ACCESSORY, SDR BAS, RLY BAS, I-SdrBa,	
					Single/Multi Station: *NST, SST, MST	
					Station Silenceable: *SIL, NSL	
					Accessory Group # (*001)	
					Point Name	
				PHOTO DUCT	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					*NO ACCESSORY, DCT RLY	

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Point (cont.)	Internal and External 5815XL, IDP Devices	Sensor Point #	DETECTOR/SUP DET	PHOTO DUCT	Single/Multi Station: *NST, SST, MST	Section 7.5.1
					Station Silenceable: *SIL, NSL	
					Accessory Group # (*001)	
					Point Name	
			CO FIRE	ALRM CO/ALRM Fire, SUP CO/ ALRM Fire, ALRM CO/SUP Fire, SUPR CO/ SUPR Fire	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					*NO ACCESSORY, SDR BAS, RLY BAS, I-SdrBa	
					Single/Multi Station: *NST, SST, MST	
					Station Silenceable: *SIL, NSL	
					Accessory Group # (*001)	
					Point Name	
		Module Point #	UNUSED			
			SWITCH	MAN_PULL, PAS_ACK, DET SW, MAN REL, ILOCK, CO DET SW	*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
				WATERFLOW, SUPERVSY, ZN_AUX1, ZN_AUX2, TAMPER	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
				FIREDRILL, SILENCE, RESET	*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Point (cont.)	Internal and External 5815XL, IDP Devices	Module Point #	SWITCH	SYS_AUX1, SYS_AUX2	*Latching (LA) or Non-Latching (NL)	Section 7.5.1
					*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	
				STATUS PT	Zone # (*001)	Used to activate an ancillary output group that does not activate alarm, sound PZT, display status, or report events. Reset has no effect on this point. Section 7.5.1
					Point Name	
			NOTIF	OUTPUT PT	Group # (*001)	Section 7.5.1
					Point Name	
				AUX CONST, AUX RESET, AUX DOOR	Point Name	
			RELAY	OUTPUT PT	Group # (*001)	
					Point Name	
				AUX RESET, AUX DOOR	Point Name	
			DETECTOR	2WIRE SMK	*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
	Internal and External 5815XL, SD Devices	Point #	UNUSED			
			DETECTOR	PHOTO, ION, HEAT	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					*NO ACCESSORY, SDR BAS, RLY BAS	
					Single/Multi Station: *NST, SST, MST	
					Station Silenceable: *SIL, NSL	
					Accessory Group # (*001)	
					Point Name	

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Point (cont.)	Internal and External 5815XL, SD Devices	Point #	DETECTOR	PHOT DUCT, ION DUCT	*Latching (LA) or Non-Latching (NL)	Section 7.5.1
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					*NO ACCESSORY, DCT RLY	
					Single/Multi Station: *NST, SST, MST	
					Station Silenceable: *SIL, NSL	
					Accessory Group # (*001)	
					Point Name	
				2 WIRE SMK	*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
			SUP DET	PHOTO, ION, HEAT	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					*NO ACCESSORY, SDR BAS, RLY BAS	
					Single/Multi Station: *NST, SST, MST	
					Station Silenceable: *SIL, NSL	
					Accessory Group # (*001)	
					Point Name	

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Point (cont.)	Internal and External 5815XL, SD Devices	Point #	SUP DET	PHOT DUCT, ION DUCT	*Latching (LA) or Non-Latching (NL)	Section 7.5.1
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					*NO ACCESSORY, DUCT RLY	
					Single/Multi Station: *NST, SST, MST	
					Station Silenceable: *SIL, NSL	
					Accessory Group # (*001)	
					Point Name	
			SWITCH	MAN_PULL, PAS_ACK, DET SW, MAN REL, ILOCK, CO DET SW	*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
				WATERFLOW, SUPERVSY, ZN_AUX1, ZN_AUX2, TAMPER	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
				FIREDRILL, SILENCE, RESET	*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	
				SYS_AUX1, SYS_AUX2	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	
				STATUS PT	Zone # (*001)	Used to activate an ancillary Output Group that does not activate alarm, sound PZT, display status or report events. Reset has no affect on this point. Section 7.5.1
					Point Name	

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Point (cont.)	Internal Pwr and External Power	Point #	NOTIF	OUTPUT PT	Group # (*001)	Section 7.5.1
					Point Name	
				AUX CONST, AUX RESET, AUX DOOR	Point Name	
			RELAY	OUTPUT PT	Group # (*001)	
					Point Name	
				AUX RESET, AUX DOOR	Point Name	
			SLC LED	LED # (01-80)	UNUSED, NOTIF	
					Group # (*001)	
					Point Name	
			UNUSED			Section 7.5.2
			B NOTIF	NOTIF OUT, CTRL CKT	Group # (*001)	
					Point Name	
			A NOTIF	NOTIF OUT, CTRL CKT	Group # (*001)	
					Point Name	
			AUX PWR	CONSTANT, AUX RESET, AUX DOOR, AUX SYNC	Point Name	
			B SWITCH	MAN _PULL, PAS_ACK, MAN REL, ILOCK	*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
				WATERFLOW, SUPERVSY, ZN_AUX1, ZN_AUX2, TAMPER	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
				FIREDRILL, SILENCE, RESET	*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	
				SYS_AUX1, SUS_AUX2	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Point (cont.)	Internal Pwr and External Power	POINT #	B SWITCH	STATUS PT	Zone # (*001)	Used to activate an ancillary Output Group that does not activate alarm, sound PZT, display status or report events. Reset has no affect on this point. Section 7.5.2
					Point Name	
			A SWITCH	Same as B SWITCH		Section 7.5.2
			B DETECTOR	2WIRE SMK, 4WIRE SMK, CO 4WIRE	*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
			A DETECTOR	2WIRE SMK, 4WIRE SMK, CO 4WIRE	*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
	ECS-VCM AND ECS-RVM		UNUSED			Section 7.5.4
			SWITCH	MAN _PULL, PAS_ACK, MAN REL, ILOCK	*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
				WATERFLOW, SUPERVSY, ZN_AUX1, ZN_AUX2, TAMPER	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone (*001)	
					Point Name	
				FIREDRILL, SILENCE, RESET	*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	
				SYS_AUX1, SUS_AUX2	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	
				STATUS PT	Zone # (*001)	
					Point Name	
				V_AuxStat	Point Name	
				V_AuxECS	*Latching (LA) or Non-Latching (NL)	
					Point Name	

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Point (cont.)	5880	Point #	UNUSED			Section 7.5.3
			NOTIF	NOTIF OUT, CTRL CKT	Group # (*001)	
					Point Name	
			SWITCH	MAN _PULL, PAS_ACK, MAN REL, ILOCK	*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
				WATERFLOW, SUPERVSY, ZN_AUX1, ZN_AUX2, TAMPER	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Zone # (*001)	
					Point Name	
				FIREDRILL, SILENCE, RESET	*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	
				SYS_AUX1, SUS_AUX2	*Latching (LA) or Non-Latching (NL)	
					*Silenceable (SI) or Non-Silenceable (NS)	
					Point Name	
				STATUS PT	Zone # (*001)	
					Point Name	
	5865	Point #	UNUSED			
			NOTIF	NOTIF OUT	Group # (*001)	
				CTRL CKT	Point Name	
	ECS-50W	Point #	UNUSED			
			NOTIF	Group # (*002)		
				Point Name		
	ECS-125W	Point #	UNUSED			
			NOTIF	Group # (*002)		
				Point Name		
	ECS-INT50W	Point #	UNUSED			
			NOTIF	Group # (*002)		
				Point Name		
	ECS-DUAL50W	Point #	UNUSED			
			NOTIF	Group # (*002)		
				Point Name		

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
System Options	Reporting Accounts	Edit Acct.	Choose Account (1-4)	Edit Account #	*123456	Account # (6-digit number, identifies account to central station) Section 7.6.1.1
				Edit Format	*CID, S20, SIA	Reporting Format (SIA, S20, Contact ID) Section 7.6.1
				Report Alarms	Yes (Y),* No (N), or Must (M)	Section 7.6.1.1
				Rep. Alarm Restore	Yes (Y), *No (N), or Must (M)	
				Report Troubles, Disables, Supervisories and their Restores	Yes (Y), *No (N), or Must (M)	
				Report Test	Yes (Y), *No (N), or Must (M)	
				Report Resets	Yes (Y), *No (N), or Must (M)	
				Switch attempts (1-5)	*3	
				Edit Phone #		
		Auto Test Time	Set the Hour			Section 7.6.1.2
			Set the Minutes			
			Select AM/PM			
			Report Every	04, 06, 12, *24 hours		
	Phone Lines	Select Phone Line	Phone Line Disable	Y or *N		Section 7.6.2
			Dial Tone Detection Disable	Y or *N		Section 7.6.2
			Dialing Prefix	*none	Up to 9 digits	Section 7.6.2.1
			# of Answer Rings	Range: 00-15	*6	Section 7.6.2.2
			Select Dialing Option	*TT, TT/PL, PULSE		Section 7.6.2.3
			Rotary Pulse Format	U = 60/40	*U	Section 7.6.2.4
				E = 66/34		
			Line Monitor	*Y or N		Section 7.6.2.5
			Answering Machine Bypass	Y = Enabled N = Disabled	*Y	Section 7.6.2.6
	System Event Outputs	Trouble Events	System Trouble	Select Group	None selected	Section 7.6.3.1
				Select Cadence		
			Alarm Silence	Select Group	None selected	
				Select Cadence		
			Trbl Silence	Select Group	None selected	
				Select Cadence		
			User Selected	Group Tr	Select Group	
				SBUS Com	Select Cadence	
				SBUS Pwr	*none	

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
System Options (cont.)	System Event Outputs	Trouble Events	User Selected	SLC Loop	Select Group Select Cadence *none	Section 7.6.3.1
				AC Loss		
				Battery		
				Gnd Flt		
				Phone Ln		
				Account		
				Printer		
				Aux Pwr		
				Sys Sw		
		Sys Alarm Cadence	Fire Drill Cadence	00-21, 23	*00 (Constant)	Section 7.6.3.2
			System Aux1 Cadence	00-21, 23	*00 (Constant)	
			System Aux2 Cadence	00-21, 23	*00 (Constant)	
	Day/Night Sense.	Enable/Disable	Yes		*N = Disabled	Section 7.6.4
			No			
		Day Start	enter time	*6:00AM		
		Night Start	enter time	*6:00PM		
		Days of the Week	Select days	S, M, T, W, T, F, S		
				*M, *T, *W, *T, *F		
	Holidays	Holidays 1 to 9	Enter dates	*01/01, *07/04, *12/24, *12/25		Section 7.6.5
		Holidays 10 to 18				
	Time Options	Water Flow Delay	0 - 90 Seconds	*01 sec	Water Flow delay is the number of sec. before water flow alarm is generated. Section 7.6.6.1	
		Alarm Verification time	Enter time from 1 to 250 seconds	*60 Seconds		Section 7.6.6.2
		Low AC Delay	0 - 30 hours	*3 hrs	Low AC Report Delay. Section 7.6.6.3	
		Clock	AM/PM	*AM/PM	System Clock Format (AM/PM or military). Section 7.6.6.4	
			MIL			
		AC Freq:	50 Hz			Section 7.6.6.5
			60 Hz			
			Neither			
	Misc. Options	SYNC Strbs w/ Sil	Y (Enabled)	*Disabled		Section 7.6.7.1
			N (Disabled)			
		Auto Display Oldest	Y (Enabled)	*Enabled		Section 7.6.7.2
			N (Disabled)			
		Report By	Zone	*Zone		Section 7.6.7.3
			Point			
	Daylight Savings	Single Key Ack	Y (Enabled)	*Disabled		Section 7.6.7.4
			N (Disabled)			
		DST	Y (Enabled)	*Enabled	Automatic Daylight Saving Time enable or disable. Section 7.6.8.1	
			N (Disabled)			
		DST Start	Select week: 1st, *2nd, 3rd, 4th or Last	Select Month (*Mar)		Section 7.6.8.2
		DST End	Select week: *1st, 2nd, 3rd, 4th or Last	Select Month (*Nov)		
	Edit Banner	Internal Message				Section 7.6.9
		Custom Message	Edit Line 1			
			Edit Line 2			
	SLC Family	SD				Section 7.6.10
		IDP				
JumpStart AutoPrg	No					Section 7.7
	Yes					

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)				Comments
Computer Account	Computer Account #	*123456			Section 7.8
	Computer Access Code	*0			
	Computer Phone #	Up to 40 digits			
Access Codes	Select Profile (01-20)	Edit Name			Profile 1 is the profile that dictates what functions the Firefighter Key has access to. Because this is the profile for a key the user name and the access code can not be edited for this profile. Profile 2 is the profile for the installer and is referred to as the “Installer Code”. This profile’s user name and panel functions can not be edited. Section 7.9.
		Edit Access Code			
		Panel Functions	System Reset		
			System Silence		
			System ACK		
			Fire Drill Key		
			System Test		
			Fire Drill Menu		
			Indicator Test		
			Walk Test no Report		
			Walk Test with Report		
			Dialer Test		
			Clear History Buffer		
			Point Functions		
			Disable/Enable Point		
			Point Status		
			Set SLC Device Address		
			SLC Device Locator		
			SLC Mult-Device Locator		
			I/O Point Control		
			Event History		
			Set Time & Date		
			Printer Options		
			Event Logging		
			Print Event History		
			Print Detector Status		
			Print System Configuration		
			Reset Dialer		
			Program Menu		
			System Information		
			Upload/Download		
			ECS Control Request		
			ECS Super User		

Table 6-1: Programming Quick Reference Table

Menu	Options/Defaults (*)					Comments
Voice Options	VCM Maintenance	PC Connection				Section 7.10.1.1
		Local Recording	Select Module	Select Circuit		Section 7.10.1.2
	Edit Voice Commands	Select Command	Message/Tone Only			Section 7.10.2
			Message Select	1-15		
			Tone Select			
			Repeats	1-14		
				Continuous		
				None		
			Initial Delay	0 - 28 (4 sec. increments), 3	*12	
			Inter message Delay	4 - 32 (4 sec. increments)	*8	
			Allow Message Restart with new group activation	Yes (Y) or No (N)	* No	
	ECS System Options	Enable ECS System	Yes (Y) or No (N)			Section 7.10.3.1
		Edit Cmd Priority				Section 7.10.3.2
		Edit Cmd Mapping				Section 7.10.3.3
		Edit Timers	Control Lockout			Section 7.10.3.4
			Auto Reset EC 0-8			
		Edit Event Names				Section 7.10.3.5
2. Use of multiple notification groups may not synchronize with each other.						

Section 7
Programming

This section of the manual describes how to manually program the control panel from the built-in annunciator. Each subsection discusses these menu options in detail. All options described in this section can be performed using the Silent Knight Software Suite 5650/5651.

Before any customized programming is done, Jump-start should be run first. After Jump-start is run, thoroughly test the system. The reason the system should be tested after Jump-start is because Jump-start automatically programs the system, searching for and configuring all SLC and SBUS devices it finds. Jump-start allows you to confirm the integrity of the installation prior to performing any custom programming. After determining that the hardware is properly installed, custom programming can be performed.
Refer to Section 6.

7.1 UL 864 / UL 2572 Programming Requirements

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 and UL 2572, certain programming features or options must be limited to specific values or not used at all as indicated below.

Programming Option	Menu Item	Permitted in UL 864 (Y/N)	Permitted in UL 2572 (Y/N)	Possible Settings	Settings Permitted in UL 864	Settings Permitted in UL 2572
Time Options	Low AC Report Delay	Yes	Yes	0–30 hours	1–3	1–3
Display Oldest Event	Y (Enabled)	Yes	Yes	Yes & No	Yes	Yes
	N (Disabled)	No	No	Yes & No	No	No
Initial Delay	0-28	Yes	Yes	0-28	3-10	4-28
Inter Message Delay	4-32	No	No	4-32	4-32	4-28
Alarm Verification	Alarm Verification	Yes	Yes	1-250	1-60	1-60
Auto Reset ECS Custom Event	Auto Reset ECS Custom Event	Yes	Yes	Never Timer Event Disabled	Never Timer Event Disabled	Never Timer Event Disabled
ECS Input	ECS Input	Yes	Yes	Latching Non-Latching	Latching	Latching

7.2 Modules

This section lists the options available under the module option in the program menu. The following modules are available for the control panel: RA-100 remote fire alarm annunciator, RA-1000 remote fire alarm annunciator, 5824 serial/parallel printer interface module, 5496 intelligent power module, RPS-1000 intelligent power module, 5880 LED I/O module, 5865 LED annunciator, ECS-50W, ECS-125W, ECS-INT50W or ECS-DUAL50W watt audio amplifier, ECS-VCM voice control module, and ECS-RVM remote voice module.

7.2.1 Edit Modules

The features that can be edited when this option is selected are, module name, and class of wiring (Class A or Class B).

To edit an existing module, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 1 to enter module menu.
4. Press 1 to edit a module.
5. Use the Up or Down arrow arrow to select the module you wish to edit.

7.2.1.1 Naming Modules

You can assign an English name to a system hardware module to make it easier to recognize on a display.

6. If you wish to edit the modules name press the Up or Down arrow to select each character for the modules name (or press right arrow to bypass name edit).

   Press the right arrow to move to the next character.

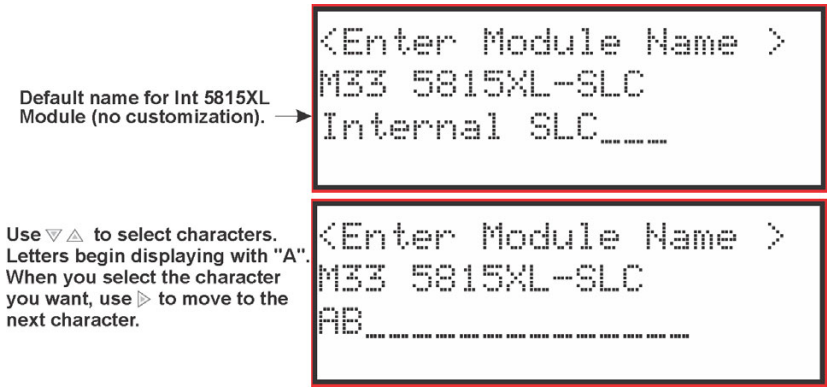


Figure 7-1 Edit module Name Programming Screen Example

7.2.1.2 Editing Module Features

This option applies only to the SLC loop. Each module has a unique set of option that specifically applies to the functionality of the module being edited.

7. Choose the class of wiring you wish to use for this module by pressing the Up or Down arrow, then press ENTER.

7.2.2 Adding a Module

If you need to add a new hardware module to the system, follow these steps.

You must be in the Main Menu to perform this task. If necessary, enter the Installer Code.

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 1 to enter module menu.
4. Press 2 to add a module.
5. From the next screen, use the Up or Down arrow to choose a module type to add from the <New Module Type> screen.

   The screen will display "Adding module [#]..." for a few moments. You will be returned to the <New Module Type> screen where you can add additional modules if desired.

You must save changes when you exit the Program Menu or the new module will not be added.

Note: If you Add a Module that has not been physically connected, the panel will go into trouble after it reinitializes (when you exit the Program Menu). When the new module is attached, the trouble will correct itself automatically the next time you power up the system.

7.2.3 Deleting a Module

If you ever need to delete a module, follow these steps.

You must be in the Main Menu to perform this task. If necessary, enter the Installer Code.

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 1 to enter module menu.
4. Press 3 to delete a module.
5. From the next screen, select a module to delete.
6. A warning screen will display. If you want to proceed with deleting the module, select Yes. To cancel, select No.

7.2.4 View Module List

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 1 to enter module menu.
4. Press 4 to view module list.

7.3 Zone

Through the zone option in the program menu you can edit, add, delete, and view zone points. Selections made here affect all detectors and switches in the zone. Up to 125 zones can be used in the system.

7.3.1 Edit Zone

Features that can be edited through the edit zone option are zone name, zone properties (which includes, zone type, and detector sensitivity), zone output mapping, and zone accessory options.

To edit a zone, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 2 to enter zone menu.
4. Press 1 to edit a zone.
5. Enter the zone number, then press ENTER.

7.3.1.1 Edit Zone Name

6. Press 1 to edit the selected zone's name.

   A screen similar to the one shown in Figure 7-2 displays.

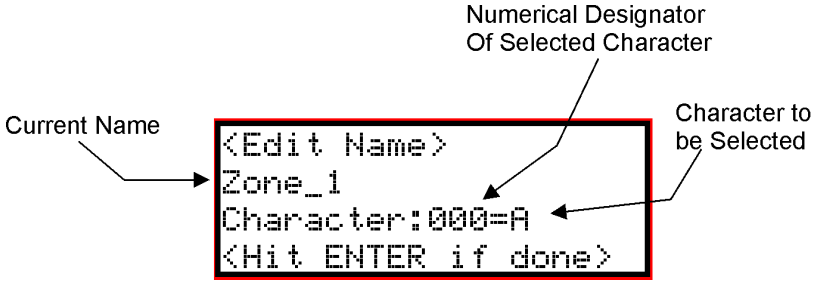


Figure 7-2 Selecting Character for Zone Name

7. Select the characters for the zone name by pressing the ▲ or ▼ arrow until the desired character is shown then the press right arrow or see Appendix B of this manual for a list of available characters and their numeric designators.
8. Repeat step 8 until the name is complete.
9. Press ENTER when the name is complete.

7.3.1.2 Edit Zone Properties

Zone properties consist of, alarm delay characteristics, and heat detector sensitivity.

1. Do steps 1 through 5of Section 7.3.1.

2. Press 2 to edit the properties of the selected zone.

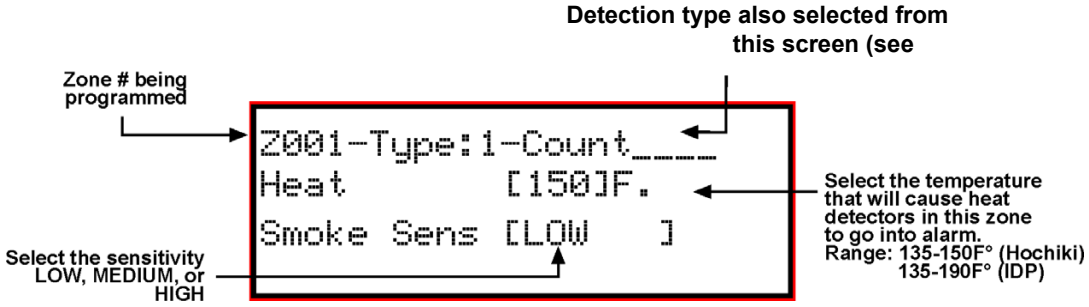


Figure 7-3 Editing Zone Properties

Alarm Delay Characteristics

3. Select the alarm delay characteristics (see Table 7-1) by pressing the ▲ or ▼ arrow.

Table 7-1: Alarm Delay Types

Type of Delay	Description
1-Count	One Count (No Delay). When this option is enabled, an alarm occurs immediately when a single device of any of the following types goes into alarm: detector, manual pull, water flow, Aux1 or Aux2. This is considered the most typical operation and is the default for all zones.
2-Count	When this type of alarm delay is used, two or more detectors within the zone must go into alarm in order for the zone to report an alarm. Switches of type manual pull, water flow, Aux1 and Aux2 are an exception; they will cause an alarm when only one switch is in alarm. When a single detector is in alarm in a 2-Count zone, the system enters a prealarm condition. In a prealarm condition, the touchpad PZT beeps and the annunciator display indicates that a prealarm has occurred. If the zone has been mapped to an output group for the prealarm event, the output group will activate. The prealarm will not be reported to the central station.
Alarm Ver.	Alarm verification is an optional false alarm prevention feature that verifies an alarm condition by resetting the smoke detector. If the alarm condition still exists by the time the reset cycle has completed, the detector will go into alarm. If the detector is no longer in alarm, no report will go to the central station. The alarm verification sequence is ignored if the zone is already in alarm.
PAS	This option is intended to be used with an acknowledge switch. An alarm is delayed for 15 seconds, giving on-site personnel a chance to investigate the alarm. If the acknowledge switch is not activated within 15 seconds, an alarm occurs automatically. If this option is enabled for a zone, the zone will respond to an alarm condition as follows: • The zone will not go into alarm for 15 seconds to allow an on-site operator to activate the acknowledge switch. • If the operator does not press the acknowledge switch within 15 seconds, the zone will go into alarm. • If the operator presses the acknowledge switch within 15 seconds, a 180-second time-frame will begin counting down. This time-frame allows the operator to investigate the cause of the alarm. If the operator performs a reset within 180 seconds, the alarm will not occur. If the operator does not perform a reset within 180 seconds, an alarm will occur automatically. • The P.A.S. feature will be overridden if another alarm occurs.
SNGL ILOCK	See Section 8.6.1 for single interlock releasing operation.
DBL ILOCK	See Section 8.6.2 for double interlock releasing operation.
Note: IDP-FIRE-CO and other CO detectors can only be installed in a 1 count zone; they will operate as a 1- count point regardless of the programmed zone type (i.e. Alarm Verification, 2 count, etc.).	

4. Press ENTER.

Heat Detector Sensitivity

Use this feature to set the temperature at which high temperature detectors will respond. All detectors in the zone will respond in the same way. The range for the SD505-AHS heat detector is from 135°F to 150°F. The range for IDP-Heat-HT heat detector is from 135°F to 190°F.

The SD505-AHS and IDP-Heat-HT heat detectors are absolute temperature devices. This means that they respond to an alarm immediately if the temperature in the zone goes above the programmed temperature.

5. Enter the temperature at which the heat detector will respond, or Use the ▲ or ▼ keys to scroll through the range or enter directly from the number keys on the annunciator, then press ENTER.

Smoke Detector Sensitivity

IMPORTANT!

Drift compensation is automatic for all smoke detectors (photoelectric and ionization). The feature is always in effect, no programming is required. See Section 8.4.14 for information about how to check if a detector is in UL compliance.

All detectors in the zone will respond as programmed in this menu location.

Table 7-2: SD & IDP Detector Sensitivity Choices*

Detector Protocol	Type of Smoke Detector	Choices	Comments
SD	SD505-APS SD505-PHOTO	Low (3.5% obscurity)	If the day/night sensitivity option is selected, you can have different sensitivity settings during the day and at night. You can determine the days of the week that Day/Night Sensitivity will automatically adjust. You can also designate specific days as Holidays. Holiday and weekend days use night sensitivity for the entire day
		Medium (2.5% obscurity)	
		High (1.5% obscurity)	
	SD505-AIS (obsolete)	Fixed	Sensitivity for ionization detectors is always 64 MIC (1.1% obscurity per foot) regardless of Low, Medium or High setting. Day and night settings also have no effect on these detectors.
	SD505-DUCT& SD505-DUCTR	Fixed	Low, Medium and High settings have no effect for photoelectric duct detectors. Photoelectric duct detector sensitivity is always 1.1% per foot. Day and night settings also have no effect on these detectors.
	SD505-DUCT& SD505-DUCTR	Fixed	Low, Medium, or High settings have no effect for ionization duct detectors. Ionization duct detector sensitivity is always 75 MIC (0.8%) regardless of Low, Medium or High setting. Day and night settings also have no effect on these detectors.
IDP	IDP-Photo, IDP-Acclimate, & IDP-Photo-T	Low (3.5% obscurity)	If the day/night sensitivity option is selected, you can have different sensitivity settings during the day and at night. You can determine the days of the week that Day/Night Sensitivity will automatically adjust. You can also designate specific days as Holidays. Holiday and weekend days use night sensitivity for the entire day
		Medium (2.5% obscurity)	
		High (1.5% obscurity)	
	IDP-Ion (obsolete)	Low (55 pA)	
		Medium (68 pA)	
		High (80 pA)	
	DNR with IDP-PhotoR or Photo	Low (2.5% obscurity)	
		Medium (2.0% obscurity)	
		High (1.5% obscurity)	

** Automatic drift compensation is always in effect for all detectors. See Section 8.4.14 for information about how to check if a detector is in compliance.*

6. Use the ▲ or ▼ keys to scroll through the range.

7.3.1.3 Zone Outputs

Output groups and cadence patterns are mapped to events. They can be programmed to output when an event occurs in a zone. Some system trouble events can be mapped for the entire system. Section 6.3 of this manual contains a general explanation of mapping. The following sections explain how to select mapping options.

Mapping to Zone Events

Eleven types of events can occur in zones. For each event type, you can activate up to 10 output groups or output group templates, specifying a pattern for each. The following is a list of all event types:

Note: Abbreviations in parentheses are the characters that are displayed in programming. (see Figure 7-4).

- Manual Pull Alarm (MP)
- Water Flow Alarm (WF)
- Detector Alarm (DE). This applies to heat or smoke detectors.
- Aux 1 and Aux 2 Alarm (A1 or A2). User-specified alarm types.
- Pre-alarm (PR)
- Supervisory (SU)
- Trouble (TR)
- Status Point (SP)
- CO Alarm (CO)
- CO Supervisory (SCO)

To map zone events to outputs, follow these steps:

1. From the Installer Main Menu, select 7 for Program Menu.
2. From the Program Menu, select 2 for Zone.
3. From the next menu, select 1 for Edit Zone.
4. Enter the zone number you wish to edit.
5. From the next menu, select 3 for Zone Outputs.
6. A screen similar to the one shown in Figure 7-4 will display. Select the event type you want to program using the ▲ or ▼ key.
7. Press the ▲ or ▼ key to toggle the group letter to either G = Group or T = output group template depending on want you need for this zone. Press ENTER.
8. Select options for each event that could occur in this zone. Figure 7-4 is a complete example of how you might map a zone.

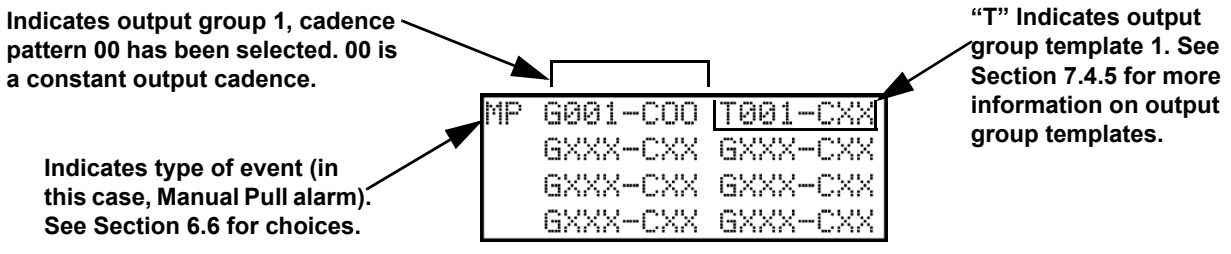


Figure 7-4 Selecting Output Groups/Templates and Cadence Patterns for a Zone Event

Zone Mapping Example

Suppose you want to program Zone 1 so that:

- Any alarm (detector, water flow or manual pull) would activate Output Group 1 using the ANSI cadence pattern.
- Manual pull alarm would activate Output Group 3 using constant output.
- Troubles would activate Output Group 2 using the zone-coded cadence pattern.

To accomplish this you need to access the screen for each event and then select your output groups. Figure 7-5 shows how you would program this application.

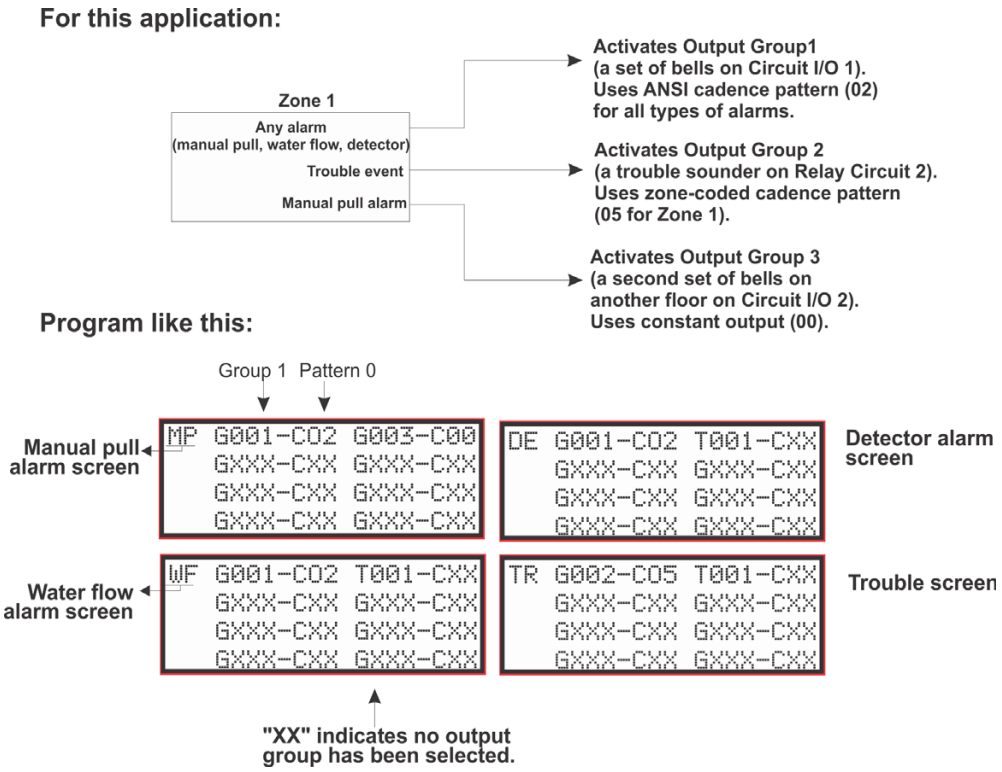


Figure 7-5 Zone Mapping Example

7.3.1.4 Cadence Patterns

The cadence patterns shown in Figure 7-6 are available for use with the control panel.

Cadence patterns can be selected by event type for each zone or for the entire system. Special cadence patterns can be selected for fire drills and any auxiliary system switches used with the system.

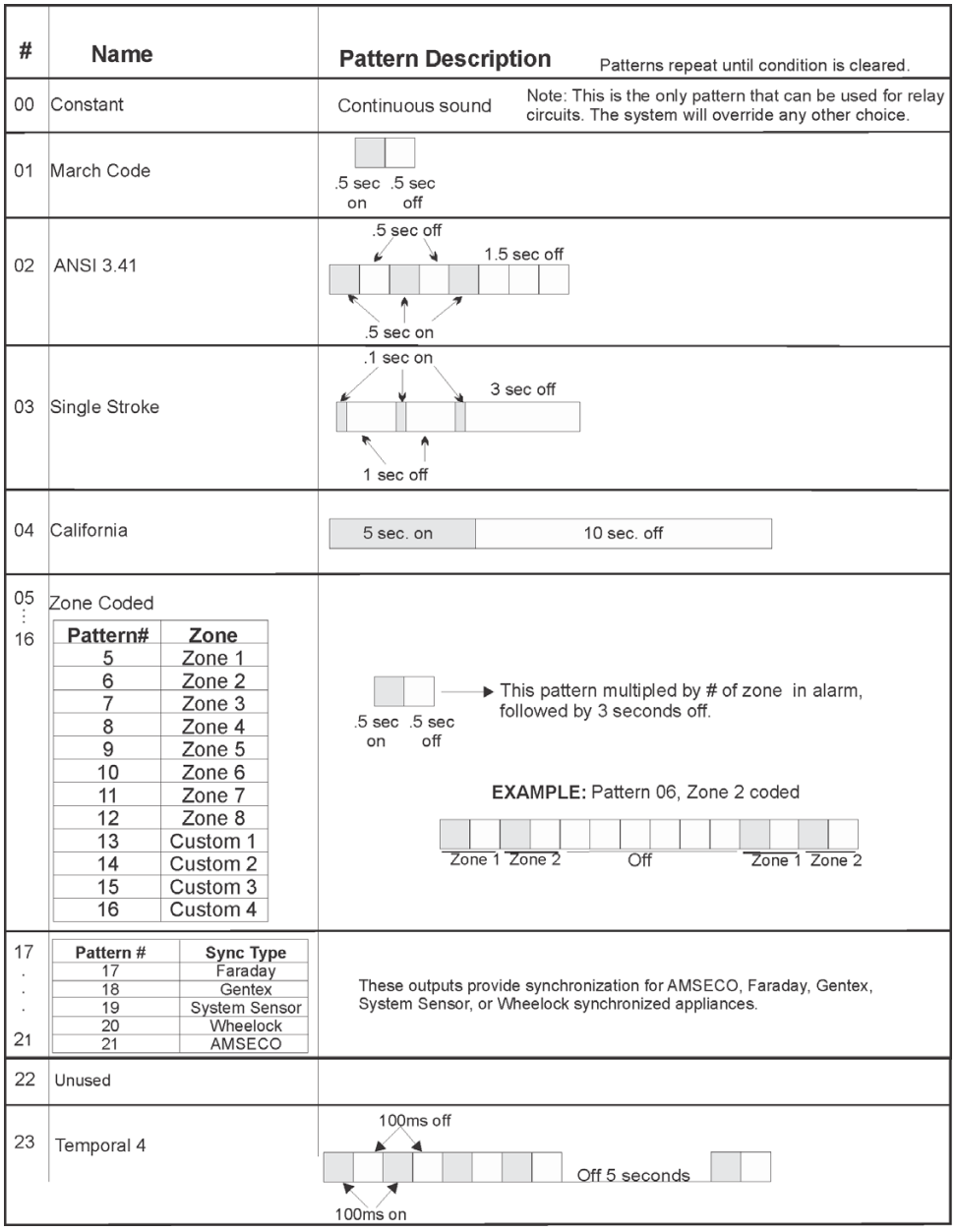


Figure 7-6 Cadence Patterns Available with the Control Panel

7.3.1.5 Zone Accessory Options

This option applies to detectors that are used with a Sounder base or Relay base.

Fire cadence__ _ / CO cadence__ pattern (choose from a subset of Patterns 00 to 23).

Note: The B200S Sounder bases are intended to be used along with the CO cadence setting.

Local Zone (choose Y or N, for Yes or No).

7.3.2 Add Zone

To add a zone, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 2 to enter zone menu.
4. Press 2 to add a zone.

   A zone will be added. The system will assign the next available zone number. Options for this zone can now be programmed through the Zone Edit sub-menu. Up to 125 zones can be used.

7.3.3 Delete Zone

To delete a zone, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 2 to enter zone menu.
4. Press 3 to delete a zone.
5. Select a zone to delete.

   A warning screen will display. If you want to proceed with deleting the zone, select Yes. To cancel, select No.

7.3.4 View Zone Points

To view the points in a zone, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 2 to enter zone menu.
4. Press 4 to view zone points.
5. Enter the number of the zone you wish to view, then press ENTER.

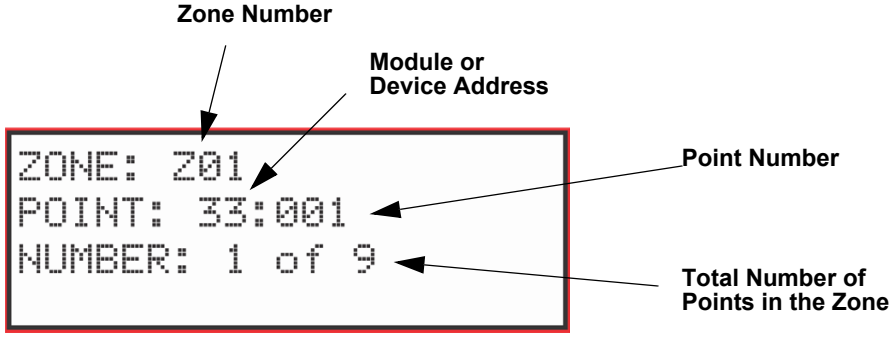


Figure 7-7 View Zone Points Screen

7.4 Group

An output group is made up of output points that have been programmed to respond in the same way. Output groups simplify programming because you have to program the output characteristics that are common to all of the group points once, instead of programming each individual point. Once you have defined the characteristics of output groups, you can assign each point to the appropriate group. All valid output points are assigned to only one output group. Unused points are not assigned to any output group. Up to 125 output groups can be defined.

Each output group is defined as either a voice output group or a non-voice output group. Output points that are audio circuits (all circuits on the ECS-50W, ECS-125W, ECS-INT50W or ECS-DUAL50W and ECS-CE4) can only be assigned to voice output groups. Output points that are non-voice circuits (all other points and circuits that are on all modules except the ECS-50W, ECS-125W, ECS-INT50W or ECS-DUAL50W and ECS-CE4) are assigned to non-voice output groups.

7.4.1 Edit Group

In the edit group option you can program the name of an output group (Section 7.4.1.1) and change the properties (Section 7.4.1.2) of that group.

To edit a group, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 3 to enter group menu.
4. Press 1 to edit group.
5. Enter the number of the group you wish to edit, then press ENTER.

7.4.1.1 Edit Group Name

6. To edit the group name, press 1.

A screen similar to the one shown in Figure 7-8 displays. Refer to Appendix B for a list of available characters.

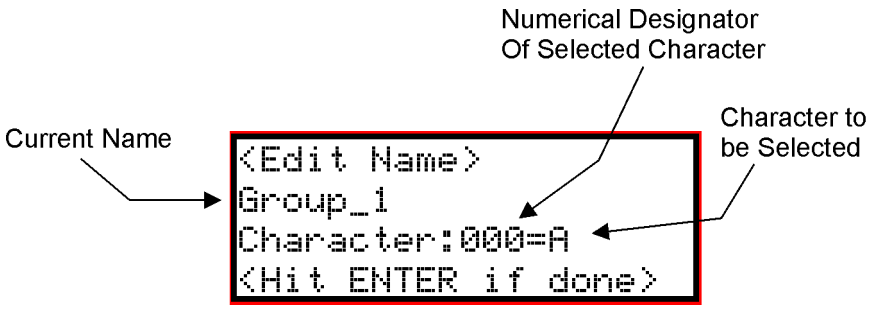


Figure 7-8 Selecting Character for Group Name

7.4.1.2 Edit Group Properties

1. Follow steps 1 through 5 of Section 7.4.1.
2. To edit the group properties, press 2.

The Edit Group Menu allows you to select options for each group for the following items:

- Latching or non-latching outputs.
- Silencing operation.
- Reverse Polarity options.
- Operation with system switches.
- Define output group type as voice or non-voice. These options are for ECS Only. See Figure 7-9.

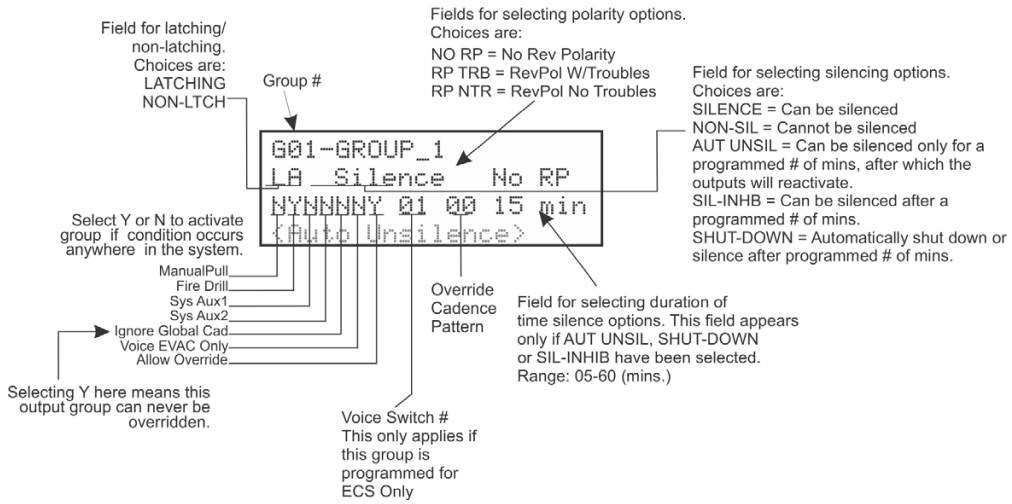


Figure 7-9 Group Properties Screen Programming Options

Latching / Non-latching Outputs

Outputs that are programmed as Latching remain active until the system has been manually reset. Non-latching outputs stop activating automatically when the condition clears.

Silencing Options

The following silencing options are available for each output group.

Table 7-3 Silencing Options

Option	Description
SILENCE	Silenceable. The output group can be silenced through the SILENCE key.
NON-SIL	Not silenceable. The output group cannot be silenced. Activation of the SILENCE key will be ignored for this output group.
AUT UNSIL	Auto Unsilenced. If this option is selected, the output group can be silenced for a programmed time-frame. If the condition that caused the output to activate has not cleared during the time-frame, the output reactivates. If you select this option, select the time-frame in the delay field. Range is 01-60 minutes. (See Figure 7-9 for location of field.)
SIL-INHIB	Timed Silence after Inhibit. If this option is selected, the output group must be audible for a programmed number of minutes before it can be silenced. If the condition that caused the output to activate has not cleared during the time-frame, the output can be silenced. If you select this option, select the timeframe in the delay field. Range is 01-60 minutes. (See Figure 7-9 for location of field.)

Table 7-3 Silencing Options

Option	Description
SHUT-DOWN	If this option is selected, the output group will automatically silence (shut down) after the programmed time period. If you select this option, select the timeframe in the delay field. Range is 01-60 minutes. (See Figure 7-9 for location of field.)

Response with System-Wide Conditions

You can select whether an output group will respond to various system-wide occurrences. (See Figure 7-9 for location of this field).

Table 7-4 Output Group Response Choices

Option	Description
ManPull	Manual Pull Activation. Select Yes if you want this group to activate for all manual pull alarms that occur in the system. ***Note:*** Even though manual pull switches are assigned to zones, activation selected here for manual pull will override zone-programmed activation.
Fire Drill	Fire Drill Activation. Select Yes if you want this group to activate for fire drills.
Sys Aux1 and Sys Aux2	Select Yes if you want this output group to activate for system-wide Aux1 and Aux2 alarms. (Aux 1 and Aux 2 alarm types are for auxiliary alarm conditions. For example, you might want to use Aux 1 to provide a unique alarm type.)
Ignore Global Cad	Ignore Global Cadence. If you want to create an output group that can never be overridden, you can select Yes for this option. Selecting No means that system-wide events that have been assigned an output pattern could override the pattern for the output group. For example, suppose you had assigned a set of strobes to Output Group 3. You would never want these strobes to output in a pattern under any circumstances. To make sure this happens, select Yes for Ignore Global Cadence for Output Group 3.
Reverse Polarity	This option programs the output group for reverse polarity operation. Selecting Reverse Polarity -Troubles for polarity reversal connections will cause the output group to be de-energized for any system trouble. Selecting Reverse Polarity - No Troubles for city box (auxiliary) connections will cause system troubles to be ignored, but all troubles will still be annunciated locally. Activation is accomplished through standard mapping methods. Use with the 7644-L8 assembly to implement reverse polarity. See Section 4.14.3.2 for more information on the 7644-L8.
Voice EVAC Only	This option programs the output group to be a voice output group. A voice group can only be mapped to voice circuits. A non-voice group can only be mapped to non-voice circuits.
Allow Override	This option programs the output group to allow it to be overridden by a higher priority system (e.g. Emergency overriding Fire). Select No if you do not want the group to be overridden.
Voice Switch #	This option links the output group with a voice select switch on a VCM, RVM, or switch expander) for dynamic activation. See Section 9.2.3.2 for more information.
Override Pattern #	This setting sets the cadence of the non-voice group mapped to voice select switch when activated using dynamic activation. See Section 9.2.3.2 for more information.

7.4.2 Add Group

To add a group, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 3 to enter group menu.
4. Press 2 to add a group.

The system will assign the next available group number. Properties for the new group can now be edited if desired (see Section 7.4.1.2). A total of 125 output groups can be defined.

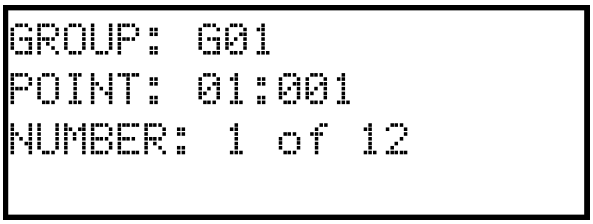
7.4.3 Delete Group

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 3 to enter group menu.
4. Press 3 to delete a group.
5. Select a group to delete.

   A warning screen will display. If you want to proceed with deleting the group, select Yes. To cancel, select No.

7.4.4 View Group Points

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 3 to enter group menu.
4. Press 4 to view group points.
5. Enter the group number, then press ENTER.



7.4.5 Edit Output Group Templates

Some installations may require that zones be mapped to more than 8 output groups. With output group templates you can combine one or all output groups into one template, which can be used when the same combination of outputs are used for several zones.

For example, lets say an installation has five zones (See table below). The check mark indicates what output groups are mapped to each zone. You will notice that every zone is mapped to outputs 1 and 2. As an alternative you can create a template that combines output group 1 and 2 as one choice.

Zone	Group Number							
	1	2	3	4	5	6	7	8
1st Floor Smoke Detectors	X	X			X			
2nd Floor Smoke Detectors	X	X			X			
3rd Floor smoke Detectors	X	X			X			
Manual Fire Pull Stations	X	X					X	
Water Flow Switches	X	X						X

This can be done by creating a template which includes output groups 1 and 2. Then you can map all the zones to

the template you created. This will free up output group assignments that are common to several zones. This is very useful when you need to map zones to more than eight output groups.

To create Output Group Templates:

1. From the Main Menu, select 7 for Program Menu.
2. From the Program Menu, select 3 for Group.
3. At the next screen, select 5 for Edit OPG Template.
4. Select the template number (01 - 08).
5. Select output group number. See Figure 7-10.

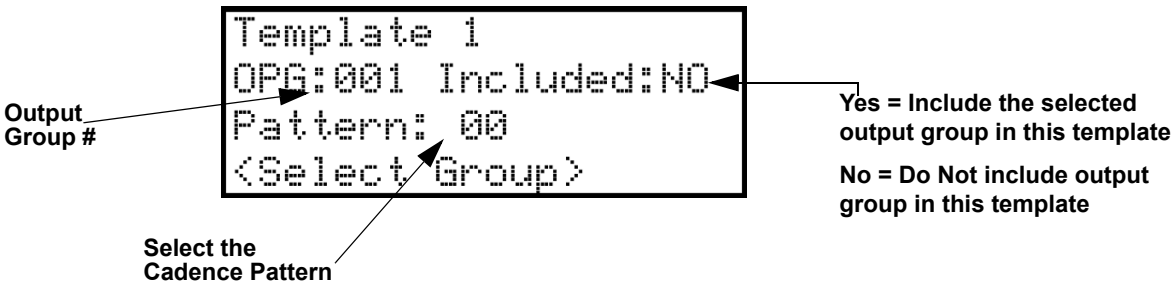


Figure 7-10 Output Group Template Programming Screen

7.5 Point

You may need to change characteristics of individual input points (detectors and switches) even after using JumpStart. This section explains how to change options for: type of point, latching/non-latching, silenceable/non-silenceable, zone assignment (input points), detector accessory base options, group assignment (output points), and point name.

7.5.1 Point Programming for the SLC

To program for points, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 4 to enter point menu.
4. Press the ▲ or ▼ arrows to select the desired module, then press ENTER. Refer to Section 6.6 Quick Reference Table for available choices.
5. Enter the number of the point you wish to edit, then press ENTER.
6. Select the type of device by pressing the ▲ or ▼ arrows. Refer to Table 7-5 under column heading “Type Selection” for a list of choices.Where applicable, features that apply only to SD or IDP devices are noted in the Comments section
7. Press ENTER.
8. Select the function of the device by pressing the ▲ or ▼ arrows. Refer to Table 7-5 under column heading “Function” for a list of choices.

Table 7-5: Point Programming

Module Type	Type Selection	Function	Latching Option	Comments
SLC Loop	UNUSED			
	SD DETECTOR	PHOTO		
		ION		
		HEAT		
		PHOT DUCT		
		ION DUCT		
		2WIRE SMK		
	SD SUP DET	SUP PHOTO	Latching Non Latching	
		SUP ION		
		SUP PHOTO DUCT		
		SUP ION DUCT		
		SUP HEAT		
	IDP DETECTOR	PHOTO		
		ION		
		HEAT		
		PHOTO DUCT		
		2-WIRE SMKE		
		HEAT HT		
		ACCLIMATE		
		PHOTO HEAT		
		BEAM		
	IDP SUP DETECTOR	SUP PHOTO DUCT	Latching Non-Latching	
		SUP SMOKE ION		
		SUP SMOKE PHOTO		
		SUP HEAT		
		SUP ACCLIMATE		
		SUP HEAT HT		
		SUP SMOKE PHOTO/HEAT		
		SUP SMOKE BEAM		
	CO FIRE	ALRM CO/ ALRM FIRE		
		ALRM CO/ SUPR FIRE		
		SUPR CO/ ALRM FIRE		
		SUPR CO/ SUPR FIRE	Latching Non Latching	Supervisory can be latching or non-latching.

Table 7-5: Point Programming

Module Type	Type Selection	Function	Latching Option	Comments
SLC	SWITCH	MAN_PULL		Use this switch type for manual pull stations. This input is always latched. The switch can clear only when an alarm is reset.
		WATERFLOW	Latching Non Latching	Use this switch type for monitoring water flow in a sprinkler system. Switch closure will cause a sprinkler alarm. Water flow switches can be programmed as latching or non-latching. You can program a delay of up to 90 seconds to be used with a water flow switch. The delay allows for normal, brief changes in sprinkler system water pressure. The water flow alarm will not activate unless the switch is active for the programmed delay time. ***Note:*** Waterflow delay of the FACP and the waterflow device shall not exceed 90 seconds. If a delay is used, the system begins counting down when the switch closes. If the switch opens (restores) before the timer expires, a water flow alarm is not generated. If the water flow switch remains closed after the timer expires, a water flow alarm will be generated.
		SUPERVISY	Latching Non Latching	Use this switch type for tamper monitoring of sprinklers and other fire protection devices. If a contact closes, a sprinkler supervisory event will be generated. Supervisory switches can be latching or non-latching.
		FIREDRILL		System-level, non latching switch. This switch is an alternative way of causing a fire drill. It has the same operation as the fire drill option available from the annunciator. When the switch is activated, a fire drill begins; when the switch is de-activated, a fire drill ends.
		SILENCE		System-level switch provides an alternate way to silence the fire and advisory system; same effect as pressing the Silence key.
		RESET		System-level switch provides an alternate way to reset the fire and advisory system; same effect as pressing the Reset key.
		PAS_ACK		Positive acknowledge switch. This switch must be used in zones programmed as Positive Alarm Sequence (see Table 7-1). If an acknowledge switch closes when an alarm or trouble condition is not already in progress, a trouble will occur. You must use a UL listed normally open, momentary switch type. The switch must be rated at 5V, 100 mA (minimum) and be used with an EOL resistor for supervision.

Table 7-5: Point Programming

Module Type	Type Selection	Function	Latching Option	Comments
SLC (cont.)	SWITCH (cont.)	ZN_AUX1	Latching	Use these switch types if you want to monitor special zone-level conditions (such as operation of a fan or damper).
			Non Latching	
		ZN_AUX2	Latching	
			Non Latching	
		SYS_AUX1	Latching	Use these switch types if you want to monitor special system-wide conditions (such as operation of a fan or damper).
			Non Latching	
		SYS_AUX2	Latching	
			Non Latching	
		DETECT SW		Used to monitor conventional 4-wire detectors, a contact closure will generate a detector alarm event.
		TAMPER	Latching	Performs identically to a supervisory switch, but will be indicated as a tamper switch on the LCD annunciator.
			Non Latching	
		MAN REL		Manual release switch, typically a pull station.
		ILOCK		Interlock release switch input.
		CO DETECT SW		CO Detector Switch
		STATUS PT		Status Point Switch
	NOTIF	OUTPUT PT	Select Group	
		AUX CONST		Use for auxiliary power applications where the devices require constant power.
		AUX RESET		Use for auxiliary power, resettable applications. See Section 4.12.2.3 for a description of how this option operates.
		AUX DOOR		Use for auxiliary power, door holder applications. For example, if you were using an auxiliary power supply for door holders, you would use this option. See Section 4.12.2.3 for a description of how this option operates.
	RELAY	OUTPUT PT	Select Group	Output Point, a general use relay type. Use for applications requiring a relay, such as fan shutdown, elevator recall, and so on.
		AUX RESET	Select Group	Use for auxiliary power, resettable applications. See Section 4.12.2.3 for a description of how this option operates.
		AUX DOOR	Select Group	Use for auxiliary power, door holder applications. For example, if you were using an auxiliary power supply for door holders, you would use this option. See Section 4.12.2.1 for a description of how this option operates.
	SD SLC LED	Select LED No.	UNUSED	
			NOTIF	When NOTIF is selected you must then select the output group number.

7.5.2 Point Programming For Internal or External Power Module

To program for an internal or external power module points, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 4 to enter point menu.
4. Press the Up or Down arrows to select the desired module, then press ENTER. Refer to Section 6.6 for available choices.
5. Enter the number of the circuit or point you wish to edit, then press ENTER. Refer to Table 7-6 for available selections.
6. Select the type by pressing he Up or Down arrows, then press ENTER.
7. Select the function by pressing he Up or Down arrows, then press ENTER.
8. Select the group by pressing he Up or Down arrows, then press ENTER.
9. Edit point name, or press the right arrow to skip point name edit. See Section 7.5.5.
10. Repeat Steps 1 through 9 for all circuits.

Table 7-6: Menu choices for Internal/External Power Module

Choices	Type Selections	Function Selections for each Type	Comments
Enter Point or Circuit			
Select Type	UNUSED		
	NOTIF OUT		
	CTRL CKT		
	AUX PWR	CONSTANT	Constant auxiliary power
		RESETTABLE	Resettable auxiliary power
		DOOR	Door holder auxiliary power
		SOUNDER SYNC	Sounder Sync auxiliary power

Table 7-6: Menu choices for Internal/External Power Module

Choices	Type Selections	Function Selections for each Type	Comments
Select Type	B SWITCH	MAN PULL	Refer to comments column of Table 7-5 for description of these options Latch or Non-latching feature only appears for waterflow, supervisory, tamper, zone aux1, zone aux2, system aux1, and system aux2
		WATERFLOW	
		SUPERVSY	
		TAMPER	
		FIREDRILL	
		SILENCE	
		RESET	
		PAS_ACK	
		ZN_AUX1	
		ZN_AUX2	
		SYS_AUX1	
		SYS_AUX2	
		MAN REL	
		ILOCK	
	A SWITCH	Same as B SWITCH	
	B DETECTOR	2-WIRE SMK	Used for Class B, 2-wire detectors
		4-WIRE SMK	Used for Class B, 4-wire detectors
		4-WIRE CO SMK	Used for Class B, 4-wire CO detectors
	A DETECTOR	2-WIRE SMK	Used for Class A, 2-wire detectors
		4-WIRE SMK	Used for Class A, 4-wire detectors
		4-WIRE CO SMK	Used for Call A, 4-wire CO detectors
Select Group			Group or Zone selection will appear depending on the type selected.
Edit Name			See Section 7.5.5.

7.5.3 Point Programming For 5880, 5865, ECS-50W, ECS-125W, ECS-INT50W, ECS-DUAL50W and ECS-CE4 Modules

To program 5880, 5865, ECS-50W, ECS-125W, ECS-INT50W, ECS-DUAL50W or ECS-CE4 module points:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 4 to enter point menu.

4. Press the arrows to select the desired module. Refer to Section 6.6 for available choices. Press ENTER.

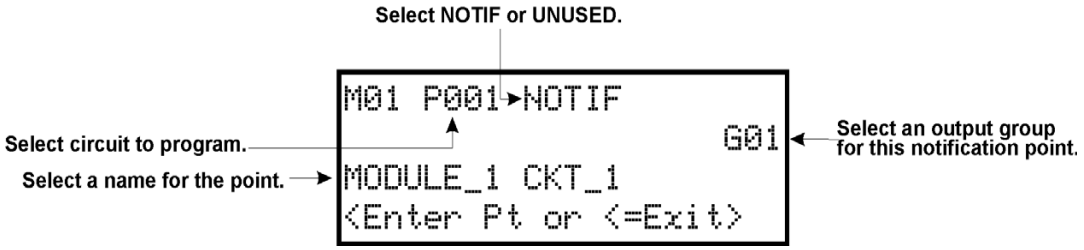


Figure 7-11 Programming Points Screen for 5880 and 5865 Modules

5. Enter the point number. Press ENTER.
6. Press the Up or Down arrows to select the type (Notification or unused). Press ENTER.
7. Press the Up or Down arrows to select the desired Group. Press ENTER.
8. Edit module name. See Section 7.5.5.

   Or

   Press the right arrow to skip module name edit.
9. Repeat Steps 1 through 8 for all points.

7.5.4 Point Programming For ECS-VCM and ECS-RVM Modules

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 4 to enter point menu.
4. Press the Up or Down arrows to select the desired module. Refer to Section 6.6 for available choices.
5. Press ENTER.
6. Enter the point number.
7. Press ENTER.
8. Press the Up or Down arrows to select the type (Switch or unused).
9. Press ENTER.
10. Press the Up or Down arrows to select the function.
11. Press ENTER.
12. Use the Up or Down arrows to modify and remaining options and use ENTER to move to the next field.
13. Edit module name. See Section 7.2.1.1. or, Press right arrow to skip module name edit.

14. Repeat Steps 1 through 13 for all points.

Table 7-7: Point Programming Options for ECS-VCM and ECS-RVM

Choices	Type Selections	Function Selections for each Type	Comments
Select Type	UNUSED		
	SWITCH	MANUAL PULL	Refer to comments column of Table 7-6 for description of these options. Latch or Non-latching feature only appears for waterflow, supervisory, tamper, zone aux1, zone aux2, system aux1, and system aux2.
		WATERFLOW	
		FIRE SUPERVISORY	
		TAMPER	
		FIREDRILL	
		SILENCE	
		RESET	
		PAS_ACK	
		ZONE AUX1	
		ZONE AUX2	
		SYSTEM AUX1	
		SYSTEM AUX2	
		MANUAL RELEASE	
		INTERLOCK	
		STATUS POINT	
		V_AuxStat	No Alarm LED
		V_AuxECS	General Alarm LED

7.5.5 Assigning a Name to a Point

You can assign a name to a point to make it easier to recognize on a display.

If you wish to edit the name of a point, follow these instructions:

1. When the display is flashing on the Edit Name field press ENTER.
2. Using the ▲ or ▼ arrow, select the module of the point you want to edit, press ENTER.
3. Enter the point number.
4. Press the right arrow until the module name is blinking. Press ENTER.

   A screen similar to the one shown in Figure 7-2 displays.

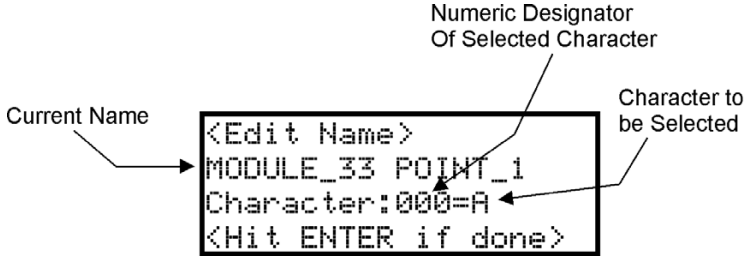


Figure 7-12 Selecting Character for Point Name

5. Select the characters for the point name by pressing the ▲ or ▼ arrow until the desired character is shown then press the right arrow. Refer to Appendix B of this manual for a list of available characters and their numeric designators.
6. Repeat step 6 until the name is complete.
7. Press ENTER when the name is complete.

If you wish to bypass the Edit Name field press the right arrow.

7.6 System Options

This section of the manual explains how to customize software options that affect general operation of the system. This includes such items as: AC loss hours, system clock options, holidays schedule, telephone and reporting account options. Refer to each individual subsection for complete instructions.

7.6.1 Reporting Account

Up to four reporting accounts can be used with the control panel. Events in accounts are reported by zone.

Each account is assigned an up-to-6-digit account number. Each account is also assigned a unique ID (1-4) which determines the priority for reporting ("1" has the highest priority; "4" has the lowest).

Disable any unused accounts by selecting "N" for all events (see Figure 7-13). If the system is local only (does not connect to a central station), disable all events for all four reporting accounts.

Options for each account can be customized. These options appear on the Reporting Accounts screen. Some related options appear on the Phone Lines screen (see Section 7.6.2).

To access the Reporting Accounts screen:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. From the Program Menu, select 5 for System Options.
4. From the next menu, select 0 for Reporting Accounts.

7.6.1.1 Edit Accounts

5. From the next menu, select 1 for Edit Account.

   A screen similar to one shown in Figure 7-13 will display. The following subsections describe the options on each field.

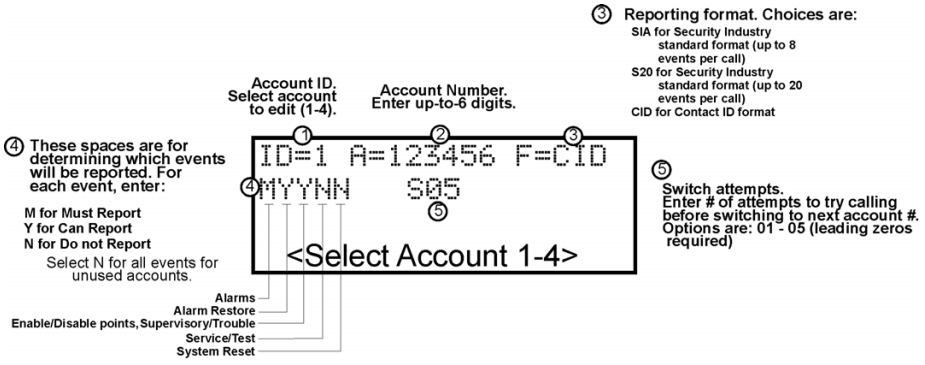


Figure 7-13 Reporting Account Editing Screen

Select Account (ID)

The control panel provides up to 4 reporting accounts. The priority of an account is based on its account ID. Account 1 is highest priority; Account 4 is lowest. Use Account 1 to report the highest priority events.

6. Press the ▲ or ▼ arrow to select account ID number, then press ENTER.

Edit Account Number

Enter an up-to-6-digit number for each account to identify the account to the central station. See Figure 7-13 for location of this option on the screen. The account number should be compatible with the reporting format used. For example, the Contact ID format transmits up to four digits only.

7. Enter the desired account number (up to 6-digits), then press ENTER.

Select Reporting Format

Select a reporting format for each account. Options are:

SIA	SIA format. 8 events per call.
CID	Ademco's Contact ID format
S20	Same as SIA but reports up to 20 events per phone call.

8. Press the ▲ or ▼ arrow to select the reporting format, then press ENTER.

Events to Report

The next five options select which types of events (or event families) will be reported to this account. (See Figure 7-13 for location of these options on the screen).

Event Family	Events Included in this Family
Alarms	All alarms (Water Flow, Manual Pull, Detectors, Auxiliary Switches, etc.)
Alarm Restore	All alarm restores.
Supervisory, Trouble, Enable/ Disable Point	All trouble and supervisory conditions and trouble and supervisory restores. Enabling and disabling of input and output points.
Service/Test	Fire drill, walk test, dialer test, automatic test, all programming sessions.
System Reset	All system resets.

9. Press the ▲ or ▼ arrow to select Must, Yes, or No (see Table below), then press ENTER.
10. Repeat step 9 for all five event report options.

For each event family, select M, Y, or N.

M(ust)	Must Report. Selecting "M" makes this a primary reporting account for this family of events. The dialer MUST report events in this family to this account. Selecting Must makes an account a primary reporting account. The dialer will try to report the event to the primary account until it exceeds the "Switch Attempts" value. When the dialer has exceeded the Switch Attempt retry limit, it will switch to a backup account (a "Can Report" or "Yes" account, see below). If the dialer cannot report the event to any of the backup accounts, it will return to the primary account and repeat the process until it succeeds or an Account Trouble condition is generated and a local trouble will sound.
Y(es)	Can Report. Selecting Y makes this a backup account for this event family. The dialer will report to this account only if it was previously unable to report the event to a Must account.
N(o)	No events in this family will ever be reported to this account.

Switch Attempts

Specify the number of times the dialer should attempt to report to this account before switching to the next account. Range is 1-5.

11. Enter the number of switch attempts (or press the ▲ or ▼ arrow), then press ENTER.

Telephone Number

Enter up to 24 characters for phone number for this account.



Figure 7-14 Edit Telephone Number

The following special characters are available:

Table 7-8: Special Dialing Characters

#	Pound (or number) key on the telephone
*	Star key on the telephone
,	Comma (character for 2-second pause)

Use the number buttons on the annunciator or the up- and down-arrow keys to select special characters. Characters begin displaying after "9". See Figure 7-14 for an example.

7.6.1.2 Auto Test Time

To access the automatic dialer test time screen:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. From the Program Menu, select 5 for System Options.
4. From the next menu, select 0 for Reporting Account.
5. From the next menu, select 2 for Auto Test Time.
6. Enter the hour you desire the control panel to send an automatic test report (or press the ▲ or ▼ arrow), then press ENTER.
7. Enter the minutes (or press the ▲ or ▼ arrow), then press ENTER.
8. Select AM or PM by pressing the ▲ or ▼ arrow, then press ENTER.
9. Select Report Time Interval by pressing the ▲ or ▼ arrow, then press ENER. Time Interval selections are 24hr, 12hr, 6hr and 4 hr.

7.6.2 Phone Lines

To access the phone lines screen:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. From the Program Menu, select 5 for System Options.
4. Select 1 for the phone lines menu.
5. Select the phone line to be edited (1 or 2) by pressing the ▲ or ▼ arrow, then press ENTER.

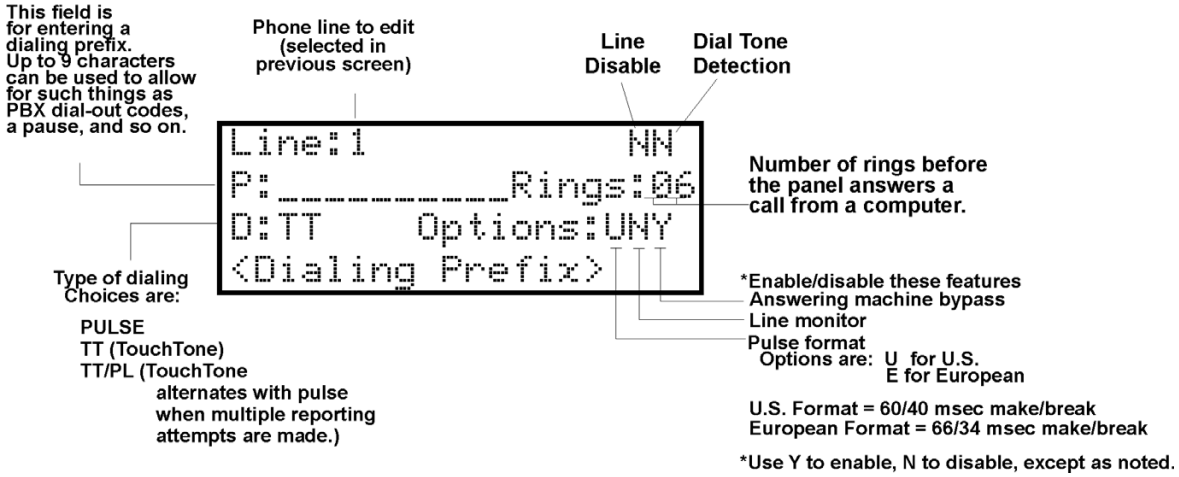


Figure 7-15 Phone Lines Editing Screen

7.6.2.1 Dialing Prefix

Enter up to 9 characters to be used for such things as PBX dial-out codes, a pause, and so on. The following special characters are available:

#	Pound (or number) key on the telephone
*	Star key on the telephone
,	Comma (character for 2-second pause)

Use the number buttons on the annunciator or the up- and down-arrow keys to select special characters. Characters begin displaying after "9". See Figure 7-15 for an example.

6. Enter a dialing prefix (if needed), then press ENTER. Or, press the right arrow to bypass the dialing prefix option.

7.6.2.2 Number of Answer Rings

This option is used in conjunction with the Silent Knight Software Suite 5650/5651. Use the option to determine the number of rings before the panel answers a call from the computer. Range is 00-15 rings. This option is factory-programmed as 06 rings, which should be compatible for most installations where the answering machine bypass feature is used. You may need to adjust it depending on the installation's telephone system.

The selection made here must match the programming for this option in the Communication Configuration dialog box of the 5650/5651 software. See the SKSS manual for more information (PN 151239).

7. Enter the desired number of answer rings, then press ENTER.

7.6.2.3 Dial Option (TouchTone or Pulse)

8. Press the ▲ or ▼ arrow to select the dial option, then press ENTER.

Dial Option	Description
PULSE	If this option is selected, only pulse dialing will be used for this phone line.
TT	TouchTone dialing. If this option is selected, only TouchTone dialing will be used for this phone line.
TT/PL	TouchTone alternating with pulse. If this option is selected, the dialer will first attempt to use TouchTone. It will switch to pulse if TouchTone is not successful on the first attempt. It will continue to alternate between TT and pulse for additional attempts.

7.6.2.4 Rotary Format

9. Press the ▲ or ▼ arrow to select the pulse ratio for rotary dialing option, then press ENTER.

   Options are:

   U U.S. standard format. Uses the 60 msec / 40 msec make/break ratio.

   E European format. Uses the 66 msec / 34 msec make/break ratio.

7.6.2.5 Line Monitor

Enable the line monitor for each phone line that will be used. See Figure 7-15 for location of this field on the phone lines screen. When the phone line monitor has been enabled for a phone line, a trouble condition will occur if the line is not connected. If a phone line will not be used, it must be disabled.

10. Select Y (monitor line) or N (don't monitor line) by pressing the ▲ or ▼ arrow, then press ENTER.

7.6.2.6 Answering Machine Bypass

This option is used in conjunction with the Silent Knight Software Suite 5650/5651. This feature ensures that an answering machine will not interfere with communication between the panel and the computer. If an answering machine is used at the panel site, enable this feature; if an answering machine is not used, disable the feature.

This option is factory-programmed as Yes (enabled).

The selection made here must match the programming for this option in the Communication Configuration dialog box of the 5650/5651 software. See the manual for the software (p/n 151239) if you need more information.

11. Select Y (answering machine bypass enabled) or N (answering machine bypass disabled) by pressing the ▲ or ▼ arrow, then press ENTER.

7.6.3 System Event Outputs

1. Enter the installer code.
2. Select 7 for Program Menu.
3. From the Program Menu, select 5 for System Options.
4. From the System Options Menu, select 2 for Sys. Event Outputs.

7.6.3.1 Trouble Events

You can map certain system trouble events to an output group. To access the screen for selecting output groups

and cadence patterns for system trouble events.

5. Press 1 for Trouble Events. A screen similar to the one in Figure 7-16 will display. Select a group and a cadence pattern for each event as needed for your application. The U: field is for a user-specified trouble condition. You can program an output group and cadence pattern for any of the following events:

Battery	Low battery condition
Phone Ln	Phone Line 1 or 2 trouble
Account	Account trouble; cannot report to account
Printer	Printer trouble
Aux Pwr	Auxiliary power trouble
Sys Sw	Trouble with a system switch
Group Tr	Trouble with an output group
SBUS Com	SBUS communication trouble
SBUS Pwr	SBUS power trouble
SLC Loop	Trouble on the SLC loop
AC Loss	AC power lost

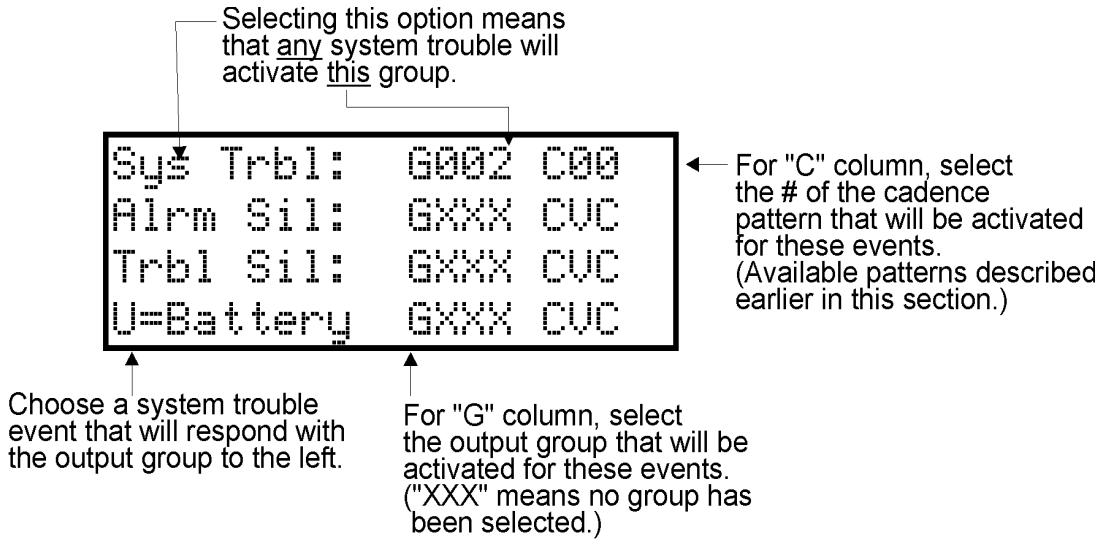


Figure 7-16 System Trouble Event Mapping Example

7.6.3.2 System Alarm Cadence

Fire drill and system auxiliary alarm events can have special cadence patterns to distinguish them from other types of alarms. See Section 7.3.1.4 for available cadence patterns.

A typical use of the System Aux1 and Aux2 patterns is to distinguish fire emergencies from other types of emergencies. The System Aux1 and Aux2 alarms would be triggered by a system-wide switch.

To access the screen for selecting output groups and cadence patterns for system trouble events:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 5 for System Options.
4. Select 2 for Sys. Event Outputs.
5. Press 2 for System Alarm Cadence.

   A screen similar to the one in Figure 7-17 will display. Select a cadence pattern for these special events if

required for your application.

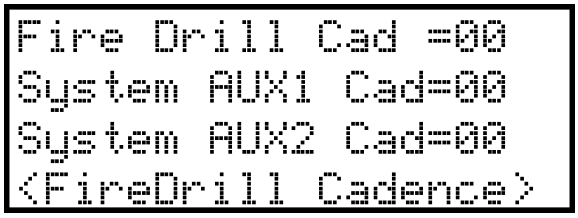


Figure 7-17 Special Cadence Patterns for Fire Drill and Auxiliary Alarm Events

7.6.4 Day/Night Sensitivity Time

If you need to change the time that sensitivity levels take effect (that is, the time that "Day" and "Night" begin, as well as the days of the week), follow these steps.

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 5 for System Options.
4. Select 3 for Day/Night Sense.

   A screen similar to the one shown in Figure 7-18 will display.

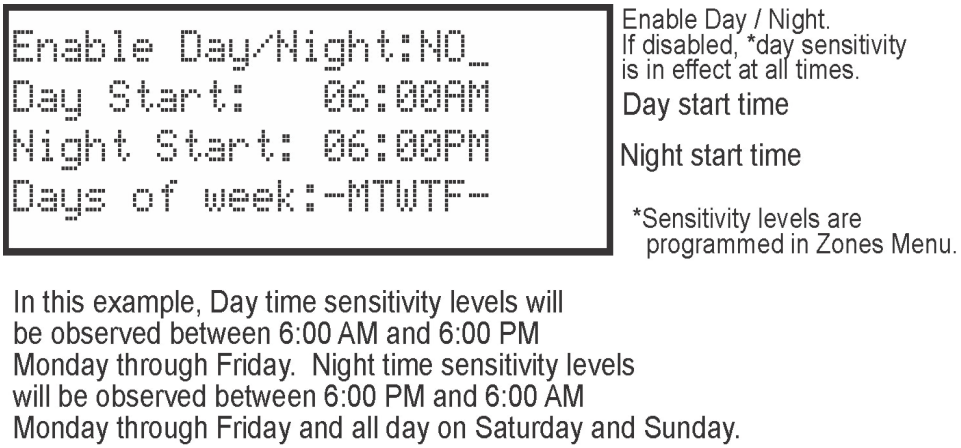


Figure 7-18 Changing Day/Night Sensitivity Time and Days

7.6.5 Holiday Days

Up to 18 dates can be designated as holidays. When day/night sensitivity is enabled, all photoelectric smoke detectors in the system will use night sensitivity for the entire day on days designated as holidays (see Section 7.6.4).

To add or change a holiday, follow these steps.

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 5 for System Options.
4. Select 4 for Holiday Days.

A screen similar to that shown in Figure 7-19 will display.



Figure 7-19 Select Holidays

Note: For most installations, holiday programming will need to be performed each year to ensure correct dates.

5. Select the holiday schedules you wish to edit (1- holidays 1 - 9, 2- holidays 10 - 18).

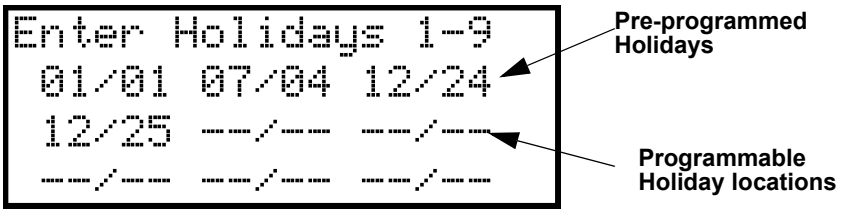


Figure 7-20 Edit Holidays Screen

6. Enter the month of the Holiday, then press ENTER.
7. Enter the day of the month for the Holiday, then press ENTER.
8. Repeat steps 6 and 7 for any remaining holidays you wish to program.

7.6.6 Time Options

Through this programming option you can set the water flow delay time, Alarm Verification, low AC report delay, AMPM/Military time and AC Frequency.

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 5 for System Options.
4. Select 5 for Time Options.

7.6.6.1 Water Flow Delay

You can program a delay of 0-90 seconds (zero means no delay) to be used in conjunction with a water flow switch. The delay is system-wide. All water flow switches on the system will use the same delay period.

To access the screen for programming water flow delay, follow these steps:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 5 for System Options.
4. Select 5 for Time Options.

A screen similar to the one shown in Figure 7-21 will display.

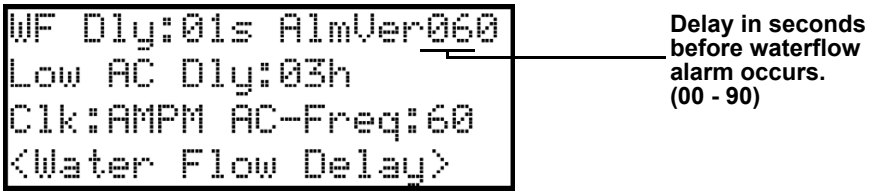


Figure 7-21 Water Flow Delay Programming Screen

5. Enter the number of seconds (0 to 90) to delay an a water flow switch alarm, then press ENTER.

7.6.6.2 Alarm Verification Time

You can set the alarm verification time from 1 to 250 seconds (default is 60 seconds).

To set the alarm verification:

6. Enter the desired number of seconds for the alarm verification time.
7. Press or ENTER to make your selection and move to the next programming option.

7.6.6.3 Low AC Report Delay

Note: You must select 1-3 hours in UL central station installations and UL remote signaling installations.

You can adjust the number of hours before a Low AC report will be sent to the central station.

To program low AC report delay, follow these steps:

Note: Steps continued from step 7 of Section 7.6.6.2.

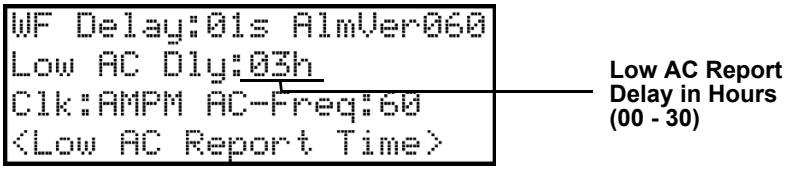


Figure 7-22 Low AC Report Delay Programming Screen

8. Enter the number of hours before a low AC report will be sent to the central station, then press ENTER. Refer to Figure 7-22.

7.6.6.4 Clock Display Format (AM/PM or Military)

To change the system clock display format, continue programming from step 8 above:

9. Select AMPM (for AM/Pm display format) or MIL (for military or 24 hr display format) by pressing the ▲ or ▼ arrow, then press ENTER.

7.6.6.5 Change AC Line Frequency

The panel's AC line frequency is selectable for 50, 60 Hz, or Neither. AC Frequency feature dictates how the control panel will calculate time based on the AC line frequency used in the installation site. The "Neither" option can be used in areas where the AC line frequency is not dependable and you want the panel to calculate time from the internal crystal. The internal crystal is not as accurate as the AC power source and either 60 Hz or 50 Hz should normally be selected. The panel defaults to the 60 Hz. selection

To change the AC line frequency, continue programming from step 9 above:

10. Select 50, 60 or Neither, by pressing the ▲ or ▼ arrow, then press ENTER.

7.6.7 Miscellaneous Options

Through this programming option you can turn on or off strobe synchronization during silence, display status at idle (auto display event), report by zone or point, plexiglass door, and single key ack.

To edit Miscellaneous Options:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 5 for System Options.
4. Select 6 for Miscellaneous Options.

7.6.7.1 Synchronize Strobes Active During Silence

When "SYNC Strbs w/ Sil:" is Selected as Y (Yes) then strobes will continue to flash when the system is silenced and will stop flashing when the system is reset.

Note: The "SYNC Strbs w/ Sil:" only functions with outputs that use a synchronized output pattern.

5. Press the  or  arrow to toggle this selection between Y (Yes) or N (No).
6. Press the right arrow or ENTER to make your selection and move to the next programming option.

Note: See Section 7.3.1.4 for more information about Synchronization protocol choices.

7.6.7.2 Auto Display Oldest Event

When this feature is programmed Y (Yes) then the oldest un-acknowledge event will automatically display on the control panel and remote annunciators after there has been no activity on any system touchpad for two minutes.

7. Press the  or  arrow to toggle this selection between Y (Yes) or N (No).
8. Press the right arrow or ENTER to make your selection and move to the next programming option.

7.6.7.3 Report by Zone or by Point

When the "Report by" option is set to Zone, then the control panel will report events by zone. If Point is selected then the control panel will report events by point.

9. Press the  or  arrow to toggle this selection between Zone or Point.
10. Then press the right arrow or ENTER. See Section 10 for reporting codes.

7.6.7.4 Single Key Acknowledge

When this feature is programmed Y (Yes) allows the user to press the ACK Key and display the oldest un-acknowledged event in the system. Pressing ACK again will acknowledge the event, then display the next oldest un-acknowledge event without pressing the  or  arrow.

7.6.8 Daylight Savings

From Miscellaneous Options 3, you set the alarm verification time and set the start and end week and month of Daylight Saving Time.

To edit Miscellaneous Options 3:

1. Enter the installer code.

2. Select 7 for Program Menu.
3. Select 5 for System Options.
4. Select 7 for Daylight Savings.
5. Daylight Saving Time Start and End

7.6.8.1 Automatic Daylight Saving Time Adjustment

The control panel has an automatic DST (Daylight Saving Time) adjustment feature. Before January 2007, if this feature is enabled (set to *Yes*), the system clock will switch to DST on the first Sunday in April at 2:00 a.m. and revert to standard time on the last Sunday in October at 2:00 a.m. After January 2007, if this feature is enabled, the system clock will start and end DST according to the settings made in Daylight Savings (see Section 7.6.8). If this feature is not enabled (set to *No*) the Daylight Saving Time change is not made to the system clock.

To enable or disable DST adjustment continue programming from step 4 above:

1. Select Y (enabled) or N (disabled) by pressing the ▲ or ▼ arrow, then press ENTER.

7.6.8.2 Daylight Saving Time Start and End

This option lets you to adjust the week and month Daylight Saving Time (DST) starts and ends. For this feature to work, you must enable (set to *Yes*) the DST option under Daylight Savings (see Section 7.6.6.4). You can view and change the settings in this option anytime, however, settings will not take effect until 2007. The default values for the DST Start and End options reflect the August 8, 2005 DST law that goes into effect in 2007:

DST Start: The second Sunday in March
DST End: The first Sunday in November

To set the start and end for Daylight Saving Time:

1. Press the ▲ or ▼ arrow to select the week (1st, 2nd, etc.) Daylight Saving Time starts, then press ENTER to make your selection and move to the month setting.
2. Press the ▲ or ▼ arrow to select the month (January – December) Daylight Saving Time starts, then press ENTER to make your selection and move to the DST End option.
3. Press the ▲ or ▼ arrow to select the week (1st, 2nd, etc.) Daylight Saving Time ends, then press ENTER to make your selection and move to the month setting.
4. Press the ▲ or ▼ arrow to select the month (January – December) Daylight Saving Time ends, then press ENTER two times to make your selection and exit.

7.6.9 Edit Banner

The banner is the message that displays on the panel LCD when the system is normal, that is, when no alarms or troubles exist and no one is currently using system menus. You can create a customized message, which can be up to 40 characters, two lines of 20 characters each.

If you do not create a customized message, the system will use the internal banner. You cannot change the internal banner.

To customize the banner display message:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 5 for System Options.

4. Select 8 for Edit Banner.

   A screen similar to the one shown in Figure 7-23 will display.

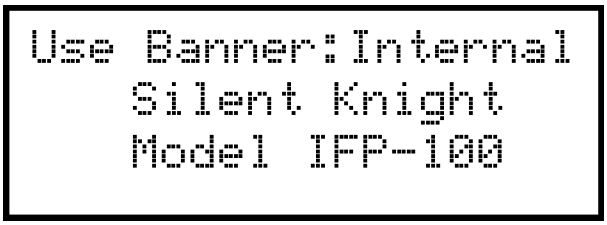


Figure 7-23 Internal Banner Message

5. Press the ▲ or ▼ arrow to select "Custom", then press ENTER.

   A screen similar to the one shown in Figure 7-24 will display.



Figure 7-24 Custom Banner Edit Screen

6. Select each character of a word by pressing the ▲ or ▼ arrow, then press the right arrow to move to the next character.
7. When word or sentence is complete press ENTER to move to line two of the custom banner. Repeat step 5 and 6.

7.6.10 SLC Family

The IFP-100 supports the use of either SD protocol SLC devices or Intelligent Device Protocol (IDP) SLC devices. You must configure the IFP-100 to accept the protocol you are installing. You cannot mix SLC devices of different protocols.

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 5 for System Options.
4. Press 9 for SLC Family.
5. Press the ▲ to select the desired SLC device type.
6. Press ENTER to accept the displayed SLC device type.

7.7 JumpStart AutoProgramming

JumpStart is intended to be used prior to performing any custom programming. Each time JumpStart is executed, all options will be reset to their default values. Do not run JumpStart after you have configured the system through programming.

To run JumpStart:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 6 for System Options.
4. Press the ▲ or ▼ arrow to select "Yes" from the warning screen.
5. Press ENTER.

7.8 Computer Account

An installer at the panel site can initiate communications between the panel and a computer running the 5650/5651 SKSS (see also Section 8.4.19). In order for this communication to function properly both the computer (running the software) and the control panel must have matching computer account numbers and computer access codes.

Before you program in this location you should know how your control panel will communicate with the downloading computer, either through direct connect (RS232 or USB) or via the phone lines (Internal Modem).

If the panel initiates the call to a downloading computer, a phone number must be programmed in the computer accounts area. If the computer initiates the call then answering machine bypass (see Section 7.6.2.6) may need to be selected.

To program computer account information:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 7 for System Options.
4. Enter the computer account number, then press ENTER.
5. Enter the computer code (up to 7-digits), then press ENTER.
6. Enter the phone number the panel will dial to connect to a downloading computer (up to 24-digits), then press ENTER. See Table 7-8 for special dialing characters.

7.9 Access Codes

Access codes provide the user access to the control panel functions. Each access code can be customized for each user. This allows some users the ability to access programming and other higher level panel functions, while other users may only need access to lower level functions such as preforming fire drills, or acknowledging trouble conditions.

Profile 1 is the profile that dictates what functions the Fire Fighter Key has access to. Because this is the profile for a key the user name and the access code can not be edited for this profile.

Profile 2 is the profile for the installer and is referred to as the "Installer Code". This profile's user name and

panel functions can not be edited.

Table 7-9 lists the panel functions that can be selected for each user profile.

Table 7-9: User Profile Selectable Panel Functions

Type of Function	Selectable Functions
Panel Operations	System Reset
	System Silence
	Event Ack
	Fire Drill Key
	ECS Control Request
	ECS Super User
Panel Menus	System Test
	Fire Drill Menu
	Indicator Test
	Walk Test no Rpt
	Walk Test with Rpt
	Dialer Test
	Clear History Buf
	Point Functions
	Disable/Enable Pt
	Point Status
	Set SLC Dev Addr
	SLC Dev Locator
	SLC Mult Locator
	I/O Point Control
	Event History
	Set Time & Date
	Printer Options
	Event Logging
	Print Event History
	Print Detector Status
	Print System Cfg
	Reset Dialer
	Program Menu
	System Information
	Upload/Download

To change an access code:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 8 for System Options.

Display reads:Select Profile 01

Fire Fighter's Key

4. Select the access code you wish to edit by pressing the ▲ or ▼ arrow. Press ENTER.

7.9.1 Profile Edit Menu

From the Profile Edit Menu you can change the users name, access code, and the panel functions that the user will have access to with their code.

Note: Profile 1 (Fire Fighter's Key) the user name and access code can not be edited. Profile 2 (Installer) the user name and panel functions can not be edited.

7.9.1.1 Edit Name

5. Select each character of a word by pressing the ▲ or ▼ arrow, then press the right arrow to move to the next character.
6. Repeat step 7 until user name is complete. Press ENTER to finish.

7.9.1.2 Edit Access Code

7. Enter new access code (minimum of 4 digits, maximum of 7 digit). Press ENTER.
8. Enter code again. Press ENTER.

7.9.1.3 Panel Functions

9. Press the ▲ or ▼ arrow to move through the list of available functions.
10. Then press the right arrow to move to Y (yes) or N (no) selection column.
11. Press the ▲ or ▼ arrow to select Y or N. Press ENTER.

7.10 Voice Options

7.10.1 VCM Maintenance

This programming menu option enables the user to add and edit the user message stored in the ECS-VCM. See the *ECS-Series Installation Manual* (PN 151455) for more information.

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 5 for System Options.
4. Select 9 for ECS-VCM Maint.

7.10.1.1 PC Connection

This option is used when adding or editing user message through the Farenhyt ECS Message Manager software. Refer to Section 9.10.4 for more information.

7.10.1.2 Local Recording

Select this option if you wish to record the user message with the ECS-VCM microphone, or through the sound card of your PC. See Section 9.10.1 for more information.

7.10.2 Edit Voice Commands

When a voice output group is selected to be activated by a zone, the cadence pattern choice listed in Section 7.3.1.4 do not apply. For voice output groups, on of seventeen system wide voice commands will activate instead of the cadence pattern. Which command is determined by the event type selected for that zone. This menu option allows you program, the message to be used, the tone used, repeats, and message delays, for each of the seventeen command. Table 9-3 lists the seventeen different commands and the associated event type. See also Section 7.3.1 for more information.

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Select 5 for System Options.
4. Select 9 for Edit Voice Cmds.
5. Select the command you wish to edit:
    - Fire Alarm
    - Fire Aux1
    - Fire Aux2
    - Fire Pre Alarm
    - Fire Supervisory
    - CO Alarm
    - CO Supervisory
    - Trouble
    - Custom Emrgncy Comm
    - Emergency Comm 1 thru 8
6. Select the desired message used for that command
7. Select the tone to be played between messages. ((ANSI, March Code, California, Steady, Alert Tone, High-Lo, ANSI Whoop, Cont Whoop, Temporal 4, Temp 4 520Hz, ANSI 520Hz, Steady 520Hz, No Tones).

Note: 520Hz tones are available when using ECS-VCM, ECS-INT50W or ECS-Dual50W. See Table A-3 for a list of compatible speakers.

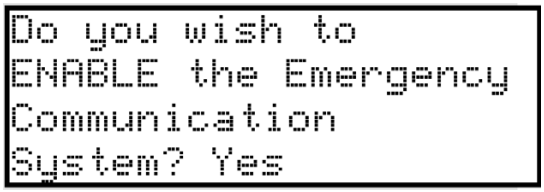
8. Select how many times you wish the message to repeat. (None, 1 - 14, or Continuous.)
9. Enable/Disable AMR (Allow Message to Repeat with New Group Activation). Y = Yes, N = No.
10. Select the initial delay time (0 to 28, or 3 seconds, in 4 second increments).
11. Select the inter message delay time (4 to 32 seconds, in 4 second increments).

7.10.3 ECS System Options

7.10.3.1 Enable ECS System

1. Select 7 for Program Menu.
2. Select 5 for System Options.
3. Select * for ECS System Options.
4. Then select 1 for Enable ECS System

5. The following screen will appear:



6. Press the ▲ or ▼ arrow to toggle this selection between Yes or No, then press ENTER.

7.10.3.2 Edit Cmd Priority

1. Select 7 for Program Menu.
2. Select 5 for System Options.
3. Select * for ECS System Options.
4. Then select 2 for Edit Cmd Priority.
5. Press ▼ to select the voice command you want to change. It will be blinking.
6. Press ENTER on the blinking command message to move.
7. Press the ▲ or ▼ arrow to move the voice command to the appropriate priority location.
8. Pressing ENTER will lock the message into its location.
9. Repeat process to change priority of other message. Keep in mind the priority limitations described in section 9.11.1.

7.10.3.3 Edit Command Mapping

1. From the Installer Main Menu, select 7 for Program Menu.
2. From the Program Menu, select 5 for System Options.
3. Select * for ECS System Options.
4. Then select 3 for Edit Cmd Mapping.
5. Select the ECS Message for items described. See Table 9-3.
6. Eight groups or templates can be entered in the following screen

GXXX -CVC GXXX - CVC
GXXX -CVC GXXX - CVC
GXXX -CVC GXXX - CVC
GXXX -CVC GXXX - CVC

7. If a voice group is entered in the GXXX field, the Cadence field will be filled with a CVC and the field is not able to be edited.
8. If a non-voice group is entered in the GXXX field, the user will be allowed to enter a Cadence value. See example below:

G004 -CVC G001 - C03

7.10.3.4 Edit Timers

1. Select 7 for Program Menu.

2. Select 9 for Voice Options.
3. Select 3 for ECS System Options.
4. The select 4 for Edit Timers.
5. From next menu, select 0 for Control Lockout.
6. Press the Up or Down arrow to select Immed/Timer/Never, then press ENTER. If timer is selected, enter the minutes (Range 0-720), and seconds (Range 0 to 59), then press ENTER. (Default is 30 seconds).
7. To edit Auto Reset:
   - Press 1 for Auto Reset EC 0.
   - Press 2 for Auto Reset EC 1.
   - Press 3 for Auto Reset EC 2.
   - Press 4 for Auto Reset EC 3.
   - Press 5 for Auto Reset EC 4.
   - Press 6 for Auto Reset EC 5.
   - Press 7 for Auto Reset EC 6.
   - Press 8 for Auto Reset EC 7.
   - Press 9 for Auto Reset EC 8.
8. Press the Up or Down arrow to select Never/Timer/Event Disabled, then press ENTER. (If timer is selected, a range of 0 to 240 minutes is allowed. Default is Never Auto Reset).

7.10.3.5 Edit Event Names

1. Select 7 for Program Menu.
2. Select 9 for Voice Options.
3. Select 3 for ECS System Options.
4. The select 5 for Edit Event Names.
5. Press the Up or Down arrow to Select Voice Event:
   - Custom Emergncy Comm
   - Emergency Comm 1
   - Emergency Comm 2
   - Emergency Comm 3
   - Emergency Comm 4
   - Emergency Comm 5
   - Emergency Comm 6
   - Emergency Comm 7
   - Emergency Comm 8
   - Aux Voice In Events
6. Press ENTER to change Event Name

Section 8
System Operation

Operation of the control panel is simple. Menus guide you step-by-step through operations. This section of the manual is an overview of the operation menus. Please read this entire section carefully before operating the panel.

Press ENTER to view Main Menu: Select the desired menu option. Enter your access code if prompted.

Note: See Section 7.9 for information on how to modify user access code profiles.

8.1 Default User and Installer Codes

User Code: Factory-programmed as 1111.

Installer Code: Factory-programmed as 123456.

8.2 Annunciator Description

Figure 8-1 shows the annunciator that is part of the control panel board assembly.

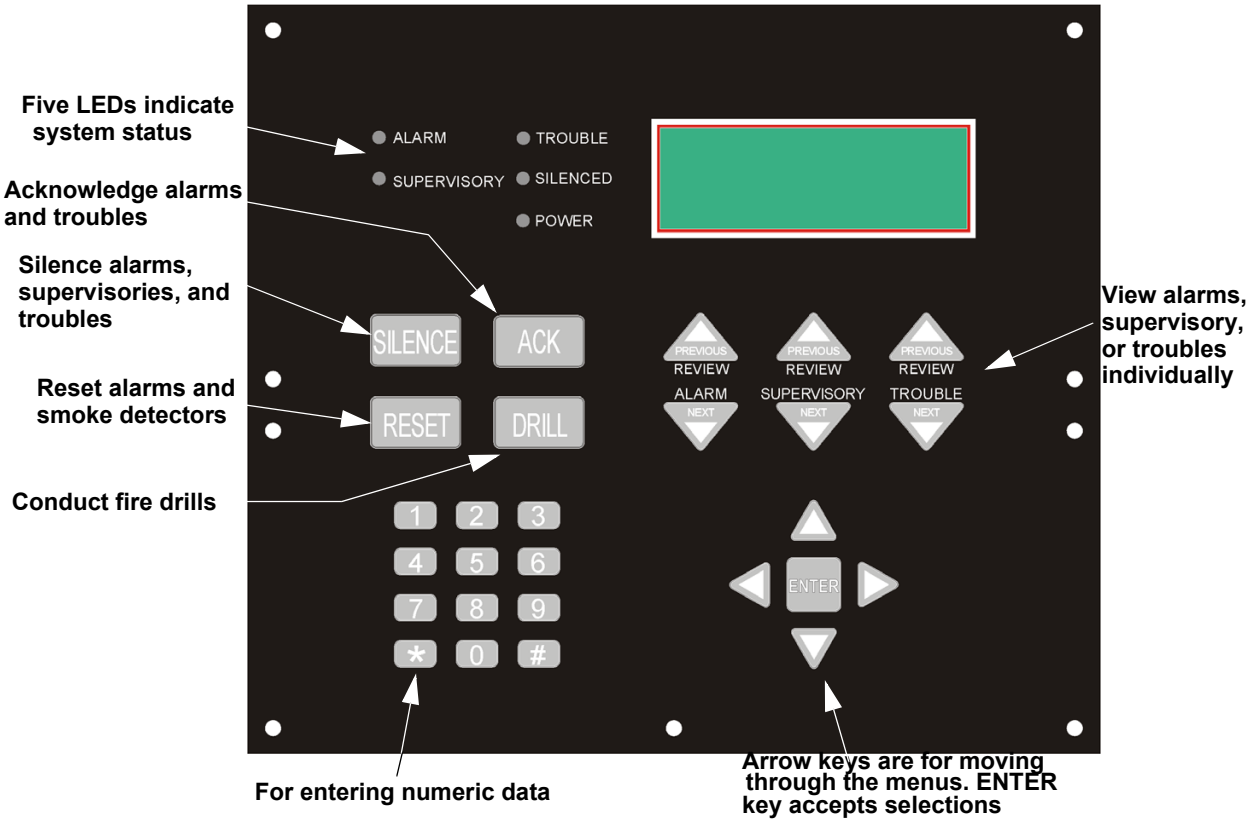


Figure 8-1 Control Panel Annunciator

8.2.1 LCD Displays

The control panel LCD displays system messages, annunciates alarms, supervisories and troubles; provides status information; and prompts for input. These messages can be up to 80 characters, displaying over four lines of 20 characters each. Annunciator keys beep when they are pressed.

8.2.2 Banner

The banner is the message that displays on the control panel when the system is in normal mode (no alarm or trouble condition exists and menus are not in use). You can create a customized message that will display instead of the internal (default) message. See Section 7.6.9 for information on customizing the banner.

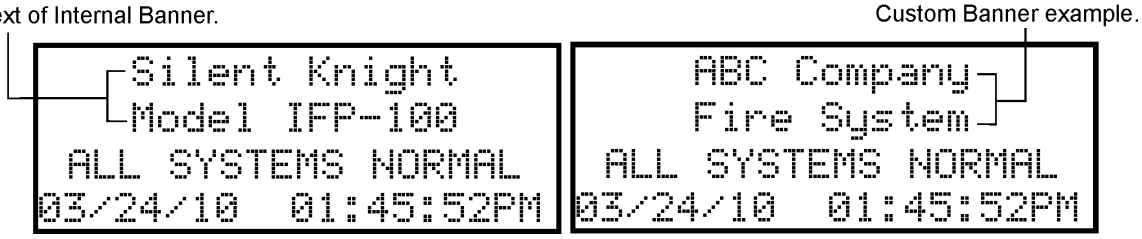


Figure 8-2 Banner Display Examples

8.3 Menu System

The control panel is easy to operate from the Main Menu. To view the Main Menu press the ENTER or ▷ button on the control panel or remote annunciator. The Main Menu will appear as shown in Section 8.3.1. Select the desired option and enter your access code if prompted.

The control panel supports up to 20 access codes. The profile for each access code (or user) can be modified through the programming menu option (see Section 7.9 for access code programming).

8.3.1 Main Menu Overview

The chart below is a brief overview of the Main Menu. These options are described in greater detail throughout this section of the manual.

Main Menu Options	Description
1- System Tests	From you can access Fire Drill and Indicator Test.
2- Point Functions	From you can enable / disable points.
3- Event History	Display event history on the LCD. See Section 8.4.6 for more information.
4- Set Time and Date	Set time and date for the system.
5- Printer Options	Options for controlling a printer if attached to the system. If a printer is used, the Model 5824 serial/parallel interface module must be used.
6- Reset Items	Cancel any attempt to call the central station. Any calls awaiting additional attempts will be aborted.
7- Program Menu	Brings up a set of menus for programming the panel, including changing access codes. These options are described in detail in Section 7.
8- System Info	View system information, including model and serial numbers and revision number and date.
9- Up/Download	Initiate communication from the panel site between the panel and a computer running the Silent Knight Software Suite.

8.3.2 Using the Menus

To move through the menus:	Use Up or Down arrow to move through the options in a menu. Use the left arrow to move to a previous menu.
To select an option:	Enter the number of the option. –OR– Press ENTER if the option appears at the top of the menu (= symbol displays after the option number in this case).

8.4 Basic Operation

8.4.1 Setting Time and Date

1. From the Main Menu, select 4 for Set Date and Time.
2. Make changes in the fields on the screen. Use the right arrow to move through the fields. Use the Up or Down arrow to select options in the fields.
3. When the date and time are correct, press ENTER.

8.4.2 Disable / Enable NACs by Group

1. From the Main Menu, select 2 for point functions.
2. Select 1 for Disable/Enable Point.
3. Select 1 to Disable NACs by group or 2 to Enable NACs by group.
4. Use the Up or Down arrow to move through the list of groups. Press ENTER to select the group highlighted.

8.4.3 Disable / Enable a Template

1. From the Main Menu, select 2 for Point Functions.
2. Select 1 for Disable/Enable Point.
3. Select 1 to Disable NACs by Template or 2 to Enable NACs by Template.
4. Use the Up or Down arrow key to select the Template and press ENTER.

8.4.4 Disable / Enable a Zone

1. From the Main Menu, select 2 for Point Functions.
2. Select 1 for Disable/Enable Point.
3. Select 5 to Disable Zone Points or 6 to Enable Zone Points.
4. Use the Up or Down arrow key to select the Zone and press ENTER.

8.4.5 Disable / Enable a Point

1. From the Main Menu, select 2 for Point Functions.
2. Select 1 for Disable/Enable Point.
3. Select 7 for Disable/Enable Pt.

4. Use ▲ or ▼ to move through the list. Press ENTER to select the module where the point you want to disable/enable is located. Select the point to disable or enable on the module. A description of the point should display. The fourth line of the screen should show “NORMAL” (meaning that the point is currently enabled) or “DISABLED” (the point is currently disabled). Press the right arrow to toggle between NORMAL and DISABLE.

8.4.6 View Event History

Use the View Event History feature to display events on LCD. From the Main Menu, press 3 to select Event History. Events will begin displaying with most recent events first.

The panel can store up to 1000 events. When it reaches its 1000-event capacity, it begins deleting, starting with the oldest events.

If a printer is attached to the system (via a Module 5824 serial/parallel interface module), you can print event history (see Section 8.4.20).

The 5650/5651 SKSS can be used to retain more than 1000 events and to create event history reports.

8.4.7 Clear Event History

From the Main Menu select 1 for System Tests. From the test menu select 6 Clear History Buffer.

8.4.8 Conduct a Fire Drill

1. From the Main Menu, press 1 for System Tests.
2. Press 1 for Fire Drill. You will be prompted to press ENTER.
3. The drill will begin immediately after you press ENTER.
4. Press any key to end the drill. (If you do not press any key to end the fire drill manually, it will time out automatically after ten minutes).

If a fire drill switch has been installed, activating the switch will begin the drill; deactivating the switch will end the drill.

8.4.9 Conduct an Indicator Test

The indicator test checks the annunciator LEDs and the PZT sounder.

1. From the Main Menu, press 1 for System Tests.
2. Press 2 for Indicator Test. The system turns on each LED and beeps the PZT. A problem is indicated if any of the following occurs:

- An LED does not turn on
- You do not hear a PZT beep

The test will time out after 15 minutes or you can press any key on the annunciator to end the test manually. When the test ends, you will be returned to the System Test Menu.

8.4.10 Conduct a Walk Test

1. From the Main Menu, press 1 for System Tests.

IMPORTANT!
If any alarm verification zones are being used, the user will be asked if they wish to disable alarm verification during walk test. This occurs for either walk test option.

2. Select 3 for Walk Test-No Rpt. Enter the time period you wish the NAC circuit to be active for each alarm (06 to 180 seconds). The LCD will display “WALK TEST STOPPED” on Line 1 and “ENTER = start test” on Line 3. By selecting this option, central station reporting is disabled while the test is in progress.

   Or

   Select 4 for Walk Test-with Rpt. Enter the time period you wish the NAC circuit to be active for each alarm (06 to 180 seconds). The LCD will display “WALK TEST STOPPED” on Line 1 and “ENTER = start test” on Line 3. By selecting this option, central station reporting will occur as normal during the walk test.

   The panel generates a TEST report to the central station when the walk test begins. During a walk test, the panel’s normal fire alarm function is completely disabled, placing the panel in a local trouble condition. All zones respond as 1-Count zones (respond when a single detector is in alarm) during a walk test. Each alarm initiated during the walk test will be reported and stored in the event history buffer.

3. Press ENTER to end the walk test. The system will reset. The panel will send a “TEST RESTORE” report to the central station.

If you do not end the walk test manually within four hours, it will end automatically. If an alarm or pre-alarm condition is occurring in the system, you will not be able to enter the walk test.

Note: The panel does not do a full 30 second reset on resettable power outputs. As soon as the device is back to normal, the panel is ready to go to the next device.

8.4.11 Conduct a Dialer Test

1. From the Main Menu, press 1 for System Tests.
2. Select 5 for Dialer Test. The screen will display “Manual dialer test started”. When the test is completed, you will be returned to the <Test Menu>.

8.4.12 Silence Alarms or Troubles

Press SILENCE and enter your code. If an external silence switch has been installed, activating the switch will silence alarms or troubles.

Note: Alarm and trouble signals that have been silenced but the detector remains un-restored will un-silence every 24 hours until it is restored.

Note: For ECS systems, pressing silence at an LOC will only silence the System in Control. See Section 9.8.1.

8.4.13 Reset alarms

Press RESET and enter your code or rotate the key at the prompt. If an external reset switch has been installed, activating the switch will reset alarms. If you are already using system menus when you press RESET, you will not need to enter your code or rotate the key.

8.4.14 Check Detector Sensitivity Through Point Status

The control panel constantly monitors smoke detectors to ensure that sensitivity levels are in compliance with NFPA 72.

If sensitivity for a detector is not in compliance, the panel goes into trouble, generating a CAL TRBLE condition. A detector enters a CAL MAINT state to indicate that it is approaching an out of compliance condition (but is currently still in compliance).

When a CAL TRBLE condition occurs, the central station receives a detector trouble report ((“373” and the zone or point for Contact ID format; “FT” and the zone or point in SIA format).

To check sensitivity for an individual detector, follow the steps below. Section 8.4.20 provides instructions for printing the status of all detectors in the system.

1. From the Main Menu, press 2 for Point Functions.
2. Press 2 for Point Status.
3. Select the module where the point you want to check is located.
4. Enter the number of the point you want to check and press ENTER.
5. A screen similar to those shown in Figure 8-3 will display.

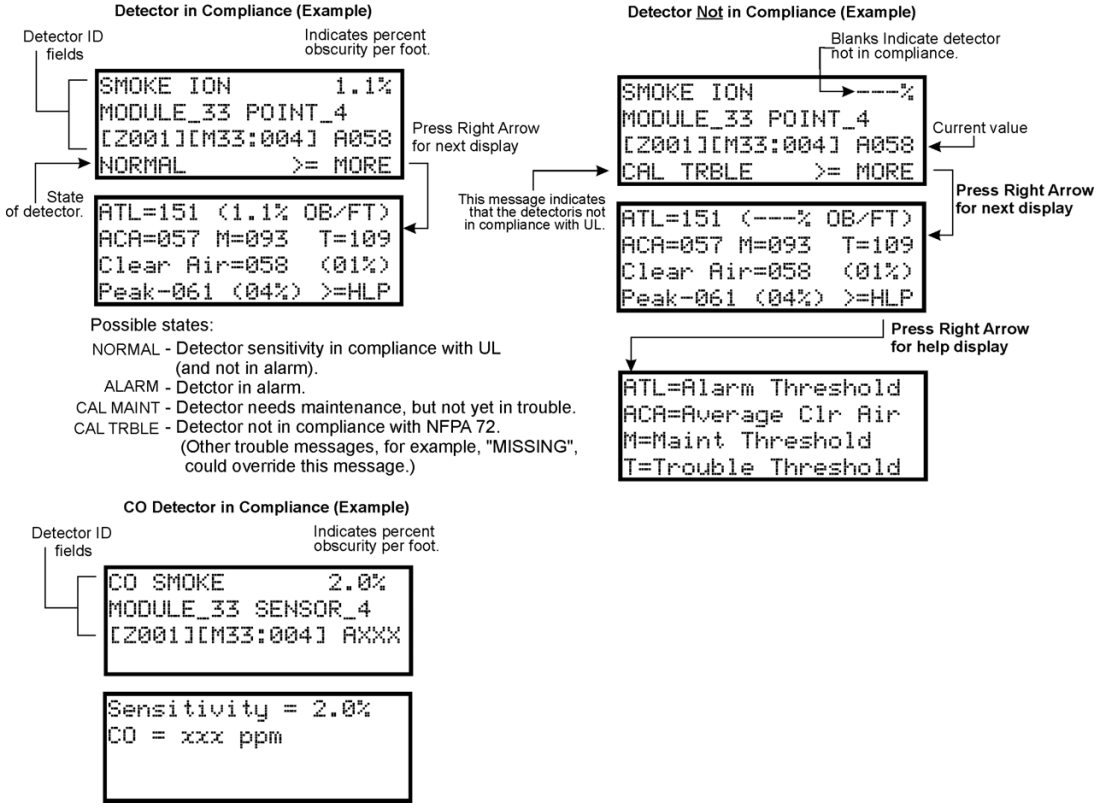


Figure 8-3 Checking Detector Sensitivity Compliance

If a printer is attached to the system (via a Module 5824 serial/parallel printer interface module), you can print detector status (see Section 8.4.20).

8.4.15 View Status of a Point

1. From the Main Menu, select 2 for Point Status.
2. From the list that displays, press ENTER to select the module where this point is located. Next, enter the point to display. The screen that displays will show you if the point has a trouble and will provide sensitivity compliance information. (See Section 8.4.14 for complete information about detector sensitivity compliance.)

8.4.16 View Alarms, Supervisories or Troubles

When the system is in alarm, supervisory or trouble, you can press ▽ to view the location of an alarm, supervisory or trouble.

8.4.17 View System Information

Press 8 from the Main Menu to view the panel model and serial number and system version number and date. Press the left arrow to return to the main menu.

8.4.18 Reset Items

From the Main Menu, select 6 for Reset Items.

8.4.18.1 Reset Dialer

This options allows the user to Reset the Dialer.

The LCD will display:

“Dialer Reset in progress… Please Wait“

You will be returned to the Main Menu when the reset is complete.

8.4.18.2 Reset DSP USB

This options allows the user to reset both the DSP Controller and USB interface logic.

The LCD will display:

“Dialer Reset in progress… Please Wait“

You will be returned to the Main Menu when the reset is complete.

8.4.19 Communicating with a Remote Computer

An installer at the panel site can initiate communications between the panel and a computer running the Silent Knight Software Suite 5650/5651. You can use this feature to upload a panel configuration. For example, if you have made programming changes to an installation on site using an annunciator, you can send your changes to the computer, so that the central station will have the latest data about the installation. See the software manual for more information (PN 151239).

To initiate communication, follow the steps below.

1. From the Main Menu, select 9 for Up/Download.
2. From the next screen that displays, select the communication device. Options are:

1 = Internal Modem	If you select this option, you will use the panel’s built-in modem to call the computer.

2 = RS232 connection	If you select this option, the panel and a computer are both on-site connected via a 9-pin **straight-through** serial cable.

3. If you are using the panel's internal modem to communicate, you will be prompted to enter a phone number. If you are communicating via the RS232 connection, a phone number is not needed and this step will be skipped.

If the phone number you will be calling is already displayed, press ENTER. Continue with Step 4.

If the phone number you will be calling is not already displayed, enter the number and press ENTER. A phone number can be up to 24 digits long and can contain the following special characters.

#	Pound (or number) key on the telephone
*	Star key on the telephone
,	Comma (character for 2-second pause)

Use the number buttons on the annunciator or the up- and down-arrow keys to select special characters. Characters begin displaying after "9".

4. You will be prompted to enter an account number. If the account number you want to use is already displayed, just press ENTER to begin communication.

   If the account number displayed is not the correct one, enter the account number and press ENTER to begin communication or view the next screen.

5. If you are using the panel's internal modem to communicate, you will be prompted to select a modem speed. Press ENTER on a speed to begin communication.

6. The panel will attempt to communicate with the computer. If communication was established, the upload task you created will be placed on the Downloading Software job queue, awaiting processing. When processing is completed, an "Unsolicited Upload" task will appear in the queue.

8.4.20 Working with a Printer

If you are using the Model 5824 serial/parallel printer interface module, several printing options are available. See Section 4.7 for information about installing the 5824.

1. From the Main Menu, select 5 Printer Options.
2. From the next screen, select the 5824 module where the printer is connected.
3. If the printer is not currently busy printing another report, a screen with the following options will be available. If the printer is busy, a message will display. You can press 1 to cancel the current print job. These options will then display.

1= Event Logging	Enables event logging, which causes the printer to continuously print events as they occur. The date/time will print in 24-hour military format. Once event logging is enabled, it will remain enabled until canceled by the installer. If you need to disable event logging, return to this option and press 1 to disable.

Sample Event Log

```
EVENT LOG:                                        STARTED: 02/17/97 02:23

02/17/97  11:23  Event: System Silenced
02/17/97  11:24  Event: System Reset
02/17/97  14:30  Event: Local Programming Begin
02/17/97  15:01  Event: Local Programming Ended Successfully

EVENT LOG:                                        STOPPED: 02/17/97  15:02
```

2 = Print Event History	Prints the up-to-1000 events currently stored in the panel's event history buffer. Events print starting with the newest. The date and time printed will be when the event actually occurred and will print in 24-hour military format.

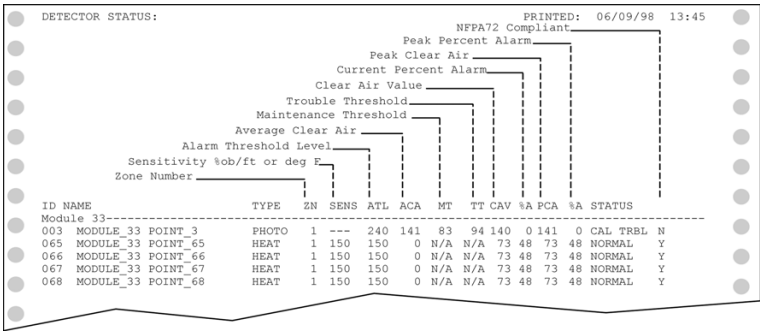
Sample Event History Print-Out

```
EVENT HISTORY:                                        PRINTED:  02/28/97  13:35
02/20/97  09:02  Event    3 of 10: System Silenced
02/20/97  09:05  Event    2 of 10: System Reset
02/22/97  08:47  Event    4 of 10: Printer Off Line 4
02/22/97  08:52  Event    4 of 10: Printer On Line 4
02/25/97  15:54  Event    5 of 10: Local Programming Begin
02/25/97  16:10  Event    5 of 10: Local Programming Ended Successfully
02/28/97  12:50  Event    6 of 10: Walk Test Begin
02/28/97  13:31  Event    2 of 10: Walk Test End
   •
   •
   •
```

3 = Print Detector Status

Prints the current status of all detectors in the system. This is a method for finding out if any detectors are out of NFPA compliance or any detectors need maintenance (are approaching an out of compliance condition).

Sample Detector Status Print-Out



4 = Print System Cfg

Prints the current system configuration of the panel. The entire configuration can be printed, or just specific sections.

Note: Detector status can also be viewed and printed using the 5650/5651 or 5670 SKSS (facility monitoring only).

8.5 Operation Mode Behavior

The control panel can be in one of seven conditions at any given moment: Normal, Alarm, Prealarm, Supervisory, Trouble, Silenced, and Reset. Table 10-1 describes the behavior of the panel in each of these modes.

Table 8-1: Operation Mode Behavior

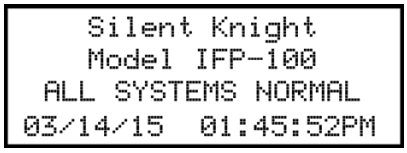
Operation Mode	Occurs When	System Behavior	In This Mode You Can
Normal	No alarm, supervisory, or trouble condition exists and menus are not in use.	SYSTEM POWER LED is on. The All Systems Normal display indicates that the system is in normal mode.  The current date and time display on the last line of the LCD.	Press ENTER to display main menu options. Select the desired option and enter access code.

Table 8-1: Operation Mode Behavior

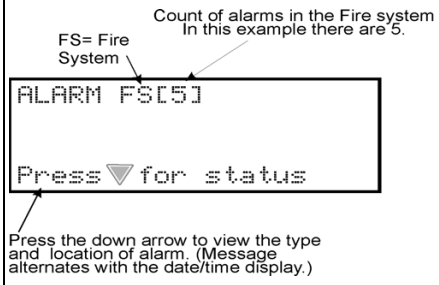
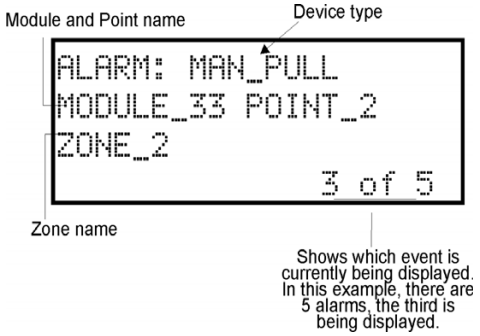
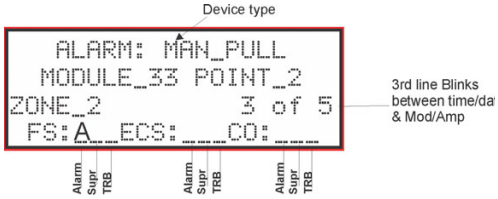
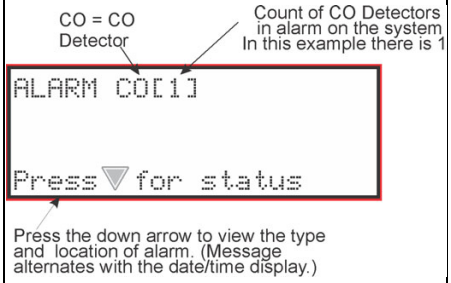
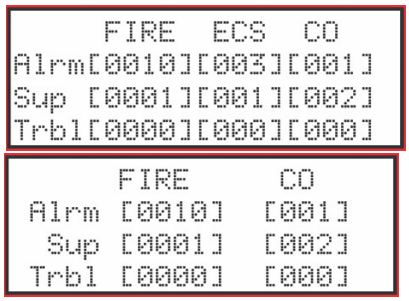
Operation Mode	Occurs When	System Behavior	In This Mode You Can
Alarm	A smoke detector goes into alarm or a pull station is activated.	The dialer seizes control of the phone line and calls the central station. The on-board annunciator sounds a loud, steady beep (any notification devices attached to the system will also sound). GENERAL ALARM LED flashes. The LCD displays a screen similar to this one. 	Press the down arrow to view the alarm. A screen similar to this one displays.  Press Silence and enter an access code (if prompted) to silence the annunciator (and any notification devices attached to the system). When the alarm condition clears, press Reset and enter a code to restore the panel to normal. After sitting idle, events will display in a screen similar to this:  *Note: Alarm and Prealarm are combined into single alarm count.*
	CO Detector goes into Alarm.		
	ECS LOC or point alarm		
	If more than 3 categories are active at a single time and ECS is enabled, top screen will display. IF ECS is not enabled, it will look like bottom screen.		

Table 8-1: Operation Mode Behavior

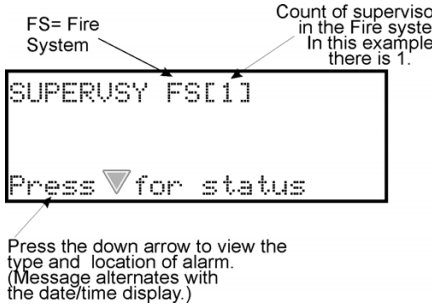
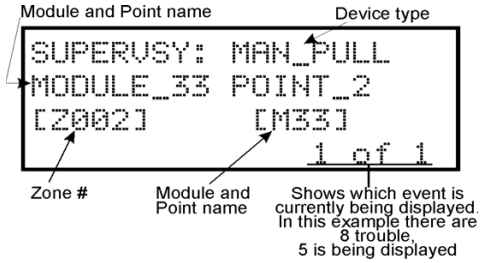
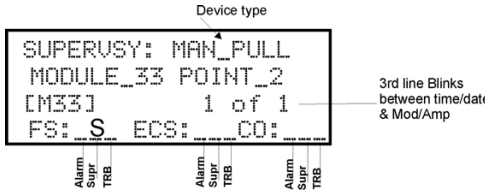
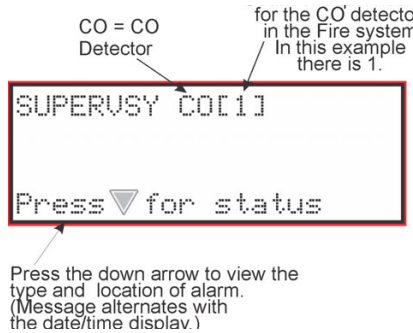
Operation Mode	Occurs When	System Behavior	In This Mode You Can
Supervisory	The system detects a supervisory condition.	The dialer seizes control of the phone line and calls the central station. The on-board annunciator sounds a loud, pulsing beep in the sequence one second on, one second off. SUPERVISORY LED flashes. The LCD displays a screen similar to this one. 	Press down arrow to view the supervisory condition. A screen similar to this one displays.  Press Silence and enter an access code (if prompted) to silence the annunciator. Once the supervisory condition has been corrected, the system will restore itself automatically. After sitting idle, events will display in a screen similar to this: 
	The system detects a supervisory condition with the ECS system.		
	The system detects a supervisory condition with a CO detector.		

Table 8-1: Operation Mode Behavior

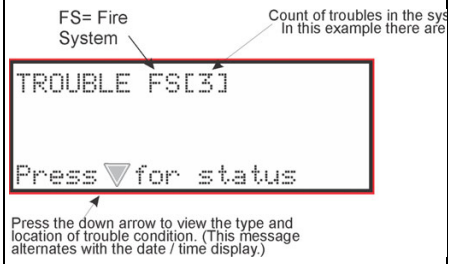
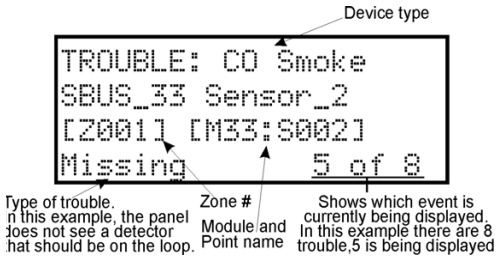
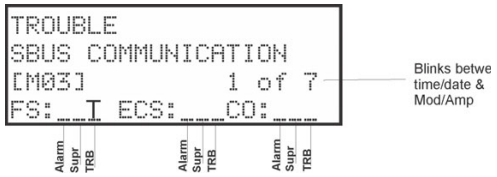
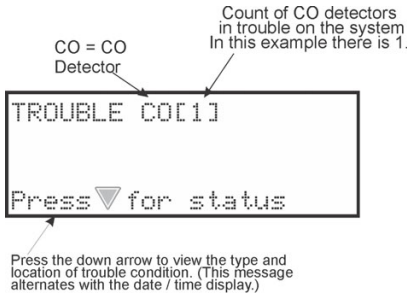
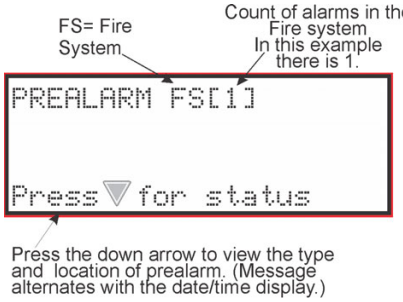
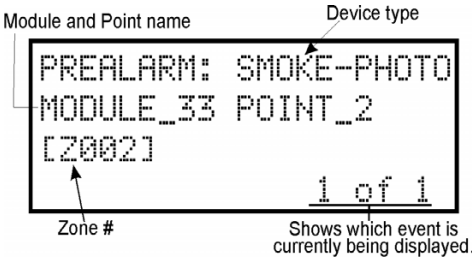
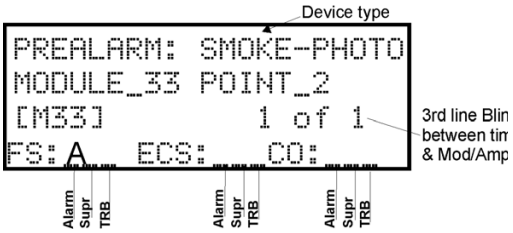
Operation Mode	Occurs When	System Behavior	In This Mode You Can
Trouble	A system trouble condition occurs.	The dialer seizes control of the phone line and calls the central station. The on-board annunciator sounds a loud, pulsing beep in the sequence one second on, nine seconds off. SYSTEM TROUBLE LED flashes. The LCD displays a screen similar to this one. 	Press down arrow to view the trouble. A screen similar to this one displays.  Press SILENCE and enter an access code (if prompted) to silence the annunciator. Once the trouble condition has been fixed, the system will restore itself automatically. After sitting idle, events will display in a screen similar to this: 
	A trouble condition with the ECS system.		
	A trouble condition with a CO detector		

Table 8-1: Operation Mode Behavior

Operation Mode	Occurs When	System Behavior	In This Mode You Can
Prealarm	A single detector trips in a 2-Count zone. (2-Count means two detectors must trip before an alarm is reported.)	Touchpad PZT beeps. The LCD displays a screen similar to this one. 	Press down arrow to view the prealarm. A screen similar to this one displays.  All system operations are available in this mode. After sitting idle, events will display on a screen similar to this:  *Note: Alarm and Prealarm are combined into single alarm count*
Reset (Fire Alarm Only)	The RESET button is pressed followed by a valid code or rotation of the key.	All LEDs are on briefly then the LCD displays “RESET IN PROGRESS”. If the reset process completes normally, the date and time normal mode screen displays.	Menus are not available during the reset process.
Reset (ECS and Fire)	The RESET button is pressed.	All LEDs are on briefly then the LCD displays Press 1 to Reset Fire System. Press 2 to Reset Emerg. System.	Menus are not available during the reset process.
Silenced (ECS and Fire)	An alarm or trouble condition has been silenced but still exists. To silence alarms and troubles, press SILENCE followed by the Installer or User Code or rotate the key.	SYSTEM SILENCE LED is on. SYSTEM TROUBLE, SUPERVISORY or GENERAL ALARM LED (depending on condition) is on. The annunciator (and any notification devices attached to the system) will be silenced.	Press down arrow to view the location of the alarm or trouble. When the condition no longer exists, the SYSTEM SILENCED and SYSTEM TROUBLE LED, SUPERVISORY or GENERAL ALARM LEDs turn off.

8.6 Releasing Operations

This control panel supports two types of releasing: Double Interlock Zone and Single Interlock Zone. The Double Interlock Zone operation requires an interlock switch input in the system, and the Single Interlock does not. An interlock switch is typically a dry-contact pressure switch.

When a Single or Double Interlock Zone releasing is selected the system will automatically default the following system parameters:

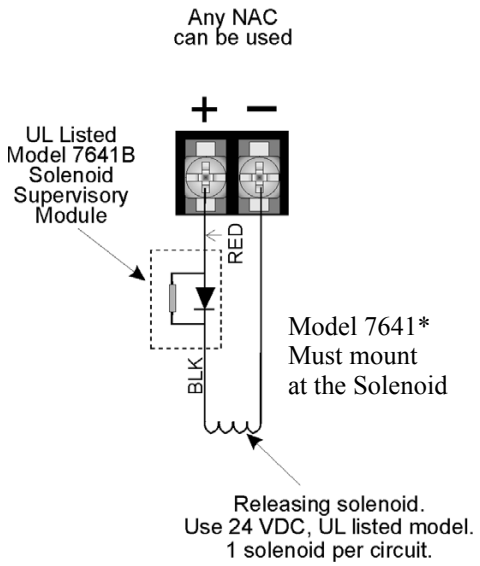
Note: The defaults created can be modified through programming if desired.

- Output Group 2 is created. Output Group 2 will be defaulted as an "Alarm" output group for all releasing zones. NAC [34:001] is assigned to Output Group 2.
- Output Group 3 is created. Output Group 3 will be defaulted as an "Pre-Alert" output group for all releasing zones. NAC [34:002] is assigned to Output Group 3.
- Output Group 4 is created. Output Group 4 will be defaulted as a "Release" output group for all releasing zones. NAC circuit [34:003] is assigned to Output Group 4.

Note: The installer must define which input points will be used for detectors, manual release switches, or interlock/pressure switches.

Table 8-2: Approved Releasing Solenoids

Manufacturer	Part Number	Rating
Asco	T8210A107	24 VDC, 3A
	8210G207	24 VDC, 3A



*Order as P/N 7641B

Figure 8-4 Wiring Configuration for Solenoid

8.6.1 Single Interlock Zone Releasing

A single interlock zone utilizes a minimum of two addressable detectors, and a designated manual release switch.

Important!
Only addressable detectors can be used. No conventional detectors can be used.
Each Single Interlock Zone input requires at least one manual release switch.

Conditions Required for an Pre-Alert Output Activation

If any single addressable detector is activated, the "Pre-Alert" output will activate. This alerts the user that the initial stages required for a release condition are present. (Also refer to Table 8-3.)

Conditions required for an General Alarm and Release Output Activation

If two or more addressable detectors, or a manual release switch activate, the "Alarm" and the "Release" outputs will activate and the "Pre-Alarm" output will deactivate. (Also refer to Table 8-3.)

Table 8-3: Single Interlock Zone Operation

Inputs	Output Results							
1st Addressable Detector		X		X		X		X
2nd Addressable Detector			X	X			X	X
Manual Release Station					X	X	X	X
	Normal	Pre-Alert	Pre-Alert	Release and General Alarm	Release and General Alarm	Release and General Alarm	Release and General Alarm	Release and General Alarm

Reduce detector spacing to 0.7 times the linear spacing in accordance with NFPA 72.

Note: Refer to Table 8-2 for approved releasing solenoids and ratings.

8.6.2 Double Interlock Zone Releasing

A Double Interlock Zone uses a minimum of two Addressable detectors, a designated manual release switch, and an interlock switch input. An interlock switch is typically a dry-contact pressure switch and will be referred to as an interlock/pressure switch in this document.

Important!
Only addressable detectors can be used. No conventional detectors can be used.
Each Single Interlock Zone input requires at least one manual release switch.
Each Double Interlock Zone input requires at least one Interlock/pressure switch

Conditions Required for a Pre-Alert Output Activation

If any single addressable detector is activated, the "Pre-Alert" output will activate. This alerts the user that the initial stages required for a release condition are present. (Also refer to Table 8-3.)

Conditions Required for a General Alarm Output Activation

If two addressable detectors, a manual release switch is activated, or an interlock switch is active, the "Pre-Alert", and "General Alarm" outputs will activate.

Conditions Required for a Release Output Activation

Any release requires the activation of an interlock switch, and either a manual release switch or 2 activated addressable detectors. When these conditions are met, the "Release" and "General Alarm" outputs will activate, and the "Alert" output will deactivate.

Table 8-4: Double Interlock Zone Operation

Inputs	Output Results															
1st Addressable Detector		X		X		X		X		X		X		X		X
2nd Addressable Detector			X	X			X	X			X	X			X	X
Manual Release Station					X	X	X	X					X	X	X	X
Interlock/Pressure Switch									X	X	X	X	X	X	X	X
	Normal	Pre-Alert	Pre-Alert	Pre-Alert and General Alarm	Pre-Alert and General Alarm	Pre-Alert and General Alarm	Pre-Alert and General Alarm	Pre-Alert and General Alarm	Pre-Alert and General Alarm	Pre-Alert and General Alarm	Pre-Alert and General Alarm	Release and General Alarm	Release and General Alarm	Release and General Alarm	Release and General Alarm	Release and General Alarm

Reduce detector spacing to 0.7 times the linear spacing in accordance with NFPA 72.

Note: Refer to Table 8-2 for approved releasing solenoids and ratings.

8.7 Smoke Alarm Verification

Figure 8-5 illustrates how the Smoke Alarm Verification cycle operates.

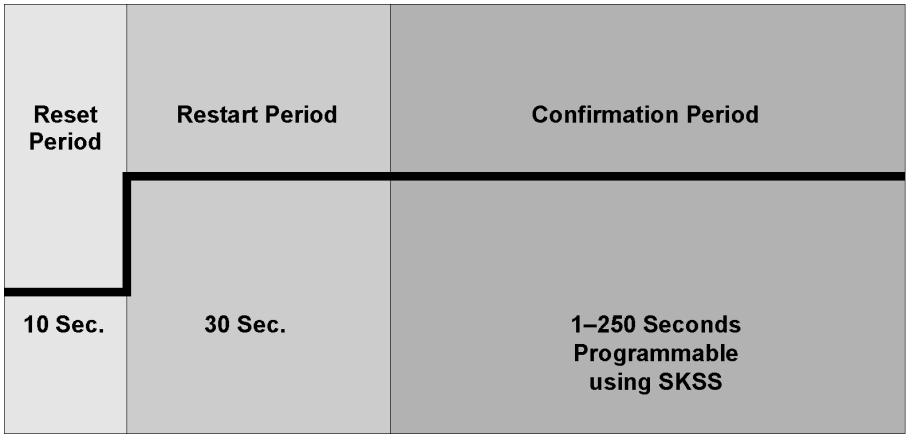


Figure 8-5 Smoke Verification Cycle

During the Confirmation Period if there is no alarm indication then the system will return to normal operation.

Section 9
Emergency Communication System Operation

9.1 Overview

The ECS series control panels and accessories provide features to meet the requirements for Mass Notification Systems as described in NFPA 72 and is compliant with the UL 2572 standard. These features are enabled through a programming option in the fire alarm control panel. When the ECS (Emergency Communication System) features are enabled they are integrated with the fire alarm and voice evacuation functions of the control panel.

Note: ECS installations are not FM approved.

To start this process, the user gains ECS control. This tells the system that a user is going to be making changes to the ECS; either by activating an ECS event, doing an ECS live page, or resetting ECS. Only one ECS device/ user can have ECS control at any given time and there are rules that will be explained that govern when a device/ user is able to gain control or pass control. Interface keypads are associated with the ECS-VCM or ECS-RVM that are installed together, will provide feedback as to the system's current state or why a user's request for changing the ECS might have been denied.

There are two ways for activating ECS in the IFP-100ECS panel:

ECS Point Activations

ECS Point Activation involves using pre-determined ECS Alarm input points to activate ECS Alarm events. These events cause output areas to activate based on mapping that is programmed into the system at installation. This is very similar to the traditional mapping that the fire system has utilized to date.

Manual LOC Activations

Manual LOC Activation involves using the LOC ECS interface to activate ECS Events, choose output areas, and speak through a microphone. These selections are not pre-determined and allow the user to make system functionality decisions when the event is actually happening. This requires the activation of Manual ECS State which bypasses ECS Point Activations. See section.

activate buttons are active when the associated ECS event was activated at the same LOC. The Alarm LEDs are active when the ECS event is active anywhere.

9.2 LOC Functionality

An LOC consists of either the ECS Series panel (ECS-VCM Voice Control Module and the Fire Alarm Control Panel), or the ECS-RCU Remote Command Unit (ECS-RVM Remote Voice Module and its associated RA-100 keypad). An LOC is created by adding a VCM or RVM to the system and selecting an associated keypad for it. It provides eight buttons for activating the ECS messages, a button to request ECS Control, and a microphone for live ECS paging. There can be eight LOC devices.

9.2.1 Keys and LEDs

This section outlines the functionality of the keys and LEDs on the ECS-VCM and ECS-RVM expander modules.

9.2.1.1 ECS Control Key

Pressing the ECS Control Key will do one of two things:

1. Enter Message Mode of the LOC ECS interface (including trying to gain ECS Control if the user doesn't have it already).
2. Relinquish ECS Control if pressed while in Message Mode.

9.2.1.2 ECS Control LED

The ECS Control LED is used to indicate the status of ECS Control in the system. When the LED is on solid, the LOC has ECS Control within the system. When the LED is blinking, another LOC has gained ECS Control in the system.

9.2.1.3 ECS Message Keys

ECS Message Keys are used in Message Mode to select which ECS Message is to be played. If pressed when the LOC does not have ECS Control, the system will automatically try to gain ECS Control before allowing the ECS Event to be activated. See section 9.2.2.

9.2.1.4 ECS Message LEDs

The red ECS Message LEDs indicate the active ECS Message and any previously active ECS messages. The green LEDs indicate the ECS Message was selected in message mode and that the LOC has ECS control.

1. For ECS Point Activation, the red ECS Message LEDs will illuminate on each LOC to indicate which ECS messages have been activated in automatic ECS state.
2. In Manual ECS State, the red ECS Message LEDs will indicate which ECS message has been activated at an LOC. See section 9.2.3.
3. The green ECS Message LEDs will activate for the LOC that activated the ECS Message.

9.2.1.5 Select Keys

The Select Keys are used to toggle which output areas are active.

1. If Message Mode is active (see Section 9.2.3), the Select Keys will toggle which areas the active message is distributed to (also toggles the red Select Key LED).
2. If Microphone Mode is active (see Section 9.2.3), the Select Keys will toggle which areas the microphone audio is distributed to (also toggles the green Select Key LED).

9.2.1.6 Select Key LEDs

The Select Key LEDs are used to indicate which output areas are active for a microphone page (see Section 9.9.5) or system events.

1. Green LEDs: active areas for microphone paging.

Note: These are only active when the microphone PTT is engaged.

2. Red LEDs: active areas for system events.

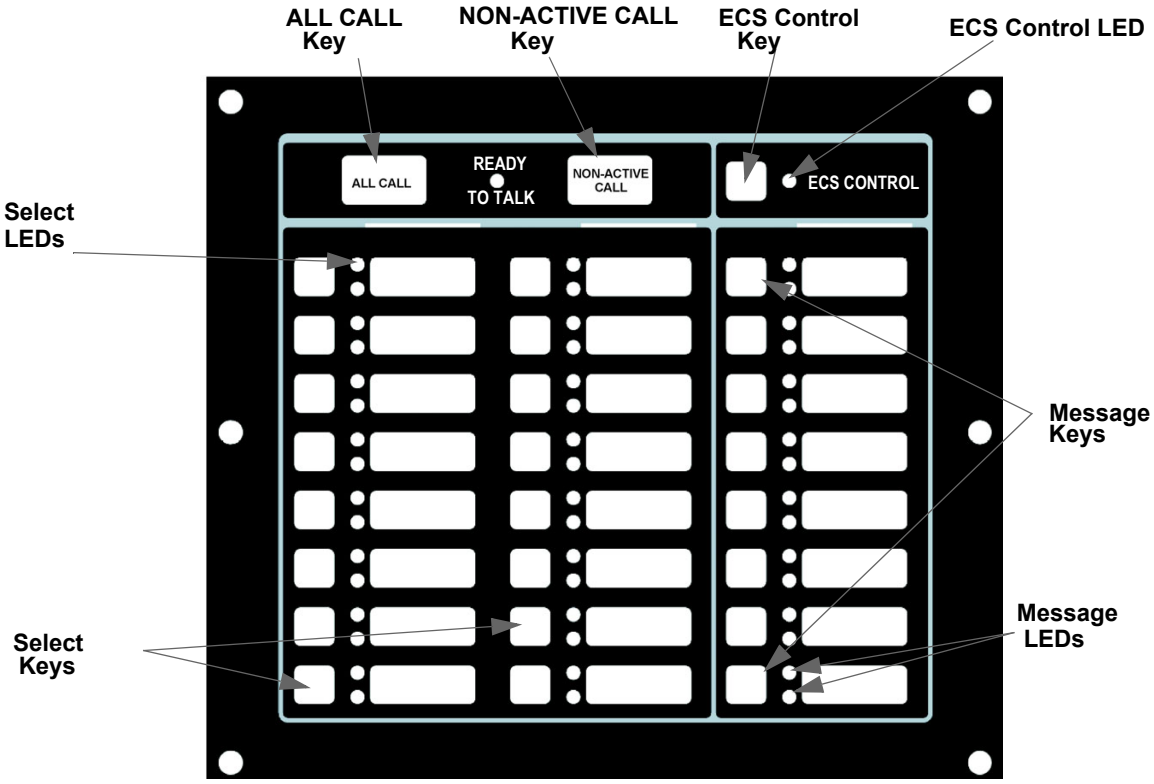


Figure 9-1 ECS Front View

9.2.2 Gaining ECS Control

When attempting to gain ECS Control, there are three things that govern whether or not ECS Control can be obtained:

1. LOC Priority.
2. LOC Lockout.
3. User profile access control.

9.2.2.1 LOC Priority

LOCs are assigned (through panel or SKSS programming of the ECS-VCM or ECS-RVM) an LOC priority of low, normal, or high. LOCs with a higher priority are always able to gain control from a lower priority LOC.

9.2.2.2 LOC Lockout

When LOCs are programmed to the same priority, the setting LOC lockout applies. LOC lockout will not allow an LOC to gain ECS Control from the LOC with ECS Control until one of three things happen:

1. The LOC lockout timer expires. Once the LOC lockout timer expires, an attempt to gain ECS Control can be made again.

Note: The lockout timer must be programmed to expire sometime other than Never.

2. The user at the second LOC requests ECS Control from the LOC with ECS Control and that LOC grants the request. (See Section 9.2.7). If the ECS lockout timer expires while an ECS Control request is in progress, the system will automatically pass ECS Control to the requesting LOC.
3. The user at the second LOC enters an access code with the ECS Super User profile option.

The LOC lockout timer can be set between immediate and 12 hours in increments of 1 second or it can be set to never expire. The default setting is 30 seconds. The LOC lockout timer is restarted upon any key press at the LOC with ECS control. The LOC lockout timer is cleared when ECS Control is relinquished.

9.2.2.3 User Profile Access Control

The user will need to enter an access code containing the ECS Control Request or ECS Super User profile option to gain ECS Control. ECS Control Request and ECS Super User profile options will be mutually exclusive to the system. If the access code has ECS Super User, the ECS Control Request is ignored and activations by that user are always as ECS Super User.

9.2.3 Manual ECS

After gaining ECS Control the system enters the LOC ECS interface which allows you to activate the Emergency System and allows for Emergency Paging. Once an emergency event has been activated the panel enters a Manual ECS State. In this state, all ECS Alarm programmed points that are currently in alarm in the system are changed to an active state. The display status screen reflects this when viewing the system for status. Any outputs that were activated by the ECS Alarm programmed points are deactivated until Manual ECS state is exited. Only an ECS Reset can exit the Manual ECS State. If a user gains ECS Control at an LOC and does not activate an ECS message, the system will automatically generate an ECS Supervisory indicating such. This prevents an LOC from being in an undesired state of ECS Control when an actual event emerges.

There are two modes for interacting with the LOC ECS interface when in Manual ECS State:

1. Message Mode
2. Microphone Mode

These two modes allow you to quickly toggle areas of output for a desired message and toggle output areas to speak to for microphone ECS Paging.

After gaining ECS Control, the system is in Message Mode of the Manual ECS State.

9.2.3.1 Switching between Microphone Mode and Message Mode

At any time while in ECS Control, you can switch between Microphone Mode and Message Mode. Microphone Mode is entered by simply engaging the microphone.

1. Message Mode: Use the ECS Message keys to select which message/event to output to the system. Use the Select Keys to select output areas to play the current ECS Message in. The Select Key's red LED will toggle on/off with the activation/deactivation of the ECS Message to the area. Any non-voice groups assigned to this Select Key will also activate with their Activation Cadence. See Section 9.2.3.2.
2. Microphone Mode: Use the Select Keys while the microphone is active to toggle which areas to do an ECS Microphone Page to. The Select Key's green LED will toggle on/off with the activation/deactivation of the ECS Microphone Page to the area.

9.2.3.2 Activating/Deactivating Output Groups Dynamically

This method allows the system to be setup with minimal or no system mapping. When in Manual ECS State and operating in Message Mode the user can dynamically activate/deactivate output areas for system notification to take place in. The Select Key red LED will become lit and the circuits in the output group(s) will become active

and play the currently active ECS event message when activated. When deactivated, the Select Key red LED will become unlit and the circuits in the output group(s) will become inactive. Non-voice output groups can also be assigned to Select Keys and will toggle on/off using the activation cadence assigned to it in output group programming. This is available in the panel and in SKSS. See Section 7.4.1.2.

9.2.4 Microphone Mode

Microphone Mode allows the user to press the Select Keys to toggle which output areas to speak to over the microphone. The green LEDs next to the Select Keys will activate or deactivate.

9.2.5 Message Mode

In Message Mode, the user is able to press the ECS Message Keys to choose a message and press the Select Keys to activate or deactivate which output areas the message will be played. This will activate or deactivate the green and red LEDs next to the ECS Message Keys and the red LEDs next to the Select Keys.

9.2.6 Custom ECS Event

Custom ECS events allows the user to generate an ECS event and speak a custom message using the microphone. Once the user is done speaking the message, the tone and any associated strobes will continue to be active in the output areas.

To generate a Custom ECS Event:

1. Gain ECS Control using the ECS Control Key when there is not an active Manual ECS State Event.
2. Activate the microphone.
3. Choose desired output areas using the Select Keys.
4. Speak custom message into microphone.

9.2.7 Passing ECS Control

Passing of ECS Control is allowed when two LOCs have the same priority. When it is possible to pass control, a prompt (similar to Figure 9-2) will display in which the user can: request control from the LOC with ECS Control, enter an access code with the ECS Super User profile option to override the other LOC, or wait for the lockout timer to expire (if applicable).

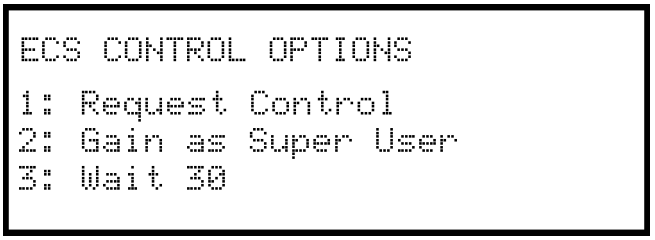


Figure 9-2 Request ECS Control with Lockout Timer Active

ECS Control lockout is programmable from immediate to 12 hours in increments of one second. You are also able to select never expire.

When passing ECS Control between two ECS Super Users, the user is not shown the prompt screen. Instead, a request for ECS Control is automatically made. Additionally, the lockout timer does not apply for ECS Super User.

When a request for ECS Control is made, the LOC with ECS Control will be shown a screen indicating that another LOC is requesting ECS Control.

Once ECS Control is passed to another LOC, the new user will assume the system AS IS. This means that the event that was set to be playing at the previous LOC and all output areas it was playing in do not change.

9.2.8 Exit ECS Control Menu

The user can exit the LOC ECS interface by pressing the left arrow. The user will be returned to the idle screen.

9.2.9 Relinquish ECS Control

Relinquishing ECS Control is accomplished by pressing the ECS Control Key from within Message Mode. A screen will be displayed to ensure the user wants to relinquish ECS Control. ECS Control will be automatically relinquished after a time-out on this screen. When ECS Control is relinquished, the system stays in the Manual ECS State. ECS Control can then be gained by another LOC or again at the same LOC.

9.2.10 ECS Reset

An ECS reset is accomplished by pressing the RESET button from an LOC. The user will be prompted to reset either the fire system or emergency system. After an ECS reset, the LOC will automatically exit the LOC ECS interface.

Note: In order to perform an ECS reset, the display must be associated with the ECS-VCM / ECS-RVM. See Section 9.6.2.2.

9.2.11 Access Control

By default, the fire fighter key user profile includes the ECS control request option. This is a programmable option for all user profiles. If the fire fighter key user profile is not specified to have the ECS control request option, upon ECS control request, the system will immediately display the “Enter Pin” dialog on the annunciator and the user will be required to enter the access code for a profile that does.

The second user profile option for the Emergency Communication System is the ECS Super User option. (See section 9.3). If a user at an LOC does something that requires ECS control or they are at the ECS status screen, if they enter the ECS Super User pin and there isn’t another ECS Super User already logged in, they will gain ECS Super User status.

9.3 ECS Super User

The ECS Super User access code profile function provides the ability to override all ECS Control rules and gain ECS Control. The ECS Super User is the highest priority user in the system. The ECS Super User has several features that differ from the normal user:

1. Any alarm activated while under ECS Super User Control needs to be reset using an ECS Super User function enabled access code.
2. LOC priority and LOC lockout timer are ignored when passing ECS Control between ECS Super Users at LOCs. If another ECS Super User attempts to gain ECS Control from an LOC, an ECS Control request is presented to the ECS Super User at the LOC that currently has ECS Control.

Note: Only one ECS Super User is allowed ECS Control in the system at a time.

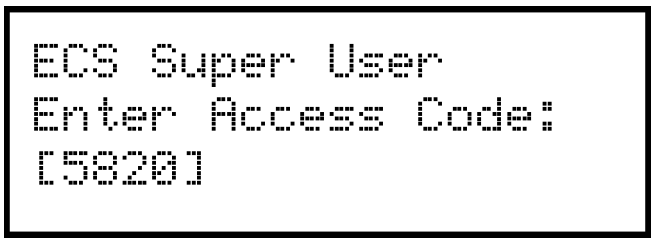


Figure 9-3 ECS Super User Window

9.4 ECS Point Functionality

Any ECS 5880 (5880 LED/Contact module with the ECS Trigger option enabled) can be used for ECS inputs. The Point ECS 1-8 Alarm input types can be used to trigger predetermined ECS events for output areas. ECS-VCM and ECS-EVM points can be programmed to trigger Voice Aux events that can allow external audio to be played through the emergency system.

9.4.1 ECS Point Activations

ECS points can only activate outputs and be placed into an alarm state if the system is not in Manual ECS State. ECS points have no priority and all are allowed to be activated. If the ECS point is a higher priority than the Fire System, then the system will play the highest event message through all ECS mapped outputs.

For example: Emergency 1 Point Alarm is higher priority than Emergency 2 Point Alarm. Emergency 1 Point Alarm has message 1 mapped to through groups 1 and 2. Emergency 2 Point Alarm has message 2 playing through groups 2 and 3. If a point for Emergency 1 Point Alarm and a point for Emergency 2 Point Alarm are both active, the system will play message 1 through groups 1, 2, and 3.

Once Manual ECS State is active, points in Alarm state switch to an Active state. When the points are changed to the Active state, they do not activate any system mapping or turn any outputs on. Any points that are activated while in Manual ECS are also placed into the Active state and are not allowed to activate any mapping. The system idle screen will show an ECS Alarm counter for any points in the Active state, and the detailed description of the point will show the point as Active.

After an ECS Reset, any ECS points that are still active will again be put into Alarm.

9.4.2 ECS-VCM Points

ECS-VCM and ECS-RVM modules contain two programmable input points. These also have the ability to be programmed as a trigger for bringing external audio into the system. These special point types are: Voice Aux ECS and Voice Aux Status. When activated, if the event has the highest Event Priority of all activated events, these points will activate the Aux In input to all outputs defined by the respective event program mapping.

9.5 ECS 5880

9.5.1 ECS (1-8) 5880 Module

An ECS 5880 is a 5880 LED/Contact module with the ECS Trigger option enabled. When this option is enabled, input points 41 through 48 on the 5880 are automatically assigned to ECS 1-8 functions respectively. See Section 9.4.1 for further information on ECS point activations. The dry-contacts can be setup as latching or non-latching and silenceable or non-silenceable in the 5880 module programming.

There can be eight ECS 5880s in the system.

Note: The system allows multiple ECS events be active at the same time. Only the highest priority event's message will play through the system.

9.5.2 Enable 5880 ECS

This option only applies to the 5880. Each Module has a unique set of options that specifically applies to the functionality being edited.

1. Press ENTER on the Naming Module Screen (See section 7.2) to enter 5880 ECS setting and priority screen.
2. Screen will indicate:
   ECS Device: Yes or No
   ECS Latching: Yes or No
   ECS Silenceable: Yes or No

9.6 ECS LOC Programming

Device Priority is a programmable option for each of the ECS devices:

- ECS-VCM
- ECS-RVM

Each Device Priority is assigned a priority level: Low, Normal, or High.

9.6.1 Adding an LOC

To add new ECS hardware modules to the system, follow these steps:

You must be in the Main Menu to perform this task.

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 1 to enter module menu.
4. Press 2 to add a module.
5. From the next screen, select the type of module you would like to add from the <New Module Type> screen.

   The screen will display “Adding module [#]...” for a few moments. You will be returned to the <New Module Type> screen where you can select a name for the module if desired.
6. Add an RA-100 Annunciator, if desired, to associate with each ECS-VCM or ECS-RVM

You must save changes when you exit the Program Menu or the new module will not be added. For more information see section 7.2.2.

Note: If you Add a Module that has not been physically connected, the panel will go into trouble after it re-

initializes (when you exit the Program Menu). When the new module is attached, the trouble will correct itself automatically the next time you power up the system.

9.6.2 Editing an ECS Module

The features that can be edited when this option is selected are module ID, module name, switch expander installed, Ext features, Mic gain, Aux gain, Keypad Priority and Aux in Priority that are specific to the module to be edited.

To edit an existing module:

1. Enter the installer code.
2. Select 7 for Program Menu.
3. Press 1 to enter module menu.
4. Press 1 to edit a module.
5. Use the ▲ or ▼ arrow to select the module you wish to edit.
6. Press the ▶ or ENTER to move to next selection.

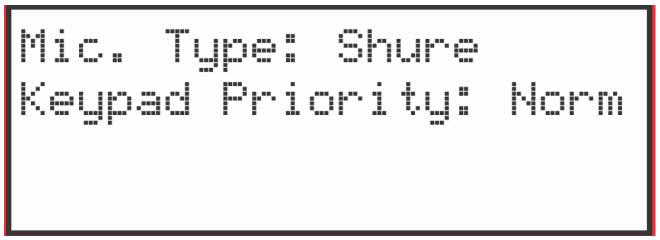


Figure 9-4 Edit Module Mic Type and Device Priority

9.6.2.1 LOC Priority

Each device is assigned a Priority level: Low, Normal, or High. This is modified by editing the LOC's ECS-VCM or ECS-RVM module. By default, the ECS-VCM has a high LOC priority. The ECS-RVM is defaulted to normal LOC priority.

9.6.2.2 LOC Association

In order to created an LOC, an annunciator must be associated to an ECS-VCM or ECS-RVM. This done by editing the ECS-VCM or ECS-RVM module and selecting the correct annunciator for the associated device. During JumpStart, the ECS-VCM is automatically associated with the internal annunciator. The association for other LOCs in the system must be performed in programming.

9.7 Amplifier Programming

9.7.1 Adding an Amplifier

To add a new amplifier to the system, follow these steps:

1. Enter the installer code. The panel will automatically go to the main menu.
2. Select 7 for Program Menu.
3. Press 1 to enter Module menu.
4. Press 2 to add a module.

5. From the next screen, select desired amplifier.

   The screen will display “Adding module [#]...” for a few moments. You will be returned to the <New Module Type> screen where you can select another module if desired. You must save changes when you exit the Program Menu or the new module will not be added. For more information see section 7.2.2. If you Add a Module that has not been physically connected, the panel will go into trouble after it re-initializes (when you exit the Program Menu). When the new module is attached, the trouble will restore automatically the next time you power up the system.

9.7.2 Editing an Amplifier

When editing amplifiers, the features that may be edited are (dependent upon amplifier model): module ID, module name, CE4 Exp installed (Yes or No), output voltage, and amp mode. To edit an existing module:

1. Enter the installer code. The panel will automatically go to the main menu.
2. Select 7 for Program Menu.
3. Press 1 to enter Module menu.
4. Press 1 to edit a module.
5. Use the  or  arrow to select the module you wish to edit.
6. Press the  or ENTER to move to the next selection.

9.8 Event Priority

This section goes over how event activations are handled by the control panel with regards to priority.

9.8.1 System Control

The IFP-100ECS control panel integrates both a fire and emergency system into one. When events are active from both systems the control panel makes intelligent decisions to determine which system should be controlling outputs. This is called System Control. This manual will refer to the fire or emergency systems having System Control, this means that the system has an active alarm or supervisory event that has a higher event priority than an active alarm or supervisory event from the other system. For this consideration, the control panel looks at the highest priority event active on each system. When both systems are active, the system with control will activate System Override. System Override is activated on the lower priority, non-System Control panel system (fire or emergency system.)

9.8.2 System Override

System Override temporarily disengages output group activations from the system being overridden. This is done to not provide conflicting messages and signaling and help with reducing confusion of the building occupants.

When output groups are supposed to be active but are not because System Control has activated System Override, they are re-activated every 30 seconds for several seconds to indicate to the building occupants that there is still an event active. This will only occur when the system with System Control is not using the output group. The System Override option is programmable for non-voice output groups on a per output group basis through the panel output group programming menus and in SKSS. In these places the option is called Allow System Override and defaults to YES. It is also possible to not reactivate the output groups every 30 seconds when System Override is active on a per system basis. This option is programmable in SKSS.

There are times when you would not want to allow System Override for an output group. For example: fire is

programmed to an elevator relay to bring the elevator to the bottom floor for fire only. If fire and ECS are active with ECS being the higher priority event, you still need the elevator to move to the bottom floor and only audible and visual notification appliances must be overridden. In this case, the output group assigned to the relay would be set to NO on the Allow System Override setting. See Section 7.4.1.2 to edit group properties.

9.8.3 ECS Event Priority

Each event type (see Table 9-2) has a priority level assigned to it. When more than one event type is active the panel uses this priority to determine which is more important. One is the highest event priority. The panel will activate output groups according to the highest priority active event. These event priorities, with some restrictions, can be changed to allow ECS and Fire events to interact. The lower priority event will be ignored until the higher priority event is reset. See section 7.10.3.2 to edit command priority.

Since the system has both fire alarm and ECS functions, a determination must be made as to which will be higher priority when both types of events occur. For each installation a risk assessment must be done to decide the priority of events.

9.8.4 View Active Alarms, Troubles and Supervisory Signals

When looking at the LCD display, the screen will display FS for the “Fire System” and ECS for “Emergency Communication System” after the condition. The highest priority event will display first. (See Figure 9-5). Press the down arrow to view location and type of alarm or trouble. After sitting idle for two minutes, events will display on line 4 of display. (See Figure 9-6).

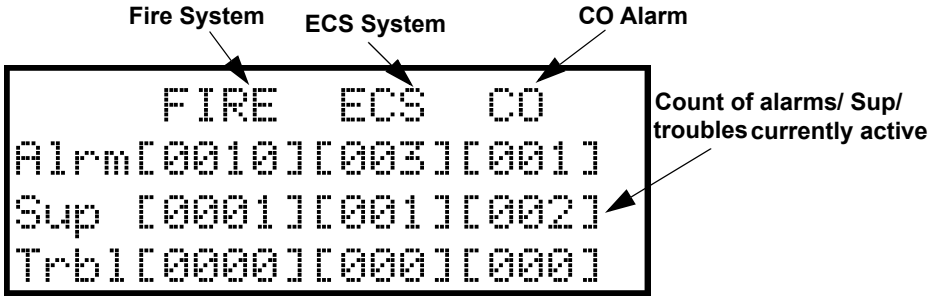


Figure 9-5 Highest Priority Event Display

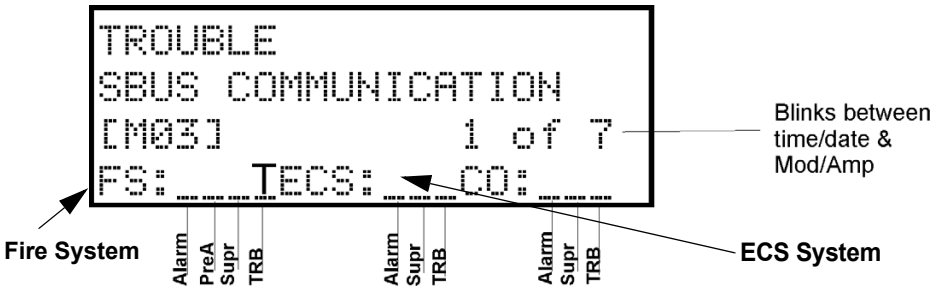


Figure 9-6 Event Screen After Two Minutes Sitting Idle

9.9 Using the Microphone

9.9.1 Microphone Functionality

Each microphone in the system is capable of providing live Fire System or ECS paging. The main difference between the two is that conventional notification circuits can be activated (typically used for strobe circuits) with ECS paging whereas Fire System paging does not automatically activate any conventional notification circuits.

The microphones are housed within the ECS-Series panel enclosure and the ECS-RCU cabinets. A maximum of 8 microphones can be connect in the system.

9.9.2 Custom ECS Event

This Event is activated by gaining control on an LOC and using the microphone without any ECS Event already active. In this case, the Custom ECS mapping and General ECS mapping will be activated and stay activated until a different ECS Event is activated at the LOC or the user resets the Emergency Communication System.

9.9.3 Fire Page

A Fire page can only occur when:

1. Only the Fire Alarm is active.
2. Both Fire and ECS are active and the Fire Alarm is programmed to be of higher priority than the active ECS alarm.
   - If the Fire Alarm has the highest active priority and ECS is also active, any LOC can do a Fire page given LOC Device priority rules are followed. If the user is at the LOC with ECS control, and the Fire page is higher priority than ECS page, the LOC will automatically relinquish ECS control to do the Fire page when the user simply engages the microphone.
3. Only Fire Alarm is active and user has gained ECS Control and Custom ECS is lower priority than Fire Alarm.
   - In this case if any LOC has ECS control, the LOC will automatically relinquish control to allow for the Fire page.
4. If both the Fire Alarm and ECS are active and the active ECS Event is programmed for higher priority than Fire Alarm; the user must also have gained ECS Control.
   - In this case a Fire page is NOT allowed at all and the LOC must gain ECS control in order to do any live voice.

9.9.4 Emergency Page

An emergency page can occur when:

1. Only the emergency system is active and the user has gained ECS Control.
2. Only Fire Alarm is active, Custom ECS is higher priority than Fire Alarm and the user has gained ECS Control.
   - This will trigger the ECS system and enable mapping for 'Custom ECS' and 'General ECS'
3. Both fire and the emergency systems are active and the highest priority active emergency event is programmed to be of higher priority than the highest priority active fire event and the user has gained ECS Control.

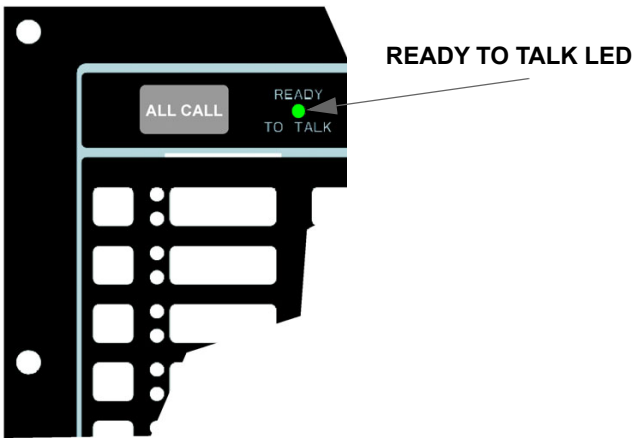
9.9.5 Paging

If there are no active emergency or fire system events, the microphone at an LOC can be used for paging by following these steps:

1. Remove the microphone from its cradle.
2. Press the push-to-talk button on the microphone.
3. Use the Select Keys on the LOC to toggle the output areas to page to with the microphone (illuminates the green LEDs).

Note: The Ready to Talk LED will illuminate after an output area has been activated.

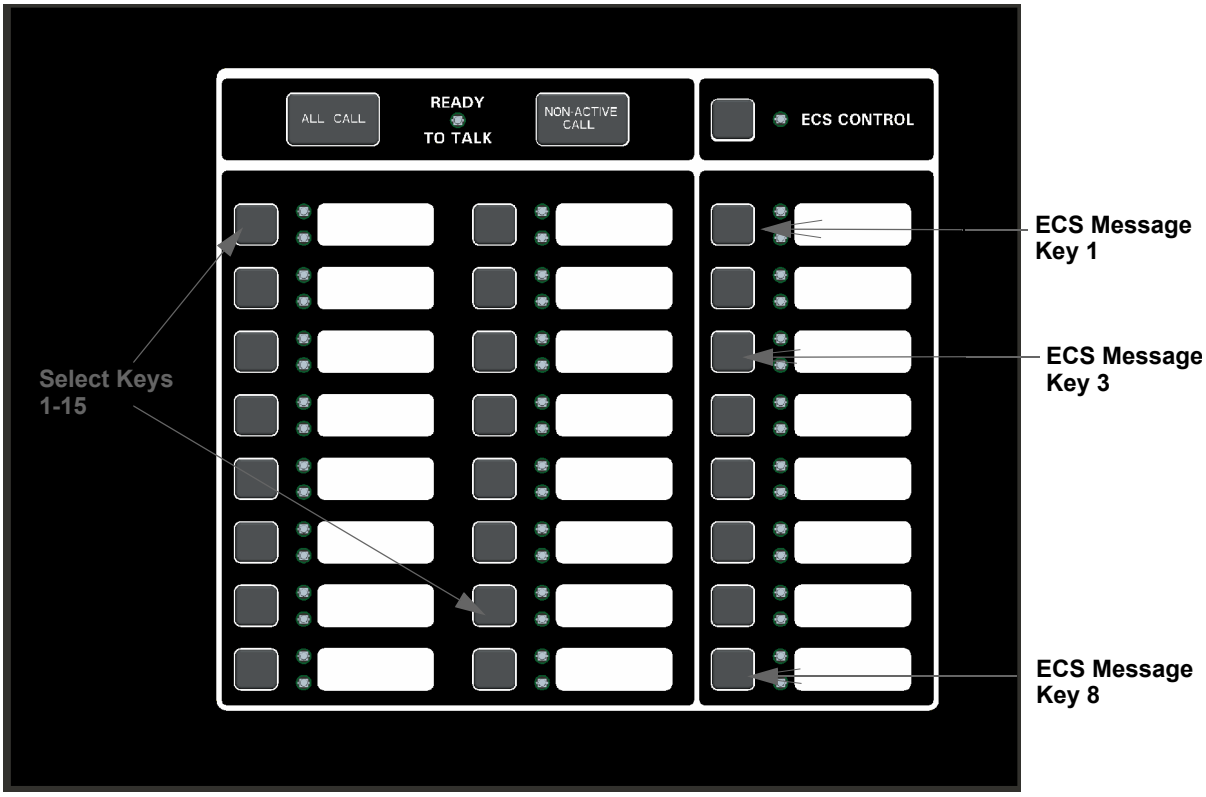
4. Speak into the microphone.
5. Release PTT button when finished.



9.10 Recording Custom Messages

The ECS-Series controls come with 15 recordable message slots. Message 1-15 can be recorded from the microphone, Aux Input or by using the Farenhyt ECS Message Manager software. All messages can be a maximum of one minute.

When in the record mode the ECS-VCM switches will function as follows:



Key	Function
ECS Message Key 1	Select message slot to record to
ECS Message Key 3	Start and stop recording from Aux Audio Input
ECS Message Key 8	Erase user message 1-15
Select Keys 1-15	Message slot 1-15

While in the Local Record mode, select keys 1-15 will be used to reference message slots 1-15. The associated green Select Key will indicate that a message is currently programmed in the corresponding slot. When there is no message recorded (or the message is erased), the associated green Select Key LED will be off. While recording a particular message, the red Select Key will turn on until recording is completed. The Select Key 1-15 will be used to playback a recorded message or to select a message slot to record to or erase.

When in the Local Record mode, the ECS-VCM LEDs will function as follows:

Table 9-1: LED Functions During Programming

Switch LED	Active LED Status	Meaning
Select Key 1-15 Green LED	On	Message is currently programmed in this slot
Select Key 1-15 Red LED	On	Message recording is in progress
Select Key 1-15 Green/Red LED	Off/Off	Message slot is empty
Select Key 1-15 Red LED	Flashing	Message is being played back or message is selected for recording

9.10.1 Recording Messages 1-15 Using Aux Audio Input

Recording messages from the Aux Audio Input enables you to load customized, pre-recorded messages into an ECS message location.

Follow these steps to input user message using Aux Audio Input:

Note: Refer to section 7 for detailed programming information.

1. Wire a speaker cable with 1/8" mini plug (Radio Shack Cat. No. 42-2454) to Aux AUDIO GND and IN terminals. Refer to Figure 9-7.

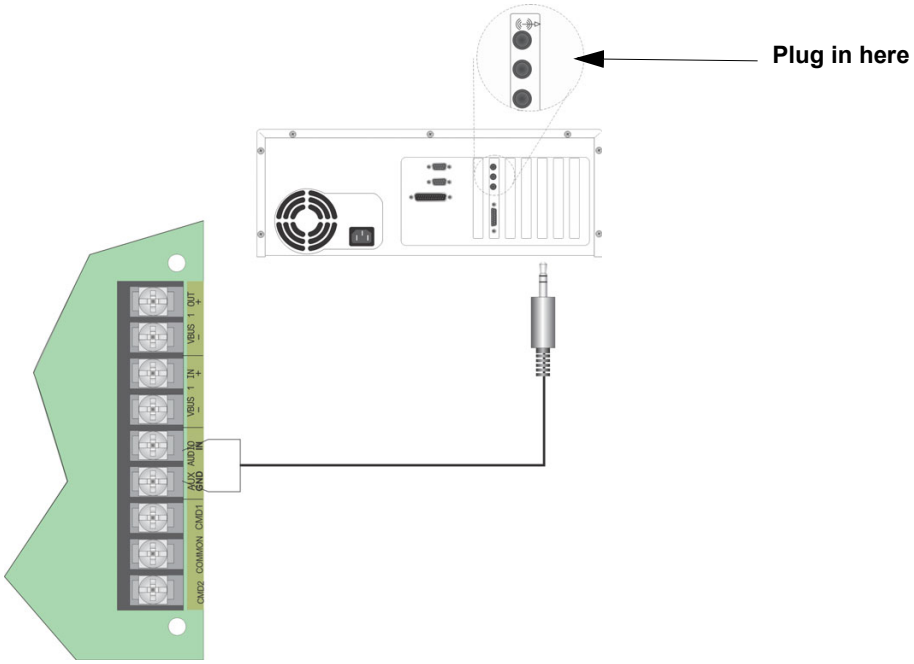


Figure 9-7 AUX Audio Connection for Recording

2. Plug the mini plug into the Line Out/Headphone jack on a PC or Laptop. See Figure 9-7.
3. Enter programming mode at main control panel.
4. Select option 9 Voice Options.
5. Select option 1 VCM Maintenance.
6. Select option 2 Local Recording.

Note: The VCM will light the green Select Key LED for message slots that are occupied. If a message is already stored in the desired slot, then you must erase the message first. (see 9.9.3).

7. Select the amplifier and circuit for the audio to play through during programming. A user would generally pick the audio circuit that is in closest proximity to them.
8. Press ECS Message Key 1 to enter the message slot selection mode. Then, press the Select Key 1-15 that corresponds to the message slot that you wish to record to. The associated Select Key red LED will begin flashing, indicating that the message slot is ready for recording.
9. Simultaneously press ECS Message Key 3 and start playing the audio source on the PC or laptop.
10. When the audio file from the PC is finished playing, press ECS Message Key 3 again to stop the recording. The Select Key green LED will come on.
11. To playback the recorded message, press the Select Key 1-15 that was just recorded to.

Recording with Aux Audio Input Example:

The user wants to record into memory slot 2 via the Aux Audio Input channel.

Upon entering the Local Recording mode via the keypad menu, the VCM will light the Select Key green LEDs 1-15 for each occupied message slot.

If a message already exists in message slot 2, it must first be erased. Press ECS Message Key 8, then press Select Key 2, (see Section 9.10.3). When the message has been erased Select Key 2's green LED will turn off.

To record a message, press ECS Message Key 1, then press Select Key 2 (this will use message slot 2 for the recording). Select Key 2's red LED will begin flashing.

Press ECS Message Key 3 while simultaneously pressing play on the PC to start recording the Aux Audio Input. When the PC message is done, press ECS Message Key 3 to stop recording. Select Key 2's red LED will stay on until processing is completed. Select Key 2's green LED comes on after the recording is completed.

Pressing Select Key 2 will start a playback of the recorded message.

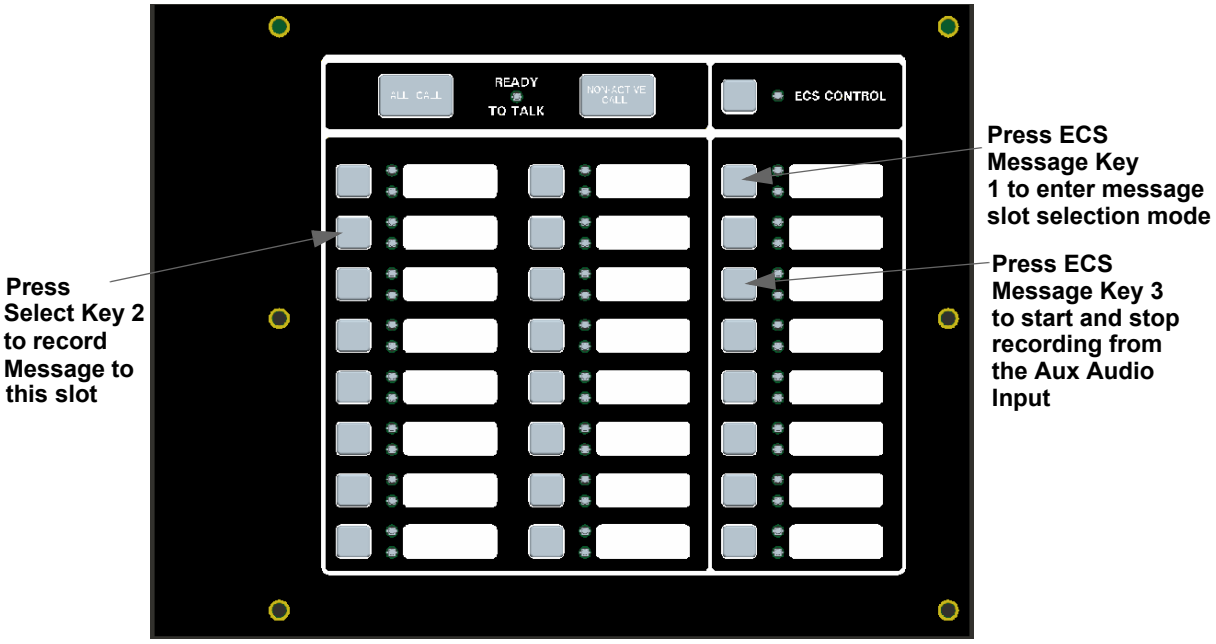


Figure 9-8 Aux Audio Input Example

9.10.2 Recording Messages 1-15 Using the Microphone

Messages can be recorded into the ECS system by using the onboard microphone.

Follow these steps to use the microphone to record your message:

1. Enter programming mode at main control panel.
2. Select option 9 Voice Options.
3. Select option 2 Local Recording.

Note: The VCM will light the green Select Key LED for message slots that are occupied. If a message is already stored in the desired slot, then you must erase the message first. (see Section 9.10.3).

4. Select the amplifier and circuit for the audio to play through during programming. A user would generally pick the audio circuit that is in closest proximity to them.
5. Press ECS Message Key 1 to enter the message slot selection mode. Then, press the Select Key 1-15 that corresponds to the message slot that you wish to record to. The associated Select Key red LED will begin flashing, indicating that the message slot is ready for recording.
6. Press the push-to-talk (PTT) button on the microphone and speak your message.
7. Release the PTT button on the microphone to save your message. The Select Key green LED for this location will turn on.
8. To playback the recorded message, press the Select Key 1-15 that was just recorded to.
9. If you are not satisfied with the recorded message, erase it (see Section *9.10.3*) and then repeat steps 1 through 7.

Recording with Microphone Example:

User wants to record a message to message slot 5 via the microphone.

Upon entering the Local Recording mode via the keypad menu, the VCM will light the Select Key green LEDs for 1-15 for each occupied message slot.

If a message already exists in message slot 5, it must first be erased. Press ECS Message key 8, then press Select Key 5, (see Section 11.8.3). When the message has been erased Select Key 5's green LED will turn off.

To record a message, press ECS Message Key 1, press Select Key 5 (this will use message slot 5 for the recording). Select Key 5's red LED will begin flashing.

Press the push-to-talk button on the microphone and speak your message. Release the PTT button to save your message. Select Key 5's red LED stays on until processing is completed. Select Key 5's green LED comes on after the recording is completed.

Pressing Select Key 5 will start a playback of the recorded message.

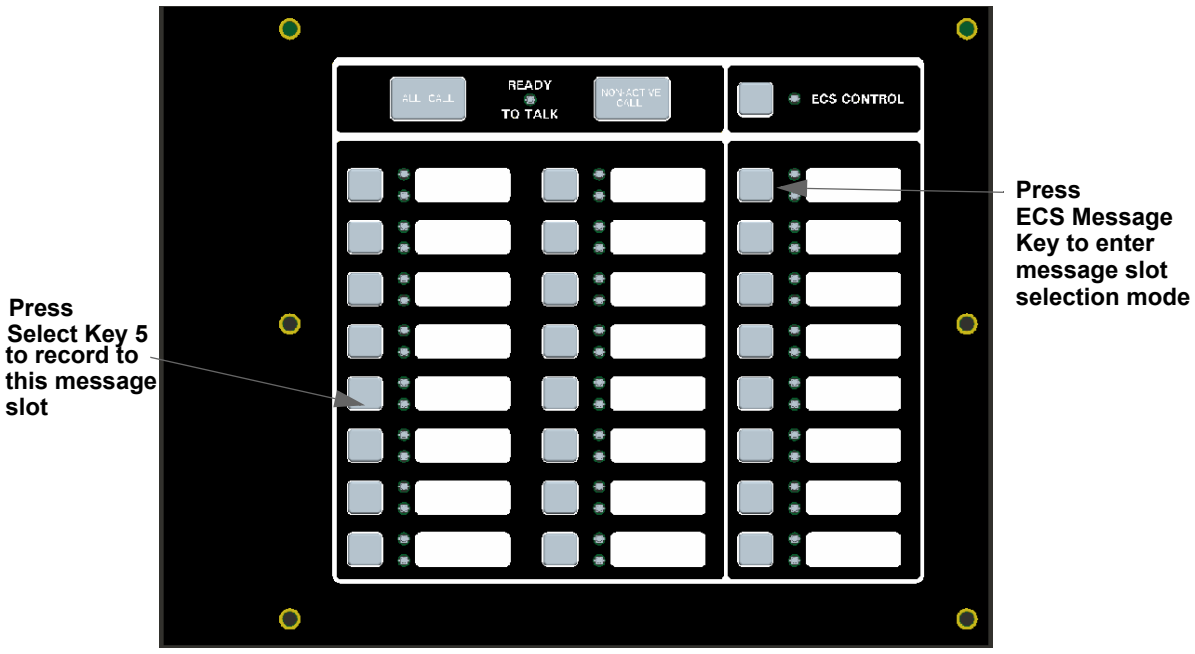


Figure 9-9 Recording with Microphone Example

9.10.3 Erasing User Message

To erase the message stored in switch 1-15 memory location follow these steps:

1. Enter programming mode at main control panel.
2. Select option 9 Voice Options.
3. Select option 1 VCM Maintenance.
4. Select option 2 Local Recording. Once in this mode, the VCM/RVM will light all the green LEDs for switches 1-15 indicating which message slots are occupied.
5. Select the amplifier and circuit for the audio to play through during programming. A user would generally pick the audio circuit that is in closest proximity to them
6. Press ECS Message Key 8 on the ECS-VCM, press the Select Key 1-15 that you wish to erase. The Select Key red LED will stay on until the erase is done. When erased, the Select Key green LED by corresponding to the message slot you erased will go off.

9.10.4 Using Farenhyt ECS Message Manager Software

The Farenhyt ECS Message Manager software is a software support utility that is used to download recorded messages (in .SKE format stored on your PC hard drive) to the various message locations of the ECS-Series controls. Messages can be uploaded from the ECS-Series control, stored, and used again in similar installations. The Farenhyt ECS Message Manger software can also be used to move messages to different message locations. For example, move message 1 to message 3 memory location.

To read/write SKE formatted messages to and from the main panel, follow these steps:

1. Make sure that panel is in Normal mode.

2. Connect the PC to the panel using a standard USB cable. See Figure 9-10.

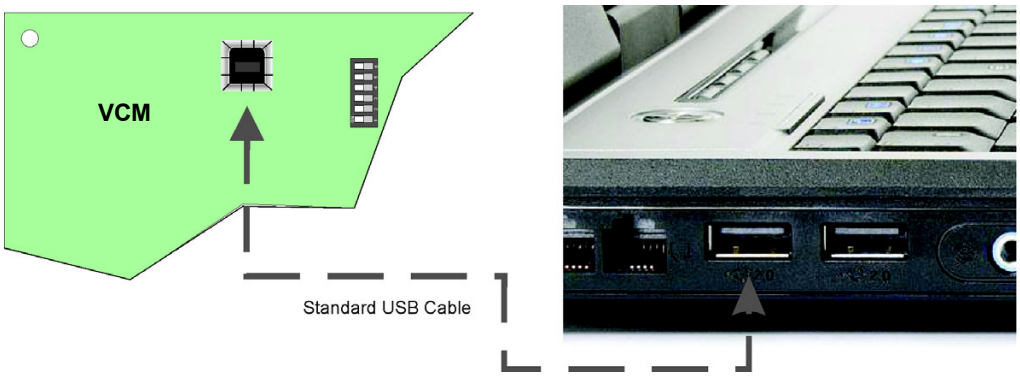


Figure 9-10 USB Cable Connections

3. Run the Farenhyt ECS Message Manager software.
4. Select “Read from Panel” to read a message and store onto your hard drive, or “Write to Panel” to transfer a .SKE formatted message to the panel.
5. Select the appropriate message location you wish to read/write.
6. Enter the file name you wish to transfer (Press “Browse” to display a list of files.)
7. Press “Start” to start the transfer.

9.11 ECS Priority

ECS command priority table will contain the following voice events:

Table 9-2: ECS Priority Table

Fire Alarm
Fire Aux 1
Fire Aux 2
CO Alarm
ECS LOC Activations
ECS 1 PT Activation
ECS 2 PT Activation
ECS 3 PT Activation
ECS 4 PT Activation
ECS 5 PT Activation
ECS 6 PT Activation
ECS 7 PT Activation
ECS 8 PT Activation
Emerg Voice Aux 1
Emerg Voice Aux 2
Emerg Voice Aux 3
Emerg Voice Aux 4
Emerg Voice Aux 5
Emerg Voice Aux 6
Emerg Voice Aux 7
Emerg Voice Aux 8

9.11.1 Priority Rules

1. Fire Alarm priority contains zoned manual pull, waterflow, and detector as well as fire drill events.
2. Fire Aux 1-2 priorities contain both zone and system Fire Aux 1-2 events. Additionally, Fire Aux 2 includes zone interlock release.
3. ECS LOC Activations is always higher than all other ECS events.
4. ECS events do not need to be in order by ECS number.
5. General Emergency Comm will always be lower priority than the lowest of all Emergency Communication events.
6. Zone Fire Pre-Alarm and Interlock Alert events will be lower priority than the lowest of all alarms
7. Fire, CO, and Emergency Supervisories will be added in the same order as the corresponding system's alarms at a lower priority than Fire Pre-Alarm and Interlock Alert.
8. Troubles will always follow supervisories in the priority list.
9. Voice Aux Status will be always follow troubles in the priority list.
10. Microphone Engaged, Zoned Status Point, Alarm Silenced, and Trouble Silenced will always follow Voice Aux Status in the priority list.

- In addition to the standard setting for voice events, the ECS and Voice Aux In events will have a 20 character event text associated with it. This will be displayed on display status and in the ECS Control menu.

- Any of the 15 messages are selectable for each standard event.

Note: For instructions to enable ECS system see Section 7.10.3.1.

9.12 Defining Output Group Type

Each output group is defined as either a voice output group or a non-voice output group. Output points that are audio circuits (all circuits on the ECS-50W, ECS-125W, ECS-INT50W, ECS-DUAL50W and ECS-CE4) can only be assigned to voice output groups. Output points that are non-voice circuits (all other points and circuits that are on all modules except the ECS-50W, ECS-125W, ECS-INT50W, ECS-DUAL50W and ECS-CE4) are assigned to non-voice output groups.

Each of the output groups defined as voice can be mapped to a particular switch and LED on the ECS-VCM, ECS-RVM and ECS-SW24. This allows the user to see the state of the voice groups assigned to the switches. This also lets the user individually select which areas they want to do a live page into.

Output groups not defined as voice groups can also be assigned to these switches as long as there is a voice group already assigned to the group. This allows for dynamically activating/deactivating both voice and strobes/other outputs in an area with a single button press. See 9.2.3.2.

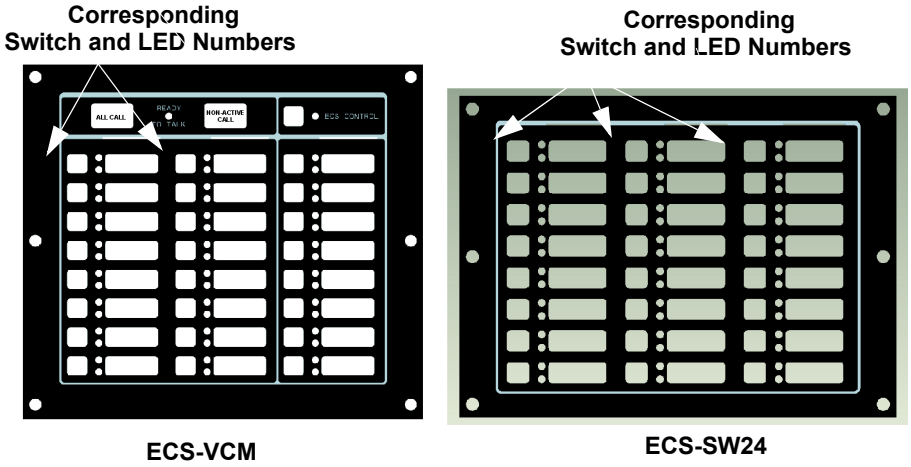


Figure 9-11 Corresponding Switch and LED for Mapping Output Groups

1. To get to this menu item repeat steps 1 through 6 of Section 7.4.1.
2. To edit group properties, press 2.
3. Press the ▽ or △ arrows to select the desired latching option.
4. Press ENTER.
5. Press the ▽ or △ arrows to select the desired silencing option. Refer to Table 7-3.
6. Press ENTER.
7. Press the ▽ or △ arrows to select the desired reverse polarity option
8. Press ENTER.
9. Enable group activation for a condition (see Table 7-4) by pressing the ▽ or △ arrows to select Y (yes) or N (no).
10. Press ENTER.
11. Repeat steps 9 and 10 for all the activation options.

9.13 Voice Command Mapping

Where an ECS event is playing can be configured automatically or manually. The automatic method is through voice system mapping and the manual method is using output group override.

9.13.1 Voice System Mapping

Mapping ECS events to activate output groups is just like mapping events for the fire system. These are located under the voice tab of SKSS.

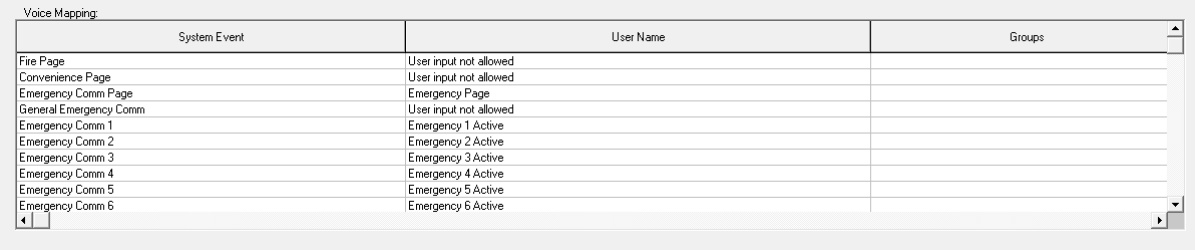


Figure 9-12 Voice System Mapping

9.13.2 ECS Voice Aux Inputs (Dynamic with VCM/RVM in the system)

Voice Aux inputs are in the priority table dynamically based on the number of ECS-VCM and ECS-RVMs in the system. If the system contains the one ECS-VCM and three ECS-RVMs the priority table will show 'ECS Aux Voice In 1' through 4. This is the same with voice mapping except voice mapping doesn't have the ECS tag in front of the event. See Table 9-2.

Note: With the ECS release, we are introducing status points to the system. The priorities associated with these and non-ECS voice aux in are always added (internal to the system) after trouble.

Zone Mapping to Voice Output Groups

When a voice output group is selected to be activated by a zone, the cadence pattern choice listed in Section 7.3.1.4 do not apply. For voice output groups, one of 16 plus all "Aux Voice In" system wide voice commands will activate instead of the cadence pattern. Which command is determined by the event type selected for that zone. The voice commands are programmable by the installer. Table 9-3 lists the voice commands and the associated event type.

Table 9-3 Event Types for Voice Commands

Priority*	Name	Comments
1	Fire	It will sound whenever a request is made to activate a voice output group that was triggered from a manual pull, detector, or water flow event.
2	Fire Aux1	Fire Command
3	Fire Aux2	Fire Command
4	Fire Pre-alarm	Fire Command
5	Fire Supervisory	Fire Command
6	CO Alarm	CO Command
7	CO Supervisory	CO Command
6	Custom Emergency Communication	ECS 0 command (Microphone triggered ECS)

Table 9-3 Event Types for Voice Commands

Priority*	Name	Comments
7	Emergency Communication 1	ECS Message 1
8	Emergency Communication 2	ECS Message 2
9	Emergency Communication 3	ECS Message 3
10	Emergency Communication 4	ECS Message 4
11	Emergency Communication 5	ECS Message 5
12	Emergency Communication 6	ECS Message 6
13	Emergency Communication 7	ECS Message 7
14	Emergency Communication 8	ECS Message 8
15	Aux Voice In 1	First ECS-VCM/RVM configured
16 - XX	Aux Voice in 2 - XX	Remaining ECS-VCM/RVM configured as next lowest SBUS address
XX	General Emergency Communication	General ECS - Active when any other ECS is active in system
XX	Trouble	Fire Command

*The priorities are not set, the are configurable by the user. For each installation a risk assessment must be done to decide the priority of events.

9.13.3 Edit Command Mapping

Up to 8 Groups or Templates can be assigned to each voice system event. See Table 9-4.

Table 9-4: Voice Commands Mapping

System Event
Custom Emergency Communication
Emergency Communication 1
Emergency Communication 2
Emergency Communication 3
Emergency Communication 4
Emergency Communication 5
Emergency Communication 6
Emergency Communication 7
Emergency Communication 8
Aux Voice In 1
Aux Voice In 2 - XX
General Emergency Communication
Microphone Engaged

9.13.3.1 Mapping for Voice Commands

To Edit CMD Mapping see Section 7.10.3.3. Select the ECS Message for items described. See Table 9-4.

Eight groups or templates can be entered in the following screen

GXXX -CXX GXXX - CXX

GXXX -CXX GXXX - CXX

GXXX -CXX GXXX - CXX

GXXX -CXX GXXX - CXX

If a voice group is entered in the GXXX field, the Cadence field will be filled with a CVC and the filed is not able to be edited.

If a non-voice group is entered in the GXXX field, the user will be allowed to enter a Cadence value. See example: G004 -CVC G001 - C03

9.13.4 ECS Timer Options

9.13.4.1 Timers include

- ECS Control Lockout
  - Immediate
  - Never
  - Timer (If timer is selected, a range of 1-720 minutes and 0-59 seconds are allowed. Default is 30 seconds).
- ECS Event Auto Reset Time (including Custom Emergency Communication 0 and Emergency Communication 1-8).
  - Event Disabled (the event can not be generated)
  - Never
  - Timer (If timer is selected, a range of 0-240 minutes is allowed. Default is Never Reset).

9.13.4.2 ECS Timer Menu

ECS Timer	Option
Control Lockout	Immed/Timer/Never
Auto Reset EC0 (Custom ECS Event)	Disabled/Never/Timer (Min XXX)
Auto Reset EC1	Disabled/Never/Timer (Min XXX)
Auto Reset EC2	Disabled/Never/Timer (Min XXX)
Auto Reset EC3	Disabled/Never/Timer (Min XXX)
Auto Reset EC4	Disabled/Never/Timer (Min XXX)
Auto Reset EC5	Disabled/Never/Timer (Min XXX)
Auto Reset EC6	Disabled/Never/Timer (Min XXX)
Auto Reset EC7	Disabled/Never/Timer (Min XXX)
Auto Reset EC8	Disabled/Never/Timer (Min XXX)

Note: Auto Reset settings only apply to the ECS Events when activated from an LOC interface.

Section 10
Reporting

This section lists receivers that are compatible with this control panel and the reporting codes sent by the control panel for SIA and Contact ID formats.

10.1 Receivers Compatible with the Control Panel

The below table shows receivers compatible with the control panel.

Manufacturer	Model	Format
Silent Knight	Model 9800	SIA and Contact ID
	Model 9000 (SIA formats)	SIA
Ademco	Model 685 (Contact ID)	Contact ID
Sur-Gard	SG-MLR2-DG (V. 1.64 or higher)	SIA and Contact ID
Osborne Hoffman	Quickalert	SIA and Contact ID

10.2 Reporting Formats Table

		SIA Reporting Format			Contact ID Reporting Format			
Event Description	**Event Family**	**Module ID # (if any)**	**SIA Event Code**	**Parameter (if any)**	**Qualifier**	**Event Code**	**Group #**	**Contact #**
System Events	Note: System events are reported when either “Report by Point” or “Report by Zone” is selected.							
AC Power restore	Trouble		AR	0	3	301	00	000
AC Power lost	Trouble		AT	0	1	301	00	000
Auto dialer test communication trouble	Trouble		YC	Line #	1	350	00	Line #
Auto dialer test communication trouble restore	Trouble		YK	Line #	3	350	00	Line #
Battery Voltage restore	Trouble		YR	Exp. ID	3	302	00	Exp. ID
Battery Voltage low	Trouble		YT	Exp. ID	1	302	00	Exp. ID
Ground Fault condition detected	Trouble		YP	Exp. ID	1	310	00	Exp. ID
Emergency Reset[1]	Reset		OR	1	1	401	00	001
Emergency System Overridden[1]	Trouble		QS	0	1	244	00	000
Emergency System Overridden Restore[1]	Trouble		QR	0	3	244	00	000
Fire System Overridden[1]	Trouble		FS	0	1	245	00	000
Fire System Override Restore[1]	Trouble		FR	0	3	245	00	000
Ground fault condition restore	Trouble		YQ	Exp. ID	3	310	00	Exp. ID
Fire Drill has begun	Test		FI	0	1	604	00	000
Fire Drill ended	Test		FK	0	3	604	00	000
Initial Power up	Trouble		RR	0	1	305	00	000

		SIA Reporting Format			Contact ID Reporting Format			
Event Description	**Event Family**	**Module ID # (if any)**	**SIA Event Code**	**Parameter (if any)**	**Qualifier**	**Event Code**	**Group #**	**Contact #**
Local Programming begin	Trouble		LB	0	1	627	00	000
Local Programming ended normally	Trouble		LS	0	1	628	00	000
Local Programming aborted or ended with errors	Trouble		LU	0	1	628	00	000
Panel Date has been changed	Trouble		JD	0	1	625	00	000
Panel Time has been changed	Trouble		JT	0	1	625	00	000
Phone line 1 trouble Restore	Trouble		LR	1	3	351	00	001
Phone line 2 trouble Restore	Trouble		LR	2	3	352	00	002
Phone line 1 trouble detected	Trouble		LT	1	1	351	00	001
Phone line 2 trouble detected	Trouble		LT	2	1	352	00	002
Periodic test event – normal	Test		RP	0	1	602	00	000
Periodic test event – off normal	Test		RY	0	1	608	00	000
Printer paper restore	Trouble		VI	Exp. ID	3	335	00	Exp. ID
Printer is out of paper	Trouble		VO	Exp. ID	1	335	00	Exp. ID
Printer back on-line	Trouble		VY	Exp. ID	3	336	00	Exp. ID
Printer off-line	Trouble		VZ	Exp. ID	1	336	00	Exp. ID
Remote programming ended normally	Trouble		RS	0	1	412	00	000
Remote programming aborted or ended with errors	Trouble		RU	0	1	413	00	000
Report to an account successful	Trouble		YK	Acct #	3	354	Acct #	Acct #
SBUS expander trouble restore	Trouble		ER	Exp. ID	3	333	00	Exp. ID
SBUS Class A supervision restore	Trouble		ER	Exp. ID	3	333	00	Exp. ID
Short circuit removed from SLC communication loop	Trouble		ER	Exp. ID	3	332	00	Exp. ID
SLC Class A supervision restored	Trouble		ER	Exp. ID	3	331	00	Exp. ID
SLC Class A supervision lost	Trouble		ET	Exp. ID	1	331	00	Exp. ID
SLC address programming started; system has been shut down.	Test		TS	0	1	607	00	000
SLC address programming ended; system has been re-enabled.	Test		TE	0	3	607	00	000
SBUS expander trouble	Trouble		ET	Exp. ID	1	333	00	Exp. ID
SBUS Class A supervision lost	Trouble		ET	Exp. ID	1	333	00	Exp. ID
Short circuit detected on SLC communication loop	Trouble		ET	Exp. ID	1	332	00	Exp. ID
User has initiated dialer test	Test		RX	0	1	601	00	000
User initiated a system reset	Reset		OR	0	1	401	00	000
Unable to report to an account	Trouble		RT	Acct #	1	354	Acct #	Acct #
Voice Mic Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Mic Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice Codec Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Codec Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice VBUS Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID

		SIA Reporting Format			Contact ID Reporting Format			
Event Description	**Event Family**	**Module ID # (if any)**	**SIA Event Code**	**Parameter (if any)**	**Qualifier**	**Event Code**	**Group #**	**Contact #**
Voice VBUS Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice Message Trouble[1]	Trouble	pi message ID	ET	Exp. ID	1	332	Message ID	Exp. ID
Voice Message Trouble Restore[1]	Trouble	pi message ID	ER	Exp. ID	3	332	Message ID	Exp. ID
Voice Switch Expander Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Switch Expander Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice Circuit Expander Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Circuit Expander Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice Audio Chain Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Audio Chain Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice VCM/RVM Audio Chain Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice VCM/RVM Audio Chain Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice VCM/RVM Audio Chain Trouble[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice Amp 1 Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Amp 1 Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice Amp 2 Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Amp 2 Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice Amp External Amp Missing Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Amp External Amp Missing Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice Amp External Amp Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Amp External Amp Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice Amp Generic Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice Amp Generic Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice unsupported Expander Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice unsupported Expander Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Voice unsupported features Trouble[1]	Trouble		ET	Exp. ID	1	332	00	Exp. ID
Voice unsupported features Trouble Restore[1]	Trouble		ER	Exp. ID	3	332	00	Exp. ID
Water release circuit has been disabled	Trouble	pi Exp. ID	SS	Point #	1	203	Exp. ID	Point #
Water release circuit has been re-enabled	Trouble	pi Exp. ID	SR	Point #	3	203	Exp. ID	Point #

		SIA Reporting Format			Contact ID Reporting Format			
Event Description	**Event Family**	**Module ID # (if any)**	**SIA Event Code**	**Parameter (if any)**	**Qualifier**	**Event Code**	**Group #**	**Contact #**
Walk test end	Test		TE	0	3	607	00	000
Walk test begin	Test		TS	0	1	607	00	000
Zone Events	Note: Zone events are reported only when "Report by Zone" is selected.							
Auxiliary power trouble	Trouble		FT	0000	1	320	00	000
Auxiliary power trouble restore	Trouble		FJ	0000	3	320	00	000
CO Detector Alarm	Alarm		GA	Zone #	1	162	00	Zone #
CO Detector Alarm Restore	Restore		GH	Zone #	3	162	00	Zone #
CO Detector Trouble	Trouble		GT	Zone #	1	373	00	Zone #
CO Detector Trouble Restore	Trouble		GJ	Zone #	3	373	00	Zone #
CO Supervisory Condition	Trouble		GS	Zone #	1	200	00	Zone #
CO Supervisory Condition Restore	Trouble		GR	Zone #	3	200	00	Zone #
Detector Trouble	Trouble		FT	Zone #	1	373	00	Zone #
Detector Trouble Restore	Trouble		FJ	Zone #	3	373	00	Zone #
Detector Alarm	Alarm		FA	Zone #	1	110	00	Zone #
Detector Alarm Restore	Restore		FH	Zone #	3	110	00	Zone #
Emergency Notification Trouble[1]	Trouble		QT	1000 + Group #	1	320	00	Group #
Emergency Notification Trouble Restored[1]	Trouble		QJ	1000 + Group #	3	320	00	Group #
Emergency Switch Trouble[1]	Trouble		QT	0	1	242	00	000
Emergency Switch Trouble Restore[1]	Trouble		QJ	0	3	242	00	000
External Reset/Silence/Fire Drill switch trouble	Trouble		UT	0000	1	373	00	000
External Reset/Silence/Fire Drill switch trouble restore	Trouble		UJ	0000	3	373	00	000
LOC Mic Activated Emergency Alarm[1]	Alarm		QA	0	1	220	00	000
LOC Mic Activated Emergency Alarm Restore[1]	Restore		QH	0	3	220	00	000
LOC/Point Emergency # Alarm[1]	Alarm		QA	Emergency #	1	220 + Emergency #	00	Emergency #
LOC/Point Emergency # Alarm Restore[1]	Restore		QH	Emergency #	3	220 + Emergency #	00	Emergency #
Manual Pull switch alarm	Alarm		FA	Zone #	1	115	00	Zone #
Manual Pull switch alarm restore	Restore		FH	Zone #	3	115	00	Zone #
Manual Pull switch trouble	Trouble		FT	Zone #	1	373	00	Zone #
Manual Pull switch trouble restore	Trouble		FJ	Zone #	3	373	00	Zone #
Notification Trouble	Trouble		FT	1000+Group #	1	320	00	Group #
Notification Output trouble restore	Trouble		FJ	1000+Group #	3	320	00	Group #
Positive Alarm Sequence acknowledge switch trouble	Trouble		FT	Zone #	1	373	00	Zone #
Positive Alarm Sequence acknowledge switch trouble restore	Trouble		FJ	Zone #	3	373	00	Zone #

		SIA Reporting Format			Contact ID Reporting Format			
Event Description	**Event Family**	**Module ID # (if any)**	**SIA Event Code**	**Parameter (if any)**	**Qualifier**	**Event Code**	**Group #**	**Contact #**
SLC LED Module trouble restore	Trouble		ER	0000	3	333	00	000
SLC LED Module trouble	Trouble		ET	0000	1	333	00	000
Status Point Types Trouble	Trouble		UT	0	1	379	00	000
Status Point Types Trouble Restore	Trouble		UJ	0	3	379	00	000
Supervisory/Tamper switch trouble restore	Trouble		FJ	Zone #	3	373	00	Zone #
Supervisory condition restore	Trouble		FR	Zone #	3	200	00	Zone #
Supervisory condition	Trouble		FS	Zone #	1	200	00	Zone #
Supervisory/Tamper switch trouble	Trouble		FT	Zone #	1	373	00	Zone #
System-based AUX1 switch alarm	Alarm		UA	1000	1	140	01	000
System-based AUX2 switch alarm	Alarm		UA	2000	1	140	02	000
System-based AUX1 switch alarm restore	Restore		UH	1000	3	140	01	000
System-based AUX2 switch alarm restore	Restore		UH	2000	3	140	02	000
System-based AUX1 switch trouble restore	Trouble		UJ	1000	3	373	01	000
System-based AUX2 switch trouble restore	Trouble		UJ	2000	3	373	02	000
System-based AUX1 switch trouble	Trouble		UT	1000	1	373	01	000
System-based AUX2 switch trouble	Trouble		UT	2000	1	373	02	000
Voice Aux Emergency X Alarm[1]	Alarm		UA	2 + Emergency #	1	170 + Emergency #	00	002 + Emergency #
Voice Aux Emergency X Alarm Restore[1]	Restore		UH	2 + Emergency #	3	170 + Emergency #	00	002 + Emergency #
Water flow switch alarm	Alarm		SA	Zone #	1	113	00	Zone #
Water flow switch alarm restore	Restore		SH	Zone #	3	113	00	Zone #
Water flow switch trouble	Trouble		ST	Zone #	1	373	00	Zone #
Water flow switch trouble restore	Trouble		SJ	Zone #	3	373	00	Zone #
Zone-based AUX1 switch alarm	Alarm		UA	1000+ Zone #	1	140	01	Zone #
Zone-based AUX2 switch alarm	Alarm		UA	2000+ Zone #	1	140	02	Zone #
Zone-based AUX1 switch alarm restore	Restore		UH	1000+ Zone #	3	140	01	Zone #
Zone-based AUX2 switch alarm restore	Restore		UH	2000+ Zone #	3	140	02	Zone #
Zone-based AUX1 switch trouble restore	Trouble		UJ	1000+ Zone #	3	373	01	Zone #
Zone-based AUX2 switch trouble restore	Trouble		UJ	2000+ Zone #	3	373	02	Zone #
Zone-based AUX1 switch trouble	Trouble		UT	1000+ Zone #	1	373	01	Zone #
Zone-based AUX2 switch trouble	Trouble		UT	2000+ Zone #	1	373	02	Zone #

		SIA Reporting Format			Contact ID Reporting Format			
Event Description	**Event Family**	**Module ID # (if any)**	**SIA Event Code**	**Parameter (if any)**	**Qualifier**	**Event Code**	**Group #**	**Contact #**
Point Events	Note: Point events are reported only when "Report by Point" is selected. When protocol devices are used sensors 1– are reported as Pnt #s 1–, and modules 1– are reported as Pnt #s .							
Auxiliary switch input disabled	Disable	pi Exp. ID	UB	Point #	1	571	Exp. ID	Point #
Auxiliary switch input re-enabled	Disable	pi Exp. ID	UU	Point #	3	571	Exp. ID	Point #
An unexpected SLC device has been detected	Trouble	pi Exp. ID	XE	Point #	1	380	Exp. ID	Point #
An unexpected SLC device has been removed	Trouble	pi Exp. ID	XI	Point #	3	380	Exp. ID	Point #
Auxiliary Power trouble	Trouble	pi Exp. ID	FT	Point #	1	320	Exp. ID	Point #
Aux Power trouble restore	Trouble	pi Exp. ID	FJ	Point #	3	320	Exp. ID	Point #
CO Detector Alarm	Alarm	pi Exp. ID	GA	Point #	1	162	Exp. ID	Point #
CO Detector Alarm Restore	Restore	pi Exp. ID	GH	Point #	3	162	Exp. ID	Point #
CO Detector Trouble	Trouble	pi Exp. ID	GT	Point #	1	373	Exp. ID	Point #
CO Detector Trouble Restore	Trouble	pi Exp. ID	GJ	Point #	3	373	Exp. ID	Point #
CO Supervisory Condition	Trouble	pi Exp. ID	GS	Point #	1	200	Exp. ID	Point #
CO Supervisory Condition Restore	Trouble	pi Exp. ID	GR	Point #	3	200	Exp. ID	Point #
CO Detector Input Switch Disabled	Disable	pi Exp. ID	GB	Point #	1	571	Exp. ID	Point #
CO Detector Input Switch Enabled	Disable	pi Exp. ID	GU	Point #	3	571	Exp. ID	Point #
CO Detector Disabled	Disable	pi Exp. ID	GB	Point #	1	571	Exp. ID	Point #
CO Detector Enabled	Disable	pi Exp. ID	GU	Point #	3	571	Exp. ID	Point #
Detector Alarm	Alarm	pi Exp. ID	FA	Point #	1	110	Exp. ID	Point #
Detector Alarm restore	Restore	pi Exp. ID	FH	Point #	3	110	Exp. ID	Point #
Detector Trouble	Trouble	pi Exp. ID	FT	Point #	1	373	Exp. ID	Point #
Detector Trouble restore	Trouble	pi Exp. ID	FJ	Point #	3	373	Exp. ID	Point #
Emergency Alarm # Point Alarm[1]	Alarm	pi Exp. ID	QA	(EPPP) E - Emergency # PPP - Point #	1	220 + Emergency #	Exp. ID	Point #
Emergency Alarm # Point Alarm Restore[1]	Restore	pi Exp. ID	QH	(EPPP) E - Emergency # PPP - Point #	3	220 + Emergency #	Exp. ID	Point #
Emergency Alarm # Point Trouble[1]	Trouble	pi Exp. ID	QT	Point #	1	242	Exp. ID	Point #
Emergency Alarm # Point Trouble Restore[1]	Trouble	pi Exp. ID	QJ	Point #	3	242	Exp. ID	Point #
Emergency Alarm # Point Disabled[1]	Disable	pi Exp. ID	QB	Point #	1	243	Exp. ID	Point #
Emergency Alarm # Point Enabled[1]	Disable	pi Exp. ID	QU	Point #	3	243	Exp. ID	Point #
Emergency NAC Trouble[1]	Trouble	pi Exp. ID	QT	Point #	1	320	Exp. ID	Point #
Emergency NAC Trouble Restored[1]	Trouble	pi Exp. ID	QJ	Point #	3	320	Exp. ID	Point #
Emergency Control Circuit Trouble[1]	Trouble	pi Exp. ID	QT	Point #	1	320	Exp. ID	Point #
Emergency Control Circuit Trouble Restored[1]	Trouble	pi Exp. ID	QJ	Point #	3	320	Exp. ID	Point #
Emergency Relay Trouble[1]	Trouble	pi Exp. ID	QT	Point #	1	320	Exp. ID	Point #
Emergency Relay Trouble Restored[1]	Trouble	pi Exp. ID	QJ	Point #	3	320	Exp. ID	Point #

		SIA Reporting Format			Contact ID Reporting Format			
Event Description	**Event Family**	**Module ID # (if any)**	**SIA Event Code**	**Parameter (if any)**	**Qualifier**	**Event Code**	**Group #**	**Contact #**
External Reset/Silence/Fire Drill switch trouble	Trouble	pi Exp. ID	UT	Point #	1	373	Exp. ID	Point #
External Reset/Silence/Fire Drill switch trouble restore	Trouble	pi Exp. ID	UJ	Point #	3	373	Exp. ID	Point #
External Reset/Silence/Fire Drill Switch Disabled	Disable	pi Exp. ID	UB	Point #	1	571	Exp. ID	Point #
External Reset/Silence/Fire Drill Switch Enabled	Disable	pi Exp. ID	UU	Point #	3	571	Exp. ID	Point #
LOC Emergency # Alarm[1]	Alarm	pi Exp. ID	QA	Emergency #	1	220 + Emer-gency #	Exp. ID	Emergency #
LOC Emergency # Alarm Restore[1]	Restore	pi Exp. ID	QH	Emergency #	3	220 + Emer-gency #	Exp. ID	Emergency #
Manual Pull switch alarm	Alarm	pi Exp. ID	FA	Point #	1	115	Exp. ID	Point #
Manual Release switch alarm (Water Release Zone)	Alarm	pi Exp. ID	FA	Point #	1	110	Exp. ID	Point #
Interlock Switch alarm (Water Release Zone)	Alarm	pi Exp. ID	FA	Point #	1	110	Exp. ID	Point #
Point Disabled	Disable	pi Exp. ID	FB	Point #	1	571	Exp. ID	Point #
Manual Pull switch alarm restore	Restore	pi Exp. ID	FH	Point #	3	115	Exp. ID	Point #
Manual Release switch alarm restore (Water Release Zone)	Restore	pi Exp. ID	FH	Point #	3	110	Exp. ID	Point #
Interlock Switch alarm restore (Water Release Zone)	Restore	pi Exp. ID	FH	Point #	3	110	Exp. ID	Point #
Notification Output trouble restore	Trouble	pi Exp. ID	FJ	Point #	3	320	Exp. ID	Point #
Manual Pull switch trouble restore	Trouble	pi Exp. ID	FJ	Point #	3	373	Exp. ID	Point #
Manual Release switch trouble restore (Water Release Zone)	Trouble	pi Exp. ID	FJ	Point #	3	373	Exp. ID	Point #
Interlock Switch trouble restore (Water Release Zone)	Trouble	pi Exp. ID	FJ	Point #	3	373	Exp. ID	Point #
Positive Alarm Sequence acknowledge switch trouble restore	Trouble	pi Exp. ID	FJ	Point #	3	373	Exp. ID	Point #
Notification Output trouble	Trouble	pi Exp. ID	FT	Point #	1	320	Exp. ID	Point #
Manual Pull switch trouble	Trouble	pi Exp. ID	FT	Point #	1	373	Exp. ID	Point #
Manual Release switch trouble (Water Release Zone)	Trouble	pi Exp. ID	FT	Point #	1	373	Exp. ID	Point #
Interlock Switch trouble (Water Release Zone)	Trouble	pi Exp. ID	FT	Point #	1	373	Exp. ID	Point #
Positive Alarm sequence acknowledge switch trouble	Trouble	pi Exp. ID	FT	Point #	1	373	Exp. ID	Point #
Point Enabled	Disable	pi Exp. ID	FU	Point #	3	571	Exp. ID	Pnt #
Status Point Trouble	Trouble	pi Exp. ID	UT	Point #	1	379	Exp. ID	Point #
Status Point Trouble Restored	Trouble	pi Exp. ID	UJ	Point #	3	379	Exp. ID	Point #
Status Point is Disabled	Disable	pi Exp. ID	UB	Point #	1	580	Exp. ID	Point #
Status Point is Enabled	Disable	pi Exp. ID	UU	Point #	3	580	Exp. ID	Point #
Supervisory/Tamper switch or supervisory detector disabled	Disable	pi Exp. ID	FB	Point #	1	571	Exp. ID	Point #

		SIA Reporting Format			Contact ID Reporting Format			
Event Description	**Event Family**	**Module ID # (if any)**	**SIA Event Code**	**Parameter (if any)**	**Qualifier**	**Event Code**	**Group #**	**Contact #**
Supervisory/Tamper switch or supervisory detector trouble restore	Trouble	pi Exp. ID	FJ	Point #	3	373	Exp. ID	Point #
Supervisory condition restore	Trouble	pi Exp. ID	FR	Point #	3	200	Exp. ID	Point #
Supervisory Condition	Trouble	pi Exp. ID	FS	Point #	1	200	Exp. ID	Point #
Supervisory/Tamper switch or supervisory detector trouble	Trouble	pi Exp. ID	FT	Point #	1	373	Exp. ID	Point #
Supervisory/Tamper switch or supervisory detector re-enabled	Disable	pi Exp. ID	FU	Point #	3	571	Exp. ID	Point #
System-based AUX1 switch trouble restore	Trouble	pi Exp. ID	UJ	Point #	3	373	Exp. ID	Point #
System-based AUX2 switch trouble restore	Trouble	pi Exp. ID	UJ	Point #	3	373	Exp. ID	Point #
System-based AUX1 switch trouble	Trouble	pi Exp. ID	UT	Point #	1	373	Exp. ID	Point #
System-based AUX2 switch trouble	Trouble	pi Exp. ID	UT	Point #	1	373	Exp. ID	Point #
System-based AUX1 switch alarm restore	Restore	pi Exp. ID	UH	Point #	3	140	Exp. ID	Point #
System-based AUX2 switch alarm restore	Restore	pi Exp. ID	UH	Point #	3	140	Exp. ID	Point #
System-based AUX1 switch alarm	Alarm	pi Exp. ID	UA	Point #	1	140	Exp. ID	Point #
System-based AUX2 switch alarm	Alarm	pi Exp. ID	UA	Point #	1	140	Exp. ID	Point #
Voice Aux Emergency X Point Alarm[1]	Alarm	pi Exp. ID	UA	([2+ Emergency #] PPP - Point #	1	170 + Emergency #	Exp. ID	Point #
Voice Aux Emergency X Point Alarm Restore[1]	Restore	pi Exp. ID	UH	([2+ Emergency #] PPP - Point #	3	170 + Emergency #	Exp. ID	Point #
Voice Aux Emergency Point Trouble[1]	Trouble	pi Exp. ID	UT	Point #	1	379	Exp. ID	Point #
Voice Aux Emergency Point Trouble Restore[1]	Trouble	pi Exp. ID	UJ	Point #	3	379	Exp. ID	Point #
Voice Aux Emergency Point Disabled[1]	Disable	pi Exp. ID	UB	Point #	1	580	Exp. ID	Point #
Voice Aux Emergency Point Enabled[1]	Disable	pi Exp. ID	UU	Point #	3	580	Exp. ID	Point #
Voice Aux Status Switch Trouble[1]	Trouble	pi Exp. ID	UT	Point #	1	379	Exp. ID	Point #
Voice Aux Status Switch Trouble Restored[1]	Trouble	pi Exp. ID	UJ	Point #	3	379	Exp. ID	Point #
Voice Aux Status Switch Disabled[1]	Disable	pi Exp. ID	UB	Point #	1	580	Exp. ID	Point #
Voice Aux Status Switch Enabled[1]	Disable	pi Exp. ID	UU	Point #	3	580	Exp. ID	Point #
Water flow switch alarm	Alarm	pi Exp. ID	SA	Point #	1	113	Exp. ID	Point #
Water flow switch disabled	Disable	pi Exp. ID	SB	Point #	1	571	Exp. ID	Point #
Water flow switch alarm restore	Restore	pi Exp. ID	SH	Point #	3	113	Exp. ID	Point #
Water flow switch trouble restore	Trouble	pi Exp. ID	SJ	Point #	3	373	Exp. ID	Point #
Water flow switch trouble	Trouble	pi Exp. ID	ST	Point #	1	373	Exp. ID	Point #
Water flow switch re-enabled	Disable	pi Exp. ID	SU	Point #	3	571	Exp. ID	Point #
Zone-based AUX1 switch alarm	Alarm	pi Exp. ID	UA	Point #	1	140	Exp. ID	Point #
Zone-based AUX2 switch alarm	Alarm	pi Exp. ID	UA	Point #	1	140	Exp. ID	Point #

		SIA Reporting Format			Contact ID Reporting Format			
Event Description	**Event Family**	**Module ID # (if any)**	**SIA Event Code**	**Parameter (if any)**	**Qualifier**	**Event Code**	**Group #**	**Contact #**
Zone-based AUX1 switch alarm restore	Restore	pi Exp. ID	UH	Point #	3	140	Exp. ID	Point #
Zone-based AUX2 switch alarm restore	Restore	pi Exp. ID	UH	Point #	3	140	Exp. ID	Point #
Zone-based AUX1 switch trouble restore	Trouble	pi Exp. ID	UJ	Point #	3	373	Exp. ID	Point #
Zone-based AUX2 switch trouble restore	Trouble	pi Exp. ID	UJ	Point #	3	373	Exp. ID	Point #
Zone-based AUX1 switch trouble	Trouble	pi Exp. ID	UT	Point #	1	373	Exp. ID	Point #
Zone-based AUX2 switch trouble	Trouble	pi Exp. ID	UT	Point #	1	373	Exp. ID	Point #
System-based Wireless Gateway Trouble	Trouble	pi Exp. ID	UT	UTN-NXXPPPP	1	373	Exp. ID	Point #
System-based Wireless Gateway Trouble - restore	Trouble	pi Exp. ID	UJ	UJN-NXXPPPP	3	373	Exp. ID	Point #
Wireless Gateway Trouble	Trouble	pi Exp. ID	UT	UTN-NXXPPPP	1	373	Exp. ID	Point #
Wireless Gateway Trouble restore	Trouble	pi Exp. ID	UJ	UJN-NXXPPPP	3	373	Exp. ID	Point #

[1]Events only applicable to VIP/ECS/EVS panels

Section 11
Testing and Troubleshooting

11.1 Troubleshooting

This section of the manual offers suggestions for troubleshooting hardware problems. Please read this section if you encounter a problem when installing the control panel. If these suggestions do not solve your problem or if you encounter a problem that is not listed here, contact Silent Knight Technical Support at 800-446-6444 for assistance.

11.2 Common Problems

Problem	Possible Cause / Suggested Actions
Trouble message “DBL ADDR” (Double Address) displays on LCD.	An address has been assigned to more than one detector. Correct the address following the procedure described in Section 5.8 for SD devices and Section 5.6 for IDP devices.
Auxiliary power or notification circuits have incorrect polarity.	Correct polarity. For notification and auxiliary power circuits: When in alarm or powered, terminals labeled “X” are positive, terminals labeled “O” are negative.
SLC devices are not being recognized (trouble message “Missing” displays).	Check hardware connections. If devices are physically connected, make sure wiring is correct (see Section 5.4 for SD devices and Section 5.5 for IDP devices). For the main panel, the positive side of device must be connected to terminal 34; the negative side must be connected to Terminal 33. For SLC devices, make sure the device connects to the SLC loop via the SLC OUT terminals.
	Make sure SLC devices have been addressed properly following the procedure described in Section 5.8 for SD devices and Section 5.6 for IDP devices. For contact monitor modules, which are addressed using DIP switches, the DIP switch must be set to the correct address before power is applied to the SLC loop. If this procedure is not followed, the device will have an incorrect address.
	Make sure correct polarity has been observed for SLC device wiring. See Section 5.8 for SD devices and Section 5.5 for IDP devices.
SLC devices are not being recognized (trouble message “Missing” displays on the annunciator).	Check that SLC loop impedance is within the required range. To measure impedance, use the following procedure. 1. Disconnect both wires from the terminal block at the panel (SLC devices can remain connected). 2. Measure the impedance from positive to negative and from negative to positive. Both measurements should be greater than 500 K ohms. If the installation uses T-taps, test each T-tap individually. 3. Temporarily connect the positive wire to the negative wire of the SLC loop at the point farthest from the panel (SLC devices can remain connected). 4. Measure the impedance from positive to negative and from negative to positive. Both measurements must be less than 50 ohms.

Problem	Possible Cause / Suggested Actions
The panel indicates a ground fault trouble condition (trouble message “GROUND FAULT” displays).	An earth ground fault occurs when the panel senses an unexpected flow of current from one or more of its terminals to the earth connection (Terminal 2). Isolate the wiring that is causing the fault by removing wiring connections one at a time until the earth fault is no longer present. Pause at least five seconds after removing a wire before removing the next one. The panel will also go into ground fault if a computer is connected to the panel via a serial cable attached to the panel’s 9-pin connector or a USB cable. This is a correct method for on-site communication between a panel and a computer. Ignore the ground fault message in this case. The trouble will clear automatically when you disconnect the computer from the cable
5496 module that has been physically connected to the panel but is not being recognized.	Check the status of the 5496 green LED. If it flashes in the pattern .5 sec on / .5 sec. off, it is likely that the 5496 has not been added to the system through programming. JumpStart will add any 5496s connected to the panel. If you have already run JumpStart, 5496s can be added manually (see Section 7.2.2). Check that the correct ID for the 5496 module has been set through the DIP switches. Assign ID#1 to the first 5496 and ID#2 to the second 5496. See Section 4.10 for complete details. If the wiring between the 5496 and the panel is correct, measure the voltage from 5496 Terminal (+) to Terminal (-). Voltage should be in the range 27.2-27.4V when AC power is present. If the green LED is not flashing, the likely cause is incorrect wiring from between the 5496 and the panel. See Section 4.4 for wiring details.

11.3 Event History

The event history can be useful for tracking or recalling a trouble condition.

11.4 Built-in Troubleshooting and Testing Tools

The fire control panel has several built-in testing and troubleshooting tools that can be utilized to save time while testing and troubleshooting points and SLC devices.

11.4.1 SLC Device Locator

SLC device locator can be used to locate a device on a SLC loop.

Follow these steps to locate a particular SLC device:

1. Select 2 (Point Functions) from the Main Menu.
2. Select 4 (SLC Dev Locator).

   A message similar to the one shown in Figure 11-1 will display.

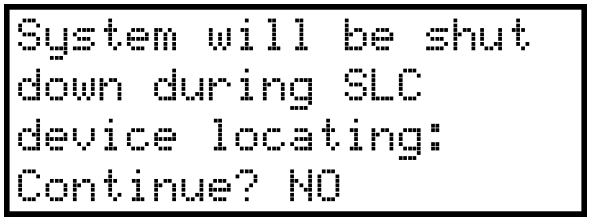


Figure 11-1 Shut Down Warning

3. Press the Up or Down arrow to toggle NO to YES then press ENTER.

If NO is chosen you will exit back to the Point Function menu.

If Yes is chosen the system will cease normal operation leaving the premise unprotected.

4. Select the SLC loop.
5. Enter the SLC address of the device you wish to locate.

   The LED on the selected device will start flashing.
6. Press any key to exit SLC device locator function.

Note: Once you exit the system will resume normal operation.

11.4.2 SLC Multi Locator

This feature is the same as SLC Device Locator, except you can locate up to 8 devices on a single search. Follow these instructions to locate multiple SLC devices:

1. Select 2 (Point Functions) from the Main Menu.
2. Select 5 (SLC Multi Locator).

   A message similar to the one shown in Figure 11-1 will display.

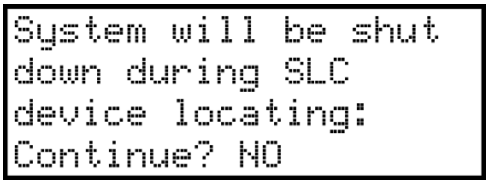


Figure 11-2 Shut Down Warning

3. Press the Up or Down arrow to toggle NO to YES then press ENTER.

   If NO is chosen you will exit back to the Point Function menu.

   If Yes is chosen the system will cease normal operation leaving the premise unprotected.
4. Select the SLC loop.
5. Enter up to 8 SLC addresses for the devices you wish to locate.

   The LEDs on the selected devices will start flashing.
6. Press the Left arrow to exit SLC multi-locator function.

Note: Once you exit the system will resume normal operation.

11.4.3 I/O Point Control

This feature allows you to toggle any output on or off and trip any input device. This can be useful to test a point's output mapping.

Follow these steps to control a I/O point:

1. Select 2 (Point Functions) from the Main Menu.
2. Select 6 (I/O Point Control).
3. Select the Module the point is on.
4. Enter the point number, or press the Up or Down arrow to select the point you wish to test, then press ENTER.
5. Press ENTER to generate an alarm for an input point or activate an output point.
6. To exit press the left arrow.

11.5 Impedances that Cause Earth Ground Faults

Table 11-1 show the minimum impedances that cause an earth ground fault on this system.

Table 11-1: Earth Ground Faults in Ohms

TERMINAL	LOW BIASED		HIGH BIASED	
(values in kohms)	high trip	high restore	low trip	low restore
NAC 1 -	0	0		
NAC 1 +			0	0
NAC 2 -	0	0		
NAC 2 +			0	0
NAC 3 -	0	0		
NAC 3 +			0	0
NAC 4 -	0	0		
NAC 4 +			0	0
SBUS -			0	0
SBUS +	0	0		
SBUS A			0	0
SBUS B			0	0
SLC IN -			0	0
SLC IN +	0	0		
SLC OUT -			0	0
SLC OUT +	0	0		
Note: Any Wire-to-Wire fault impedance is 0 ohms				

Section 12
Installation Records

This section of the manual is for you to use if you wish to track of how points, zones, and groups have been programmed.

12.1 SD SLC Device Point Record

You can use Table 12-1 to keep track of SD SLC device points.
Default addresses for ID:On-board: = 33

Table 12-1: SD Installation Record

Module	Addr	Zone / Group	Description
On-board	1		
On-board	2		
On-board	3		
On-board	4		
On-board	5		
On-board	6		
On-board	7		
On-board	8		
On-board	9		
On-board	10		
On-board	11		
On-board	12		
On-board	13		
On-board	14		
On-board	15		
On-board	16		
On-board	17		
On-board	18		
On-board	19		
On-board	20		
On-board	21		
On-board	22		
On-board	23		
On-board	24		
On-board	25		
On-board	26		
On-board	27		
On-board	28		
On-board	29		
On-board	30		

Module	Addr	Zone/ Group	Description
On-board	31		
On-board	32		
On-board	33		
On-board	34		
On-board	35		
On-board	36		
On-board	37		
On-board	38		
On-board	39		
On-board	40		
On-board	41		
On-board	42		
On-board	43		
On-board	44		
On-board	45		
On-board	46		
On-board	47		
On-board	48		
On-board	49		
On-board	50		
On-board	51		
On-board	52		
On-board	53		
On-board	54		
On-board	55		
On-board	56		
On-board	57		
On-board	58		
On-board	59		
On-board	60		

Table 12-1: SD Installation Record

Module	Addr	Zone / Group	Description
On-board	61		
On-board	62		
On-board	63		
On-board	64		
On-board	65		
On-board	66		
On-board	67		
On-board	68		
On-board	69		
On-board	70		
On-board	71		
On-board	72		
On-board	73		
On-board	74		
On-board	75		
On-board	76		
On-board	77		
On-board	78		
On-board	79		
On-board	80		
On-board	81		
On-board	82		
On-board	83		
On-board	84		
On-board	85		
On-board	86		
On-board	87		
On-board	88		
On-board	89		
On-board	90		
On-board	91		
On-board	92		
On-board	93		
On-board	94		

Module	Addr	Zone/ Group	Description
On-board	95		
On-board	96		
On-board	97		
On-board	98		
On-board	99		
On-board	100		
On-board	101		
On-board	102		
On-board	103		
On-board	104		
On-board	105		
On-board	106		
On-board	107		
On-board	108		
On-board	109		
On-board	110		
On-board	111		
On-board	112		
On-board	113		
On-board	114		
On-board	115		
On-board	116		
On-board	117		
On-board	118		
On-board	119		
On-board	120		
On-board	121		
On-board	122		
On-board	123		
On-board	124		
On-board	125		
On-board	126		
On-board	127		

12.2 IDP SLC Device Point Record

You can use Table 12-2 to keep track of IDP SLC detectors and modules.

Default addresses for ID: On-board: = 33

Table 12-2: IDP Detector Installation Record

Detector	Addr	Zone / Group	Description
On-board	1		
On-board	2		
On-board	3		
On-board	4		
On-board	5		
On-board	6		
On-board	7		
On-board	8		
On-board	9		
On-board	10		
On-board	11		
On-board	12		
On-board	13		
On-board	14		
On-board	15		
On-board	16		
On-board	17		
On-board	18		
On-board	19		
On-board	20		
On-board	21		
On-board	22		
On-board	23		
On-board	24		
On-board	25		
On-board	26		
On-board	27		
On-board	28		
On-board	29		
On-board	30		
On-board	31		
On-board	32		
On-board	33		
On-board	67		
On-board	68		
On-board	69		
On-board	70		

Detector	Addr	Zone/ Group	Description
On-board	34		
On-board	35		
On-board	36		
On-board	37		
On-board	38		
On-board	39		
On-board	40		
On-board	41		
On-board	42		
On-board	43		
On-board	44		
On-board	45		
On-board	46		
On-board	47		
On-board	48		
On-board	49		
On-board	50		
On-board	51		
On-board	52		
On-board	53		
On-board	54		
On-board	55		
On-board	56		
On-board	57		
On-board	58		
On-board	59		
On-board	60		
On-board	61		
On-board	62		
On-board	63		
On-board	64		
On-board	65		
On-board	66		
On-board	84		
On-board	85		
On-board	86		
On-board	87		

Table 12-2: IDP Detector Installation Record

Detector	Addr	Zone / Group	Description
On-board	71		
On-board	72		
On-board	73		
On-board	74		
On-board	75		
On-board	76		
On-board	77		
On-board	78		
On-board	79		
On-board	80		
On-board	81		
On-board	82		
On-board	83		

Detector	Addr	Zone/ Group	Description
On-board	88		
On-board	89		
On-board	90		
On-board	91		
On-board	92		
On-board	93		
On-board	94		
On-board	95		
On-board	96		
On-board	97		
On-board	98		
On-board	99		

Appendix A
Compatible Devices

A.1 Notification Appliances

For proper operation, you must use polarized devices with a Model 7628 4.7k ohm EOL resistor on each loop. All supervised notification appliances used with the control panel must be polarized.

Note: *Not all devices can use the Sync feature, be sure to check table below to ensure the device you have chosen will work with this feature. This control is UL listed for panel wide Synchronization.*

Table below lists notification appliances compatible with the fire alarm control panel. Appliances which can be synchronized indicate the type of SYNC available in the columns marked Audio and Visual.

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
AMSECO	SH24W-153075	x	x	Horn/Strobe
	SAD24-153075		x	Strobe
	SAD24-75110		x	Strobe
	SL24W-75110		x	Strobe
	SL24C-3075110		x	Strobe
	SLB24-75		x	Strobe
	RSD24-153075		x	Strobe
	RSD24-75110		x	Strobe
	SH24W-75110	x	x	Horn/Strobe
	SH24W-3075110	x	x	Horn/Strobe
	SHB24-75	x	x	Horn/Strobe
	SCM24W-153075	x		Chimes/Strobe
	SCM24W-75110	x		Chimes/Strobe
	SCM24C-3075110	x		Chimes/Strobe
	SCM24C-177	x		Chimes/Strobe
	H24W	x		Horn
	H24R	x		Horn

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
FCI	S2415-FC		x	Strobe
	S241575-FC		x	Strobe
	S2430-FC		x	Strobe
	130-3117C	x		Mini Horn
	130-3147C	x		Mini Horn
	BLV-6	x		Vibrating Bell
	BLV-10	x		Vibrating Bell
	BLVCH	x		Vibrating Chime
	H12/24-FC	x		Horn
	H12/24W-FC	x		Horn
	H12/24K-FC	x		Horn
	HC12/24-FC	x		Horn
	HC12/24W-FC	x		Horn
	HC12/24K-FC	x		Horn
	P2415-FC	x	x	Horn/Strobe
	P2415W-FC	x	x	Horn/Strobe
	P2415K-FC	x	x	Horn/Strobe
	P241575-FC	x	x	Horn/Strobe
	P241575W-FC	x	x	Horn/Strobe
	P241575F-FC	x	x	Horn/Strobe
	P241575K-FC	x	x	Horn/Strobe
	P2430-FC	x	x	Horn/Strobe
	P2430W-FC	x	x	Horn/Strobe
	P2430K-FC	x	x	Horn/Strobe
	P2475-FC	x	x	Horn/Strobe
	P2475W-FC	x	x	Horn/Strobe
	P2475K-FC	x	x	Horn/Strobe
	P24110-FC	x	x	Horn/Strobe
	P24110W-FC	x	x	Horn/Strobe
	P24110K-FC	x	x	Horn/Strobe
	S2430W-FC		x	Strobe
	S2430K-FC		x	Strobe
	S2475-FC		x	Strobe
	S2475W-FC		x	Strobe
	S2475K-FC		x	Strobe
	S24110-FC		x	Strobe
	S24110W-FC		x	Strobe
	S24110K-FC		x	Strobe
Federal Signal	450	x		Horn
	VALS	x	x	Horn/Strobe

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
Gentex	GEC-24-15	x	x	Horn/Strobe
	GEC-24-30	x	x	Horn/Strobe
	GEC-24-60	x	x	Horn/Strobe
	GEC-24-75	x	x	Horn/Strobe
	GEC-24-177	x	x	Horn/Strobe
	GEC-24-110	x	x	Horn/Strobe
	GEC-24-15/75	x	x	Horn/Strobe
	GX91	x		MiniHorn Steady Tone
	GX93	x		MiniHorn Temporal Tone
	HG124	x		Horn
	HS24-15	x	x	Horn/Strobe
	HS24-30	x	x	Horn/Strobe
	HS24-60	x	x	Horn/Strobe
	HS24-75	x	x	Horn/Strobe
	HS24-110	x	x	Horn/Strobe
	HS24-1575	x	x	Horn/Strobe
	GCC24	x	x	Multi Candella Horn/Strobe Ceiling Mount
	GCCR24		x	Multi Candella Horn/Strobe Ceiling Mount
	GCS24		x	Multi Candella Strobe Ceiling Mount
	GCSR24		x	Multi Candella Strobe Ceiling Mount
	GECR-24	x	x	Multi Candella Horn/Strobe
	GES24-15		x	Strobe
	GES24-30		x	Strobe
	GES24-60		x	Strobe
	GES24-75		x	Strobe
	GES24-110		x	Strobe
	GES24-15/75		x	Strobe
	GES24-177		x	Strobe
	GES3-24		x	Multi Candella Strobe
	GESR-24		x	Multi Candella Strobe
	GEH-24	x		Horn
	ST24-30		x	Strobe
	ST24-60		x	Strobe
	ST24-75		x	Strobe
	ST24-110		x	Strobe
	ST24-1575		x	Strobe
	WGEC24-75W	x	x	Weatherproof Horn/Strobe
	WGES24-75W		x	Weatherproof Strobe
	WGMS-24-X	x	x	Horn/Strobe

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
System Sensor	CHR	x		Chime
	CHW	x		Chime
	CHSR	x	x	2-Wire Chime/Strobe
	CHSW	x	x	2-Wire Chime/Strobe
	HR	x	x	Horn
	HW		x	Horn
	HRK		x	Horn
	HWL		x	Horn WHT Wall 4x4
	HRL		x	Horn Red Wall 4x4
	HGRL		x	Horn Red Wall 2x4
	HGWL		x	Horn WHT Wall 2x4
	CHWL	x		Chime WHT Wall 4x4
	CHRL	x		Chime Red Wall 4x4
	CHSRL	x	x	Chime/Strobe Red Wall 4x4
	CHSWL	x	x	Chime/Strobe WHT Wall 4x4
	CHSCRL	x	x	Chime/Strobe Red Ceil 4x4
	CHSCWL	x	x	Chime/Strobe WHT Ceil 4x4
	P2R	x	x	2-Wire Horn/Strobe
	P2R-P	x	x	2-Wire Horn/Strobe
	PC2R	x	x	2-Wire Horn/Strobe
	PC2R-P	x	x	2-Wire Horn/Strobe
	P2RH	x	x	2-Wire Horn/Strobe High Candela
	P2RH-P	x	x	2-Wire Horn/Strobe High Candela
	PC2RH	x	x	2-Wire Horn/Strobe High Candela
	PC2RH-P	x	x	2-Wire Horn/Strobe High Candela
	P2W	x	x	2-Wire Horn/Strobe
	P2W-P	x	x	2-Wire Horn/Strobe
	PC2W	x	x	2-Wire Horn/Strobe
	PC2W-P	x	x	2-Wire Horn/Strobe
	P2WH	x	x	2-Wire Horn/Strobe High Candela
	P2WH-P	x	x	2-Wire Horn/Strobe High Candela
	PC2WH	x	x	2-Wire Horn/Strobe High Candela
	PC2WH-P	x	x	2-Wire Horn/Strobe High Candela
	P2RK	x	x	2-Wire Horn/Strobe
	PC2RK	x	x	2-Wire Horn/Strobe
	P2RHK	x	x	2-Wire Horn/Strobe High Candela
	PC2RHK	x	x	2-Wire Horn/Strobe High Candela
	P4R	x	x	4-Wire Horn/Strobe
	PC4R	x	x	4-Wire Horn/Strobe
	P4RH	x	x	4-Wire Horn/Strobe High Candela
	P4W	x	x	4-Wire Horn/Strobe

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
System Sensor (cont.)	PC4W	x	x	4-Wire Horn/Strobe
	P4WH	x	x	4-Wire Horn/Strobe High Candela
	PC4WH	x	x	4-Wire Horn/Strobe High Candela
	P4RK	x	x	4-Wire Horn/Strobe
	PC4RK	x	x	4-Wire Horn/Strobe
	P4RHK	x	x	4-Wire Horn/Strobe High Candela
	PC4RHK	x	x	4-Wire Horn/Strobe High Candela
	PC4RH	x	x	4-Wire Horn/Strobe High Candela
	P2RL, P2RL-P, P2RL-SP*	x	x	Horn/Strobe 2W Red Wall 4x4
	P2WL, P2WL-P, P2WL-SP*	x	x	Horn/Strobe 2W WHT Wall 4x4
	PC2RL	x	x	Horn/Strobe 2W Red Ceil 4x4
	PC2WL	x	x	Horn/Strobe 2W WHT Ceil 4x4
	P2GRL	x	x	Horn/Strobe 2W Red Wall 2x4
	P2GWL	x	x	Horn/Strobe 2W WHT Wall 2x4
	P4RL	x	x	Horn/Strobe 4W Red Wall 4X4
	P4WL	x	x	Horn/Strobe 4W WHT Wall 4X4
	PC4RL	x	x	Horn/Strobe 4W Red Ceil 4X4
	PC4WL	x	x	Horn/Strobe 4W WHT Ceil 4X4
	SR		x	Strobe
	SR-P		x	Strobe
	SCR		x	Strobe
	SCR-P		x	Strobe
	SRH		x	Strobe High Candela
	SRH-P		x	Strobe High Candela
	SCRH		x	Strobe High Candela
	SCRH-P		x	Strobe High Candela
	SW		x	Strobe
	SW-P		x	Strobe
	SCW		x	Strobe
	SCW-P		x	Strobe
	SWH		x	Strobe High Candela
	SWH-P		x	Strobe High Candela
	SCWH		x	Strobe High Candela

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
System Sensor (cont.)	SCWH-P		x	Strobe High Candela
	SRK		x	Strobe
	SCRK		x	Strobe
	SRHK		x	Strobe High Candela
	SCRHK		x	Strobe High Candela
	SRL, SRL-P, SRL-SP*		x	Strobe Red Wall 4x4
	SWL, SWL-P, SWL-ALERT SWL-CLR-ALERT*		x	Strobe White Wall 4x4
	SCRL		x	Strobe Red Ceil 4x4
	SCWL		x	Strobe White Ceil 4x4
	SCWL-CLR-ALERT		x	Strobe WHT Ceil CLR Lens 4x4
	SGRL		x	Strobe Red Wall 2x4
	SGWL		x	Strobe White Wall 2x4
	P2RH-LF	x	x	2-Wire Low Frequency Sounder Strobe
	P2WH-LF	x	x	2-Wire Low Frequency Sounder Strobe
	HR-LF	x		Low Frequency Sounder
	HW-LF	x		Low Frequency Sounder
	* P=Plain, ALERT=Pad Printing ALERT, SP=Fuego			
Wheelock	AH-12	x		Horn
	AH-24	x		Horn
	AH-12WP	x		Horn Weatherproof
	AH-24WP	x		Horn Weatherproof
	AMT-241575W	x	x	Multi-Tone Horn Strobe
	AMT-24MCW		x	Mutli-Tone Horn Strobe
	AMT-241575W-NYC	x	x	Multi-Tone Horn Strobe
	AMT-12/24	x		Multi-tone Horn
	AMT-12/24 NYC	x		Multi-tone Horn
	AS-121575W		x	Horn/Strobe
	NH-12/24	x	x	Horn
	AS-241575W	x	x	Horn/Strobe
	AS-24MCC	x	x	Horn/Strobe
	AS-24MCCH	x	x	Horn/Strobe
	AS-24MCW	x	x	Horn/Strobe
	AS-24MCWH	x	x	Horn/Strobe
	ASWP-2475W	x	x	Horn/Strobe Weatherproof
	ASWP-2475C	x	x	Horn/Strobe Weatherproof

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
Wheelock (cont.)	ASWP-24MCWH	x	x	Horn/Strobe
	ASWP-24MCCH	x	x	Horn/Strobe
	CH-70	x		Chime
	CH-90	x		Chime
	CH70-241575W		x	Chime/Strobe
	CH70-24MCW		x	Chime/Strobe
	CH70-24MCWH		x	Chime/Strobe
	CH90-24MCC		x	Chime/Strobe
	CH90-24MCCH		x	Chime/Strobe
	HS-24	x		Horn
	HS4-241575W	x	x	Horn/Strobe
	HS4-24MCW	x	x	Horn/Strobe
	HS4-24MCWH	x	x	Horn/Strobe
	HS4-24MCC	x	x	Horn/Strobe
	MIZ-24S	x	x	Mini Horn Strobe
	MT-121575W		x	MultitoneHorn Strobe
	MT-241575W	x	x	Multitone Horn Strobe
	MT-24MCW		x	Multitone Horn Strobe
	MTWP-2475W		x	Multitone Horn Strobe
	MTWP-2475C		x	Multitone Horn Strobe
	MTG-121575W	x	x	Multitone Horn Strobe
	MTR-121575W	x	x	Multitone Horn Strobe
	MTWPA-2475W	x	x	Multitone Horn Strobe
	MTWPB-2475W	x	x	Multitone Horn Strobe
	MTWPG-2475W	x	x	Multitone Horn Strobe
	MTWPR-2475W	x	x	Multitone Horn Strobe
	MTWPA-24MCCH	x	x	Multitone Horn Strobe
	ZNH	x		Horn
	NS-121575W	x	x	Horn/Strobe
	NS-241575W	x	x	Horn/Strobe
	NS-24MCW	x	x	Horn/Strobe
	NS-24MCC	x	x	Horn/Strobe
	NS-24MCCH	x	x	Horn/Strobe
	ZNS-MCW	x	x	Horn/Strobe
	ZNS-MCWH	x	x	Horn/Strobe
	ZNS-24MCC	x	x	Horn/Strobe

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
Wheelock (cont.)	ZNS-24MCCH	x	x	Horn/Strobe
	RSS-121575W		x	Strobe
	RSS-241575W		x	Strobe
	RSS-24MCC		x	Strobe
	RSS-24MCCR		x	Strobe
	RSS-24MCCH		x	Strobe
	RSS-24MCCHR		x	Strobe
	RSS-24MCW		x	Strobe
	RSS-24MCWH		x	Strobe
	RSSP-121575W		x	Strobe
	RSSP-241575W		x	Strobe
	RSSR-2415W		x	Strobe
	RSSR-2415C		x	Strobe
	RSSR-2475W		x	Strobe
	RSSR-2475C		x	Strobe
	RSSR-24110C		x	Strobe
	RSSA-24110W		x	Strobe
	RSSB-24110W		x	Strobe
	RSSG-24110W		x	Strobe
	RSSR-24110W		x	Strobe
	RSSA-24MCC		x	Multi-Cd Strobe
	RSSB-24MCC		x	Multi-Cd Strobe
	RSSG-24MCC		x	Multi-Cd Strobe
	RSSR-24MCC		x	Multi-Cd Strobe
	RSSWPA-2475W		x	Strobe Weatherproof
	RSSWPA-24MCCH		x	Strobe Weatherproof
	RSSWPG-24MCCH		x	Strobe Weatherproof
	RSSWPR-24MCCH		x	Strobe Weatherproof
	RSSWP-2475W		x	Strobe Weatherproof
	RSSWP-2475C		x	Strobe Weatherproof
	RSSWP-24MCWH		x	Strobe Weatherproof

Table A-1: Compatible Notification Appliances

Manufacturer	Model	Audio	Visual	Type
Wheelock (cont.)	ZRS-MCWH		x	Strobe
	ZRS-24MCC		x	Strobe
	ZRS-24MCCH		x	Strobe
	MB-G6-24	x		Motor Bell
	MB-G10-24	x		Motor Bell
	MB-G6-12	x		Motor Bell
	MB-G10-12	x		Motor Bell
	MIZ-24-R	x		Mini-Horn
	MT-12/24-R	x	x	Multitone Horn
	MT4-12/2z	x	x	Multitone Horn
	ZRS-MCW		x	Strobe
	MTWPR-24MCCH	x	x	Multitone Horn Strobe
	NH-12/24R	x		Horn
	HSR		x	Horn/Strobe
	HSW		x	Horn/Strobe
	STR		x	Strobe
	STW		x	Strobe
	HNR		x	Horn
	HNW		x	Horn

A.2 Two-Wire Smoke Detectors

The below table lists two-wire smoke detectors that are compatible with the fire control panel. The table is organized by manufacturer. The columns show the number of detectors per loop that can be used.

	IFP-100/ECS
Identifier	24H
Operating Voltage Range	18.5–27.4 VDC

Note: The maximum number of smoke detectors per zone is determined by both the current draw and the impedance of the smoke detector. If too many smoke detectors are used on any zone, false alarms could occur.

Do not mix different models of detectors on any zone; false alarms could occur.

Do not mix detectors of different models unless the system is specifically intended to be installed in that configuration.

Control unit Smoke Reset Time must be programmed for a number greater than or equal to the maximum

reset time of the smoke detector.

Table A-2: Compatible Two-Wire Smoke Detectors

Manufacturer	Model Name or Number *(Base model name or number in parentheses.)*	Compatibility ID		# per Loop
		Head	Base	
Apollo	55000-350 (45681-200)	55000-350	45681-200	24 / loop
	55000-250 (45681-200)	55000-250	45681-200	24 / loop
	55000-225	55000-225	45681-255, 256, 45681-200, 220, 230, 232, 251,252	15 / loop for Ion Detectors 15 / loop for Photo Electric Detectors
	55000-226	55000-226		
	55000-227	55000-227		
	55000-325	55000-325		
	55000-328	55000-328		
	55000-326	55000-326		
	55000-327	55000-327		
ESL	429C (S10A)	N/A	S10A	30 / loop
	429CRT (S11A)	N/A	S11A	30 / loop
	429CST (S11A)	N/A	S11A	30 / loop
	429CT (S10A)	N/A	S10A	30 / loop
	609U01-11	S10	S00	40 / loop
	609U02-11	S10	S00/S03	40 / loop
	611U (601U or 602U)	S10	S00/S03	40 / loop
	611UD (601U or 602U)	S10	S00/S03	40 / loop
	611UT (601U or 602U)	S10	S00/S03	40 / loop
	612U (601U or 602U)	S10	S00/S03	40 / loop
	612UD (601U or 602U)	S10	S00/S03	40 / loop
	711U (701E or 701U)	N/A	S10A	25 / loop
	712U (701E or 701U)	N/A	S10A	25 / loop
	713-5U (702E or 701U)	N/A	S10A	25 / loop
	713-6U (702E or 701U)	N/A	S10A	25 / loop
	721-U (S10A)	N/A	S10A	30 / loop
	721-UT (S10A)	N/A	S10A	30 / loop
Falcon	525	FDT1	N/A	17 / loop
	525T	FDT1	N/A	17 / loop
Hochiki	SIH-24F (HS-224D OR HSD-224)	HD-3	HB-5	25 / loop
	SLK-24F (HS-224D)	HD-3	HB-5	25 / loop
	SLK-24FH (HS-224D)	HD-3	HB-5	25 / loop

Table A-2: Compatible Two-Wire Smoke Detectors

Manufacturer	Model Name or Number *(Base model name or number in parentheses.)*	Compatibility ID		# per Loop
		Head	Base	
System Sensor	1400	A	N/A	20 / loop
	1451 (B401B)	A	A	20 / loop
	2100	A	N/A	20 / loop
	2100T	A	N/A	20 / loop
	2151 (B401)	A	N/A	16 / loop
	2151T (B401)	A	N/A	16 / loop
	2300T	A	N/A	20 / loop
	2300	A	N/A	20 / loop
	2300TB	A	N/A	20 / loop
	2400	A	N/A	20 / loop
	2400 (DH400)	A	N/A	20 / loop
	2400AIT	A	N/A	20 / loop
	2400AT	A	N/A	20 / loop
	2400TH	A	N/A	20 / loop
	2451 (B401B)	A	N/A	20 / loop
	2451DH (DH 400)	A	N/A	20 / loop
	2451TH (B401B)	A	N/A	20 / loop
	2W-B	A	N/A	16 / loop
	2WT-B	A	N/A	16 / loop
	2WTR-B	A	N/A	16 / loop
	2WTA-B	A	N/A	16 / loop

A.3 Compatible 520Hz Signaling Speakers

Table A-3 520Hz Speakers

Model Number	Description
SPR	Wall High-Fidelity Speaker, Red
SPW	Wall High-Fidelity Speaker, White
SPCR	Ceiling High-Fidelity Speaker, Red
SPCW	Ceiling High-Fidelity Speaker, White
SPSR	Wall High-Fidelity Speaker Strobe, Red
SPSRH	Wall High-Fidelity Speaker Strobe, High Candela, Red
SPSW	Wall High-Fidelity Speaker Strobe, White
SPSCR	Ceiling High-Fidelity Speaker Strobe, Red
SPSCW	Ceiling High-Fidelity Speaker Strobe, White
SPSCWH	Ceiling High-Fidelity Speaker Strobe, High Candela, White
SPSCRH	Ceiling High-Fidelity Speaker Strobe, High Candela, Red
SPSCW-CLR-ALERT	Ceiling High-Fidelity Speaker Strobe, Clear Lens, ALERT, White
SPSCW-P	Ceiling High-Fidelity Speaker Strobe, Plain, White
SPSCWH-P	Ceiling High-Fidelity Speaker Strobe, High Candela, Plain, White
SPSR-P	Wall High-Fidelity Speaker Strobe, Plain, Red
SPSRH-P	Wall High-Fidelity Speaker Strobe, High Candela, Plain, Red
SPSCWH-P	Ceiling High-Fidelity Speaker Strobe, High Candela, Plain, White
SPSW-ALERT	Wall High-Fidelity Speaker Strobe, Amber Lens, ALERT, White
SPSW-CLR-ALERT	Wall High-Fidelity Speaker Strobe, Clear Lens, ALERT, White
SPSW-P	Wall High-Fidelity Speaker Strobe, Plain, Red
SPSWH	Wall High-Fidelity Speaker Strobe, High Candela, White
SPSWH-P	Wall High-Fidelity Speaker Strobe, High Candela, Plain, Red
SPRL	Wall High-Fidelity Speaker, Red
SPWL	Wall High-Fidelity Speaker, White
SPCRL	Ceiling High-Fidelity Speaker, Red
SPCWL	Ceiling High-Fidelity Speaker, White
SPSCRL	Ceiling High-Fidelity Speaker Strobe, Red
SPSCWL	Ceiling High-Fidelity Speaker Strobe, White
SPSRL	Wall High-Fidelity Speaker Strobe, Red
SPSRL-SP	Wall High-Fidelity Speaker Strobe-FUEGO
SPSWL	Wall High-Fidelity Speaker Strobe, White
SPSCWL-P	Ceiling High-Fidelity Speaker Strobe, Standard, White, Plain
SPSRL-P	Ceiling High-Fidelity Speaker Strobe, Standard, Red, Plain
SPSWL-P	Wall High-Fidelity Speaker Strobe, Standard, White, Plain
SPSCWL-CLR-ALERT	Ceiling High-Fidelity Speaker Strobe, Clear Lens, Standard, White, ALERT
SPSWL-ALERT	Wall High-Fidelity Speaker Strobe, Amber Lens, ALERT, White
SPSWL-CLR-ALERT	Wall High-Fidelity Speaker Strobe, Clear Lens, Standard, ALERT, White

Table A-3 520Hz Speakers

Model Number	Description
*F=FIRE, P=PLAIN, AL=ALERT, AG=AGENT, EV=EVAC, SP=FUEGO, PG=FOGO	

A.4 Compatible 520Hz Low Frequency Bases

Table A-4 Low Frequency Bases

Model Number	Description
B200S-LF/IV	Low Frequency Intelligent Sounder Base
B200SR-LF/IV	Low Frequency Intelligent Sounder Base

Appendix B
Special Characters Lists

This section contains tables of programmable characters that may be used for device, module, and zone names or phone numbers.

B.1 Characters used for Naming

Table B-1 list the available character and their associated numeric designator. When programming these numbers can be entered as a short cut to using the up or down arrow keys, to select characters when naming a point or zone.

Table B-1: Character Table

000	A	001	B	002	C	003	D
004	E	005	F	006	G	007	H
008	I	009	J	010	K	011	L
012	M	013	N	014	O	015	P
016	Q	017	R	018	S	019	T
020	U	021	V	022	W	023	X
024	Y	025	Z	026	a	027	b
028	c	029	d	030	e	031	f
032	g	033	h	034	i	035	j
036	k	037	l	038	m	039	n
040	o	041	p	042	q	043	r
044	s	045	t	046	u	047	v
048	w	049	x	050	y	051	z
052		053	0	054	1	055	2
056	3	057	4	058	5	059	6
060	7	061	8	062	9	063	:
064	-	065	_	066	.	067	,
068	&	069	*	070	#		

Silent Knight Fire Product Warranty and Return Policy

General Terms and Conditions

- All new fire products manufactured by Silent Knight have a limited warranty period of 36 months from the date of manufacture against defects in materials and workmanship. See limited warranty statement for details.
- This limited warranty does not apply to those products that are damaged due to misuse, abuse, negligence, exposer to adverse environmental conditions, or have been modified in any manner whatsoever.

Repair and RA Procedure

- All products that are returned to Silent Knight for credit or repair require a RMA (Return Authorization) number. Call Silent Knight Customer Service at 800-328-0103 or 203-484-7161 between 8:00 A.M. and 5:00 P.M. EST, Monday through Friday to obtain a return authorization number.
- Silent Knight Technical Support is available at 800-446-6444 between 8:00 A.M. and 5:00 P.M. CST, Monday through Friday.
- All returns for credit are subject to inspection and testing at the factory before actual determination is made to allow credit.
- RMA number must be prominently displayed on the outside of the shipping box. See return address example under Advanced Replacement Policy.
- Include a packing slip that has the RMA number, a content list, and a detailed description of the problem should be included with each return.
- All products returned to Silent Knight must be sent freight pre-paid. After product is processed, Silent Knight will pay for shipping product back to customer via UPS ground.
- Return the Silent Knight product circuit board only. Products that are returned in cabinets will be charged an additional $50 to cover the extra shipping and handling costs over board only returns. **Do not return batteries**. Silent Knight has the authority to determine if a product is repairable. Products that are deemed un-repairable will be returned to the customer.
- Product that is returned that has a board date code more than 36 months from date of manufacture will be repaired and the customer will be assessed the standard Silent Knight repair charge for that model.

Advanced Replacement Policy

- Silent Knight offers an option of advance replacement for fire product printed circuit boards that fail during the first 6 months of the warranty period. These items must be returned with transportation charges prepaid and must be accompanied by a return authorization.
- For advance replacement of a defective board contact your local Silent Knight Distributor

or call Silent Knight at 203-484-7161 to obtain a RMA (Return Authorization) number and request advanced replacement,

- A new or refurbished board will be shipped to the customer. The customer will initially be billed for the replacement board but a credit will be issued after the repairable board is received at Silent Knight. All returned products must comply with the guidelines described under “General Terms and Conditions”.
- The defective board must be returned within 30 days of shipment of replacement board for customer to receive credit. No credit will be issued if the returned board was damaged due to misuse or abuse.
- Repairs and returns should be sent to:
  Silent Knight / Honeywell
  Attn: Repair Department
  12 Clintonville Road
  Northford, CT 06472
  USA

  RMA Number:_____

Manufacturer Warranties and Limitation of Liability

Manufacturer Warranties. Subject to the limitations set forth herein, Manufacturer warrants that the Products manufactured by it in its Northford, Connecticut facility and sold by it to its authorized Distributors shall be free, under normal use and service, from defects in material and workmanship for a period of thirty six months (36) months from the date of manufacture (effective Jan. 1, 2009). The Products manufactured and sold by Manufacturer are date stamped at the time of production. Manufacturer does not warrant Products that are not manufactured by it in its Northford, Connecticut facility but assigns to its Distributor, to extent possible, any warranty offered by the manufacturer of such product. This warranty shall be void if a Product is altered, serviced repaired by anyone other than Manufacturer or its authorized Distributors.This warranty shall also be void if there is a failure to maintain the Products and the systems in which they operate in proper working conditions.

MANUFACTURER MAKES NO FURTHER WARRANTIES, AND DISCLAIMS ANY AND ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCTS,TRADEMARKS, PROGRAMS AND SERVICES RENDERED By MANUFACTURER INCLUDING WITHOUT LIMITATION, INFRINGEMENT, TITLE, MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE. MANUFACTURER SHALL NOT BE LIABLE FOR ANY PERSONAL INJURY OR DEATH WHICH MAY ARISE IN THE COURSE OF, OR AS A RESULT OF, PERSONAL, COMMERCIAL OR INDUSTRIAL USES OF ITS PRODUCTS.

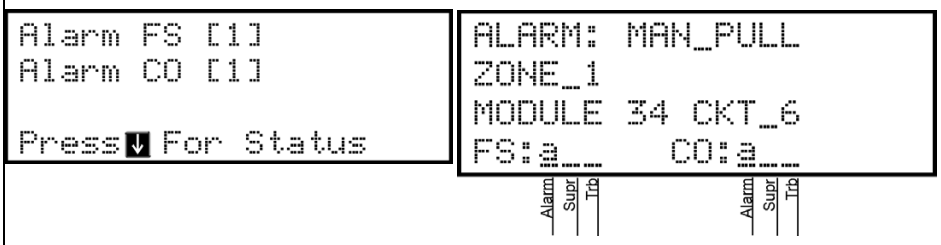
This document constitutes the only warranty made by Manufacturer with respect to its products and replaces all previous warranties and is the only warranty made by Manufacturer. No increase or alteration, written or verbal, of the obligation of this warranty is authorized. Manufacturer does not represent that its products will prevent any loss by fire or otherwise.

Warranty Claims. Manufacturer shall replace or repair, at Manufacturer's discretion, each part returned by its authorized Distributor and acknowledged by Manufacturer to be defective, provided that such part shall have been returned to Manufacturer with all charges prepaid and the authorized Distributor has completed Manufacturer's Return Material Authorization form. The replacement part shall come from Manufacturer's stock and may be new or refurbished. THE FOREGOING IS DISTRIBUTOR'S SOLE AND EXCLUSIVE REMEDY IN THE EVENT OF A WARRANTY CLAIM.

Model IFP-100 Basic Operating Instructions

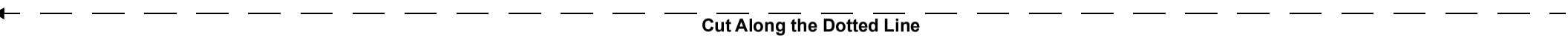
Honeywell

These Instructions must be framed and displayed next to the IFP-100 panel in accordance with NFPA 72 fire code for Local Protected Fire Alarm Systems. Test the system in accordance to NFPA 72.

Operation	Task to Perform
Silence Alarms and Troubles	Press SILENCE then enter a code if prompted. Silence LED will light.
Reset Alarms	Press RESET then enter a code if prompted.
View Alarms, Supervisories, and Troubles	For each type of condition press the Up or Down arrow associated for Alarms, Supervisories, or Troubles. 
View a Point's Status	1. Press ENTER to access Main Menu. 2. Press 2 to select Point Functions. 3. Then press 2 to select Point Status. 4. Select the module the device is located on by using the ▲ or ▼. Then press ENTER. 5. Enter the point number.
Check Detector Sensitivity	1. Press ENTER to access Main Menu. 2. Press 2 for Point Status. 3. From the list that displays, select the 5815XL module where the point you want to view is located. 4. The fourth line of the display shows the sensitivity status. "NORMAL" means the detector is in compliance with NFPA 72. "CAL MAINT" means the detector is in compliance with NFPA 72 but maintenance should be performed soon. "CAL TRBLE" means the detector is not in compliance with NFPA 72.
Set Time and Date	1. Press ENTER to access Main Menu. 2. Press 4 to select Set Time & Date. Enter a code if prompted 3. Make changes in the fields on the screen as necessary. 4. When the time and date are correct, press ENTER.
Enable / Disable a Point	1. Press ENTER to access Main Menu. 2. Press 2 to select Point Functions. 3. Press 1 for Disable / Enable Pt 4. Press 7 for Disable / Enable Pt. 5. Use the Up or Down arrow to move through the list. Then press ENTER to select the module where the point you want to disable/enable is located 6. Enter the point or circuit number that you want to disable/enable. 7. Press the right arrow key to toggle between NORMAL (enable) or DISABLE.
View Event History	1. From the Program Menu. 2. Press 3 to select Event History. 3. Press the Up or Down arrow to view events in the history buffer.
For Service Call:	

P/N 151279-L8 Rev D ECN: 13-0482

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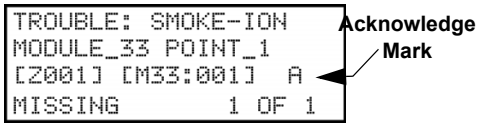
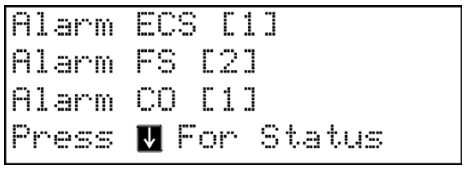
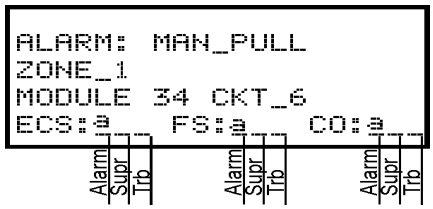

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Model IFP-100ECS Basic Operating Instructions

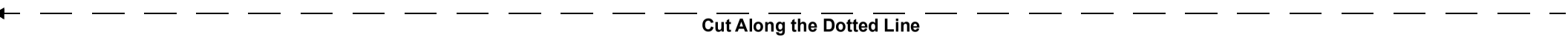
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These instructions must be framed and displayed next to the IFP-100ECS panel in accordance with NFPA 72 fire code for Local Protected Fire Alarm Systems.

FS= Fire System ECS = Emergency Communication System

Operation	Task to Perform
Silence Alarms and Troubles (FS & ECS)	Press SILENCE then enter a code if prompted. Silence LED will light.
Reset Alarms (Fire Only)	Press RESET then enter a code if prompted.
Reset Alarms (ECS & Fire)	1. Press RESET. 2. Press 1 to Reset Fire System. 3. Press 2 to Reset Emergency System. *Note: To reset ECS at an LOC, the user must gain ECS Control. (See Figure 1).*
Acknowledge Alarms and Troubles	Press ACK then enter a code if prompted. When the Alarm or Trouble is acknowledged an A will appear in the annunciator display as shown Below. 
Conduct a Fire Drill	1. Press ENTER to access Main Menu. 2. Then Press 1 to select System Tests. 3. Press 1 to select Fire Drill. 4. Press ENTER to start the fire drill. 5. Press ENTER to end the fire drill.
View all active alarms, troubles, and supervisory signals	The highest priority event will display first. Press ▼ to view location and type of alarm or trouble. After 2 minutes of sitting idle, events will display on line 4.  
Set Time and Date	1. Press ENTER to access Main Menu. 2. Then press 4 to select Set Time & Date. Enter a code if prompted 3. Make changes in the fields on the screen as necessary. 4. Press ENTER if you wish to keep the changes. 5. Press ENTER to set the entered time and date.
Enable / Disable a Point	1. Rotate the key or enter a code to access to access Main Menu. 2. Press 2 to select Point Functions. 3. Press 1 for Disable / Enable Pt 4. Press 7 for Disable / Enable Pt. 5. Use the Up or Down arrow to move through the list. Then press ENTER to select the module where the point you want to disable/enable is located 6. Enter the point or circuit number that you want to disable/enable. 7. Press the right arrow key to toggle between NORMAL (enable) or DISABLE.
To Gain / Request ECS Control	1. Press the  Button and follow the on-screen Instructions. *Note: When ECS Control LED is blinking, another LOC has ECS Control. ECS Control LED is on steady when the LOC has ECS Control.*
For Service Call:	

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Integrated Voice Operation

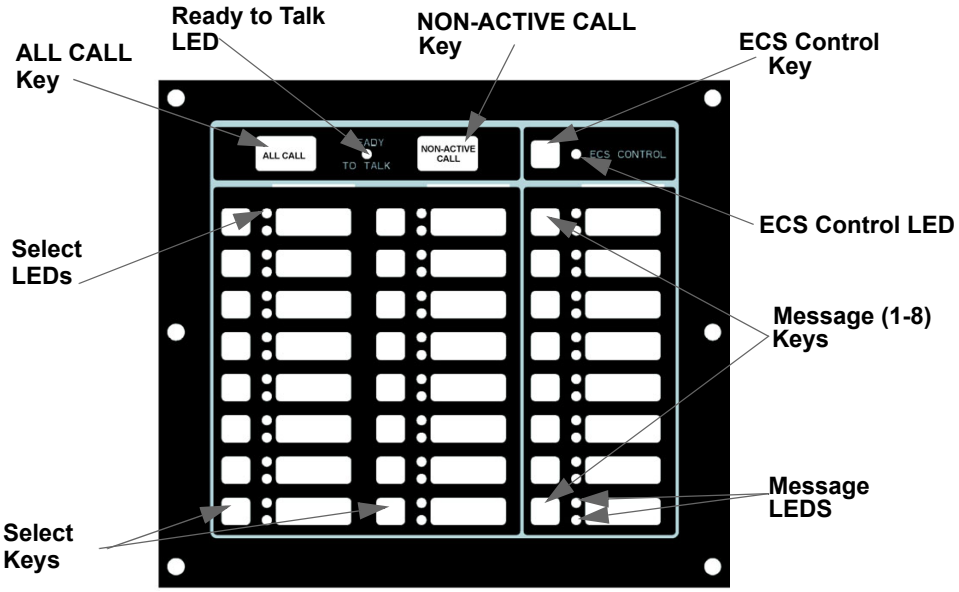


Table 1: Figure 1: ECS-VCM Front View

LED	Color	States	Meaning
Select Keys	Red	On	The corresponding area is active for the currently playing ECS message.
		Off	The corresponding area is not active.
	Green	On	The corresponding area is active for the microphone.
		Off	The corresponding area is not active for the microphone.
ECS Control LED	Green	On	LOC has ECS Control and the user is able to make changes to the ECS.
		Off	LOC does not have ECS Control.
		Blinking	Another LOC has ECS Control
ECS Message LED	Red	On	The corresponding ECS event is not active.
		Off	The corresponding ECS event was not activated from this LOC.
	Green	On	The corresponding ECS event is active and was generated from the LOC (or was activated from another LOC, but this LOC now has ECS Control).
		Off	The corresponding ECS event was not activated from this LOC or this LOC does not have ECS Control.

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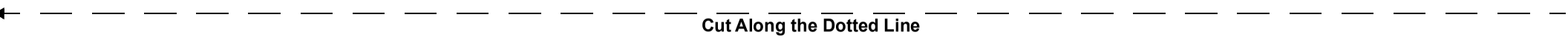

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Table 2: ECS Control Request:

OPERATION	TASK
Gain ECS Control at an LOC	Press the ECS Control Key and enter a code if prompted. If ECS Control is available, the ECS Control LED will illuminate. If another LOC has ECS Control, the display will be similar to the one shown. Press 1 to request control. The LOC with ECS Control will then be able to allow or deny the request.
Gain ECS Control as ECS Super User at an LOC (only one ECS Super User is allowed ECS Control in the system at a time).	From the idle screen, enter an ECS Super User access code and then press the ECS Control Key. If ECS Control as Super User is available, the ECS Control LED will illuminate. If another LOC has Super User ECS Control, a request for Super User ECS Control will automatically be made to the LOC with control. The LOC with Super User ECS Control will then be able to allow or deny the request.
Select all output group for microphone override	Key the microphone, wait for the Ready-to-Talk LED to light, press the All Call Key, and then deliver your verbal message.
Select all non-activated output groups for microphone override	Key the microphone, wait for the Ready-to-Talk LED to light, press the Non-Active Call Key, and then deliver your verbal message.

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