Content

Section 1
Introduction

The Model SK-5208 is an 24-volt 10-zone fire alarm control panel (expandable up to 30 zones using SK-5217 Zone Expanders) with a digital communicator that meets NFPA 72 requirements. The SK-5208 cabinet can be surface mounted or semi-flush mounted.

1.1 Model SK-5208 Features

- Built-in two-line (16 Character each line) LCD display provides easy to read english language readouts
- 10 Initiation inputs, 8 Class B (Style B) and 2 zones that can be configured as Class B (Style B) or Class A (Style D), expandable to 30 zones
- Supervised zone expanders and I/O modules can be mounted remotely from the main control panel
- UL Listed
- Event History Buffer (approximately 150 events) with Date/Time stamp
- All zones are compatible with 2- and 4-wire detectors
- 8 selectable/programmable output pattern for notification appliance circuits (Including ANSI 3.41)
- Built-in Digital Alarm Communicator Transmitter (DACT)
- 4 Notification appliance circuits
- 4 programmable general purpose relays
- Programmable smoke verification, pre-alarm delay, cross zoning and enhanced verification mode features that can help minimize false alarms
- Programmable from the built-in control panel touchpad, remote annunciator or Window® downloading software
- Built-in walk test

1.2 About This Manual

The *Model SK-5208 Fire Control/Communicator Installation Manual (P/N 151204)* is intended for those persons involved with the installation and maintenance of the SK-5208 panel. It is a comprehensive guide, providing detailed instructions, and should be kept for reference. As much as possible, we have tried to organize the manual chronologically by the tasks that need to be performed.

Table 1-1: Standards Used in this Manual

1	A same graphic replicating the key that you press on a touchpad.
LCD DISPLAY MESSAGE	The font shown to the left represents messages that you see on a liquid crystal display (LCD) on the control panel and the remote annunciator.
1-1, 2-3, etc.	This manual is organized into sections. Section numbers are part of the page numbers. For example, 1-1 means Page 1 of Section 1.

1.2.1 Optional Accessories

Table 1-2: Compatible Modules Manufactured by Silent Knight

Model	What It Does
SK-5217 Zone Expander	Adds 10 zones to the SK-5208 for a total expansion of the system to 30 zones.
SK-2190 Accessory Cabinet	Used for remote mounting of the SK-5217 Zone Expander.
5220 Direct Connect Module	For direct alarming and trouble transmission from the SK-5208 to a supervising station.
SK-5235 Remote Annunciator	For remote annunciation, operation, and on-site programming.
SK-5280	The Model SK-5280 Status Display module provides outputs and control functions for remote annunciation of alarm, trouble, and supervisories for each zone.
SK-5495 Signal Power Expander	Notification circuit power for additional notification appliances. Provides additional 6A of 24 VDC, supervised.
^^^Downloading Software	For remote programming of the SK-5208 using a personal computer.
7181 Zone Converter	Converts a zone from Class B to Class A or from Class A to Class B. One 7181 per zone to be converted.

Limitations of Fire Alarm Systems

Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premise 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 Guide for the Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off or give early warning in as many as 35% of all fires. While fire alarm systems are designed to provide 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. For example:

- 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, or chimneys 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
  - Smoke particles may be drawn into air returns before reaching the detector.

  In general, smoke detectors on one level of a structure cannot be expected to sense fires developing on another level.
- 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 are subject to false alarms and nuisance alarms and may have been disconnected by users. For example, a smoke detector located in or near a kitchen may go into nuisance alarm during normal operation of kitchen appliances. In addition, dusty or steamy environments may cause a smoke detector to falsely alarm. If the location of a smoke detector causes an abundance of false alarms or nuisance alarms, do not disconnect the smoke detector; call a professional to analyze the situation and recommend a solution.
- Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially within bedrooms), smoking in bed, violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).
- Heat detectors do not sense particles of combustion and are designed to alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Heat detectors are designed to protect property, not life.
- Warning devices (including horns, sirens, and bells) may not alert people or wake up sleepers who are located on the other side of closed or partially open doors. A warning device that activates on a different floor or level of a dwelling or structure is less likely to awaken or alert people. Even persons who are awake may not notice the warning if the alarm is muffled by noise from a stereo, radio, air conditioner or other appliance, or by passing traffic. Audible warning devices may not alert the hearing-impaired (strobes or other devices should be provided to warn these people). Any warning device may fail to alert people with a disability, deep sleepers, people who have recently used alcohol or drugs, or people on medication or sleeping pills.
  - Please note that:
    i) Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
    ii) Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. 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 on the proper reaction to alarm signals.
    iii) In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.
- Telephone lines needed to transmit alarm signals from a premises to a central station may be out of service or temporarily out of service. For added protection against telephone line failure, backup radio transmission systems are recommended.
- System components, though designed to last many years, can fail at any time. As a precautionary measure, it is recommended that smoke detectors be checked, maintained, and replaced per manufacturer s recommendations.
- System components will not work without electrical power. If system batteries are not serviced or replaced regularly, they may not provide battery backup when AC power fails.

- Environments with high air velocity or that are dusty or dirty require more frequent maintenance.

  In general, fire alarm systems and devices will not work without power and will not function properly unless they are maintained and tested regularly.

  While installing a fire alarm system may make the owner eligible for a lower insurance rate, an alarm system is not a substitute for insurance. Property owners should continue to act prudently in protecting the premises and the people in their premises and should properly insure life and property and buy sufficient amounts of liability insurance to meet their needs.

Section 2
Agency Listings and Requirements

2.1 Federal Communications Commission (FCC)

1. If requested by the telephone company, the following information must be provided before the SK-5208 can be connected to the phone lines:

A.	Manufacturer:	Silent Knight
B.	Model Number:	SK-5208
C.	FCC registration number:	AC6USA-34758-AL-E
	Ringer equivalence:	0.5B
D.	Type of jack (to be installed by the telephone company):	RJ31X

2. This device may not be directly connected to coin telephone or party line services.
3. This device cannot be adjusted or repaired in the field. In case of trouble with the device, notify the installing company or return to:

   Silent Knight
   7550 Meridian Circle
   Maple Grove, MN 55369-4927
   612-493-6455
   800-328-0103

4. If the SK-5208 causes harm to the telephone network, the telephone company will notify the user in advance that temporary discontinuance of service may be required. When advance notice is not practical, the telephone company will notify the user as soon as possible. Users have the right to file complaints, if necessary, with the Federal Communications Commission.
5. 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 to allow you to make the necessary modifications to maintain uninterrupted service.

Warning

This device has been verified to comply with FCC Rules Part 15. Operation is subject to the two 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)

The SK-5208 is UL Listed as a control unit for use in Central Station Protected Premises, Local Protected Fire Alarm Systems, Auxiliary Protected Fire Alarm Systems for Fire Alarm Service (City Box), Remote Station Protected Fire Alarm Systems. If the SK-5208 and its accessories are to be used as part of a UL installation, carefully read the UL requirements in this section.

2.2.1 Requirements for All Installations

General requirements are described below. The sections that follow describe additional requirements for the type of installation (for example, Central Station Fire Alarm systems, Local Protected Fire Alarm systems, and so on).

1. Use UL listed smoke detectors compatible with the SK-5208. Refer to Appendix A.
2. Use UL listed compatible notification devices. Refer to Appendix A.

2.2.2 Requirements for Central Station Fire Alarm Systems

1. The Phone Line “Line Dial Type” must be selected for anything other than “Not Used”. (See programming Section 4.2.9).
2. On class A (style D) zones, the number of waterflow devices is limited to five.
3. Auxiliary relays may not be programmed to activate for Pre-Alarm. See programming Section 4.2.5.

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

1. Follow the current load restrictions shown in Section 3.6.
2. The Model 5220 Direct Connect module must be installed (see Section 3.15.1 for wiring).

2.2.4 Requirements for Remote Station Protected Fire Alarm Systems, for Digital Communication or Polarity Reversal

1. Follow the current load restrictions shown in Section 3.6.
2. Use the SK-5208’s built-in dialer or install the Model 5220 Direct Connect Module (see Section 3.15.1).

2.3 Industry Canada Warnings

NOTICE:

The Industry Canada Label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.
Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Number of all the devices does not exceed 5.

2.3.1 Avis D'industrie Canada

AVIS:
L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la comformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunicationspeut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales. Avertissement: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

AVIS:
L'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition quela somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

Section 3
Control Panel Installation

3.1 Electrical Specifications

Table 3-1: Electrical Specifications

Primary AC	120 Vrms at 60 Hz, 3A
Total DC Load	6A
Accessory Power	27.4 VDC, 1A
Smoke Power	27.4 VDC, 1A
Battery Charging Voltage	27.4
Battery Charging Current	.75 A max.
Class B (Style B) Circuit Current	95 mA max.
Telephone Minimum Input Sensitivity	35 dB
Good Phone Line Voltage	3 V
Maximum Low Battery Detect	20.4
Minimum Low AC Detect	98
Notification Power	3A max. per output (6A total)

3.2 Environmental Specifications

It is important to protect the SK-5208 control panel from water. To prevent water damage, the following conditions should be AVOIDED when mounting the units:

- 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 SK-5208 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 outside the range of 10%-85% at 30°C (86°F) noncondensing.

See also the mounting recommendations in Section 3.5 for additional environmental specifications.

3.3 Wiring Specifications

To avoid induced noise (transfer of electrical energy from one wire to another), keep input wiring isolated from high current output and power wiring. Induced noise can interfere with telephone communication or even cause false alarms. Avoid pulling one multiconductor cable for the entire panel. Instead, separate the wiring as follows:

1/4" spacing must be maintained between each of these circuit types; as well as between power limited and non-power limited circuits.	Input/Output Type	Wiring
	High current:	AC power, speaker, and notification devices
	Low current:	Annunciator and zone circuit wiring
	Audio:	Telephone wiring

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 only.

For the same reasons, wiring within the cabinet should be routed around the perimeter of the cabinet. It should not cross the printed circuit board where it could induce noise into the sensitive microelectronics or pick up unwanted RF noise from the high speed circuits.

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 provides an example.

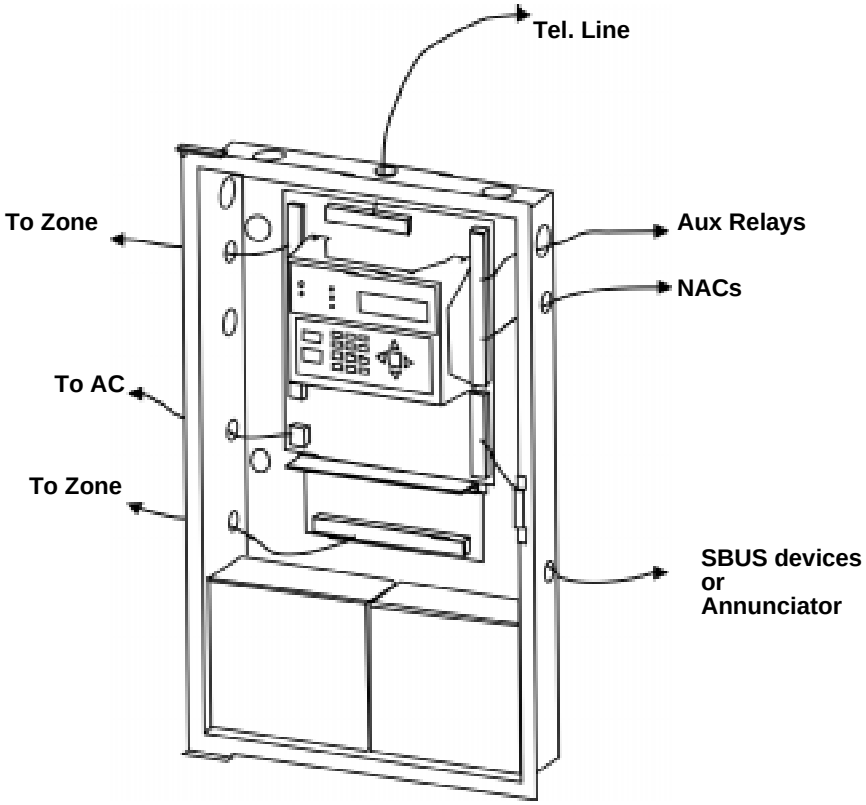


Figure 3-1 Wire Routing Example

3.4 Control Board Components

Figure 3-2 is a wiring diagram for wiring the Model SK-5208 panel.

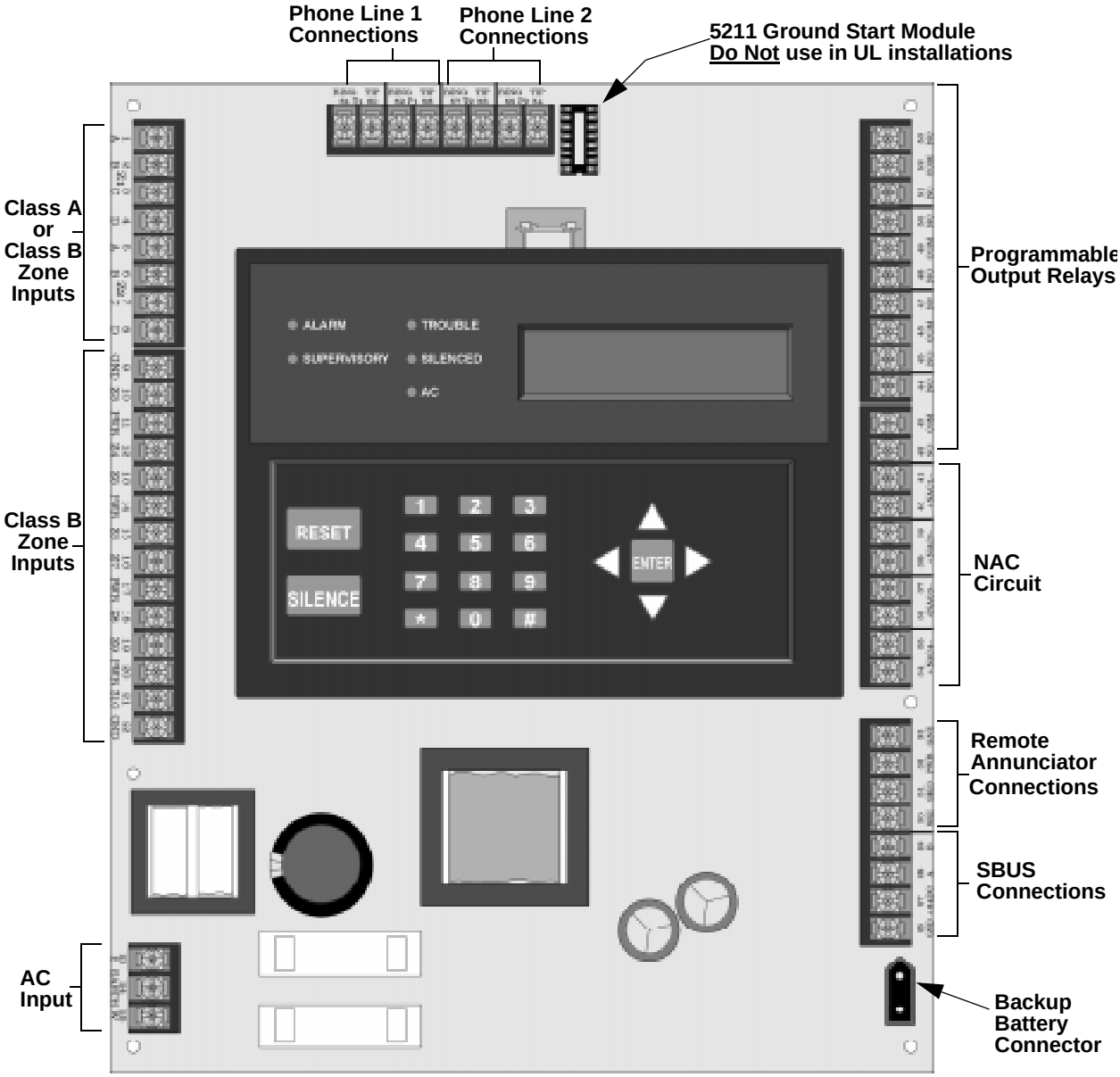


Figure 3-2 Model SK-5208 Board Layout

Refer to Section 3.9 for complete description of control panel terminal connections.

3.5 Mounting the SK-5208

Read the environmental specifications in section 3.2 on page 1 before mounting the SK-5208 panel.

The SK-5208 cabinet dimensions are:

16" W x 26.4" H x 4" D (40.64 cm W x 67.06 cm H x 10.16 cm D).

The SK-5208 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 SK-5208 to the plywood. Also mount any other desired components to the plywood.

DO NOT flush-mount the SK-5208 cabinet in a wall designated as a fire break.

3.6 Current Draw Calculations

3.6.1 Worksheet Requirements

The following steps must be taken when determining SK-5208 current draw and standby battery requirements.

Filling in the Current Draw Worksheet, Table 3-2 (Section 3.6.2)

1. For the SK-5208, the worst case current draw is listed for the panel and panel accessories. Fill in the number of devices that will be used in the system and compute the current draw requirements for alarm and standby. Record this information in Table 3-2 at Line A.
2. Add up the current draw for all smoke detectors 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 appliances 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 SK-5208 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 5495 to distribute the power loads so that the SK-5208 or the power expanders do not exceed their power rating. Refer to the current draw worksheets provided with the 5495 manuals so you do not exceed their power requirements.
6. Complete the remaining instructions in Table 3-2 for determining battery size requirements.

3.6.2 Current Draw Worksheet

Use Table 3-2 to determine current requirements during alarm/battery standby operation. (Copy the page if additional space is required.)

Table 3-2: Current Draw Calculations

	Device	# 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.	
	SK-5208 Fire Panel (Current draw from battery)	1	Standby:		140 mA	140 mA	
			Alarm:		460 mA		460 mA
	Panel Accessories						
	SK-5217 Zone Expander	(2 max.)	Standby:		60 mA	mA	
			Alarm:		260 mA		mA
	5220 Direct Connect		Standby:		15 mA	mA	
			Alarm:		15 mA		mA
	SK-5235 Annunciator	(6 max.)	Standby:		30 mA	mA	
			Alarm:		50 mA		mA
	SK-5280 Status Display Module	(8 max.)	Relay (max.)	Standby:	10 mA	mA	
				Alarm:	80 mA		mA
			Outputs	Per output	100 mA		mA
				Max.	700 mA		mA
	7181 Zone Converter		Standby:		35 mA	mA	
			Alarm:		65 mA		mA
A					**Total System Current**		
	Smoke Detectors						
			Standby:		mA	mA	
			Alarm:		mA		mA
			Standby:		mA	mA	
			Alarm:		mA		mA
			Standby:		mA	mA	
			Alarm:		mA		mA
			Standby:		mA	mA	
			Alarm:		mA		mA
			Standby:		mA	mA	
			Alarm:		mA		mA
B					**Smoke Detector Current**	mA	mA
	Notification Appliances						
			Alarm:		mA		mA
			Alarm:		mA		mA
			Alarm:		mA		mA
			Alarm:		mA		mA
C					**Notification Appliances Current**		mA
	Additional Devices						
			Standby:		mA		
			Alarm:		mA		
			Standby:		mA		
			Alarm:		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.				**Total ampere hours required**	AH	

* *Use next size battery with capacity greater than required.*

3.6.3 Maximum Battery Standby Load

Table 3-3 shows the maximum battery standby load for the SK-5208 based on 24 and 60 hours of standby. The standby load calculations of line D in the Current Draw Calculation Worksheet (Table 3-2) must be less than the number shown in Table 3-3 for the battery size used and standby hours required.

Batteries larger then 17 AH will not fit into the SK-5208 cabinet and must be housed in the AB-33 Accessory Battery Cabinet. See Section 3.8 for battery installation.

Table 3-3: 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	270 mA	105 mA
12 AH	475 mA	190 mA
18 AH	685 mA	270 mA
33 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 3-3. 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 3-2 to calculate the correct battery amperes/hour rating needed for your installation.

3.7 AC Wiring

The Model SK-5208 power supply delivers 24 VDC at 6A for smoke detector power, notification device power, and accessory power. Figure 3-3 shows the AC connections to the SK-5208 control panel.

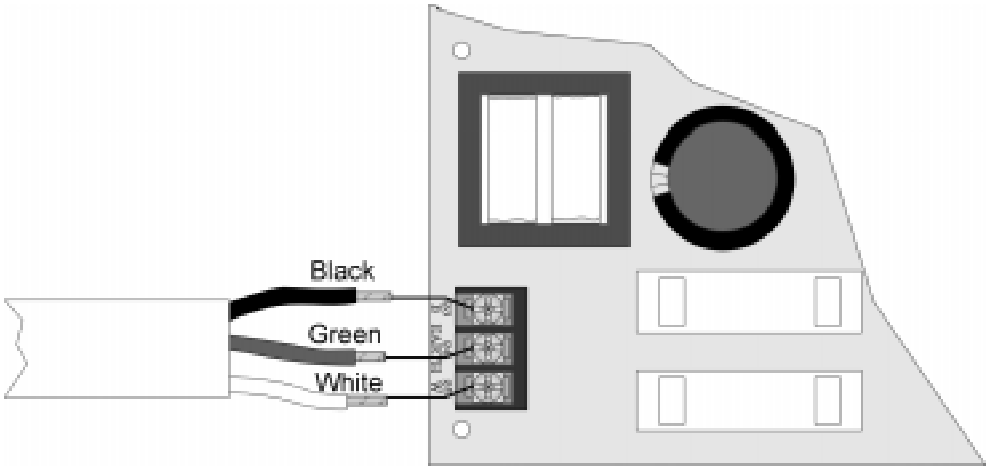


Figure 3-3 AC Wiring

Warning
To reduce the risk of electrical shock, make sure that all power has been turned off or disconnected before attempting to connect the Model SK-5208 control panel. Do NOT apply power to this panel until all accessories are properly connected.

Note: Note: All conduit and wiring connected to the SK-5208 must meet the applicable National Electric Code, NFPA Standards, state, and local building code requirements. In all cases, the authority having jurisdiction takes precedence.

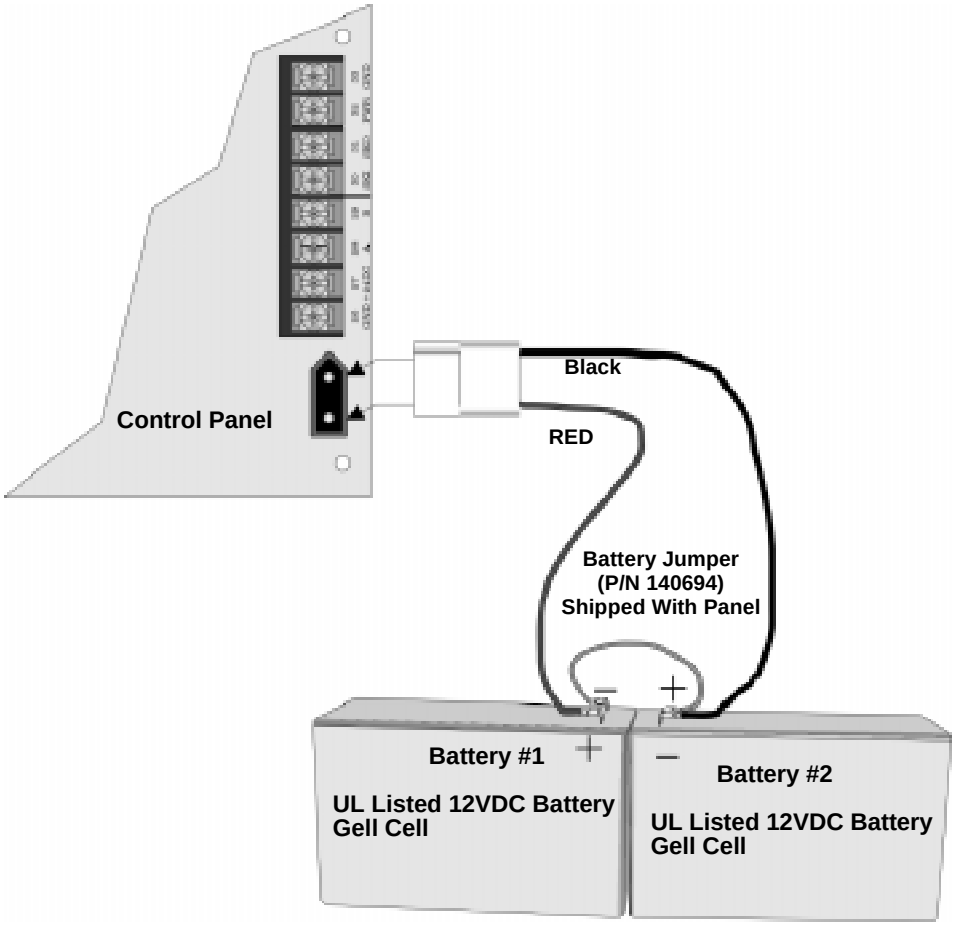
3.8 Backup Batteries

The control panel battery charge capacity is 7.0 to 33.0 AH. Use 12V batteries of the same AH rating. Determine the correct AH rating as per your current load calculation (see 3.6.2).

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

Batteries larger than 17 AH (not to exceed 33 AH) use 33-AB Accessory Battery Cabinet. It is recommended that you replace the batteries every five years. The following steps and diagram explain how to connect the batteries.

1. Connect the black wire 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 to the positive (+) side of battery #1



Caution

Apply AC power before connecting the batteries to the power supply to prevent arcing on battery terminals.

Note: The total current draw on smoke power, accessory power, and notification device outputs must not exceed 6A.

3.9 Terminal Strip Description

The terminal strips on the PC board are non-removable. Table 3-4 lists the functions of each terminal. See Section 3.4 for the board layout.

Table 3-4: Terminal Descriptions

Function	Terminal Number	Terminal Label		Comments
Zone 1 input.	1	A	Z1	Zone 1 input Class A (Style D) or Class B (Style B). See Section 3.11 for wiring configurations.
	2	B		
	3	C		
	4	D		
Zone 2 input	5	A	Z2	Zone 2 input Class A (Style D) or Class B (Style B). See Section 3.11 for wiring configurations.
	6	B		
	7	C		
	8	D		
Ground	9	GND		
Zone 3 input	10	Z3		Zone input Class B (Style B). Refer to Section 3.11.2. Power Limited at 100mA. Voltage 27.4 VDC.
Power (Zone 3 & 4)	11	PWR		
Zone 4 input	12	Z4		
Zone 5 input	13	Z5		
Smoke Power	14	PWR		
Zone 6 input	15	Z6		
Zone 7 input	16	Z7		
Smoke Power	17	PWR		
Zone 8 input	18	Z8		
Zone9 input	19	Z9		
Smoke Power	20	PWR		
Zone 10 input	21	Z10		
Ground	22	GND		
AC Power Connections	23	B		
	24	Earth		
	25	W		
SBUS Connections	26	GND		Used to connect SK-5217 Zone Expanders and 5280 Status Display Modules to the control panel. Accessory Power (terminals 26 and 27) provides 1 Amp total current.
	27	+24DC		
	28	A		
	29	B		
Remote Annunciator Connections	30	SKI		Used to connect 5235 remote annunciators to the control panel.
	31	SKO		
	32	PWR		
	33	GND		

Table 3-4: Terminal Descriptions

Function	Terminal Number	Terminal Label		Comments
Notification Appliance Circuit 4	34	+	NAC4	3 Amp maximum per circuit. Voltage 27.4 VDC. ***Note:*** Total control panel current is 6 Amps.
	35	–		
Notification Appliance Circuit 3	36	+	NAC3	
	37	–		
Notification Appliance Circuit 2	38	+	NAC2	
	39	–		
Notification Appliance Circuit 1	40	+	NAC1	
	41	–		
Auxiliary Relay 4	42	NO		Relay contacts are rated at 2.5 A, 24 VDC/24VAC (inductive rating). 5A, 24 VDC/24 VAC (resistive). Connect to power limited source only.
	43	COM		
	44	NC		
Auxiliary Relay 3	45	NO		
	46	COM		
	47	NC		
Auxiliary Relay 2	48	NO		
	49	COM		
	50	NC		
Auxiliary Relay 1	51	NO		
	52	COM		
	53	NC		
Telco Line 2	54	TIP	P2	Telephone line 2 connection terminals (see Section 3.10 for wiring diagram).
	55	RING		
	56	TIP	T2	
	57	RING		
Telco Line 1	58	TIP	P1	Telephone line 1 connection terminals (see Section 3.10 for wiring diagram).
	59	RING		
	60	TIP	T1	
	61	RING		

3.10 Telephone Line Connection

The SK-5208 connects to two separate telephone lines to report data to the central station. An RJ31X jack should be installed by the telephone company for each line. Figure 3-4 shows how to wire the telephone line interconnect cords (not provided) to the SK-5208.

Note: To reduce the possibility of false alarms and transient damage, DO NOT bundle telephone wires together with notification device wires.

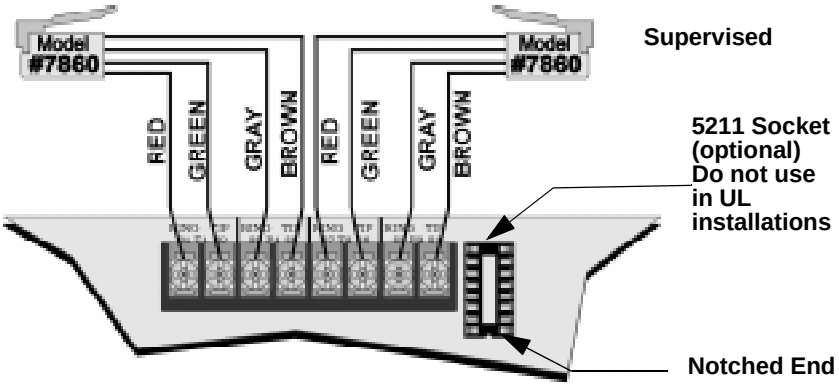


Figure 3-4 Telephone Line Connection

The letter designator on the phone input indicates whether it is the Telco or House side of the phone circuit. For example terminals 60 and 61 are labeled T1, T = Telco side of the phone circuit and terminals 58 and 59 are labeled P1, P = Premise (House) side of the phone circuit.

The SK-5208 has built-in dual phone line monitors. These circuits will detect any fault in the phone lines by monitoring the DC voltage present on the lines. If phone line voltage drops below 3 VDC and is not corrected within approximately 60 seconds, an audible trouble signal will sound and the panel will report a line fault trouble over the remaining phone line.

A situation could occur where both phone lines appear to be good, but the dialer cannot get through to the central station on the first line. In this case, the SK-5208 will switch phone lines and attempt the call again using the second line. Make sure the phone lines are programmed properly (see Section 4).

Note: To comply with industry standards, this product is equipped with line seizure. Any time the system's dialer needs to communicate with the central station, it will not be possible to use any telephones that are on the same line(s) as the system. Normally, this condition will last approximately one minute, but under adverse telephone circuit conditions, could last for as long as 15 minutes.

3.11 Detector Installation

3.11.1 Class A (Style D) Zones

Zones 1 and 2 may be selected through programming as Class A (Style D) zones (see Section 4.2.2 for zone style programming). See Section 3.11.2 for Class B (Style B) configuration.

Each class A zone is a four-wire circuit that allows an alarm to be detected even after a single open or ground fault occurs. When a single open or ground fault occurs, the audible trouble signal will sound and the SK-5208 will report the trouble to the central station (if programmed to report troubles).

Figure 3-5 shows how to wire a Class A (Style D) circuit. No end-of-line (EOL) resistors are needed for these zones. These zones must be wired using normally open contacts.

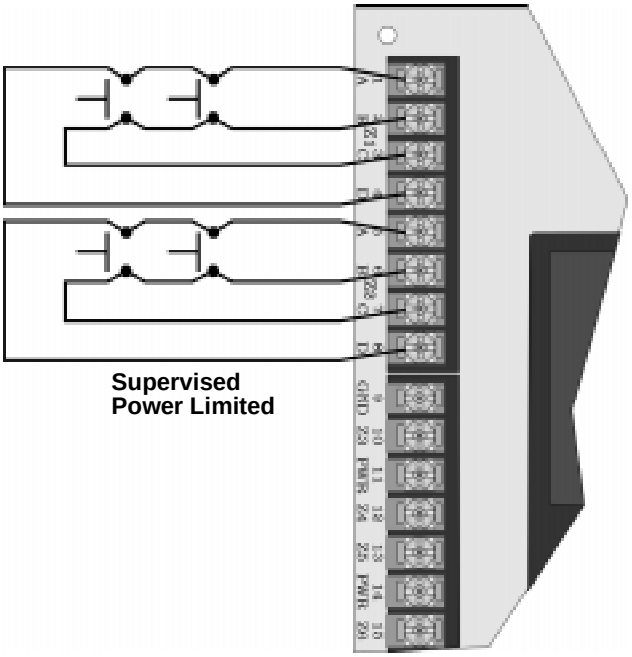


Figure 3-5 Class A (Style D) Supervised Fire Circuit

Maximum voltage:	25.6 VDC
Circuit Current:	95 mA

3.11.2 Class B (Style B) Zones

Zones 3 through 10 are Class B (Style B) only fire zones. Zones 1 & 2 may also be programmed as Class A (Style D) or Class B (Style B), see Section 4.2.2 for zone 1 & 2 zone programming.

Each Class B zone consists of a two-wire circuit that will detect the occurrence of an open in the circuit, but may not be able to detect an alarm after such an occurrence. The detection of an open will cause the audible trouble signal to sound and the SK-5208 will report the trouble to the central station (if programmed to do so).

Figure 3-6 shows how to wire a Class B (Style B) circuit. One side of each Class B circuit connects to a zone input terminal and the other side of each circuit connects to Smoke power. For each circuit, use a 4.7K-ohm EOL resistor wired in parallel with the normally open contact farthest from the panel.

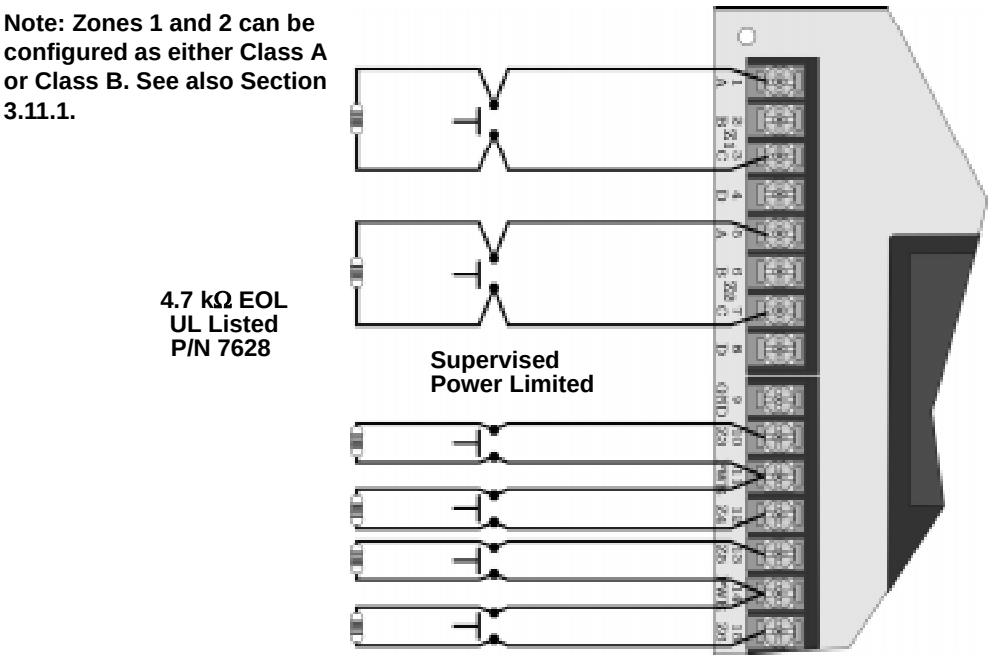


Figure 3-6 Model SK-5208 Class B (Style B) Circuits

Maximum circuit Resistance - 50 ohms
Maximum Total alarm current for all Class B (Style B) zones - 1 A
Maximum Standby Current per Zone: 3.0 mA
Maximum Alarm Current per Zone: 95 mA

3.11.3 Four-Wire Smoke Detector Connection

Figure 3-7 illustrates how UL listed four-wire smoke detectors must be connected to Class B (Style B) zones.

When wiring a four-wire smoke detector to the Class B (Style B) zones, you must use a Power Supervision Unit, such as Silent Knight's 160150.

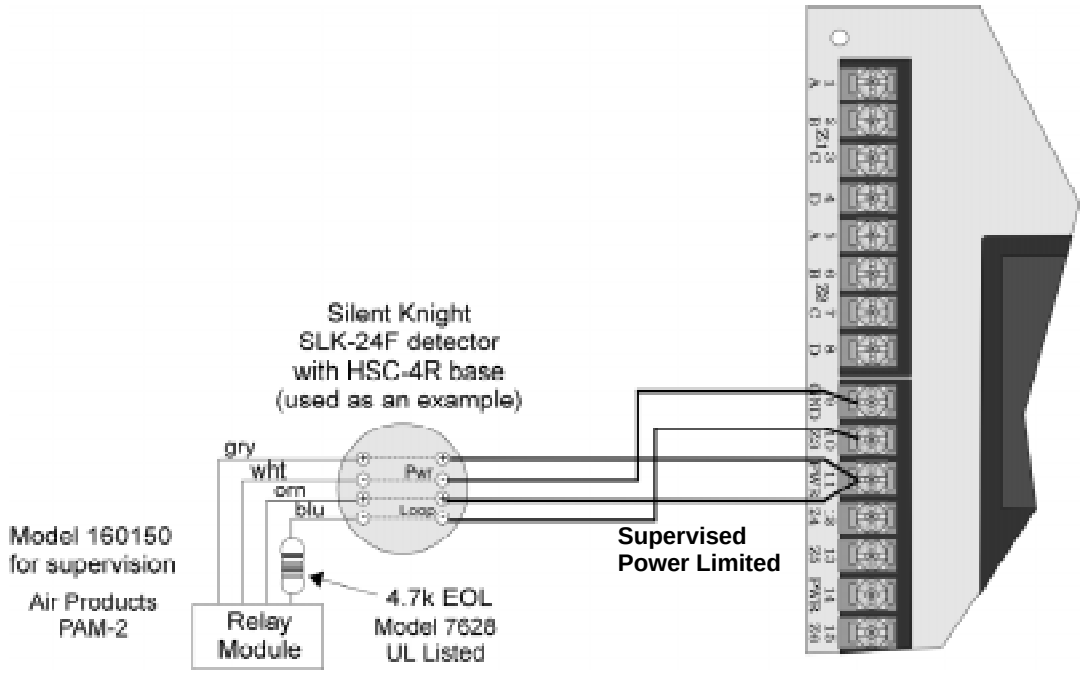


Figure 3-7 Four-Wire Smoke Detector Wiring

See Appendix A for a list of four-wire smoke detectors that may be used with the SK-5208.

3.11.4 Two-Wire Smoke Detector Connection

Figure 3-8 shows how to connect two-wire smoke detectors to Class B (Style B) zones.

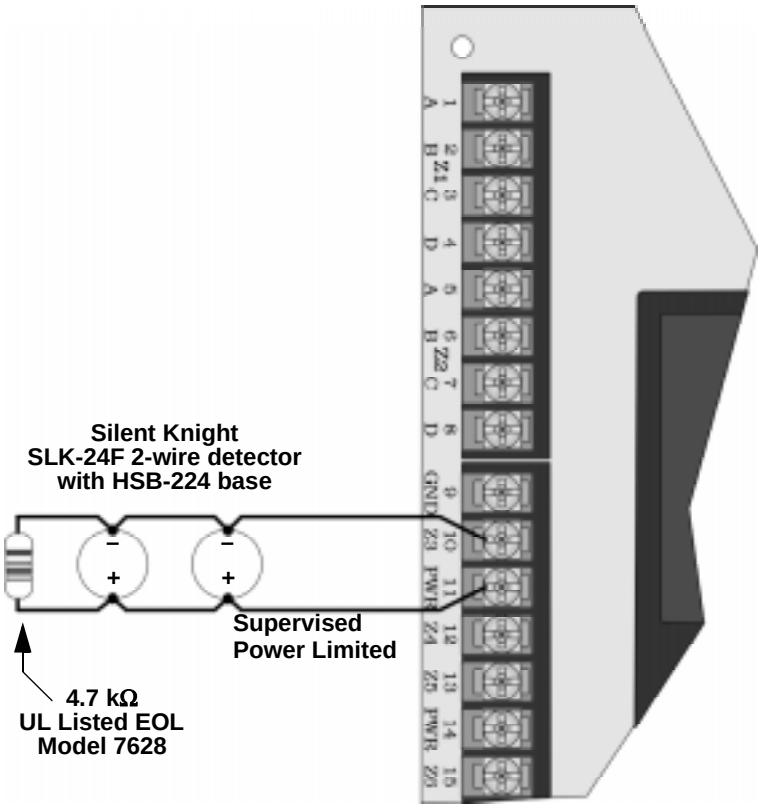


Figure 3-8 Two-Wire Smoke Detector Wiring

See Appendix A for a list of two-wire smoke detectors that may be used with the SK-5208.

Note: Two-wire detectors can be configured for Enhanced Mode. Enhanced mode is smoke verification for zones with 2-wire detectors and contact type devices, such as pull stations, used on the same circuit. If the alarm current is treater than 78 mA, the smoke verification cycle will not occur. See Section 4.2.1 Verify Options under the Zone Options Menu to program initiation circuits for enhanced mode.

3.12 Supervised Notification Appliance Outputs

Note: To reduce the possibility of false alarms and transient damage, DO NOT bundle telephone wires together with notification circuit wires.

The SK-5208 provides four Class B (Style Y) supervised notification circuit outputs to annunciate alarm conditions. For proper operation, you must use polarized sounding devices with a 4.7k ohm end-of-line resistor on each circuit. Figure 3-9 shows how to connect the notification circuits to the SK-5208.

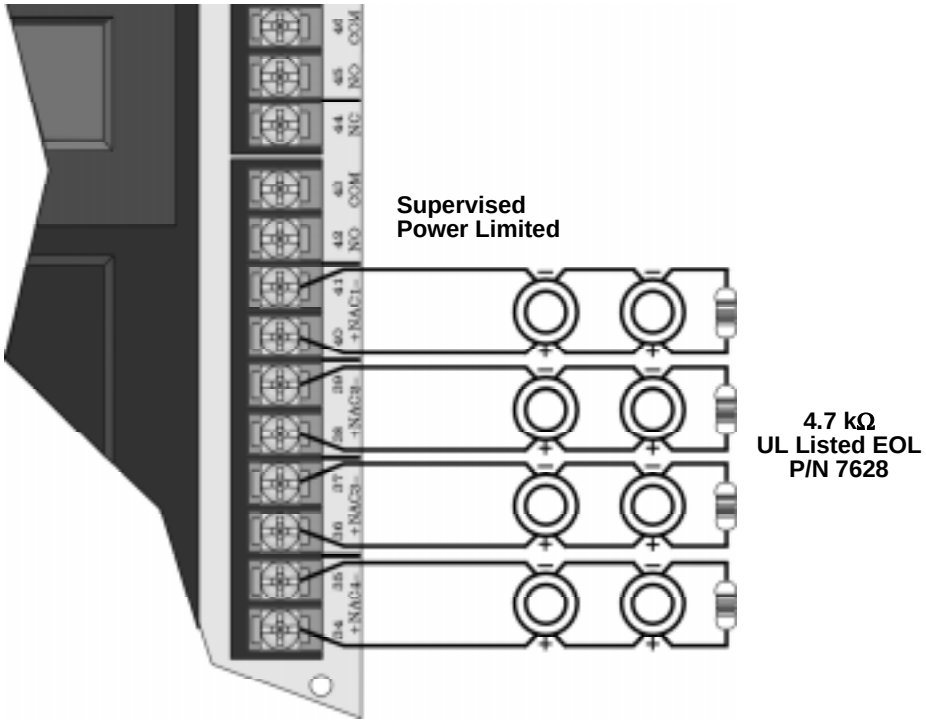


Figure 3-9 Supervised Notification Appliance Wiring

3 Amp maximum current draw from any single NAC output (not to exceed a total current draw of 6 amps for the control panel). See Appendix A for a list the UL sounding appliances that can be used with the SK-5208. Contact Silent Knight if you have any questions about compatible notification circuits.

3.13 Auxiliary Relays

The SK-5208 provides four programmable auxiliary relay outputs. Relays can be programmed to activate for the following conditions, either for all zones or by individual zone: pre-alarm (not acceptable for NFPA 72 Central Station), fire alarm, auxiliary alarm, alarm by zone, and system or circuit troubles (loss of AC, low battery, failed to communicate, phone line troubles, fire drills, and notification circuit troubles).

Refer to the SK-5208 programming manual for more information. Figure 3-10 shows the relay contact connections using a door holder application as an example.

Note: Relays programmed as "Trouble" will be active during normal state and deactivated during a trouble condition.

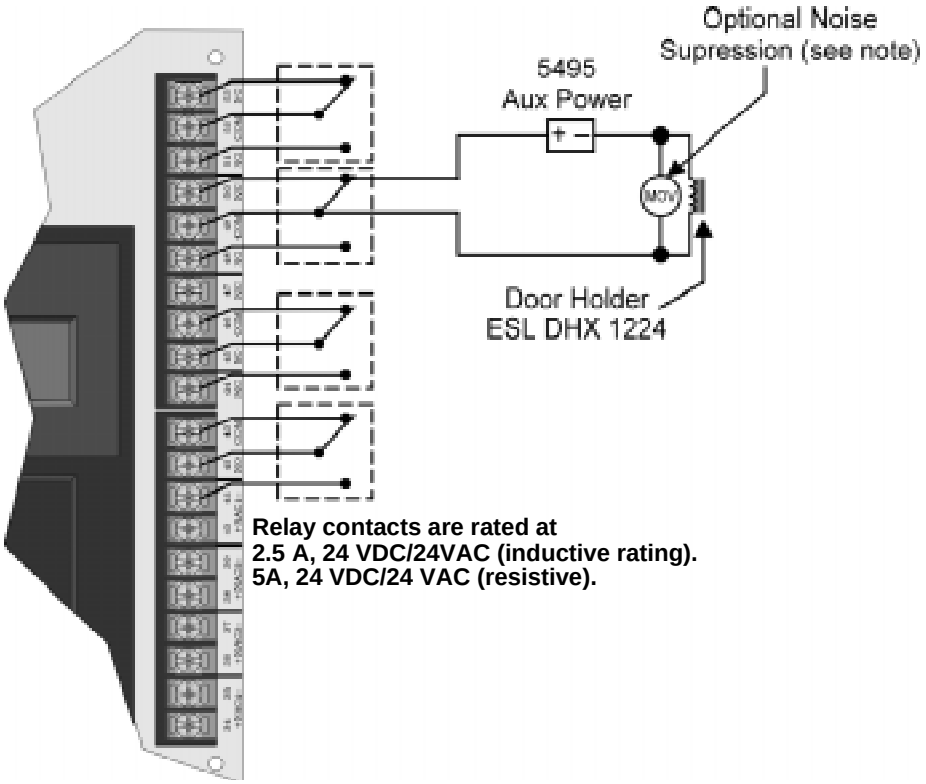


Figure 3-10 Auxiliary Relays

Note: Noise suppression devices, such as metal oxide varistors (MOVs), can be used with auxiliary relay outputs. Connect the noise suppression devices close to the auxiliary device. Refer to auxiliary device manufacturers installation manual for noise suppression requirements.

3.14 Accessory Devices

The section describes how to install the SK-5235 Remote Annunciator, SK-5217 Zone Expander, and the SK-5280 Status Display Module.

3.14.1 Setting ID Codes

Before installing the SK-5235, SK-5217 or SK-5280, you must first set their identification codes. Each Like device must be given its own identification codes. For example: each SK-5235 needs a unique ID code, but a SK-5235 can have the same ID code as a SK-5217. Each type of device has it's own devices type programmed into it enabling the control panel to distinguish between the different devices.

On the back of each device is a small 4-position dip switch used to set the ID code. Use the chart below to determine the dip switch positions for each possible ID code.

Table 3-5: ID Dip Switch Settings

ID Number	Switches			
	1	2	3	4
0 *	Down	Down	Down	Down
1	Up	Down	Down	Down
2	Down	Up	Down	Down
3	Up	Up	Down	Down
4	Down	Down	Up	Down
5	Up	Down	Up	Down
6	Down	Up	Up	Down
7	Up	Up	Up	Down
8	Down	Down	Down	Up

*Not supervised Up = On Down = Off

3.14.2 Model SK-5235 Remote Annunciator

The SK-5235 performs all system operation. It also provides trouble and alarm information and can be used for programming. The control panel can support up to six 5235 Remote Annunciators.

Upon initial power up, the address of each SK-5235 is displayed on the LCD. (Annunciators with address 0 will not be supervised.)

3.14.2.1 Mounting the SK-5235 Remote Annunciator

The SK-5235 Remote Annunciators must be mounted on a dual gang electrical box.

To mount the annunciator:

1. Remove the rear mounting plate by inserting a #4 flat blade screwdriver into the slots on the bottom edge of the annunciator. See Figure 3-11. Gently turn the screwdriver until the mounting plate pulls away from the frame.

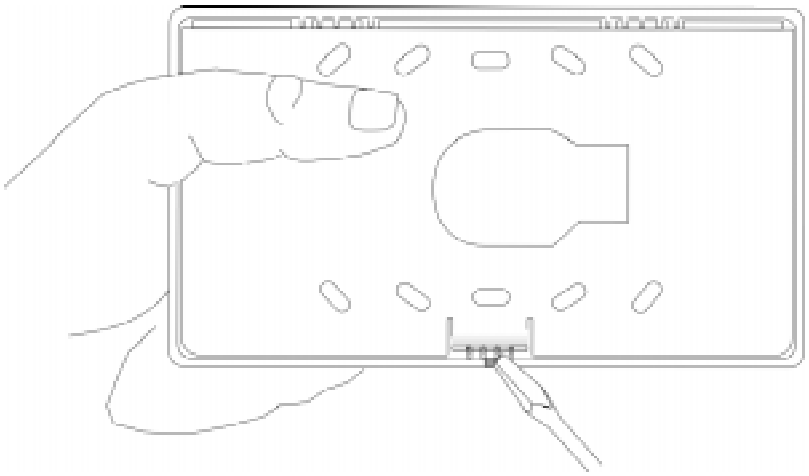


Figure 3-11 Rear Mounting Plate Removal

2. Secure it to the wall using #6 or #8 screws. The mounting plate should be oriented so that the word TOP is toward the top of the plate and facing you. A square hole is provided in the mounting plate to run the wiring to the annunciator.
3. When all of the wires have been connected to the annunciator, set the top of the annunciator over the tabs on the top of the mounting plate. Make sure the wires do not get pinched between the frame and the mounting plate. Press each corner of the bottom side onto the annunciator mounting plate until you hear it click. You may have to gently squeeze the annunciator (top to bottom) to align it while snapping the bottom edge into place.

3.14.2.2 Wiring the SK-5235

Follow these steps to properly wire the SK-5235 to the control panel.

1. Remove power from the control panel.
2. Wire the SK-5235s as shown in Figure 3-12.
3. Set the ID number. See Table 3-5.

Note: The ID number of 7 is reserved for the built-in touchpad on the 5208.

4. Reapply power the the control panel.

   When the annunciator powers up, it will display its ID code and current status of the panel.

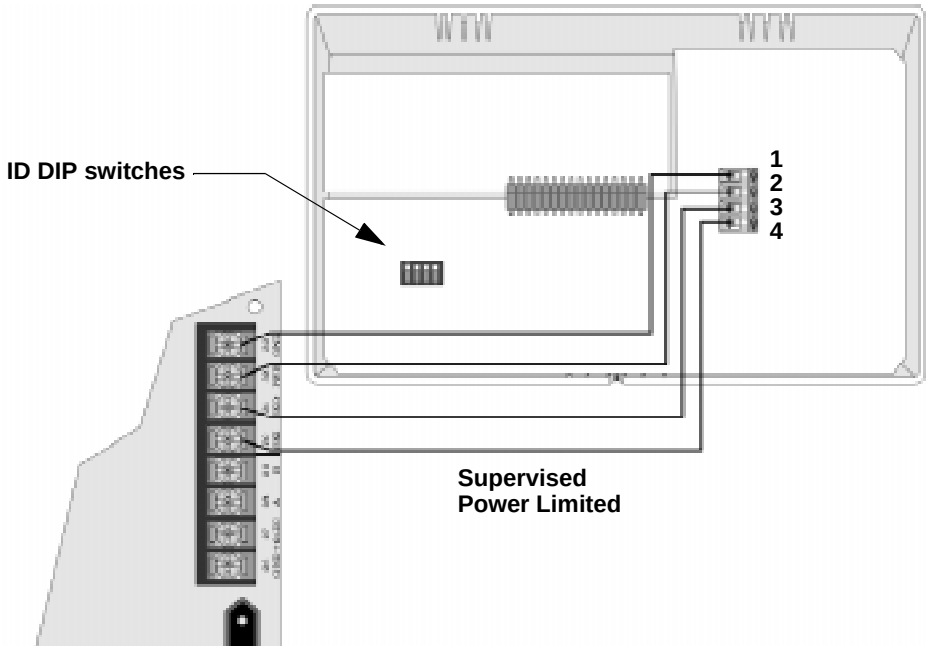


Figure 3-12 Model SK-5235 Connection

Note: Each 5235 touchpad can be individually supervised. See Section 4.2.2 for programming touchpads as supervised.

3.14.3 Model SK-5280 Status Display Module

The Model SK-5280 Status Display module provides outputs and control functions for remote annunciation of alarm, trouble, and supervisories for each zone.The system can supervise up to eight SK-5280 Status Display Modules.

Note: The driver outputs are non-supervised. Relays must be connected to power limited sources only.

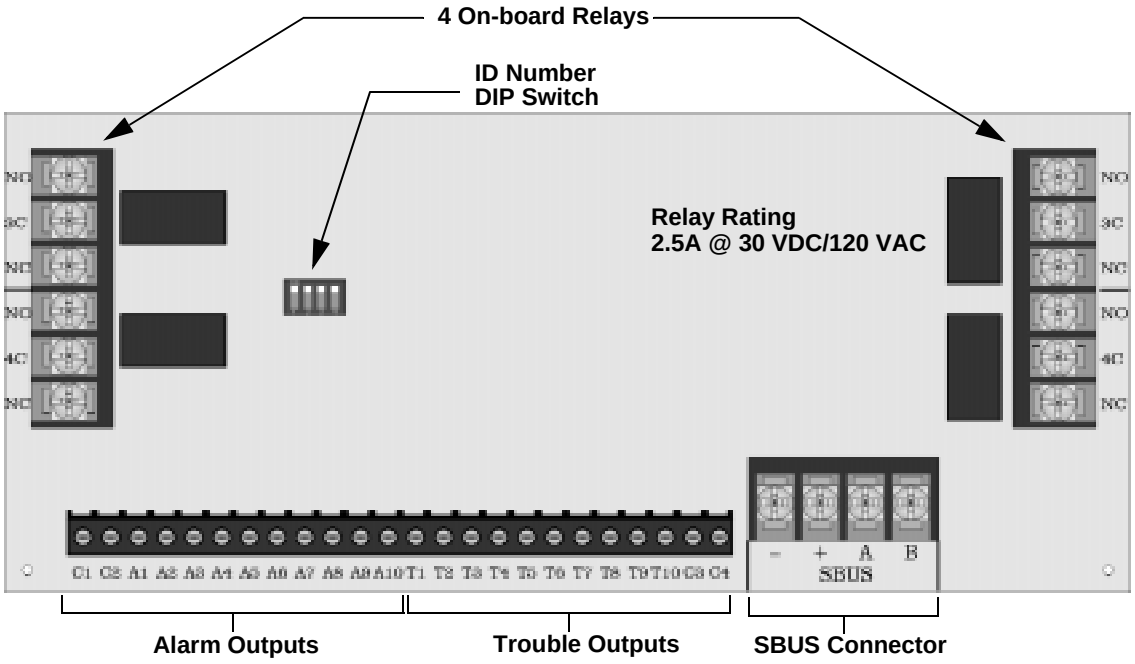


Figure 3-13 Model 5280 Board Layout

The SK-5280 has 1 connector which has 10 outputs for alarms and 10 outputs for trouble annunciation. These outputs are active low. Each output can provide up to 100 mA of current, with a total limitation of 700 mA.

The module has 4 normally open non-dedicated relays that can be wired to be active with any of the outputs.

Wire the SK-5280 as shown in Figure 3-14. Maintain a physical separation of one-half inch or more between field wires and connection points to prevent damage from transients.

Note: SILENCE does not affect SK-5280 outputs. To reset a SK-5280 output, the alarm or trouble condition must be restored.

The SK-5280 can be used to interface to LED annunciator.

The SK-5280 can be programmed to indicate alarms and trouble status for; zones 1 - 10, zones 11 - 20, zones 21 - 30, or system status outputs. See Section 4.2.11.

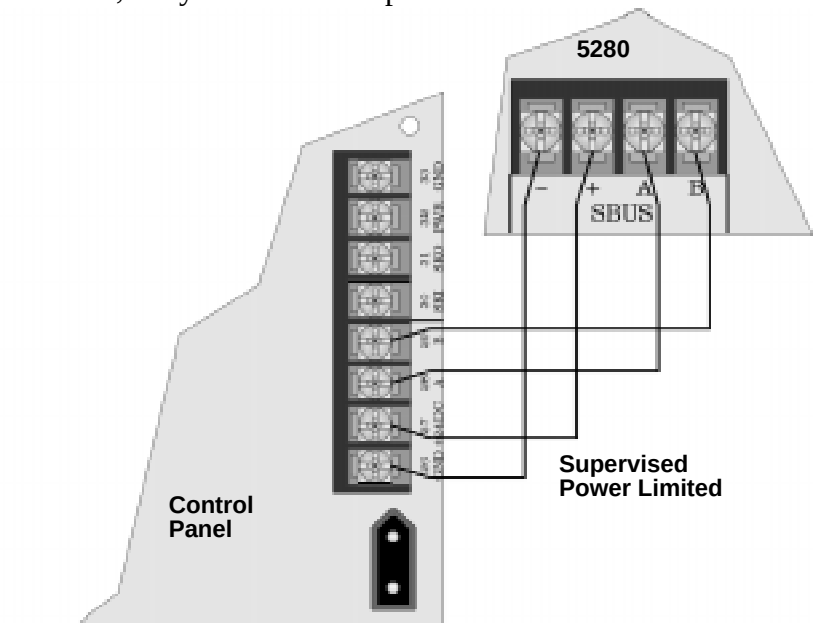


Figure 3-14 Model SK-5280 Connection to the Control Panel

3.14.3.1 Mounting the 5280

The SK-5280 into a metal bracket and standoffs in the SK-5208 cabinet or into SK-2190 accessory cabinet.

Mounting the SK-5280 into SK-5208 Cabinet

Follow these steps to properly mount the SK-5280 into the SK-5208 cabinet:

1. Remove power from the control panel.
2. Mount the SK-5280 onto the standoffs and bracket located in the cabinet. See Figure 3-15.

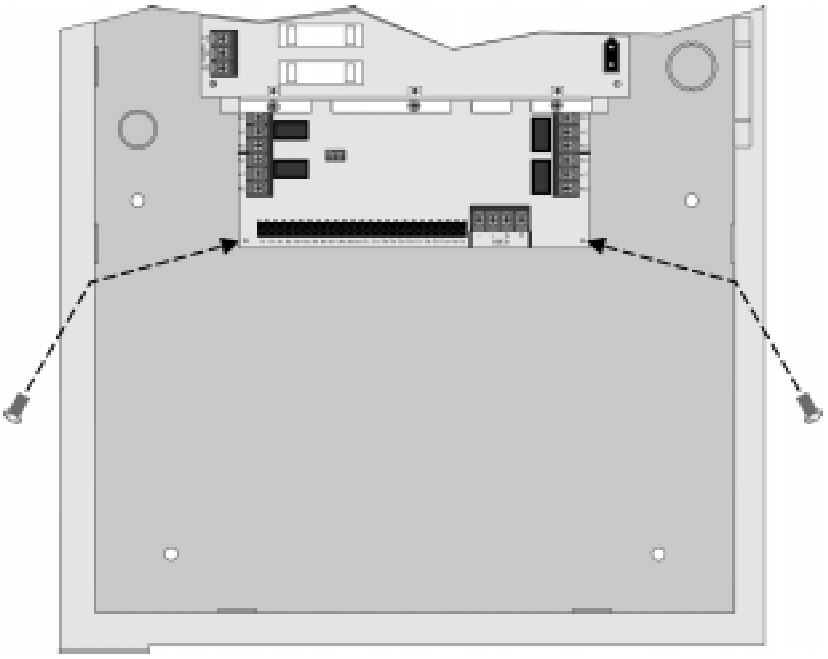


Figure 3-15 Installing the 5280 Into the 5208 Cabinet

3. Connect the SK-5280 to the SK-5208 control panel as shown in Figure 3-14.
4. Set the ID number (see Figure 3-13 for ID DIP switch location). See also Section 3.14.1for information on setting ID numbers.
5. Reconnect power to the control panel.

Mounting the SK-5280 into the SK-2190 Accessory Cabinet.

Follow these steps to properly mount the SK-5280 into the SK-2190 cabinet:

1. Mount the remote cabinet using the cabinet mounting holes. See Figure 3-16.

   Refer to Section 3.5 for proper cabinet mounting procedures.

2. Remove power from the control panel.
3. Mount the SK-5280 onto the standoffs and bracket located in the cabinet. See Figure 3-16.

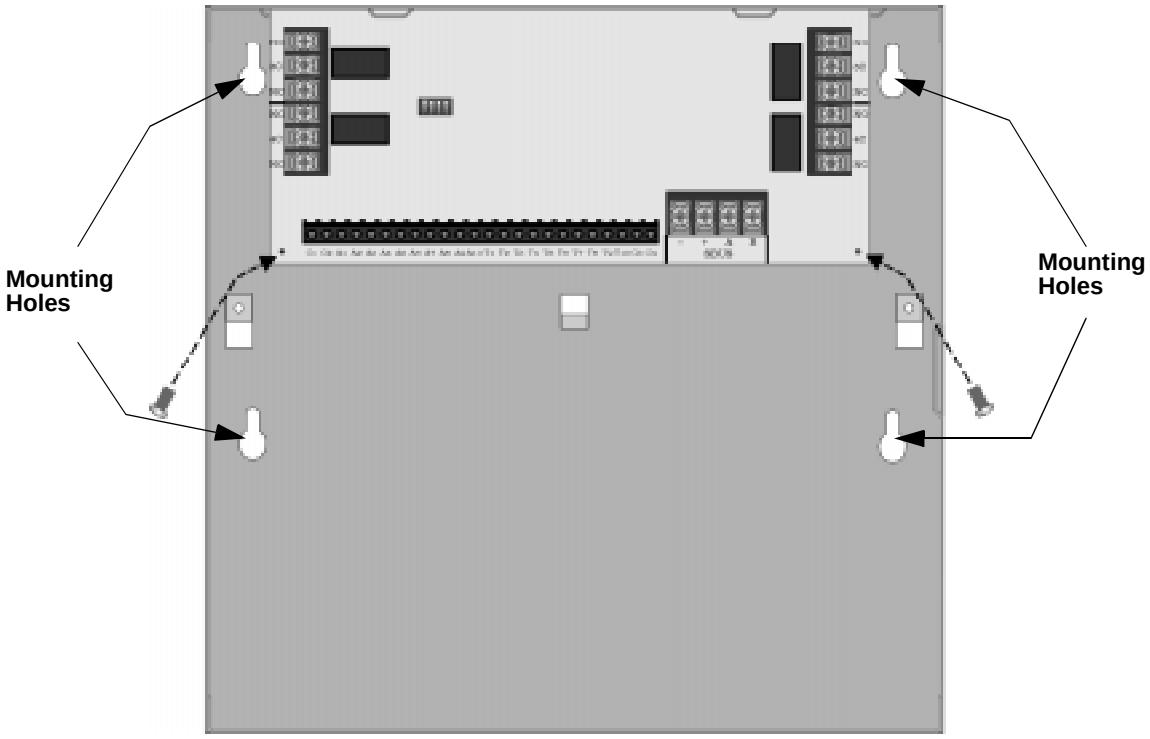


Figure 3-16 Model SK-5280 Remote Installation

4. Connect the SK-5280 to the SK-5208 control panel as shown in Figure 3-14.
5. Set the ID number (see Figure 3-13 for ID DIP switch location). See also Section 3.14.1for information on setting ID numbers.
6. Reconnect power to the control panel.

3.14.3.2 Wiring Relays

The four on-board relays can be triggered by the active low outputs. For example, the alarm outputs can all be wired to relay 3 and the trouble outputs can be wired to relay 4 (see Figure 3-17).

C1 is the coil for the relay 1, C2 is the coil for relay 2, C3 and C4 are the coils for relays 3 and 4 respectively.

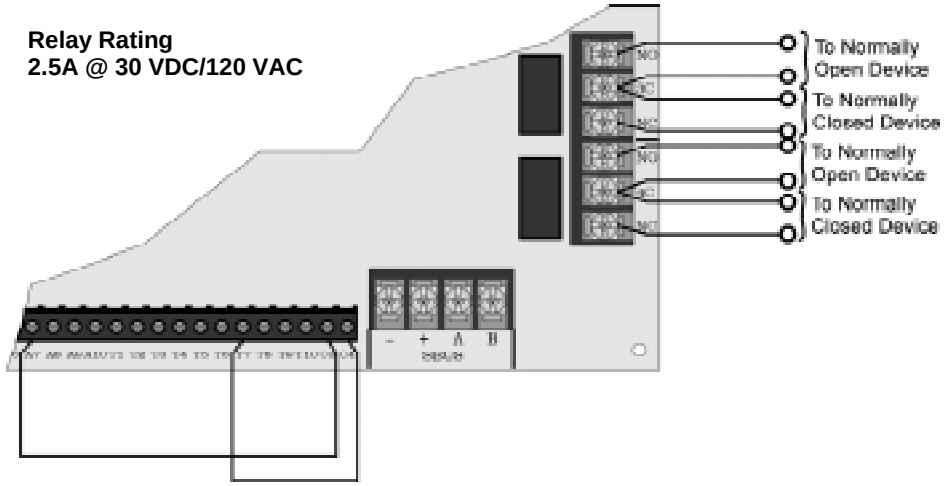


Figure 3-17 Relay Wiring on the SK-5280

Note: Figure 3-17 uses A7 and T7 to activate relays 3 and 4 as an example. However, any of the outputs can be used to trip any of the relays.

3.14.3.3 Wiring LEDs to Outputs

The outputs (A1-A10 and T1-T10) can be used to operate LEDs used in a remote annunciator (see Figure 3-18). Outputs A1-A10 are alarm outputs for the zones corresponding to those outputs. For example, if the 5280 is programmed to output for zones 11-20, then outputs A1-A10 will correspond with zones 11 through 20.

Outputs T1-T10 are trouble outputs for the zones corresponding to those outputs. for example, if the 5280 is programmed to output for zones 21-30, then outputs T1-T10 will correspond

with zones 21-30.

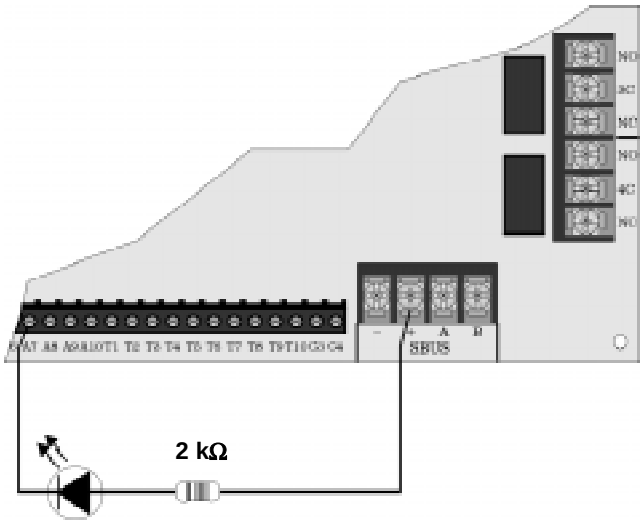


Figure 3-18 LED Wiring on the SK-5280

3.14.4 Model SK-5217 Zone Expander Installation

The Model SK-5217 provides the SK-5208 with ten additional Class B (style B) zones. The SK-5217 connects to the SK-5208 control panel via the SBUS as shown in Figure 3-19.

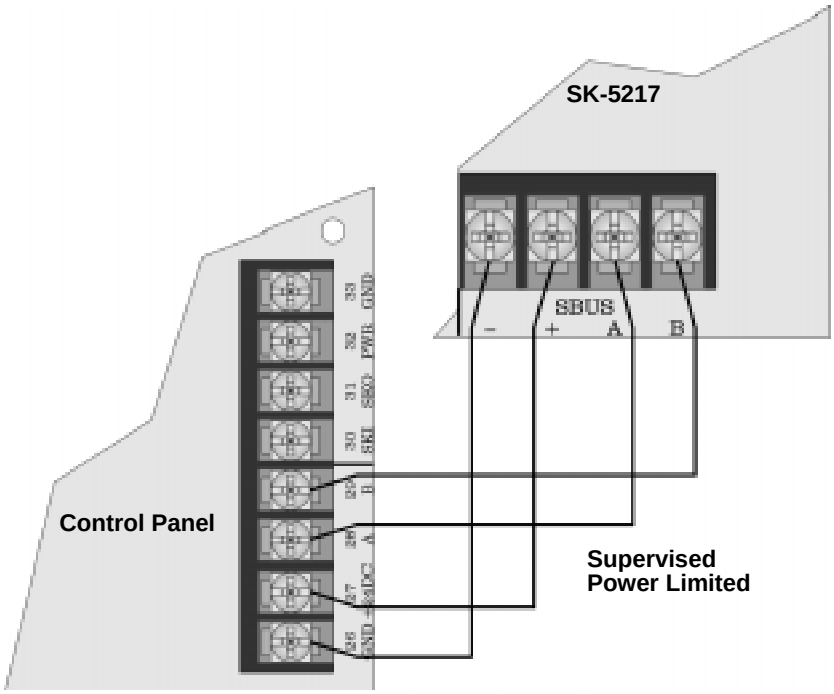


Figure 3-19 SBUS Connections

3.14.4.1 Zone Inputs

Figure 3-20 shows how to wire the SK-5217. Use a 4.7k end of line resistor for each Class B circuit. The EOL must be wired in parallel with the normally open contact farthest from the panel. See Appendix A for a list of the smoke detectors that can be used with the SK-5217.

Maximum circuit Resistance - 50 ohms
Maximum Total alarm current for all class B (style A) zones - 1 A
Maximum Standby Current per Zone: 3.0 mA
Maximum Alarm Current per Zone: 95 mA
Voltage:27.4 VDC

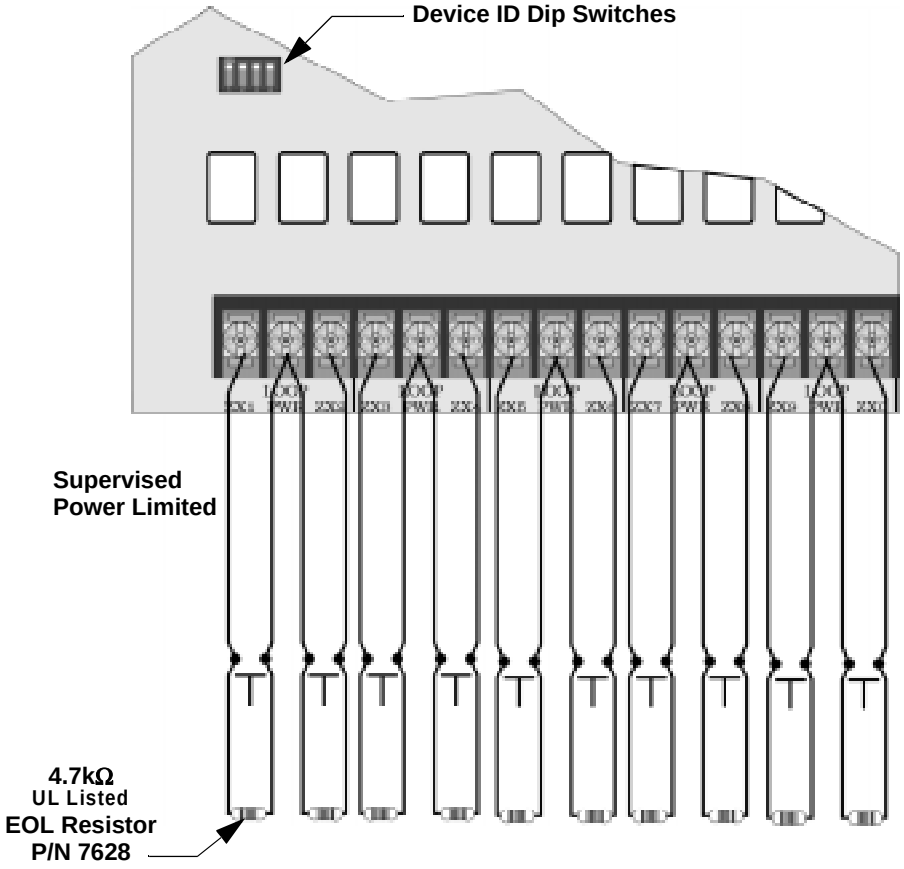


Figure 3-20 Model SK-5217 Class B (Style B) Circuits

3.14.4.2 Mounting Instructions

The SK-5217 into a metal bracket and standoffs in the SK-5208 cabinet or into SK-2190 accessory cabinet.

Mounting the SK-5217 into SK-5208 Cabinet

Follow these steps to properly mount the SK-5217 zone expander into the SK-5208 cabinet:

1. Remove power from the control panel.
2. Mount the SK-5217 onto the standoffs and bracket located in the cabinet. See Figure 3-21.

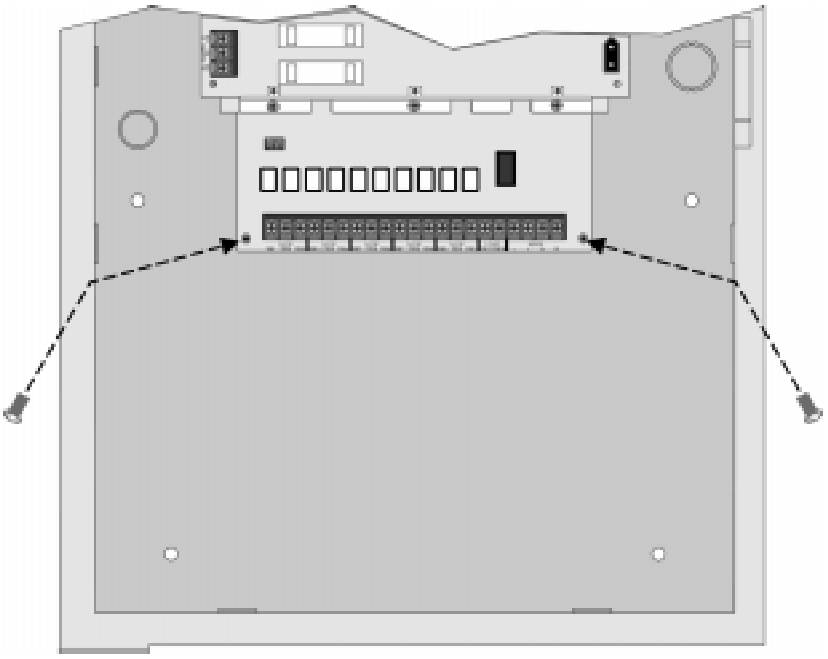


Figure 3-21 Installing the 5217 Into the 5208 Cabinet

3. Connect the SK-5217 to the SK-5208 control panel as shown in Figure 3-19.
4. Wire the zone inputs to the zone expander as shown in Figure 3-20.
5. Set the ID code (see Section 3.14.1).

   If ID code 1 is selected the SK-5217 will input zones 11 - 20.

   If ID code 2 is selected the SK-5217 will input zones 21 - 30.
6. Reconnect power to the control panel.

Mounting the SK-5217 into the SK-2190 Accessory Cabinet.

Follow these steps to properly mount the SK-5217 zone expander into the SK-2190 cabinet:

1. Mount the remote cabinet using the cabinet mounting holes. See Figure 3-22.

   Refer to Section 3.5 for proper cabinet mounting procedures.

2. Remove power from the control panel.
3. Mount the SK-5217 onto the standoffs and bracket located in the cabinet. See Figure 3-22.

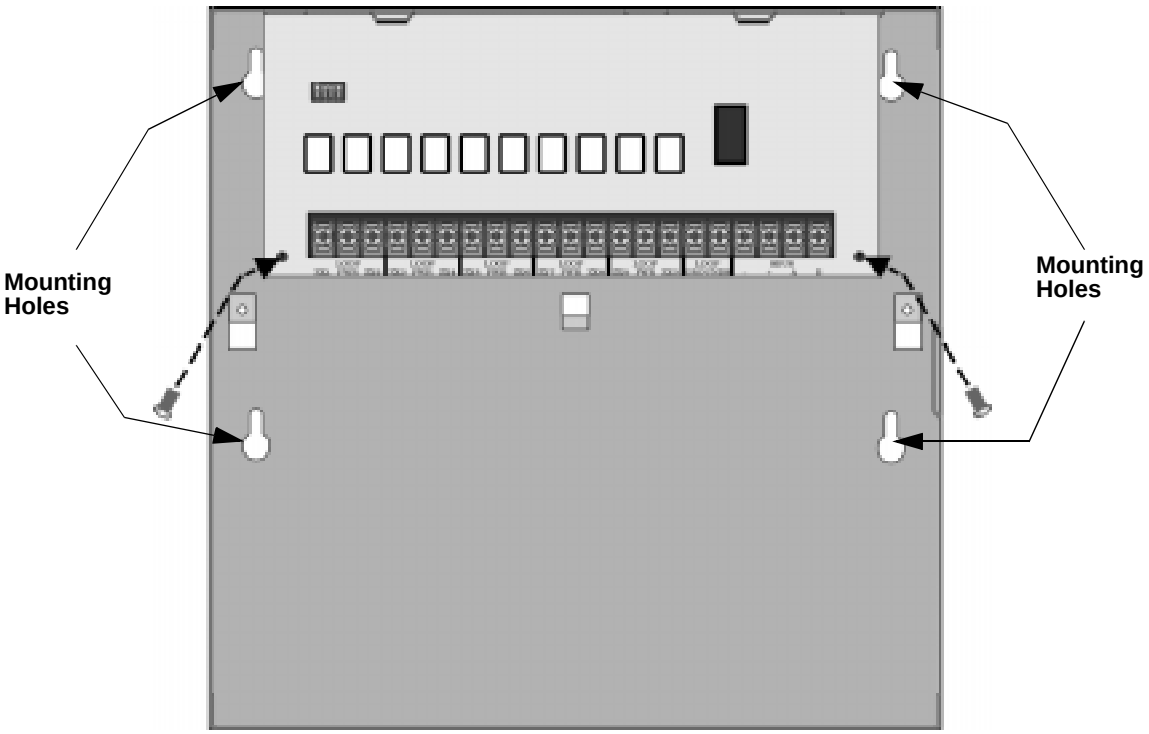


Figure 3-22 Model SK-5217 Remote Installation

4. Connect the SK-5217 to the SK-5208 control panel as shown in Figure 3-19.
5. Set the ID code (see Section 3.14.1).

   If ID code 1 is selected the SK-5217 will input zones 11 - 20.

   If ID code 2 is selected the SK-5217 will input zones 21 - 30.

6. Wire the zone inputs to the zone expander as shown in Figure 3-20.

3.15 Special Applications

3.15.1 Model 5220 Direct Connect Module

The 5220 Direct Connect module can be used with the SK-5208 to meet NFPA 72 standards. The 5220 requires four connections to the SK-5208 and provides outputs for city box and polarity reversal applications. The 5220 cannot be used for sprinkler supervisory.

The 5220 provides a current that reverses polarity during alarm or removes current during a trouble condition.

*Note: The 5220 Direct Connect Module will activate for alarm and trouble conditions during a Walk Test. To disable alarm activation during Walk Test, bypass the NAC programmed for Direct Connect before entering the Walk Test mode. To bypass the NAC, press; 10 + NAC# + * + Code (repeat to un-bypass NAC). The Direct Connect relay will indicate trouble until the NAC is un-bypassed.*

3.15.1.1 City Box Connection

This section describes how to connect the SK-5208 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.

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

To install the 5220 for city box connection:

1. Locate the knockout on the right side of the SK-5208 cabinet to connect the 5220 using a short piece of conduit (must not exceed 20 feet in length).
2. Wire the 5220 to the SK-5208 as shown in Figure 3-23. This drawing also shows how to connect the city box coil to terminals 3 and 4 on the 5220.
3. Program NAC #4 to be direct connect from the NAC Options menu. Relay #4 will automatically be configured to indicate system troubles.

Note: It is not possible to reset the remote indication until you clear the condition and reset the SK-5208.

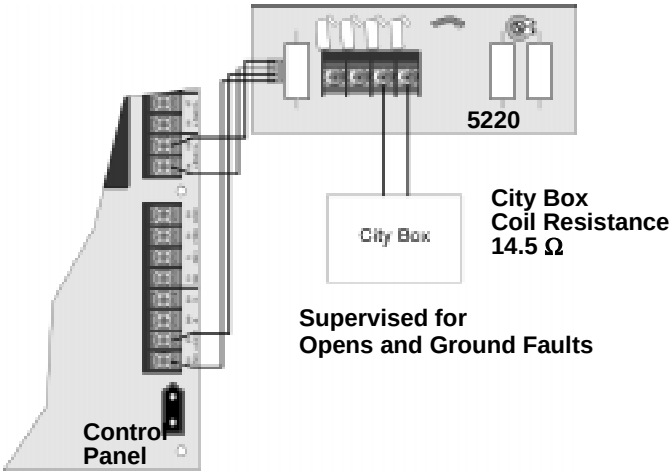


Figure 3-23 City Box Connection

3.15.1.2 NFPA 72 Polarity Reversal

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 SK-5208 panel is reset.

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

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

1. Locate the knockout on the right side of the SK-5208 cabinet to connect the 5220 using a short piece of conduit (must not exceed 20 feet in length).
2. Wire the 5220 to the SK-5208 using the four-wire pigtail provided as shown in Figure 3-24 (next page). This diagram also shows how to connect the 5220 to the remote indicator.
3. Program one of the notification circuits to be Direct Connect (Figure 3-24 uses NAC 4 and Relay 4). The relay and NAC circuits are paired when selected as direct connect. For example, if NAC 4 is programmed as Direct Connect then relay 4 used for the trouble output.

4. If necessary, adjust circuit current using potentiometer R10 on the 5220 board. Normal circuit current is 4-to-8 mA with a 1k ohm remote station receiving unit. Maximum circuit resistance is 3k ohm.

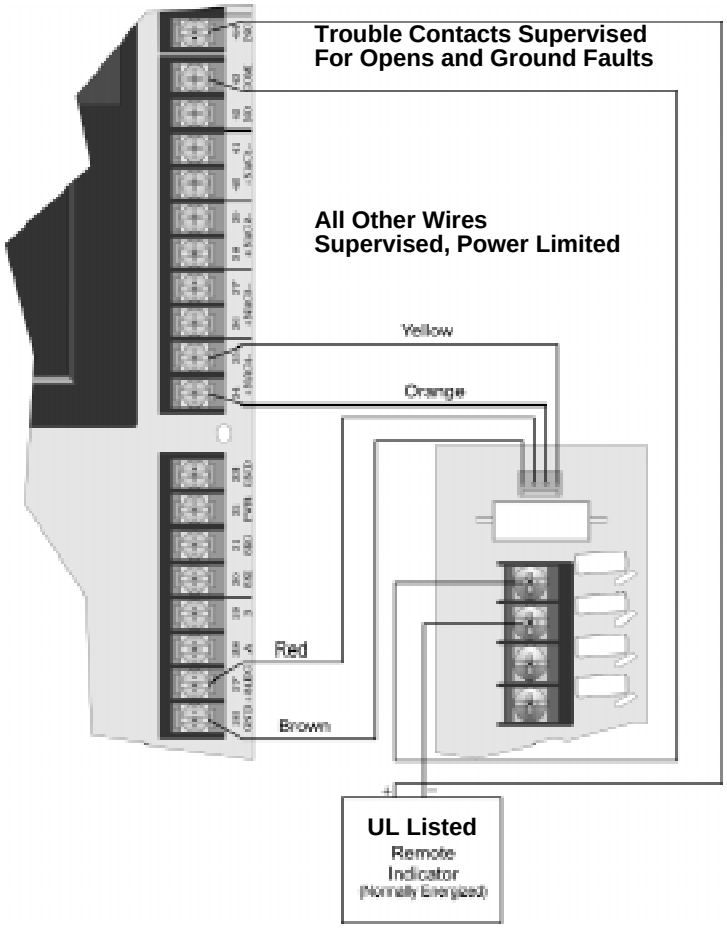


Figure 3-24 Polarity Reversal Connection

3.15.2 Keltron 95M3158 Tones Transmitter Module

This section of the manual shows the specific connections you will make when wiring the SK-5208 to the Keltron 95M3158 Tones Transmitter Module (3158). Refer to the installation sheet shipped with the 95M3158 for complete information. (Note: The 3158 is not available from Silent Knight.)

Note: The 3158 Keltron Module must be mounted within 3 feet of the control panel and all wiring must be run in conduit. The Keltron Module shall be enclosed in the TBX1 enclosure.

1. Wire the 3158 to the SK-5208 as shown in the Figure 3-25.
2. Program NAC 4 for Direct Connect (see Section 4.2.4).
3. Program NAC 3 for Supervisory (see Section 4.2.4).
4. Program NACs 3 and 4 as unsupervised (NACs With EOL). See Section 4.2.4.
5. Program NAC 3 cadence as Steady (see Section 4.2.3).

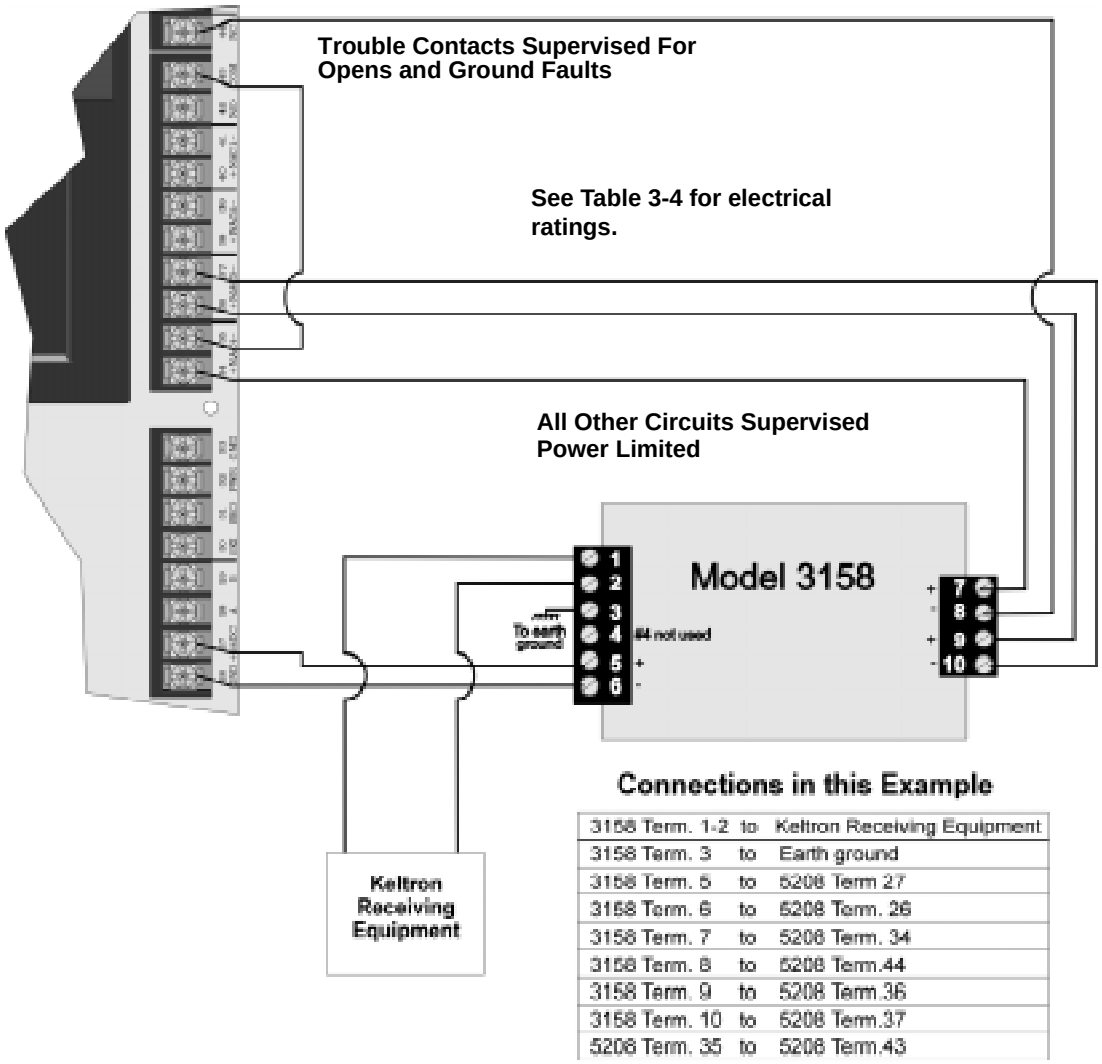


Figure 3-25 Wiring the Keltron 3158 to the SK-5208

Section 4
Programming

The SK-5208 control panel can be programmed from either the on-board annunciator or the SK-5235 remote annunciator. You must be in Programming Mode to program the control panel.

4.1 Keypad Operation During Programming

This section describes the function of the buttons on the keypad while in program mode.

Operation/Button	Operation/Description
Enter Step Programming mode	Press 2 7 ACK ENTER, followed by installer level code (the factory programmed code is 123456). See Section 4.2.6 for user code programming information.
Moving through programming	When you have entered programming correctly, the display will show Zone 1 Options . Press ▷ to move to next programming option. See Table 4-3 for list of programming options (column 1) and their menu items (column 2). When the display shows the option you wish to program press ACK ENTER to program items in this option. If you receive a trouble beep and the message TRY AGAIN appears you are not using an installer level code.
Exit Step Programming	Press RESET. You will return to normal operation. ***Note:*** If you have made a selection in programming the Enter or Down arrow must be pressed to enter that selection in programming. If the Reset button is pressed before the Enter or Down arrow the selection made will not be entered into programming.
Down Arrow ▽	Accepts the entered data and scrolls down to the next menu item.
Enter Button ACK ENTER	Accepts the entered data and scrolls down to the next menu item.
Left Arrow ◁	Scrolls backwards through the programmable items list for the currently selected option.
Right Arrow ▷	Scrolls forward through the programmable options list or choices for an the selected item.
Silence Button SILENCE	Enables extended programming list so you can scroll through lists of items that have multiple components such as, Zone 1 -30. See Section 4.1.2 for an example.
Up Arrow △	Accepts the entered data and scrolls up to the next menu item.
* Button *	Used as shift key when entering special characters (A, B, C, D, E, or F characters). See Section 4.1.1 for more information.
# Button #	Clear entry.

4.1.1 Special Characters

Special characters are characters used while dialing such as pause, *, #, or 2nd dial tone. Table 4-1 list the Special characters and what they mean.

Table 4-1: Special Characters

To Enter:	Press	LCD Display
Pause	* 1	A
*	* 2	B
#	* 3	C
2nd Dial Tone	* 4	D

4.1.2 Enabling Extended Programming List

While programming there are several programming options that have multiple components that can be programmed within that menu item, such as Zones, NAC Cadence, User Codes, Accounts, etc. However when you scroll through these options only the first one may be displayed (see Figure 4-1). In order to view and program subsequent items the Silence button must be pressed. This enables you to move through the other Zones, NAC Cadence, etc.

Example:

If the Zone 1 Options is displayed (see Figure 4-1) and you want to program zone 2 options, press the SILENCE button.

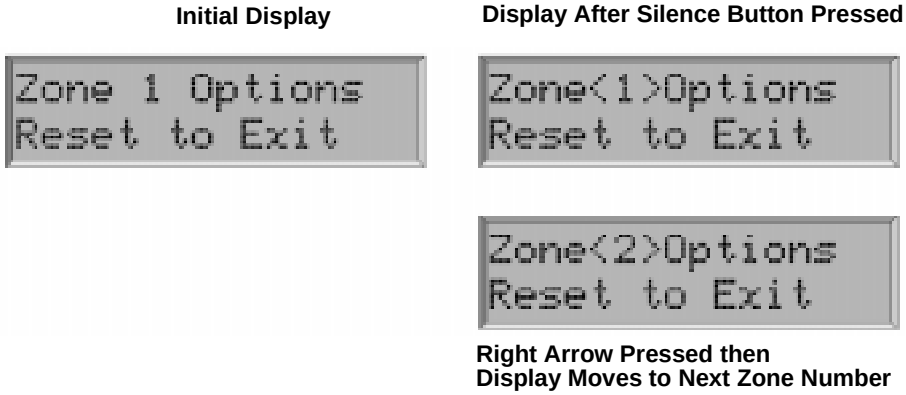


Figure 4-1 Extended Programming List Access Example

The display will add brackets around the zone number (see Figure 4-1). To move to the next zone number press the right arrow to go forward through the zone numbers or the left arrow to go backward through the zone numbers. Press the Silence button again to remove the bracket and lock the menu on this Zone number, NAC number, or Relay, etc.

This Feature works for the following programming options: Zone Options, NAC Cadence, User Codes, Accounts, Line Options, and SK-5280 Options.

4.2 Programming Flow

Figure 4-2 is an overview of the programming menu flow. Figure 4-3 through Figure 4-13 illustrate the programming flow within each option. The arrows indicate how to maneuver through programming.

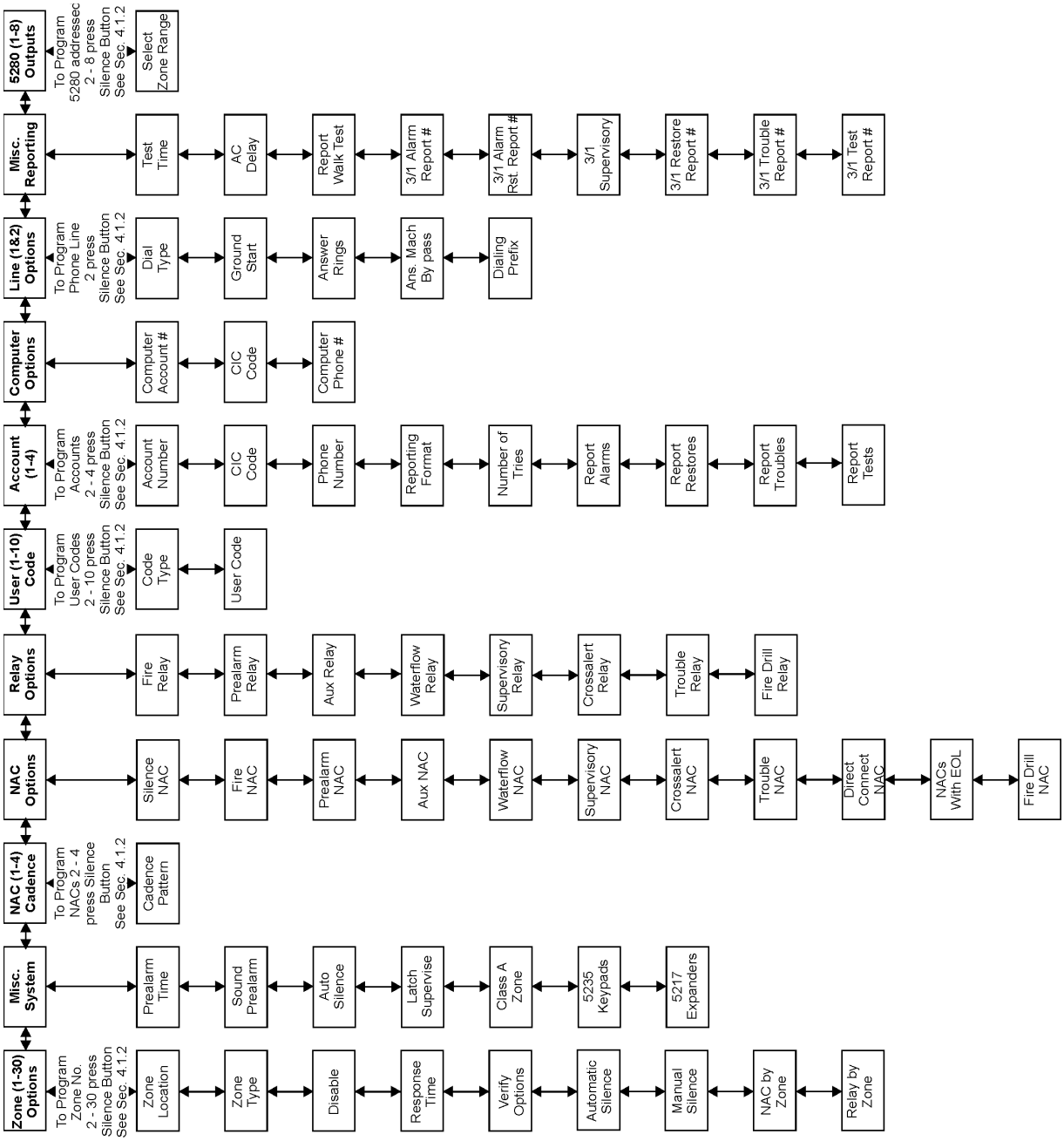


Figure 4-2 Programming Overview Flow Chart

4.2.1 Zone Options

Figure 4-3 illustrates, in more detail, the the programming flow when in the zone options menu.

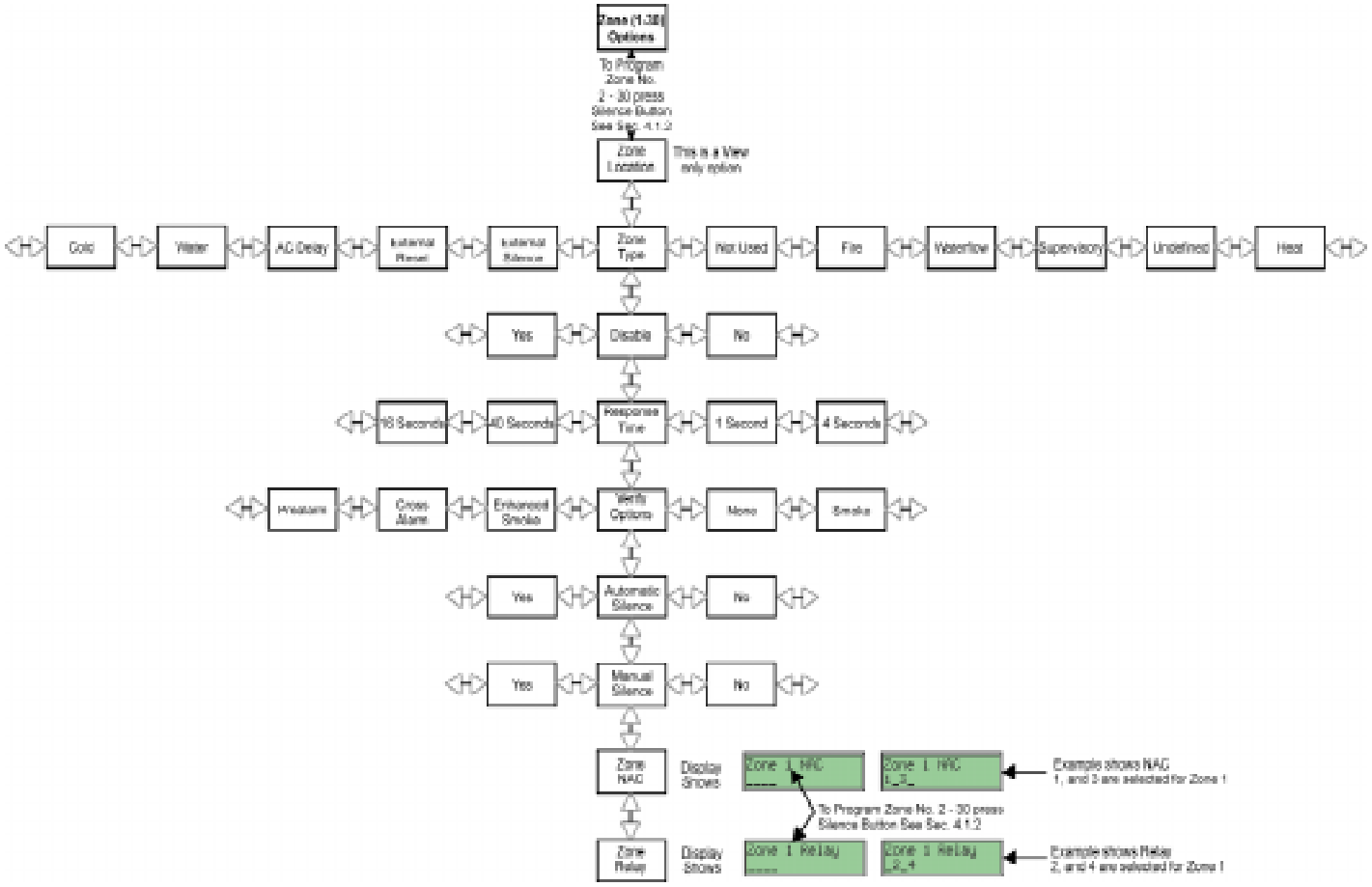


Figure 4-3 Zone Options

4.2.2 Misc System Option

Figure 4-4 illustrates, in more detail, the the programming flow when in the misc system menu.

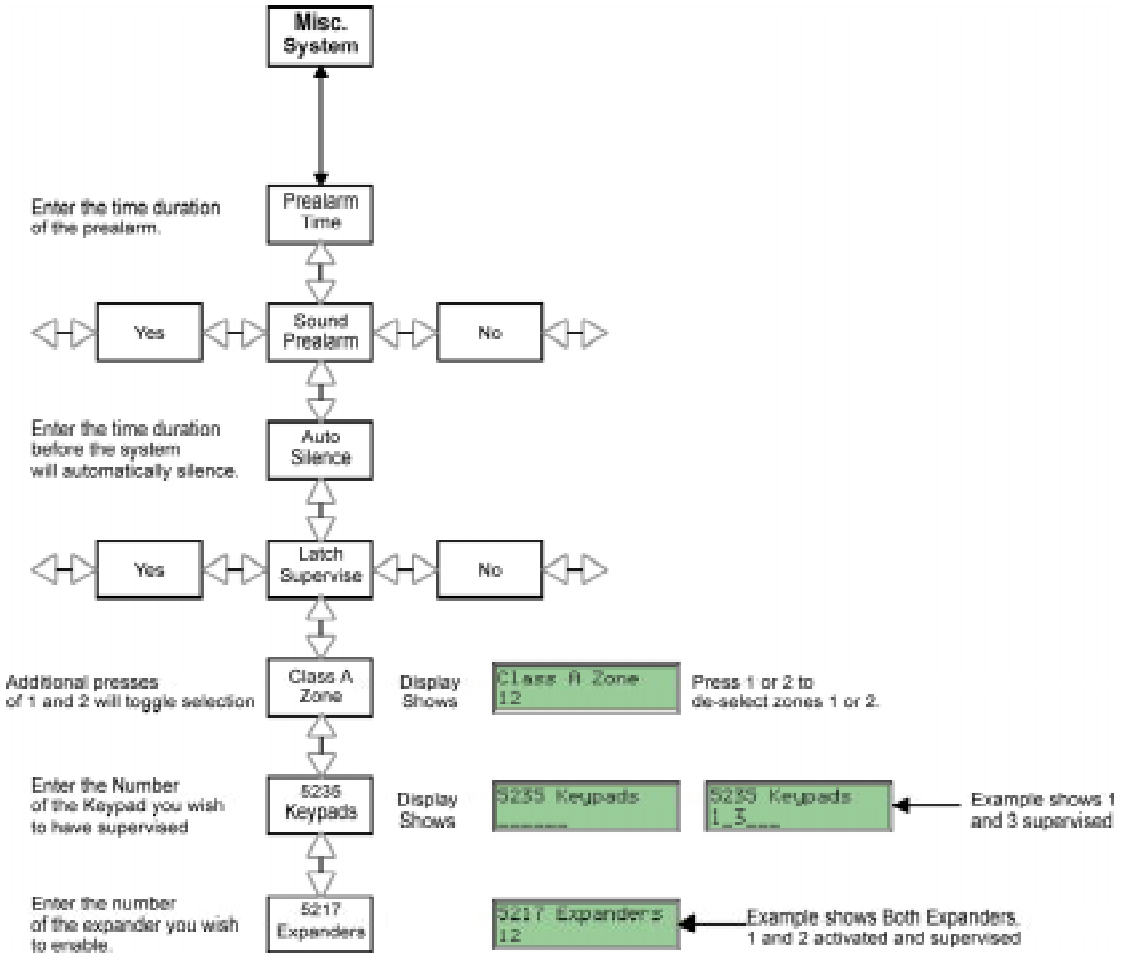


Figure 4-4 Miscellaneous System Options

4.2.3 NAC Cadence

Figure 4-5 illustrates, in more detail, the the programming flow when in the NAC cadence menu.

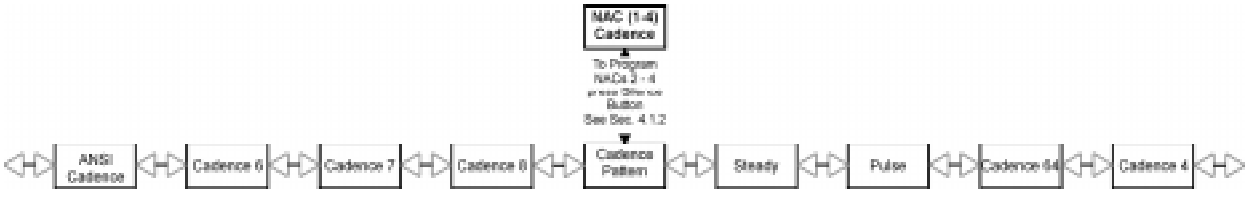


Figure 4-5 NAC Cadence

4.2.4 NAC Options

Figure 4-6 illustrates, in more detail, the the programming flow when in the NAC options menu.

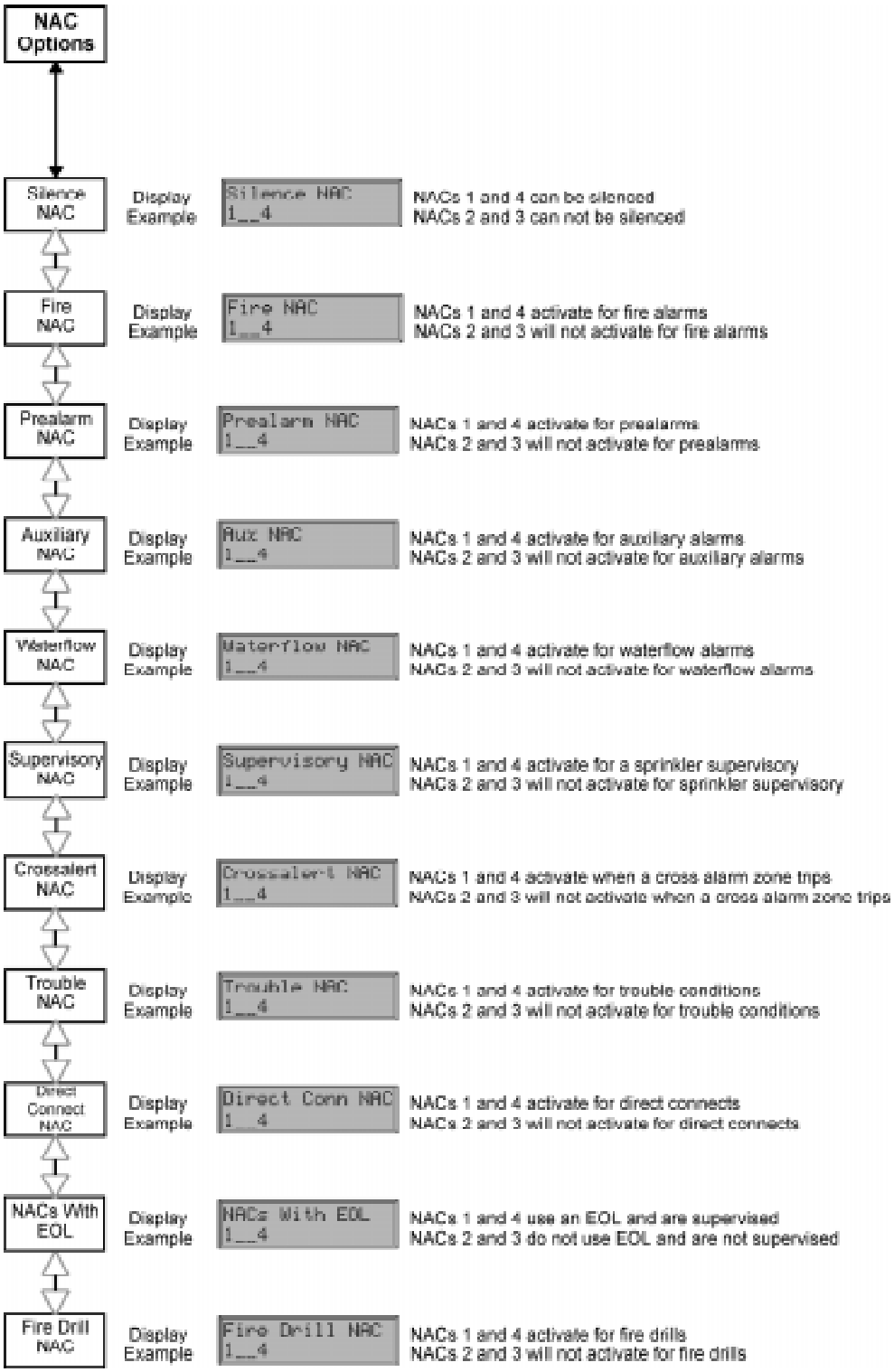


Figure 4-6 NAC Options Programming Menu

4.2.5 Relay Options

Figure 4-7 illustrates, in more detail, the the programming flow when in the relay options menu.

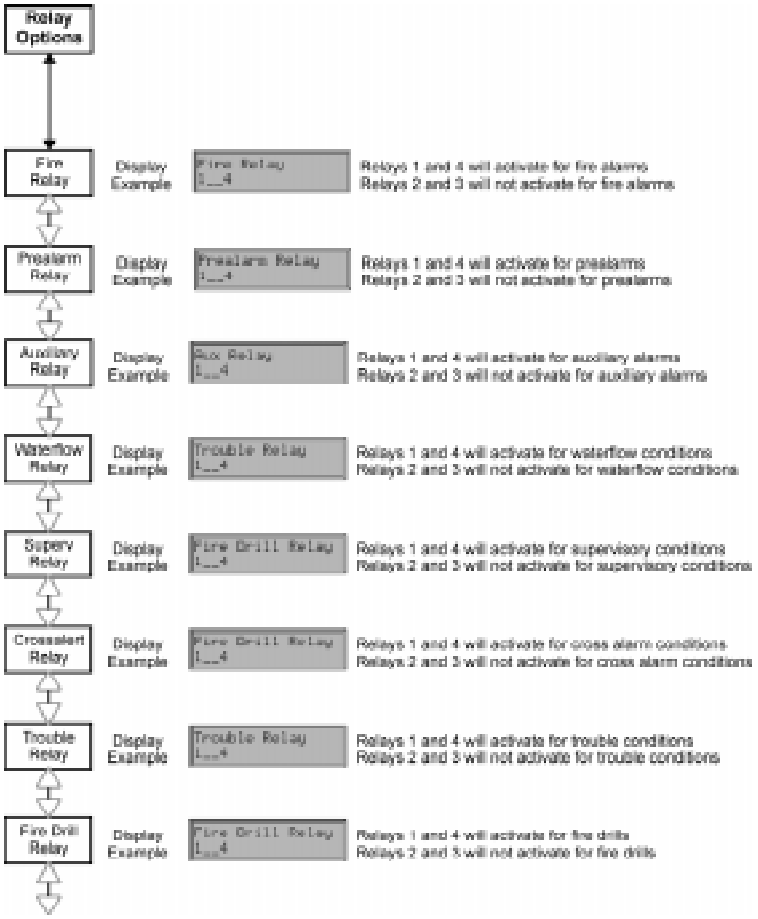


Figure 4-7 Relay Options Programming Menu

4.2.6 User Code

Figure 4-8 illustrates, in more detail, the the programming flow when in the user code menu.

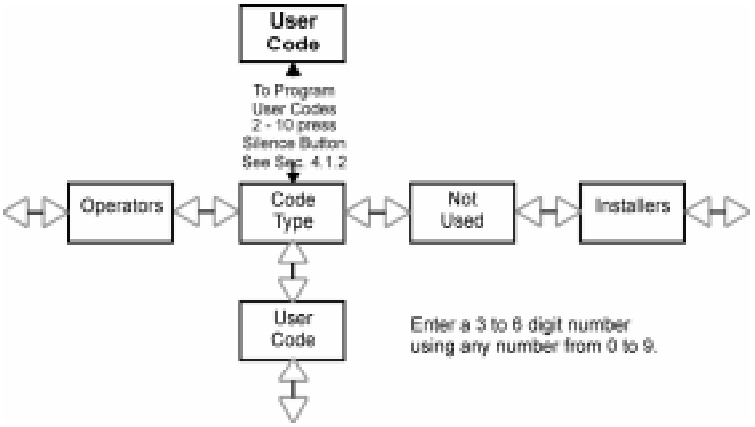


Figure 4-8 User Code Programming Menu

4.2.7 Account

Figure 4-9 illustrates, in more detail, the the programming flow when in the account menu.

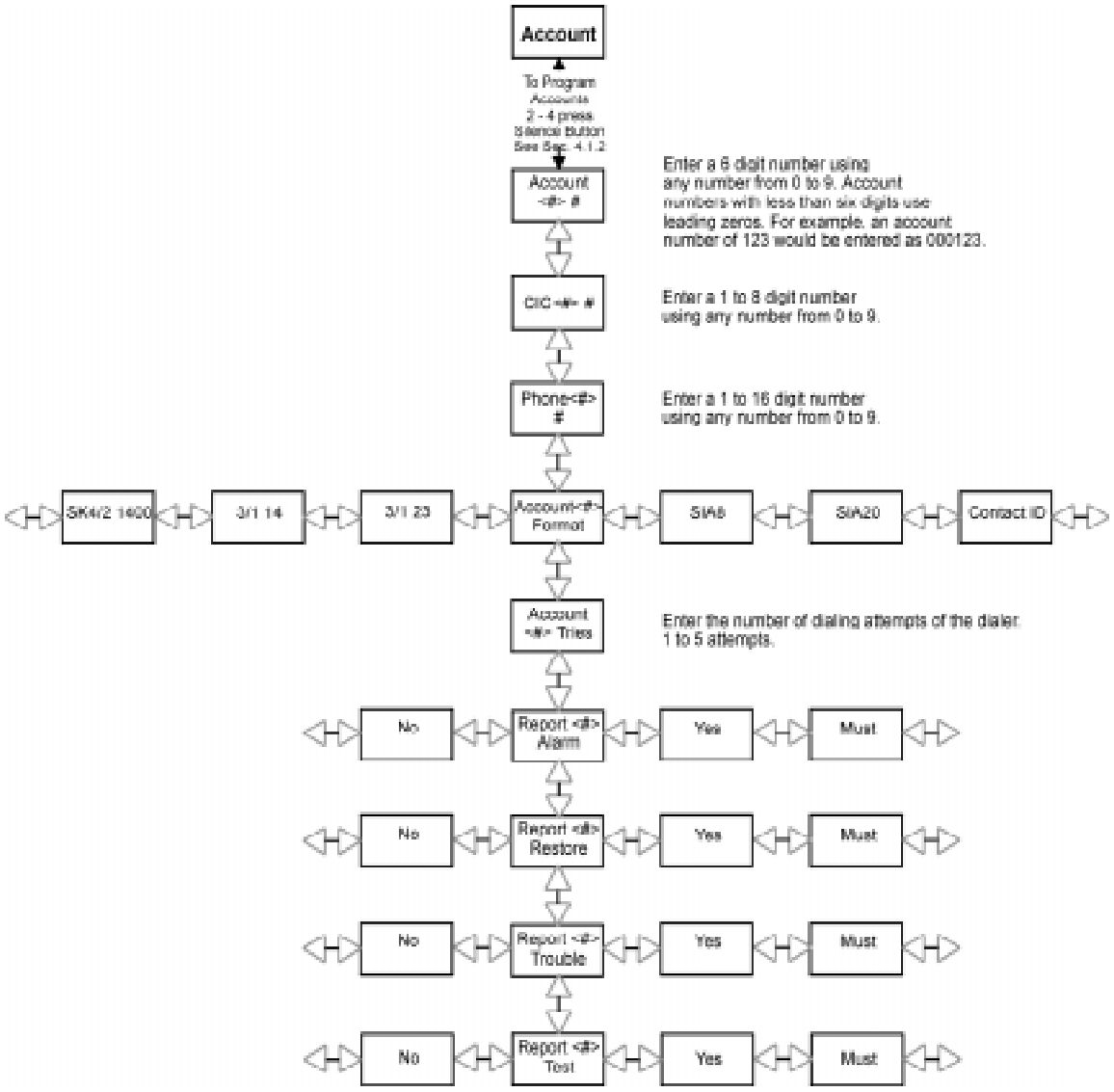


Figure 4-9 Account Programming Menu

Must	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 "Account Tries" value. When the dialer has exceeded the Account Tries 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 exceeds the a total of 10 attempts. When the Account Tries limit is exceeded, an Account Trouble condition is generated and a local trouble will sound.
Yes	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.
No	No events in this family will ever be reported to this account.

Note: *CIC and Phone number can also use special characters as described in Section 4.1.1.*

4.2.8 Computer Options

Figure 4-10 illustrates, in more detail, the the programming flow when in the computer options menu.

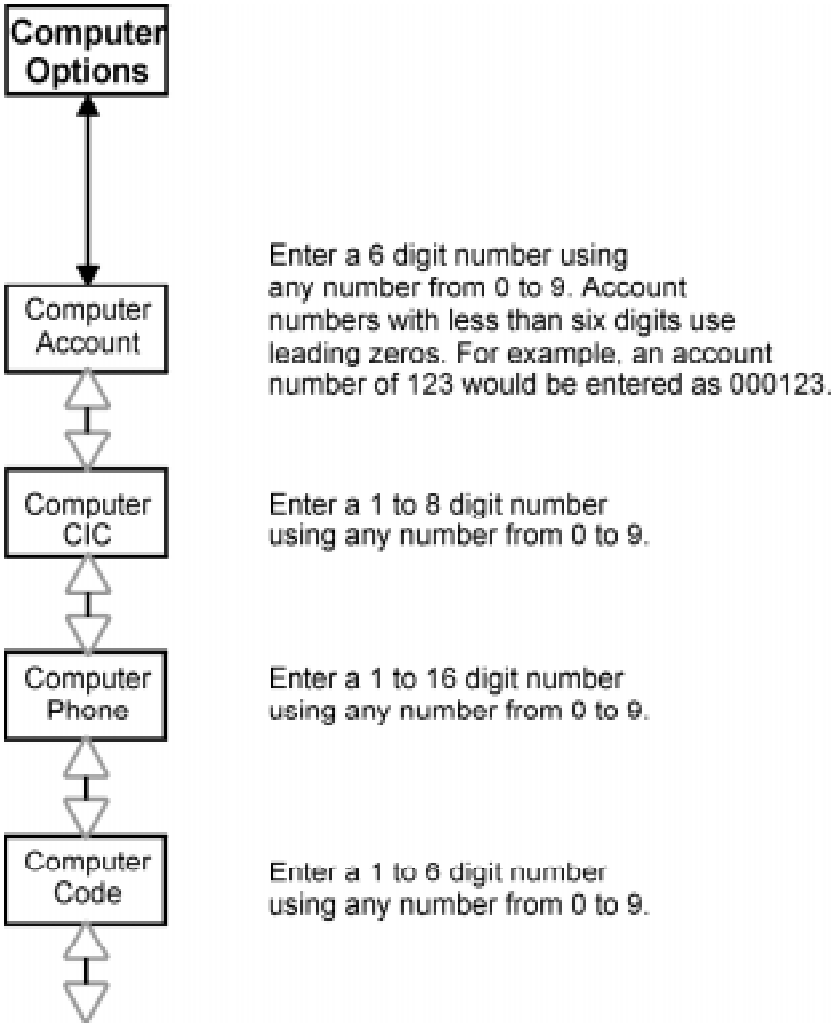


Figure 4-10 Computer Options Programming Menu

Note: *Computer CIC & Phone can also use special characters as described in Section 4.1.1.*

4.2.8.1 Computer Code

In order to remote download to a control, the computer code programmed in the panel, and the computer code used in the downloading software must match.

! Important !

Remote downloading can only be used for Central Station Signaling Services, if this system does not meet Central Station Signaling requirements, this feature must be set to zero.

4.2.9 Line Options

Figure 4-11 illustrates, in more detail, the the programming flow when in the line options menu.

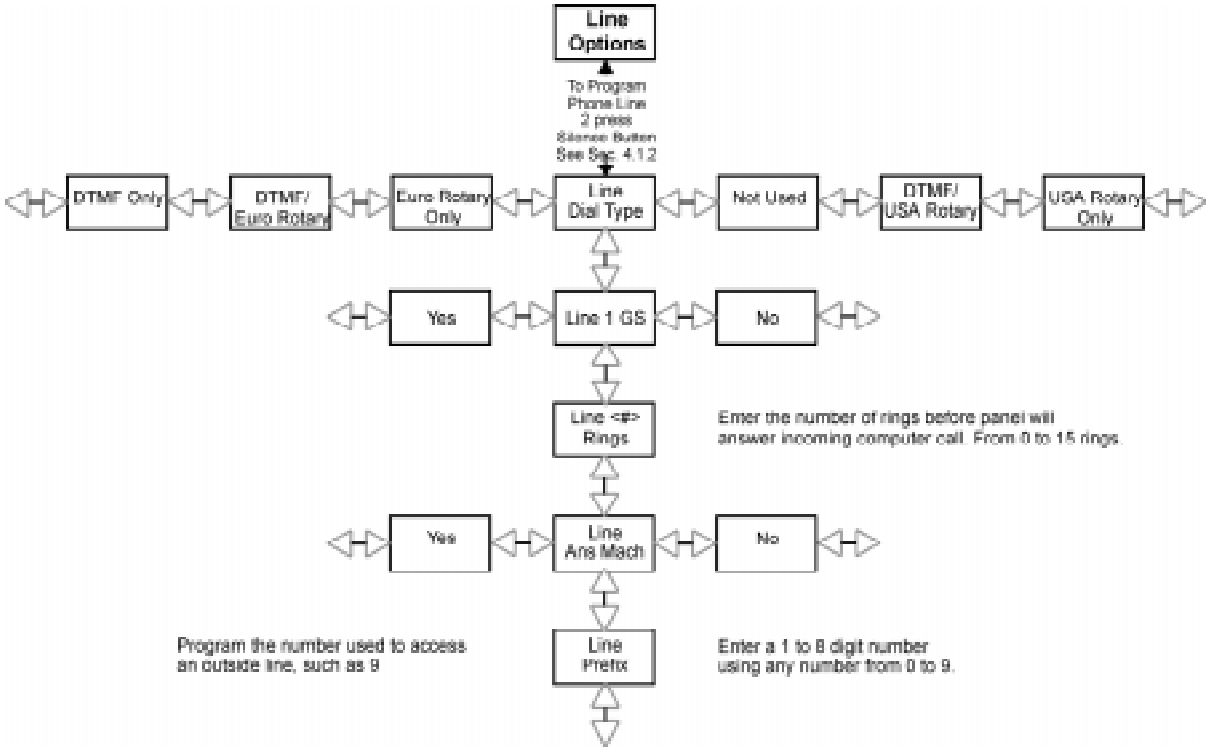


Figure 4-11 Line Options Programming Menu

Note: *Line prefix can also use special characters as described in Section 4.1.1.*

4.2.10 Misc Reporting

Figure 4-12 illustrates, in more detail, the the programming flow when in the miscellaneous reporting menu.

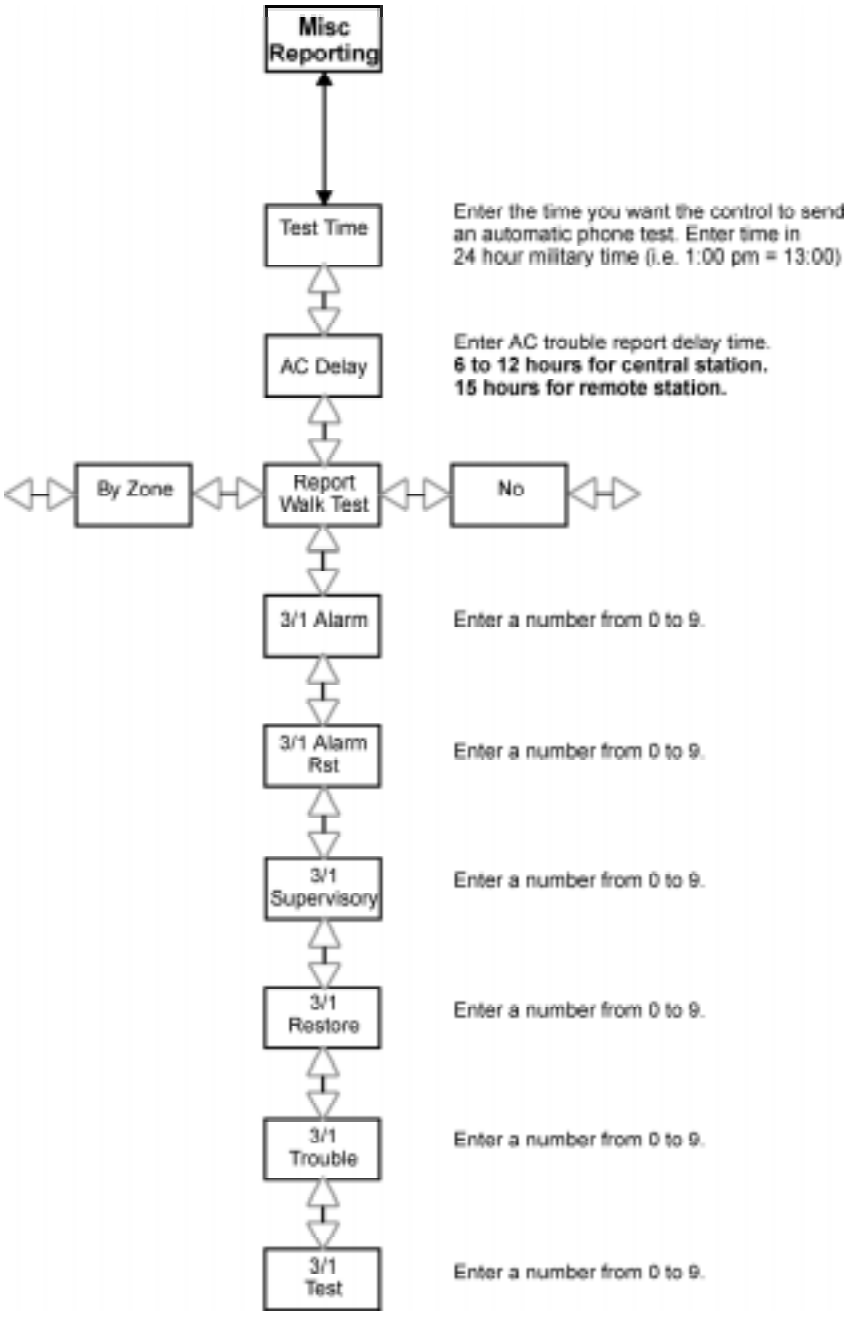


Figure 4-12 Misc Reporting Programming Menu

4.2.11 5280 Outputs

Figure 4-13 illustrates, in more detail, the the programming flow when in the SK-5280 outputs menu.

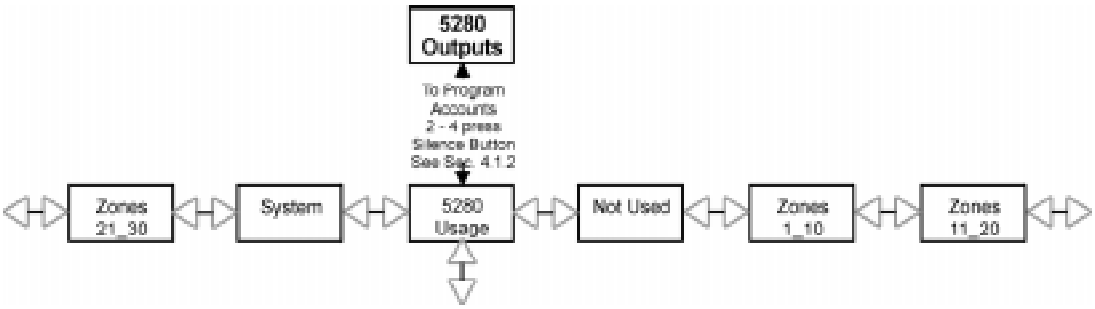


Figure 4-13 5280 Outputs Programming Menu

If Zones 1-10 is selected then the 5280 will output when alarms and troubles occur for zones 1 through 10. If Zones 11-20 is selected then 5280 will output when alarms and troubles occur for zones 11 through 20. If Zones 21-30 is selected then the 5280 will output when alarms and troubles occur for zones 21-30.

If System is selected then the 5280 will output as shown in Table 4-2 for the following system conditions:

Table 4-2: System Outputs

5280 Output Terminal	Output For:
A1	Fire Alarm
A2	Waterflow Alarm
A3	Supervisory
A4	Aux Alarm
A5	Prealarm
A6	Trouble
A7	Communications Fail
A8	Communicating
A9	Alarm Silenced
A10	Trouble Silenced
T1	Low AC
T2	Low Battery
T3	Relay 1 Active
T4	Relay 2 Active
T5	Relay 3 Active
T6	Relay 4 Active
T7	NAC 1 Active
T8	NAC 2 Active
T9	NAC 3 Active
T10	NAC 4 Active

4.3 Programming Options

Table 4-3 list all the programming options and the items that can be modified within those programming option menus.

Note: *Programming options that have a # in the Programming Options column have multiple programmable components. See Section 4.1.2 for additional information.*

Table 4-3: Programming Options

Programming Option	Menu Item	Choices	Default	Comments
Zone (1-30) # Options	Zone # Location			Programmable only through downloading software.
	Zone # Type	Not Used		
		Fire	✔	
		Waterflow		
		Supervisory		
		Undefined		
		Heat		
		Cold		
		Water		
		AC Delay		Will generate an AC Trouble for either an open or shorted input. The report to the receiver will be delayed until the AC Delay timer expires. (See Section 4.2.10 for AC Delay Time programming.)
		Ext. Reset		A shorted input will reset active alarms. This type of zone is local only. No troubles will be reported to the central station receiver.
		Ext. Silence		A shorted input will silence alarms and troubles. This type of zone is local only. No troubles will be reported to the central station receiver.
	Zone # Disable	No		Zone cannot be bypassed.
		Yes	✔	Zone can be bypassed.
	Zone # Response	1 Sec	✔	
		4 sec		
		16 sec		
		40 sec		
	Verify # Options	None	✔	
		Smoke		Smoke verification for zones with 2- or 4-wire detectors. Do not use any other type of device on this circuit if Smoke Verification is selected.
		Prealarm		Activated zone will start a prealarm timer that counts down from a user programmed value (see Section 4.2.2 for prealarm time programming). If the timer reaches zero before the panel is reset, a general alarm will then be sounded.
		Cross Alarm		Will not generate or report a general alarm until a second zone that is also programmed for cross alarm is activated. See Section 5.4.

Table 4-3: Programming Options

Programming Option	Menu Item	Choices	Default	Comments
Zone (1-30) # Options	Verify # Options (Cont.)	Enhanced Smoke		Smoke verification for zones with 2-wire detectors and contact type devices, such as pull stations, used on the same circuit. If the alarm current is greater than 78 mA, the smoke verification cycle will not occur.
	Zone # Auto Sil	No	✔	Alarm sounds for this zone cannot be automatically silenced.
		Yes		Alarm sounds for this zone can be automatically silenced.
	Zone # Man Sil	No		Alarm sounds for this zone cannot be manually silenced.
		Yes	✔	Alarm sounds for this zone can be manually silenced.
	Zone # NAC	_ _ _ _		Select the number of each NAC to operate with this zone in alarm.
	Zone # Relay	_ _ _ _		Select the number of each Relay to operate with this zone in alarm.
Misc System	Prealarm Time	Enter a value from 0 to 60	40 seconds	Enter time duration for prealarm verification.
	Sound Prealarm	No		No on-board or 5235 remote PZT sound for prealarms.
		Yes	✔	5235 and on-board PZTs will sound for prealarms.
	Auto Silence	Enter a value from 0 to 60	8 minutes	This feature selects the time in minutes in which the NAC will automatically silence. 0 = no automatic silence
	Latch Supervise	No	✔	Supervisory type zones will self restore.
		Yes		Supervisory type zones must be reset after any supervisories conditions.
	Class A Zone	1	Both selected as Class A.	
		2		
	5235 Keypads	_ _ _ _ _ _		Touchpad numbers that are selected here will be supervised.
	5217 Expanders	1		Enables zones 11-20.
		2		Enables zones 21-30
NAC (1-4) # Cadence		Steady		Additional cadence patterns are programmable only through down loading software.
		Pulse		
		Cadence 64		
		ANSI	All NACs	

Table 4-3: Programming Options

Programming Option	Menu Item	Choices	Default	Comments
NAC Options	Silence NAC	_ _ _ _	No NACs selected	If number is selected that NAC may be silenced.
	Fire NAC	1 2 3 4	All NACs selected	If number is selected that NAC will activate for any fire alarm.
	Prealarm NAC	_ _ _ _	No NACs selected	If number is selected that NAC will activate during the prealarm timer countdown.
	Aux NAC	_ _ _ _	No NACs selected	If number is selected that NAC will activate for undefined, heat, cold, and water alarms.
	Waterflow NAC	1 2 3 4	All NACs selected	If number is selected that NAC will activate for waterflow alarms.
	Supervisory NAC	_ _ _ _	No NACs selected	If number is selected that NAC will activate for sprinkler supervisories.
	Crossalert NAC	_ _ _ _	No NACs selected	If you have a single zone, that is programmed for crossalarm verification, in alarm, all NAC output select for this option will activate.
	Trouble NAC	_ _ _ _	No NACs selected	If number is selected that NAC will activate for any trouble condition.
	Direct Conn NAC	_ _ _ _	No NACs selected	for alarms when using the 5220 module for city box or polarity reversal. Corresponding relay number will automatically be selected.
	NACs With EOL	1 2 3 4	All NACs selected	If number is selected that NAC output must be supervised with an 4.7 kΩ UL listed EOL.
	Fire Drill NAC	1 2 3 4	All NACs selected	If number is selected that NAC will activate during a fire drill.
Relay Options	Fire Relay	1 _ _ _	Relay 1 selected	If a relay is selected, that relay will activate for fire alarm conditions.
	Prealarm Relay	_ _ _ _	No Relays selected	If a relay is selected, that relay will activate for prealarm conditions.
	Aux Relay	_ _ _ _	No Relays selected	If a relay is selected, that relay will activate for Auxiliary conditions.
	Waterflow Relay	_ _ _ _	No Relays selected	If a relay is selected, that relay will activate for waterflow conditions.
	Superv Relay	_ _ _ _	No Relays selected	If a relay is selected, that relay will activate for supervisory conditions.
	Crossalert Relay	_ _ _ _	No Relays selected	If a relay is selected, that relay will activate for crossalarm conditions.
	Trouble Relay	_ _ _ 4	4	Relay will be activated when no troubles exist and will deactivate when a trouble condition occurs.
	Fire Drill Relay	1 _ _ _	Relay 1 selected	If a relay is selected, that relay will activate for fire drills.
User (1-10) # Code	Code # Type	Installers	5208 and 123456	
		Operators	1111	
		Not Used		
	User # Code	Enter 3 to 6 digit number		Enter any value from 001 to 999999.

Table 4-3: Programming Options

Programming Option	Menu Item	Choices	Default	Comments
Account (1-4) #	Account <#> #	Enter a 6-digits number		Enter any value from 000001 to 999999. Account numbers with less than 6 digits must use leading zeros. For example, if the code 321 is used, it must be entered as 000321.
	CIC <#> #	Enter up to 8 digits		Carrier Identification Code is the prefix that needs to be dialed before a phone number to access a particular long distance carrier. Use special characters to add pauses, #, *, and "look for second dial tone" characters into the phone number. See Section 4.1.1 for special characters.
	Phone <#> #	Enter up to 16 digits		See Section 4.1.1 for special characters.
	Account # Format	SIA8		
		SIA20		
		Contact ID		
		SK4/2 1400		
		3/1 1400		
		3/1 2300		
	Account # Tries	1 to 5		
	Report # Alarm	No		Do not report alarm events.
		Yes		Can report alarm events.
		Must		Must report alarm events.
	Report # Restore	No		Do not report alarm restores.
		Yes		Can report alarm restores.
		Must		Must report alarm restores.
	Report # Trouble	No		Do not report sprinkler supervisory, system troubles, zone troubles, zone bypasses, and zone restores.
		Yes		Can report sprinkler supervisory, system troubles, zone troubles, zone bypasses, and zone restores.
		Must		Must report sprinkler supervisory, system troubles, zone troubles, zone bypasses, and zone restores.
	Report # Test	No		Do not report manual test, auto test, downloading pass , downloading fail, data lest, and walk test.
		Yes		Can report manual test, auto test, downloading pass , downloading fail, data lest, and walk test.
		Must		Must report manual test, auto test, downloading pass , downloading fail, data lest, and walk test.
Computer Options	Computer Account	Enter 6-digit number		Enter any value from 000001 to 999999. Account numbers with less than 6 digits must use leading zeros. For example, if the code 321 is used, it must be entered as 000321.
	Computer CIC	Up to 8 digits.		Carrier Identification Code is the prefix that needs to be dialed before a phone number to access a particular long distance carrier. Use special characters to add pauses, #, *, and "look for second dial tone" characters into the phone number. See Section 4.1.1 for special characters.
	Computer Phone	up to 16 digits		See Section 4.1.1 for special characters.
	Computer Code	1 to 6 digits	0	The computer code must match the coputer code in the remote downloding computer inorder to perform a remote download. See also Section 4.2.8.1.

Table 4-3: Programming Options

Programming Option	Menu Item	Choices	Default	Comments
Line (1-2) # Options	Line # Dial Type	Not Used	✔	This disables the phone line.
		DTMF/USA Rotary		Attempts 1 through 6 will be DTMF, then the dialer will alternate between Rotary and DTMF for attempts 7 through 10, Rotary Make/Break ratio is 40/60.
		USA Rotary Only		Attempts 1 through 10 will be Rotary only, with a Make/Break ratio of 40/60.
		DTMF Only		Attempts 1 through 10 will be DTMF only.
		DTMF/Euro Rotary		Attempts 1 through 6 will be DTMF, then the dialer will alternate between Rotary and DTMF for attempts 7 through 10, Rotary Make/Break ratio 33/67.
		Euro Rotary Only		Attempts 1 through 10 will be Rotary only, with a Make/Break ratio of 33/67.
	Line # GS	No	✔	Yes enables Ground Start phone functions. A ground start relay (Model 5211) is required if this feature is enabled (see Figure 3-2).
		Yes		
	Line # Rings	0 - 15	2	Number of rings before the panel will answer an incoming telephone call.
	Line # Ans Mach	No	✔	This feature is used in installations where an answering machine is on the same phone line that the control panel is on. The answering machine may interfere with a computer download.
		Yes		When enabled (Yes) the computer calls the control panel and the phone line rings twice, hangs up and calls again (within 10 to 60 seconds). When the control panel see two more rings on the phone line it will answer and acknowledge the calling computer.
	Line # Prefix	Up to 8 digits		See Section 4.1.1 for special characters.
Misc Reporting	Test Time	00:00 - 23:59	12:00	Selects the time of day the control will send an automatic test signal to a central station receiver.
	AC Delay	6 - 15 Hours	6	Selects the delay time (in hours) before the control will report an AC power loss to the central station.
	Report Walk Test	No	✔	No zone information will be reported just test begin and test end.
		By Zone		Test begin, test end, and all events in between will be reported to central station.
	*3/1 Alarm		0	Alarms for Fire, Waterflow, Undefined, Heat, Cold, and Water events.
	*3/1 Alarm Rst		2	Alarms restores for Fire, Waterflow, Undefined, Heat, Cold, and Water events.
	*3/1 Supervisory		6	Sprinkler supervisories.
	*3/1 Restore		7	Restore reports for Troubles, Supervisories, and unbypasses. The only exceptions are the restores listed as alarm restores.
	*3/1 Trouble		8	All system and zone troubles, and zone/NAC bypasses, and NACs troubles.
	*3/1 Test		9	All test events.

* *Event code for 3/1 and 4/2 reporting formats.*

Table 4-3: Programming Options

Programming Option	Menu Item	Choices	Default	Comments
5280 (1 - 8) # Outputs	5280 #	Not Used	✔	
		Zones 1_10		
		Zones 11_20		
		Zones 21_30		
		System		

Section 5
Operation

To operate the SK-5208 you can use either the on-board touchpad or the Model SK-5235 Remote Annunciator.

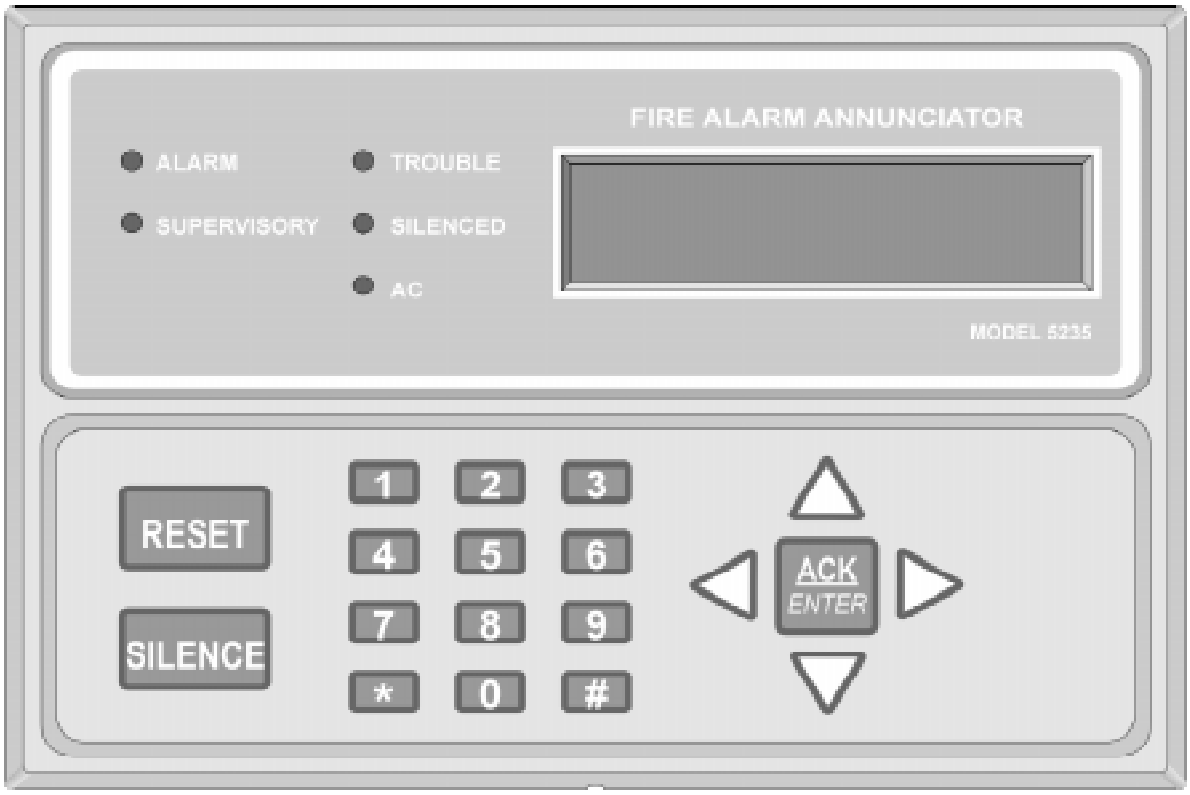


Figure 5-1 Model SK-5235 Remote Annunciator

5.1 On-board Touchpad and SK-5235 Operation

Basic operation of both the SK-5235 and the on-board touchpad is described in Table 5-1. Note that if no keys are pressed for 15 minutes while in program mode, the system will time out and resume normal operation.

Note: A valid code is required for all touchpad functions. In Table 5-1, code = any valid operating code.

Table 5-1: How to

How To	Do This			Comments
	Press	Display Message	Press	
Test the system	0 ACK ENTER	System Test Enter Code	Enter Code	The system will perform a display lamp test and a communication test.
Reset Alarms	1 ACK ENTER	Reset Alarm Enter Code	Enter Code	Resets system.
Clear History	2 ACK ENTER	Clear History Enter Code	Enter Installer Code	Clears event history of all events.
Reset the Dialer	3 ACK ENTER	Reset Dialer Enter Code	Enter Installer Code	Resets the dialer and aborts the call to central station.
Call Computer to Up/ Download	4 ACK ENTER	Call Computer Enter Code	Enter Installer Code	Will dial the programmed phone number for the computer to initiate an up or download.
Display History Events	5 ACK ENTER	History Events Enter Code	Enter Installer Code	Displays the panel history, which includes alarms, supervisories, troubles, reports, time and date changes, etc.
Show Status	6 ACK ENTER	Show Status Enter Code	Enter Code	View existing system status. List Alarms first, supervisories and then troubles.
Silence Troubles or Alarms	7 ACK ENTER or SILENCE	Silence Enter Code	Enter Code	
Set the Date	8 ACK ENTER	Set Date Enter Code	Enter Code	Enter 8 digits for the date. For example, to set the date 08/31/1999 enter 08311999. Press # to clear incorrect entries.
Set the Time	9 ACK ENTER	Set Time Enter Code	Enter Code	Enter the time in 24 hour increments. For example, 1:00 pm = 13:00.
Disable/Enable a Zone	Zone # + *	Disable Zone Enter Code	Enter Code	Repeat the process to enable the zone.
Disable/Enable NAC	1 0 NAC # *	Disable NAC Enter Code	Enter Code	Repeat the process to enable the NAC.
Conduct a Fire Drill	2 0 ACK ENTER	Fire Drill Enter Code	Enter Code	To End the Fire Drill press RESET then code.
Reset Detectors	2 1 ACK ENTER	Rst Smk Pwr Enter Code	Enter Code	Resets all smoke detector power.
Walk Test the System	2 2 ACK ENTER	Walk Test Enter Code	Enter Installer Code	To End the Walk Test press RESET.
Menu of Options	Press ▽ or △ to scroll trough list.		Enter Installer Code	To exit press ACK ENTER or wait 15 seconds.

5.2 Acknowledge Operation

Events can be acknowledged by pressing the 

button. No code is required to acknowledge events. The status LEDs (Alarm, Supervisory and Trouble) will flash when an un-acknowledged alarm, supervisory, or trouble condition exists.

After each event has been acknowledged its associated LED (Alarm, Supervisory, or Trouble LED) stop flashing and turn on steady. When viewing system status the LCD displays "Acked" for each individual event once has been acknowledged. The control panel piezo will silence after all alarms have been acknowledged.

Note: The control panel piezo will continue to sound for Supervisories and Troubles even after the event has been acknowledged. Supervisories and troubles will silence once the event is restored.

After the event is acknowledged an event is added to the event history buffer. Acknowledged events in the history buffer will be preceded with an asterisk "*".

5.3 LED Indicators

Five light emitting diodes (LEDs) appear in the SK-5208 built in annunciator and remote annunciator. The chart below explains the meaning of these LEDs.

Table 5-2

LED	Status	Condition
ALARM (red)	Off	Normal condition
	On	System in alarm and all alarms have been acknowledged..
	Flashing	LED will flash when a alarm condition exists that has not been acknowledged.
SUPERVISORY (yellow)	Off	Normal condition
	On	If a supervisory condition exist on the system.
	Flashing	LED will flash when a supervisory condition exists that has not been acknowledged.
TROUBLE (yellow)	Off	Normal condition
	On	Trouble condition exists
	Flashing	LED will flash when a trouble condition exists that has not been acknowledged.
SILENCED (yellow)	Off	Normal condition.
	On	Alarm or trouble condition has been silenced but condition still exists.
AC (green)	On	Panel is running on AC (normal condition); standby battery fully charged.
	Off	Panel has lost all power.
	Flashing	Panel is running on battery power only or AC power only.

5.4 Cross Alarm Operation

Cross alarm is an optional false alarm prevention feature. If an alarm occurs in a zone that has been programmed as cross alarm, it will not be reported unless a cross alarm occurs in another zone zone programmed for cross alarm. Cross alarm works as follow; if the first detector, which is programmed for cross alarm, trips only the local annunciator's piezo will sound. (Note: the local annunciator will continue to sound until it is silenced or until another cross alarm zone is tripped.) When a second detector trips, which is programmed for cross alarm, then the programmed notification circuits will activate. If the control has account information programmed, then a report will be generated to the central station.

Do not mix cross alarming zones with smoke verification zones. There must be at least two automatic detection devices in each protected space. See Section 4.2.1 for zone option programming.

Figure 5-2 illustrates how cross alarming may be programmed.

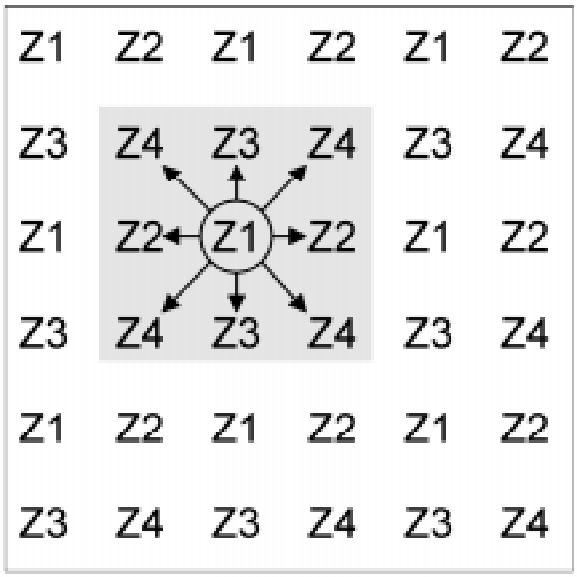


Figure 5-2 Example Showing Smoke Detector Cross Alarm Application

5.5 System Testing

This section describes operation of fire drills, zone testing, and the 24-hour automatic test.

5.5.1 Fire Drills

Fire drills can be run from either the on-board touchpad or the Model SK-5235 Remote Annunciator. To initiate a fire drill, press 2 0 ACK + Code. The system will sound an alarm and report a fire test. To end the fire drill, press RESET + Code.

5.5.2 Walk Test

The walk test is designed to be used for on-site testing only.

To enter walk test mode, press 2 2 ACK + Installer Code.

Select the following test parameters:

Test Feature	Enable or Disable	Comments
Use Verify:	Yes or No	If Yes is selected then this option will be enabled during walk test. If No is selected this option will be disabled during walk test.
Mapped Rlys:	Yes or No	
Mapped NACs:	Yes or No	

The LCD will indicate that you are in walk test mode. When a zone is tripped, the SK-5208 will activate the bell outputs for approximately six second and will cycle smoke power off and on for the programmed time interval. When smoke power is restored, there is a two-second power up delay before the zone will respond to additional test inputs.

The system will time out and resume normal operation in 30 minutes if no keys are pressed or no zones are tripped during the walk test.

To exit walk test mode, press RESET.

5.5.3 Automatic Self Test

The Model SK-5208 lets you select the time of day that the 24-hour automatic test signal will be sent to the central station. See Sections 4.2.10 and 4.3 for additional information on automatic test time.

5.5.4 Watchdog Circuit

During normal operation, the control microprocessor of the SK-5208 is constantly running programs to check inputs and carry out other routine functions. If the program should ever stop running, the watchdog circuit will automatically detect this and attempt to resume normal operation by resetting the microprocessors. Each time the watchdog circuit initiates a reset signal, it will also sound the audible trouble signal for approximately four seconds.

Section 6
Reporting

The SK-5208 can transmit information in four different formats. This section describes the four basic reporting formats of the SK-5208 and the codes that they send to a central station receiver. Of these four formats some of the formats offer a more specific selection for that format. For example, you can select a 3/1 format that requires a 1400 or 2300 Hz handshake, or SIA format that can handle 8 or 20 events per call. Selecting the correct format depends on the type of receiver that will receive calls from the SK-5208.

The SK-5208 DACT is compatible with Silent Knight Model 9800 and 9500 Digital Receivers.

6.1 Reporting Formats

This section gives a description of each of the SK-5208 reporting formats. Refer to Table 6-1.

Table 6-1: Reporting Formats Descriptions

Format Name		Description
Category Name	**Programming Name**	
3/1	3/1 14	Old format, transmits a 3-digit account number and a 1-digit event code. Transmissions are acknowledged at 1400 Hz.
	3/1 23	Old format, transmits a 3-digit account number and a 1-digit event code. Transmissions are acknowledged at 2300 Hz.
4/2	SK4/2 1400	Tone burst format, transmits a 4-digit account code and 2-digit event code. Transmissions are acknowledged at 1400 Hz.
SIA	SIA8	Security Industry Association standard communication format which send a maximum of 8 events per call.
	SIA20	Security Industry Association standard communication format which send a maximum of 20 events per call. Up to a 6-digit account number.
Contact ID	Contact ID	Ademco Contact ID format. DTMF (Dual Tone Multiple Frequency) format. Send a 4-digit account number. Transmission is acknowledged at both 1400 and 2300 Hz.

6.2 Reporting Codes

Table 6-2 list the events sent by the SK-5208 and the code that is sent for that event by the type of reporting format used.

Note: Codes under in the SK4/2 and 3/1 1400 & 2300 column are the codes programmed for 3/1 reporting formats in Misc Reporting. See Section 4.2.10 for Misc. Reporting options.

Table 6-2: Event and Reporting Code by Format

Event	SIA8 & 20	SK4/2	3/1 1400 &2300	Contact ID
AC Trouble	AT0	T0	Trouble Code	1 301 000
AC Restore	AR0	R0	Restore Code	3 301 000
Annunciator Trouble 1-7	ET17 - ET23	T7 - T3	Trouble Code	1 330 017 - 1 330 023
Annunciator Restore 1-7	ER17 - ER23	R7 - R3	Restore Code	3 330 017 - 3 330 023
Bell Trouble 1-4	ET32-ET35	T2 - T5	Trouble Code	1 320 032 - 1 320 035
Bell Restore 1-4	ER32-ET35	R2 - R5	Restore Code	3 320 032 - 3 320 035
Smoke (Loop) Power Trouble	ET36	T6	Trouble Code	1 320 036
Smoke (Loop) Power Restore	ET36	R6	Restore Code	3 320 036
Aux Power Trouble	ET37	T7	Trouble Code	1 330 037
Aux Power Restore	ER37	R7	Restore Code	3 330 037
Earth Ground Trouble	ET38	T8	Trouble Code	1 330 038
Earth Ground Restore	ER38	R8	Restore Code	3 330 038
Keypad Power Trouble	ET40	T0	Trouble Code	1 330 040
Keypad Power Trouble	ET40	R0	Restore Code	3 330 040
5217 Expander Trouble	ET51-ET52	T1 - T2	Trouble Code	1 330 051 - 1 330 052
5217 Expander Restore	ER51-ER52	R1 - R2	Restore Code	3 330 051 - 3 330 052
5280 Expander Trouble	ET61-ET68	T1 - T8	Trouble Code	1-330 061 - 1 330 068
5280 Expander Restore	ER61-ER68	R1 - R8	Restore Code	3-330 061 - 3 330 068
NAC Bypass	ET101-ET104	T1 - T4	Trouble Code	1-330 101 - 1 330 104
NAC Restore	ER101-ER104	R1 - R4	Restore Code	3-330 101 - 3 330 104
Fire Alarm 1-30	FA1 - FA30	A1 - A0	Alarm Code	1 110 001 - 1 110 030
Fire Bypass	FB1-FB30	T1 - T0	Trouble Code	1 571 001 - 1 571 030
Fire Alarm Restore 1-30	FH1 - FH30	AR1 - AR0	Alarm Restore Code	3 110 001 - 3 110 030
Fire Test Begin	FI1 - FI10	Test 0	Test Code	1 604 000
Fire Trouble Restore 1-30	FJ1 - FJ30	R1 - R0	Restore Code	3 373 001 - 3 373 030
Fire Test End	FK0	Test 0	Test Code	1 604 000
Fire Restore	FR1-FR30	R1 - R0	Restore Code	3 110 001 - 3 110 030
Fire Trouble 1-30	FT1 - FT30	T1 - T0	Trouble Code	1 373 001 - 1 373 030
Fire Unbypass	FU1-FU30	R1 - R9	Restore Code	3 571 011 - 3 571 030
Heat Alarm	KA1-KA30	A1 - A9	Alarm Code	1 114 001 - 1 114 030
Heat Bypass	KB1-KB30	T1 - T0	Trouble Code	1 570 011 - 1 570 030
Heat Alarm Restore	KH1-KH30	AR1 - AR0	Alarm Restore Code	3 114 001 - 3 114 030

Table 6-2: Event and Reporting Code by Format

Event	SIA8 & 20	SK4/2	3/1 1400 &2300	Contact ID
Heat Trouble	KT1-KT30	T1 - T0	Trouble Code	1 370 001 - 1 370 030
Heat Trouble Restore	KJ1-KJ30	R1 - R0	Restore Code	3 370 001 - 3 370 030
Heat Restoral	KR1-KR30	R1 - R0	Restore Code	3 370 001 - 3 370 030
Heat Unbypass	KU1-KU30	R1 - R0	Restore Code	3 570 001 - 3 570 030
Trouble Phone Line #1	LT1	T1	Trouble Code	1 351 000
Restore Phone Line #1	LR1	R1	Restore Code	3 351 000
Trouble Phone Line #2	LT2	T2	Trouble Code	1 352 000
Restore Phone Line #2	LR2	R2	Restore Code	3 352 000
Automatic Test	*RP0 or RP99 (See * Note)	*Test 0 or Test 9	Test Code	*1 602 000 or 1 602 099
Power Up	RR0	T0	Test Code	1 305 000
Downloading Passed	RS0	Test 0	Test Code	1 412 000
Data Lost	RT0	Test 0	Trouble Code	1 354 000
Downloading Failed	RU0	Test 0	Test Code	1 413 000
Manual Test	RX1-RX10	Test 1 - Test 0	Test Code	1 601 001 - 1 601 010
Sprinkler Alarm	SA1-SA30	A1 - A0	Alarm code	1 113 001 - 1 113 030
Sprinkler Bypass	SB1-SB30	T1 - T0	Trouble Code	1 570 001 - 1 570 030
Sprinkler Alarm Restore	SH1-SH30	AR1 - AR0	Alarm Restore Code	3 113 001 - 3 113 030
Sprinkler Trouble Restore 1-30	SJ1 - SJ30	R1 - R0	Restore Code	3 370 001 - 3 370 030
Sprinkler Supervisory Restore 1-30	SR1 - SR30	R1 - R0	Restore Code	3 203 001 - 3 203 030
Sprinkler Supervisory 1-30	SS1 - SS30	S1 - S0	Supervisory Code	1 203 001 - 1 203 030
Sprinkler Trouble 1-30	ST1 - ST30	T1 - T0	Trouble Code	1 370 001 - 1 370 030
Sprinkler Unbypass 1-30	SU1-SU30	R1 - R0	Restore Code	3 570 001 - 3 570 030
Untyped Zone Alarm 1-30	UA1-UA30	A1 - A0	Alarm Code	1 140 001 - 1 140 030
Untyped Bypass 1-30	UB1-UB30	T1 - T0	Trouble Code	1 570 001 - 1 570 030
Untyped Alarm Restore 1-30	UH1-UH30	AR1 - AR9	Alarm Restore Code	3 140 001 - 3 140 030
Untyped Trouble Restore 1-30	UJ1-UJ30	R1 - R0	Restore Code	3 370 001 - 3 370 030
Untyped Zone Trouble 1-30	UT1-UT30	T1 - T0	Trouble Code	1 370 001 - 1 370 030
Untyped Zone Unbypass 1-30	UU1-UU30	R1 - R0	Restore Code	3 570 001 - 3 570 030
Water Alarm 1-30	WA1-WA30	A1 - A0	Alarm Code	1 154 001 - 1 154 030
Water Bypass 1-30	WB1-WB30	T1 - T0	Trouble Code	1 570 001 - 1 570 030
Water Alarm Restore 1-30	WH1-WH30	AR1 - AR0	Alarm Restore Code	3 154 001 - 3 154 030
Water Trouble Restore 1-30	WJ1-WJ30	R1 - R0	Restore Code	3 370 001 - 3 370 030
Water Trouble 1-30	WT1-WT30	T1 - T0	Trouble Code	1 370 001 - 1 370 030
Water Unbypass 1-30	WU1-WU30	R1 - R0	Restore Code	3 570 001 - 3 570 030
Communications Failure Line #1	YC1	T1	Trouble Code	1 354 001

Table 6-2: Event and Reporting Code by Format

Event	SIA8 & 20	SK4/2	3/1 1400 &2300	Contact ID
Communications Restore Line #1	YK1	R1	Restore Code	3 354 001
Communications Failure Line #2	YC2	T2	Trouble Code	1 354 002
Communications Restore Line #2	YK2	R2	Restore Code	3 354 002
System Battery Restore	YR0	R0	Restore Code	3 302 000
System Battery Trouble	YT0	T0	Trouble Code	1 302 000
Cold Alarm 1-30	ZA1-ZA30	A1 - A0	Alarm Code	1 153 001 - 1 153 030
Cold Bypass 1-30	ZB1-ZB30	T1 - T0	Trouble Code	1 570 001 - 1 570 030
Cold Alarm Restore 1-30	ZH1-ZH30	AR1 - AR0	Alarm Restore Code	3 153 001 - 3 153 030
Cold Trouble Restore 1-30	ZJ1-ZJ30	R1 - R0	Restore Code	2 370 001 - 3 370 030
Cold Trouble 1-30	ZT1-ZT30	T1 - T0	Trouble Code	1 370 001 - 1 370 030
Cold Unbypass 1-30	ZU1-ZU30	R1 - R0	Restore Code	3 570 001 - 3 570 030

* ***Note:*** *99 replaces 0 (or 9 with 0 for SK4/2 format) when off normal conditions exists on the control panel when the automatic test is sent to the central station receiver. For example, if a trouble condition exists on the control panel when the control sends an automatic phone test.*

Section 7
Troubleshooting

This section of the manual contains information that can be used to isolate and correct installation problems encountered in the field.

7.1 System Error Messages

Table 7-1 contains a list of possible error messages along with their meaning and possible solution.

Table 7-1: Error Messages

Error Message	Description	Solution
FLASH Defaulted	On power up the SK-5208 will check the flash for an “option record”.	If an “option record” is not found during power up, one will be created and the display will indicate “Flash Defaulted” for approximately one second.
Earth Fault Trb	The SK-5208 has built-in earth ground fault detection that will detect an earth ground fault connection between earth and any panel terminal. When an earth ground fault is detected the SK-5208 display will indicate Earth Fault Trb. The SK-5208 will also add two events to the history buffer Expand Trb 38 and Earth ###. The Earth ### is a debug event number between 0 and 255.	See Section 7.2 for earth ground fault troubleshooting procedure.
Key BUS Trouble	This message will display when communication is lost between the 5235 and the control panel.	Check for a short or an open on either the SKI or SKO terminals.
NAC # Trb	This message indicates that a short or an open is detected on a Notification Appliance Circuit. The # indicates which NAC has the trouble.	Check for a short or an open on the indicated NAC wire run.
Remote # Trb	Each 5235 can be programmed to be supervised (see Section 4.2.2). If the SK-5208 is unable to communicate with the 5235 it will indicate this message. # indicates the ID number of the faulted touchpad.	Check the wire connections between the indicated touchpad and the control panel.
5217 Trb #	If the SK-5208 is unable to communicate with a 5217 expander it will display this message. The # indicates the ID number of the expander in trouble.	Check all wire connections between the control panel and the 5217 expander in trouble.
5280 Trb #	If the control panel is unable to communicate with a SK-5280 Status Display Module this message will be displayed. # indicates the ID number of the SK-5280 in trouble.	Check all wire connections between the control panel and the SK-5280 in trouble.

Table 7-1: Error Messages

Error Message	Description	Solution
Smk Pwr Trb	Smoke power terminals 11, 14, 17, and 20 are supervised. If the voltage between circuit ground (terminals 9, 22, 26, 33) and loop power is less than 20VDC this message will display.	This may occur when the maximum current draw for the initiation circuit is exceeded. See Section 3.11 for initiation circuit current requirements.
5235 Pwr Trb	The power terminal for the 5235 is supervised and a trouble indication will occur if the voltage between circuit ground and terminal 32 drops below 20 VDC.	This may occur if the maximum current rating (1Amp) for this circuit is exceeded.
Aux Pwr Trb	the SBUS power terminal (27) is supervised and will display this message when the voltage between SBUS power ad circuit ground drops below 20 VDC.	This may occur if the maximum current rating (1Amp) for this circuit is exceeded.
AC Trb	This message is displayed when the AC voltage drops below 98 VAC.	Check the AC power connection. This report will be sent to the central station after the AC delay time has expired. See Section 4.2.10 to program AC delay time.
Battery Trb	This message will be displayed when the battery voltage drops below 20.4 VDC under load. the control panel performs a load test every minute.	Check battery connection. Verify that the control panel has AC power.
Ph Line # Trb	This message is displayed when the phone line voltage drops below 2 VDC or can not supply a minimum of 4 mA of current. The # indicates which phone line is in trouble.	
Data Lost	This event will be reported to the central station if the reporting buffer fills. This may occur if more that 24 events need to be reported. When additional event needed to be added to the report buffer and it is already full the oldest event will be overwritten and the data lost event will be added.	
Com # Trb	The SK-5208 must use alternating phone lines (according to NFPA) when reporting auto tests and manual tests. If the control panel can not communicate using the selected phone line, the Com # Trb message will be displayed. The # indicates which line had the trouble.	The trouble condition will clear after the control panel is successful in communicating using the phone line.

7.2 Earth Ground Fault Troubleshooting

An Earth Fault Trb indicates that the panel has detected a short between any terminal on the panel and earth ground. To determine the location of the short, place a DC volt meter with ground on terminal 22 (circuit ground) and positive on any of the screws that secure the circuit board to the cabinet (earth ground).

A typical meter reading should indicate a voltage of approximately 10.85 volts DC. Any reading lower than 8.5 volts DC or higher than 13.1 volts DC will put the panel into Earth Fault Trb (see also Table 7-1). Remove and leave off field wiring from the panel until the meter reads in the normal range (about 10.85 VDC).

When an Earth Fault Trb is indicated at the touchpad two messages will be added to the event history buffer, Expand Trb 38 and Earth ###. This information can be very helpful to identify where an earth ground fault exists in an intermittent earth ground situation.

If the Earth ### is lower than 74 this typically would indicate an earth ground short to a low voltage source (8.5 VDC or less). For example, any circuit ground terminal or zone input terminal.

If the Earth ### is higher than 114 this typically would indicate an earth ground to a higher voltage source (13.1 VDC or higher). For example, any circuit power, standby battery, phone lines, or AC power.

Appendix A
Compatible Devices

This section of the manual lists devices (smoke detectors and notification appliances) that are compatible with the SK-5208. Contact Silent Knight if you have a question about whether a device not listed here is compatible.

A.1 Smoke Detectors

This section of the manual contains information about smoke detectors that are compatible with the SK-5208.

	SK-5208	SK-5217
Identifier	24J	24J
Maximum Voltage	27.4 VDC	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.

Control unit Smoke Reset Time must be programmed for a number greater than or equal to the maximum reset time of the smoke detector.

Two-Wire Smoke Detectors

The table below lists two-wire smoke detectors that are compatible with the SK-5208 and SK-5217 zone expander. The table is organized by manufacturer. The columns show the number of detectors per loop that can be used.

Manufacturer	Enhanced Mode Compatible	Model Name or Number *(Base model name or number in parentheses.)*	Compatibility ID		# per Loop
			Head	Base	
Apollo		55000-150, 151, 152, 153 (45681-200, 220, 230, 231, 232)	55000-150, 151, 152, 153	45681-200, 220, 230, 231, 323	40
	✓	55000-250 (45681-200, 220, 230, 231, 232)	55000-350	45681-200, 230, 231,	40
	✓	55000-350 (45681-200, 220, 230, 231, 232)	55000-250	45681-200, 220, 230, 231, 232	25
		55000-380 (45681-200, 220, 230, 231, 232)	55000-380	45681-200, 220, 230, 231, 232	15
Detection Systems		DS200 (MB200-2W)	B	A	24
		DS200HD (MB200-2W)	B	A	24
		DS250 (MB2W or MB2WL)	B	A	18
		DS250HD (MB2W or MB2WL)	B	A	18
		DS250TH (MB2W or MB2WL)	B	A	18
ESL	✓	425 (S10)	N/A	S00	30
	✓	425C (S10)	N/A	S00	30
	✓	425CR (S10)	N/A	S00	30
	✓	425CRT (S10)	N/A	S00	30
	✓	425CT (S10)	N/A	S00	30
	✓	429C (S10A)	N/A	S10	30
	✓	429CRT (S11A)	N/A	S11	30
	✓	429CST (S11A)	N/A	S11	30
	✓	429CT (S10A)	N/A	S10	30
	✓	521B	N/A	S10A/S11A	40
	✓	521BXT	N/A	S10A/S11A	40
	✓	609U01-11	S10	S00	40
	✓	609U02-11	S10	S00/S03	40
	✓	611U (601U or 602U)	S10	S00/S03	40
	✓	611UD (601U or 602U)	S10	S00/S03	40
	✓	611UT (601U or 602U)	S10	S00/S03	40
	✓	612U (601U or 602U)	S10	S00/S03	40
	✓	612UD (601U or 602U)	S10	S00/S03	40
	✓	711U (701E or 701U)	N/A	S10A	25
	✓	712U (701E or 701U)	N/A	S10A	25
	✓	713-5U (702E or 701U)	N/A	S10A	25
	✓	713-6U (702E or 701U)	N/A	S10A	25
	✓	721-U (S10A)	N/A	S10A	30
	✓	721-UT (S10A)	N/A	S10A	30

Manufacturer	Enhanced Mode Compatible	Model Name or Number *(Base model name or number in parentheses.)*	Compatibility ID		# per Loop
			Head	Base	
FCI		301I (301B)	A	A	20
		301IL (301BL/SS B401BH)	N/A	N/A	20
		301P (301B)	A	N/A	20
		301PL (301BL/SS B401BH)	A	N/A	20
		301PT (301B)	A	N/A	20
		301P (301DH-2)	A	N/A	20
		301I-DH (301DH-2)	A	N/A	20
		2100S	A	N/A	20
		2100TS	A	N/A	20
		2100TR	A	N/A	20
		2100AT	A	N/A	20
		SBS-1101	A	N/A	20
		SBS-1201	A	N/A	20
		SBS-1201T	N/A	N/A	20
		PSD-7155 (2WB/2WRLT/2WRB)	P55FE1	FE51A	40
		PSD-7155 (CPD-001/-002/-003/-005)	P56FE1	FE51A	40
		PSD-7156 (2WB/2WRLT/2WRB)	P55FE1	FE01A	40
		PSD-7156 (CPD-001/-002/-003/-005)	P56FE1	FE01A	40
		CPD-7051 (2WB/2WRLT/2WRB)	CPD7051	FE51A	40
		CPD-7051 (CPD-001/-002/-003/-005)	CPD7051	FE51A	40
		DH100P (Duct Housing)	N/A	N/A	40
Hochiki		SIH-24F (HS-224D or HSB-224)	N/A	N/A	25
		SLK-12	N/A	N/A	25
		SLK-24F (HS-224D)	N/A	N/A	25
		SLK-24FH (HS-224D)	N/A	N/A	25
		(HS224L) Heat Detector base	N/A	N/A	30
		SLR-8358B	N/A	N/A	25
Kidde-Fenwal		PSD-7155 (70-201000-001)	P55FE1, P56FE1	FE51A, FE01A	40
		PSD-7156 (70-201000-001)	P56FE1	FE01A	40
		CPD-7051 (70-201000-001)	CPD 7051, I51FE1	FE51A, FE01A	40

Manufacturer	Enhanced Mode Compatible	Model Name or Number *(Base model name or number in parentheses.)*	Compatibility ID		# per Loop
			Head	Base	
System Sensor		1100T			20
		1151 (B110LP)			20
		1400	A	N/A	20
		1451 (B401B)	A	A	20
		2100	A	N/A	20
		2100AT	A	N/A	20
		2100D	A	N/A	20
		2100T	A	N/A	20
		2100TR	A	N/A	20
		2100TS	A	N/A	20
		2151 (B110LP)			20
		2300	A	N/A	20
		2300T	A	N/A	20
		2300TB	A	N/A	20
		2400	A	N/A	20
		2400TH			20
		2400 (DH400)	A	N/A	20
		2451 (B401B)	A	N/A	20
		2451DH (DH 400)	A	N/A	20
		2451TH (B401B)	A	N/A	20

Four Wire Smoke Detectors

Manufacturer	Model
Hochiki	SLR-835B with HD-6 Base
ESL	445C Series 449C Series
System Sensor	1851B 2851/2851BTH DH400AC/DC

A.2 Notification Appliances

The chart below lists notification appliances compatible with the SK-5208.

Manufacturer	Model	Type
Faraday	446X 12/24VDC	Vibrating Bell
	476X 12/24VDC	Vibrating Bell
	477X 12/24VDC	Single Stroke Bell
	5303B-0-14-( )-DC	Chime (flush)
	5304B-0-14-( )-DC	Chime (surface)
	5305B-0-4-( )-DC	Chime (ceiling)
	5306B-0-14-( )-24-DC	Chime/Strobe (flush)
	5307B-0-14-( )-24-DC	Chime/Strobe (surface)
	5308B-0-4-( )-24-DC	Chime/Strobe (ceiling)
	5333B-0-14-24-DC	Multi-Tone Horn (flush)
	5334B-0-14-24-DC	Multi-Tone Horn (surface)
	5336B-( )-14-24-DC	Multi-Tone Horn/Strobe (flush)
	5337B-( )-14-24-DC	Multi-Tone Horn/Strobe (surface)
	5338B-( )-4-24-DC	Multi-Tone Horn/Strobe (ceiling)
	5343B-0-14-24-DC	Single Tone Horn/Strobe (flush)
	5344B-0-14-24-DC	Single Tone Horn/Strobe (surface)
	5345B-0-4-24-DC	Single Tone Horn/Strobe (ceiling)
	5348B-( )-4-24-DC	Single Tone Horn/Strobe (ceiling)
	5373B-0-14-24-DC	8-Tone Horn/Strobe (flush)
	5374B-0-14-24-DC	8-Tone Horn/Strobe (surface)
	5375B-0-4-24-DC	8-Tone Horn/Strobe (ceiling)
	5376B-0-14-24-DC	8-Tone Horn/Strobe (flush)
	5377B-0-14-24-DC	8-Tone Horn/Strobe (surface)
	5378B-0-4-24-DC	8-Tone Horn/Strobe (ceiling)
	5405B-0-14-24-DC	Sync Control Unit
	5508B-( )-14-24-DC	Single Gang Sync Strobe (flush)
	5521B-( )-14-24-DC	4” Square Sync Strobe (surface)
	5522B-( )-14-24-DC	4” Square Sync Strobe (flush)
	6126B-U-14-24 VDC	Horn/Strobe
	6223B-0-14-24-DC	Horn (flush)

Manufacturer	Model	Type
Faraday (Cont.)	6224B-0-14-24-DC	Horn (surface)
	6225B-0-4-24-DC	Horn (ceiling)
	6226B-( )-14-24-DC	Horn/Strobe (flush)
	6227B-( )-14-24-DC	Horn/Strobe (surface)
	6228B-( )-4-24-DC	Horn/Strobe (ceiling)
	6243B-0-14-24-DC	Electron-Mechanical Horn (flush)
	6244B-0-14-24-DC	Electron-Mechanical Horn (surface)
	6245B-0-4-24-DC	Electron-Mechanical Horn (ceiling)
	6246B-( )-14-24-DC	Electron-Mechanical Horn/Strobe (flush)
	6247B-( )-14-24-DC	Electron-Mechanical Horn/Strobe (surface)
	6248B-( )-4-24-DC	Electron-Mechanical Horn/Strobe (ceiling)
	6300B-0-14-24-DC	Mini-Horn (flush)
	6301B-0-14-24-DC	Mini-Horn (surface)
	6302B-( )-4-24-DC	Mini-Horn (ceiling)
	6310B-0-14-24-DC	Mini-Horn/Strobe/Strobe (flush)
	6311B-0-14-24-DC	Mini-Horn/Strobe/Strobe (surface)
	6312B-( )-14-24-DC	Mini-Horn/Strobe/Strobe (ceiling)
	6320B-0-14-24-DC	Sync Mini Horn/Strobe (1 gang)
	6321B-0-14-24-DC	Sync Mini Horn/Strobe (1,2 gang)
	6322B-( )-14-24-DC	Mini Horn/Sync Strobe (1,2 gang, 4SQ)
FCI	130-3117C	Mini Horn
	130-3147C	Mini Horn
	BLV-6	Vibrating Bell
	BLV-10	Vibrating Bell
	BLVCH	Vibrating Chime
	BC/STW	Bell/Chime Plate w/15-75 cd Strobe
	B/STW	Bell/Chime Plate w/15-75 cd Strobe
	BC/STS	Bell/Chime Plate w/110 cd Strobe
	H12/24-FC	Horn
	H12/24W-FC	Horn
	H12/24K-FC	Horn
	HC12/24-FC	Horn
	HC12/24W-FC	Horn
	HC12/24K-FC	Horn
	P241575F-FC	Horn/Strobe
	P241575K-FC	Horn/Strobe
	P2430-FC	Horn/Strobe
	P2430W-FC	Horn/Strobe
	P2430K-FC	Horn/Strobe
	P2475-FC	Horn/Strobe
	P2475W-FC	Horn/Strobe
	P2475K-FC	Horn/Strobe
	P24110-FC	Horn/Strobe
	P24110W-FC	Horn/Strobe
	P24110K-FC	Horn/Strobe
	S2415-FC	Strobe
	S241575-FC	Strobe
	S241575W-FC	Strobe
	S241575K-FC	Strobe

Manufacturer	Model	Type
FCI (Cont.)	S2430-FC	Strobe
	S2430W-FC	Strobe
	S2430K-FC	Strobe
	S2475-FC	Strobe
	S2475W-FC	Strobe
	S2475K-FC	Strobe
	S24110-FC	Strobe
	S24110W-FC	Strobe
	S24110K-FC	Strobe
Federal Signal	450	Horn
	VALS 24 VDC version	Horn/Strobe
Gentex	GX90-4	Horn
	GXS-4-15-1	Strobe
	GXS-4-1575	Strobe
	GX90S-4-15	Horn
	GX90S-4-1575	Horn
	HG124	Horn
	SHG24-1575	Horn/Strobe
	SHG24-15	Horn/Strobe
	GMH-24-X	Horn
	GMS-24-X	Horn/Strobe
	GMS-24-X	Horn/Strobe
	G0T24	Horn
	G0S24-X	Horn
	WGMS-24-X	Horn/Strobe
System Sensor	H12/24	Horn
	HC12/24	Horn
	MASS241	Horn/Strobe
	MASS24110ADA	Horn/Strobe
	MASS2415ADA	Horn/Strobe
	MASS2475ADA	Horn/Strobe
	P241575	Horn/Strobe
	P2430	Horn/Strobe
	P2475	Horn/Strobe
	P24110	Horn/Strobe
	S2415	Strobe
	S241575	Strobe
	S2430	Strobe
	S2475	Strobe
	PS2415	Mini-Horn/Strobe
	PS241575	Mini-Horn/Strobe
	PS24110	Mini-Horn/Strobe
	PS2475	Mini-Horn/Strobe
	SS24110	Strobe
	SS2415	Strobe
	SS2475	Strobe

Manufacturer	Model	Type
Wheelock	46T-G4-24-R	Bell
	46T-G6-24-R	Bell
	46T-G10-24-R	Bell
	46T-G6-24-WS-24-HF-R	Strobe/Bell
	46T-G10-24-WS-24-HF-R	Strobe/Bell
	46T-G6-24-WH-24-HF-R	Strobe/Bell
	46T-G10-24-WH-24-HF-R	Strobe/Bell
	7001T-12\24-W-FR	Strobe Horn
	7002T-12\24-W-FR	Strobe Horn
	AES-DL1-R	Multitone Horn
	AES-EL1-R	Multitone Horn
	AES-DL1-WS-24-VF-R	Multitone Horn
	AES-EL1-WS-24-VF-R	Multitone Horn
	AES-DL1-WH-24-VF-R	Multitone Horn
	AES-EL1-WH-24-VF-R	Multitone Horn
	AES-DL1-WM-24-VF-R	Multitone Horn
	AES-EL1-WM-24-VF-R	Multitone Horn
	AH-24-R	Horn
	AMT-12\24-R	Strobe Horn
	AMT-24-LS-VFR	Strobe Horn
	AMT-24-LSM-VFR	Strobe Horn
	AMT-24-IS-VFR	Strobe Horn
	AS-2415-VFR	Strobe Horn
	AS-241575-VFR	Strobe Horn
	AS-2430-VFR	Strobe Horn
	AS-2475-VFR	Strobe Horn
	AS-24110-HFR	Strobe Horn
	SM-12\24-R	Strobe Horn Controller
	DSM-12\24-R	Strobe Horn Controller
	CH-BF1	Chime
	CH-BF1-R	Chime
	CH-CF1	Chime
	CH-CF1-R	Chime
	CH-CF1-W	Chime
	CH-DF1	Chime
	CH-DF1-R	Chime
	CH-BF1-WS-24-HF-R	Strobe Chime
	CH-CF1-LS-24	Strobe Chime
	CH-CF1-MS-24	Strobe Chime
	CH-CF1-IS-24	Strobe Chime
	CH-CF1-LS-24-CFW	Strobe Chime
	CH-CF1-MS-24-CFW	Strobe Chime
	CH-CF1-IS-24-CFW	Strobe Chime
	CH-CF1-WS-24-CF-W	Strobe Chime
	CH-DF1-LS-24	Strobe Chime
	CH-DF1-MS-24	Strobe Chime
	CH-DF1-IS-24	Strobe Chime

Manufacturer	Model	Type
Wheelock (Cont.)	CH-DF1-LS-24-VFR	Strobe Chime
	CH-DF1-LSM-24-VFR	Strobe Chime
	CH-DF1-MS-24-VFR	Strobe Chime
	CH-DF1-IS-24-VFR	Strobe Chime
	CH-DF1-WM-24-VFR	Strobe Chime
	CH-DF1-WS-24-VF-R	Strobe Chime
	DSM-12/24	Sync Module
	EH-DL1-R	Electronic Horn
	EH-EL1-R Electronic Horn	Electronic Horn
	EHS-DL1-W-VF-R	Strobe Horn (single input)
	EHS-EL1-W-VF-R	Strobe Horn (single input)
	EH-DL1-WS-24-VF-R	Strobe Horn (dual input)
	EH-EL1-WS-24-VF-R	Strobe Horn (dual input)
	EH-DL1-WH-24-VF-R	Strobe Horn (dual input)
	EH-EL1-WH-24-VF-R	Strobe Horn (dual input)

Manufacturer	Model	Type
	EH-DL1-WM-24-VF-R	Strobe Horn (dual input)
	EH-EL1-WM-24-VF-R	Strobe Horn (dual input)
	HSW-24-HFR	Remote Strobe
	HS2W-24-HFR	Remote Strobe
	HSPW-24-HFR	Remote Strobe
	IS-24-VFR	Remote Strobe
	IS1-24-VFR	Remote Strobe
	IS3-24-VFR	Remote Strobe
	ISP-24-HFR	Remote Strobe
	LS-24-VFR	Remote Strobe
	LS1-24-VFR	Remote Strobe
	LS3-24-VFR	Remote Strobe
	LSP-24-HFR	Remote Strobe
	LSM-24-VFR	Remote Strobe
	LS1M-24-VFR	Remote Strobe
	LS3M-24-VFR	Remote Strobe
	LSPM-24-VFR	Remote Strobe
	MS-24-VFR	Remote Strobe
	MS1-24-VFR	Remote Strobe
	MS3-24-VFR	Remote Strobe
	MSP-24-HFR	Remote Strobe
	MB-G6-24-R	Motor Bell
Wheelock (Cont.)	MB-G10-24-R	Motor Bell
	MBS-G6-24-W-HF-R	Motor Bell with Strobe
	MBS-G10-24-W-HF-R	Motor Bell with Strobe
	MIZ-24-R	Mini-Horn
	MIZ-24-W	Mini-Horn
	MIZ-24-LS-VFR	Mini-Horn/Strobe
	MIZ-24-LSM-VFR	Mini-Horn/Strobe
	MIZ-24-MS-VFR	Mini-Horn/Strobe
	MIZ-24-HSW-HFR	Mini-Horn/Strobe
	MIZ-24-IS-VFR	Mini-Horn/Strobe
	MIZ-24-WS-VF-R	Mini-Horn/Strobe
	MIZ-24-WS-VF-W	Mini-Horn/Strobe
	MIZ-24-WH-VF-W	Mini-Horn/Strobe
	MIZ-24-WM-VF-W	Mini-Horn/Strobe
	MT-12/24-R	Strobe Horn
	MT-24-LS-VFR	Strobe Horn
	MT-24-LSM-VFR	Strobe Horn
	MT-24-MS-VFR	Strobe Horn
	MT-24-IS-VFR	Strobe Horn
	MT-24-SL-VFR	Strobe Horn
	MT-24-SLM-VFR	Synch. Multitone Strobe
	MT-24-WM	Strobe
	MT-24-WM-VF-R	Horn

Manufacturer	Model	Type
Wheelock (Cont.)	MT-24-WM-VFR	Horn
	RS-2415-HFR	Strobe
	RSP-2415-VFR	Strobe
	RS-241575-VFR	Strobe
	RSP-241575-VFR	Strobe
	RS-2430-VFR	Strobe
	RS-2430-HFR	Strobe
	RS-2475-VFR	Strobe
	RSP-2475-HFR	Strobe
	RS-24110-HFR	Strobe
	RSP-24110-HFR	Strobe
	SL-24-VFR	Synchronized Remote Strobe
	SL1-24-VFR	Synchronized Remote Strobe
	SL3-24-VFR	Synchronized Remote Strobe
	SLP-24-VFR	Synchronized Remote Strobe
	SLM-24-VFR	Synchronized Remote Strobe
	SL1M-24-VFR	Synchronized Remote Strobe
	SL3M-24-VFR	Synchronized Remote Strobe
	SLPM-24-VFR	Synchronized Remote Strobe
	SHW-24-VFR	Synchronized Remote Strobe
	SH2W-24-VFR	Synchronized Remote Strobe
	SHPW-24-VFR	Synchronized Remote Strobe
	SCM-24-R	Controller for Synchronized Strobes
	SM-12/24-R	Sync Module
	SR-2415-VFR	Sync Strobe
	SRP-2415-HFR	Sync Strobe
	SR-241575-VFR	Sync Strobe
	SRP-241575-VFR	Sync Strobe
	SR-2475-VFR	Sync Strobe
	SR-2475-HFR	Sync Strobe
	SR-24110-HFR	Sync Strobe
	SRP-24110-HFR	Sync Strobe
	V7001T-12\24-W-FR	Strobe Horn
	WM3T-24-FR	Remote Strobe
	WM3T-24-VFR	Remote Strobe
	WS1T-24-FR	Strobe
	WS3T-24-FR	Strobe
	WST-24-FR	Strobe

SK-5208 Basic Operating Instructions P/N 151214 Rev. A

These instructions must be framed and displayed next to the panel in accordance with NFPA 72 fire code for Local Fire Alarm System.

How To	Do This			Comments
	Press	Display Message	Press	
Test the system	0 ACK ENTER	System Test Enter Code	Enter Code	The system will perform a display lamp test and a communication test.
Reset Alarms	1 ACK ENTER	Reset Alarm Enter Code	Enter Code	Resets system.
Reset the Dialer	3 ACK ENTER	Reset Dialer Enter Code	Enter Code	Resets the dialer and aborts the call to central station.
Display History Events	5 ACK ENTER	History Events Enter Code	Enter Code	Displays the panel history, which includes alarms, supervisories, troubles, reports, time and date changes, etc.
Show Status	6 ACK ENTER	Show Status Enter Code	Enter Code	View existing system status. List Alarms first, supervisories and then troubles.
Silence Troubles or Alarms	7 ACK ENTER or SILENCE	Silence Enter Code	Enter Code	
Disable/Enable a Zone	Zone # + *	Disable Zone Enter Code	Enter Code	Repeat the process to enable the zone.
Disable/Enable NAC	1 0 NAC # + *	Disable NAC Enter Code	Enter Code	Repeat the process to enable the NAC.
Conduct a Fire Drill	2 0 ACK ENTER	Fire Drill Enter Code	Enter Code	To End the Fire Drill press RESET then code.
Reset Detectors	2 1 ACK ENTER	Rst Smk Pwr Enter Code	Enter Code	Resets all smoke detector power.
Walk Test the System	2 2 ACK ENTER	Walk Test Enter Code	Enter Code	To End the Walk Test press RESET.
Menu of Options	Press ▽ or △ to scroll trough list.		Enter Installer Code	To exit press ACK ENTER or wait 15 seconds.
Acknowledge Events	Events can be acknowledged by pressing the ACK ENTER button. No code is required to acknowledge events. The status LEDs (Alarm, Supervisory and Trouble) will flash when an un-acknowledged alarm, supervisory, or trouble condition exists. After each event has been acknowledged its associated LED (Alarm, Supervisory, or Trouble LED) stop flashing and turn on steady. When viewing system status the LCD displays “Acked” for each individual event once it has been acknowledged. The control panel piezo will silence after all alarms have been acknowledged. **Note:** The control panel piezo will continue to sound for Supervisories and Troubles even after the event has been acknowledged. Supervisories and troubles will silence once the event is restored. After the event is acknowledged an event is added to the event history buffer. Acknowledged events in the history buffer will be preceded with an asterisk “*”.			

Cut Along the Dotted Line

LEDs Meaning

LED	Status	Condition
ALARM (red)	Off	Normal condition
	On	System in alarm.
	Flashing	LED will flash when a alarm condition exists that has not been acknowledged.
SUPERVISORY (yellow)	Off	Normal condition
	On	If a supervisory condition exist on the system.
	Flashing	LED will flash when a supervisory condition exists that has not been acknowledged.
TROUBLE (yellow)	Off	Normal condition
	On	Trouble condition exists
	Flashing	LED will flash when a trouble condition exists that has not been acknowledged.
SILENCED (yellow)	Off	Normal condition.
	On	Alarm or trouble condition has been silenced but condition still exists.
AC (green)	On	Panel is running on AC (normal condition); standby battery fully charged.
	Off	Panel has lost all power.
	Flashing	Panel is running on battery power only or AC power only.

For Service Contact:	

Cut Along the Dotted Line

Silent Knight Fire Product Warranty and Return Policy

General Terms and Conditions

- All new fire products manufactured by Silent Knight after September 1, 1997 have a limited warranty period of 18 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, 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 RA (Return Authorization) number. Call Silent Knight Customer Service at 800-446-6444 or 612-493-6435 between 8:00 A.M. and 5:00 P.M. CST, Monday through Friday to obtain a return authorization number. Silent Knight Technical Support is available at 800-328-0103 between 8:00 A.M. and 6:00 P.M. CST, Monday through Friday.
- RA number must be prominently displayed on the outside of the shipping box. See return address example under Advanced Replacement Policy.
- 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.
- Return the Silent Knight product circuit board only. Products that are returned in cabinets will be charged an additional $20 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 18 months from date of manufacture will be repaired and the customer will be assessed the standard Silent Knight repair charge for that model.
- A detailed description of the problem should be included with each return.

Advanced Replacement Policy

- Silent Knight offers an option of advance replacement for fire product printed circuit boards that fail during the 18 month warranty period.
- For advance replacement of a defective board call Silent Knight at 800-446-6444 or 612-493-6435 to obtain a RA (Return Authorization) number and request advanced replacement.
- Customers must use a MasterCard or Visa credit card to get an advance 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.
- 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
  Attn: Repair Department
  7550 Meridian Circle
  Maple Grove, MN 55369-4927

  RA Number:_____

Limited Warranty

Silent Knight warrants that the products of its manufacture shall be free from defects in materials or workmanship for 18 months from the manufacturing date code on the printed circuit board, if such goods have been properly installed, are subject to normal proper use, and have not been modified in any manner whatsoever. Upon return of the defective product to the nearest Silent Knight, Silent Knight will, at its sole discretion, either repair or replace, at no cost, such goods as may be of defective material or workmanship. Customers outside the United States are to return products to their distributor for repair.

SILENT KNIGHT SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM LOSS OF PROPERTY OR OTHER DAMAGE OR LOSSES OWING TO THE FAILURE OF SILENT KNIGHT SECURITY SYSTEMS PRODUCTS BEYOND THE COST OF REPAIR OR REPLACEMENT OF ANY DEFECTIVE PRODUCTS.

SILENT KNIGHT MAKES NO WARRANTY OF FITNESS OR MERCHANTABILITY AND NO OTHER WARRANTY, ORAL OR WRITTEN, EXPRESS OR IMPLIED, BEYOND THE 18 MONTH WARRANTY EXPRESSLY SPECIFIED HEREIN.