Contents

Section 1.
Introduction

The Model C-6000 is a low-cost fire alarm control/communicator panel that meets UL 864 and NFPA 72 requirements.

1.1 System Overview

Figure 1-1 is a block diagram showing the basic layout of the C-6000.

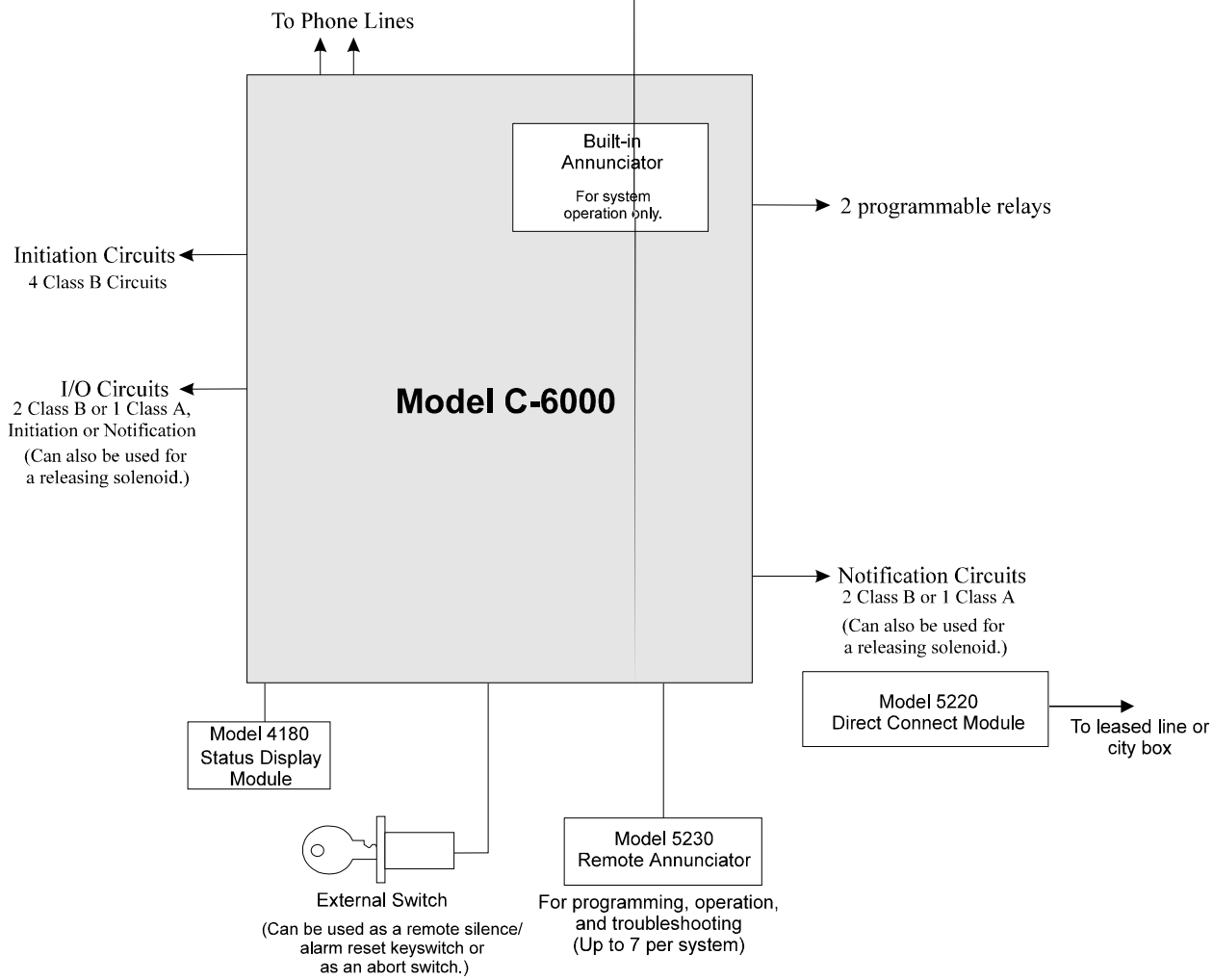


Figure 1-1. Model C-6000 Block Diagram

1.2 Optional Accessories

The following Silent Knight products can be used with the Model C-6000 panel.

Table 1-1. Compatible Modules Manufactured by Silent Knight

Model	Description
5211 Ground Start Relay	Used for ground start phone lines (not UL listed).
4180 Status Display Module	For remote annunciation of alarm and trouble status information for each zone.
5220 Direct Connect Module	For direct alarming and trouble transmission from the C-6000 to a supervising station.
5230 Remote Annunciator	Provides complete system operation and programming. Up to 7 can be used per C-6000. Required for annunciator programming.
Quick connect program cable, P/N 130294	For temporarily connecting the 5230 to the C-6000 for programming.
5395 Distributed Power Module	For connecting more notification devices than the C-6000 normally allows.
5541 Downloading Software	For remote programming of the C-6000. Version 4.0 required for C-6000 programming.
5530 Modem	Modem for downloading; required if using the 5541 software.
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.
7628 EOL Resistor	For end of line supervision of smoke detectors and notification devices.
7641 Solenoid Supervisory Module	For end of line supervision of a releasing solenoid.
7860 Phone Cord	For connecting the C-6000 to an RJ31X phone jack. One 7860 per phone line.

1.3 How to Use This Manual

In this manual, the following conventions are used:

KEY	A clear rectangle represents a key that you press on a annunciator.
LCD DISPLAY MESSAGE	This typeface represents messages that appear on an LCD.

For simplicity, this manual refers to circuits as “Class A” and “Class B.” See Section 3.10 of this manual for the complete references.

1.4 How to Contact Silent Knight

If you have a question or encounter a problem not covered in this manual, contact Silent Knight Technical Support at 800-328-0103 (or 612-493-6455). To order parts, contact Silent Knight Sales at 800-446-6444 (or 612-493-6435).

Section 2.
Agency Listings, Approvals, and Requirements

2.1 Federal Communications Commission (FCC)

1. If requested by the telephone company, the following information must be provided before the C-6000 can be connected to the phone lines:

A	Manufacturer:	Silent Knight Security Systems
B	Model Number:	C-6000
C	FCC registration number	AC6USA-23783-AL-E
	Ringer equivalence:	0.8B
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 Security Systems
   7550 Meridian Circle
   Maple Grove, MN 55369-4927
   612-493-6455
   800-328-0103

4. If the C-6000 causes harm to the telephone network, the telephone company will notify the user in advance that temporary discontinuance of service may be required. If 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 C-6000 is UL listed as a control unit for use in NFPA 72 systems. If the C-6000 and its accessories are to be used as part of a UL installation, carefully read the UL requirements in this section. For more information on the following NFPA 72 standards, refer to the *NFPA National Fire Alarm Code, 1993 Edition*.

- Chapter 3
  - Local Protected Fire Alarm Systems
- Chapter 4
  - Central Station Fire Alarm Systems
  - Auxiliary Protected Fire Alarm Systems for Fire Alarm Service (City Box)
  - Remote Station Protected Fire Alarm Systems

2.2.1 Requirements for All Installations

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

1. All field wiring must be installed in accordance with NFPA 70 National Electric Code.
2. Use UL listed smoke detectors and notification appliances compatible with the C-6000 from those specified in the *Appendix* to this manual.
3. Do not mix, smoke verification, cross alarming, and pre-releasing in the same zone.
4. If you are using the smoke verification feature:
   - Do not use smoke detectors with built-in alarm verification.
   - Do not use in a zone that has been programmed for cross-alarm or pre-release.
   - Do not use pull stations or waterflow switches in smoke verification zones.
   - Select the 1-1.25 second zone response speed (fastest possible response time) for all zones except water flow.
5. A full system checkout must be performed any time the panel is programmed.

2.2.2 Requirements for Central Station Fire Alarm Systems

1. Both phone lines must be used.
2. You must program a phone number and a test time so that the C-6000 sends an automatic daily test to the central station.
3. In systems using class A zones, do not use more than 5 waterflow devices per zone.
4. Do not use the ground start option.
5. The AC Loss Hours option must be set from 6-12 hours.
6. The Attempts to Report option must be set for 5.
7. Do not select the Pre-release option.

2.2.3 Requirements for Local Protected Fire Alarm Systems

At least one UL listed supervised notification appliance must be used.

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

1. Do not exceed the current load restrictions shown in Section 3.7.
2. The Model 5220 Direct Connect module must be installed (see Section 3.15).
3. The 5220 cannot be used for sprinkler supervisory.
4. Do not select the Pre-release option.

2.2.5 Requirements for Remote Station Protected Fire Alarm Systems - Polarity Reversal or Digital Alarm Communicator Transmitter (DACT)

1. Do not exceed the current load restrictions shown in Section 3.7.
2. The 5220 cannot be used for sprinkler supervisory.
3. The AC Loss Hours option must be set from 6-12 hours.
4. Do not select the Pre-release option.

Section 3.
Hardware Installation

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

3.1 Environmental Specifications

It is important to protect the C-6000 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 C-6000 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.

3.2 Mounting the C-6000

Read the environmental specifications in Section 3.1 before mounting the C-6000 panel.

The panel should be accessible to main drop wiring runs. It should be mounted as close to the center of the building as possible and located within a secured area, but should be accessible for testing and service. 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.

Mount the C-6000 so it is firmly secured to the wall surface. When mounting the C-6000 on concrete, especially when moisture is expected, attach a piece of 3/4-inch plywood to the concrete surface and then attach the C-6000 to the plywood. Also mount any other modules to the plywood. Either flush- or surface-mounting is acceptable. If you will be flush-mounting the cabinet, the hole for the enclosure should be 16” W x 26.4” H x 4” D. Do NOT flush-mount in a wall designated as a fire break.

3.3 Electrical Specifications

	Rating
Primary AC	120 Vrms at 60 Hz, 2500 mA rms
Total External DC Load	5.0 @ 24 VDC, 500 mA @ 12 VDC
+12 V Accessory Power	11.5 V to 14.0 V, 500 mA
+24 V Accessory Power	19.8 V to 28.0 V, 2000 mA max.
Bell Power	19.8 V to 28.0 V, max., 3.0 A max. each
Smoke Power	19.8 V to 28.0 V, max., 1000 mA max.
Battery Charging Voltage	27.0 V - 27.6 V
Minimum Low Battery Detect	20.4 V
Minimum Low AC Detect	100 Vrms at 60 Hz, full load

3.4 Wiring Specifications

Induced noise (transfer of electrical energy from one wire to another) can interfere with telephone communication or cause false alarms.

To avoid induced noise, follow these guidelines:

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

  High current input/output: AC power, speaker, and notification device wiring

  Low current input/output: Annunciator and zone loop wiring

  Audio input/output: 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 circuit ground at the panel. You must route high and low voltages separately.
- Route the wiring within the cabinet 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. See Figure 3-1 (next page) for an example.
- High frequency noise, such as that produced by the inductive reactance of a speaker or bell, can also be reduced by running the wire through ferrite shield beads or by wrapping it around a ferrite toroid.

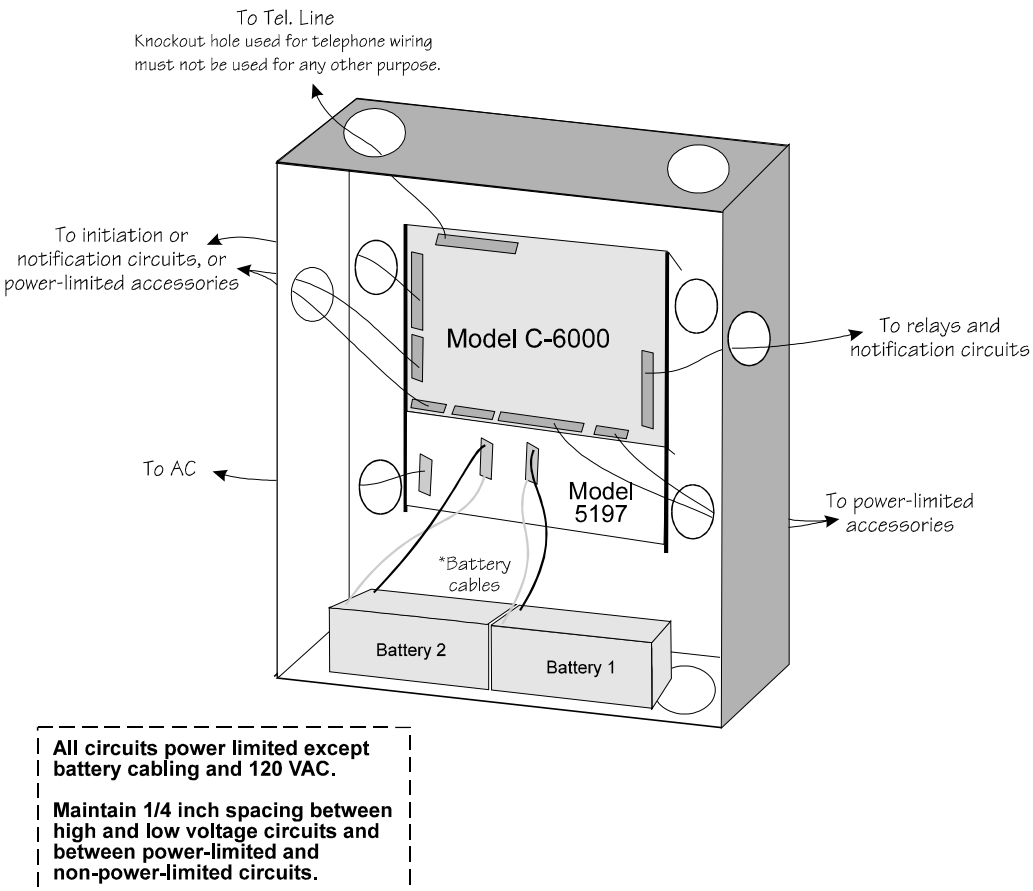


Figure 3-1. Wire Routing Example

3.5 Terminal Strip Description

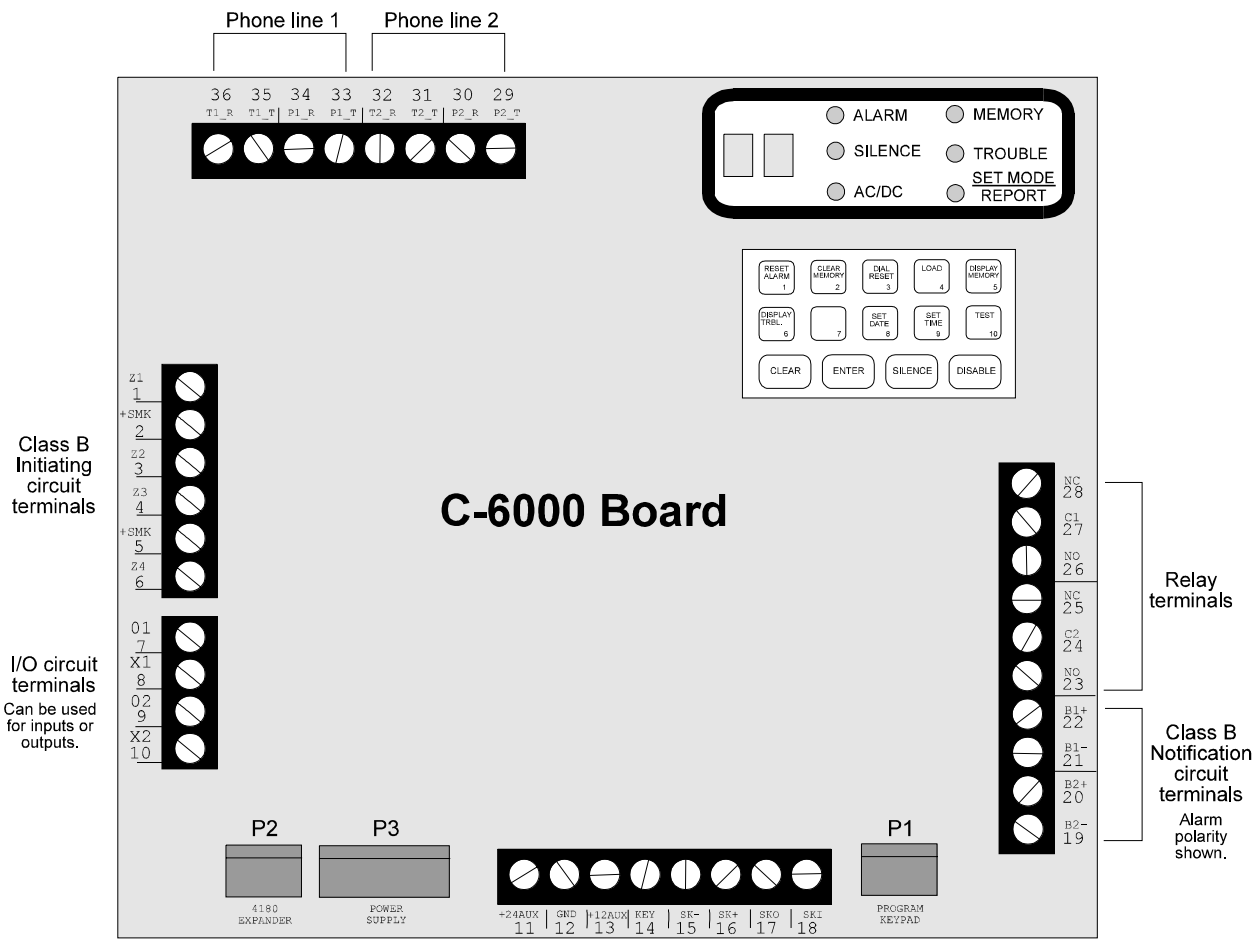


Figure 3-2. Model C-6000 Board Layout

The terminal strips on the PC board are nonremovable. Table 3-1 below lists the function and electrical rating of each terminal. Note the following:

- The total load of all devices attached to the system must not exceed 5.0 A.
- Alarm polarity is shown for bells (terminals 19-22).
- See Table 3-1 (next page) for descriptions of each terminal.

Table 3-1. Terminal Strip Descriptions

Notes: Combined smoke power maximum capacity is 1A.

For terminals 7-10, polarity varies depending on type of circuit (initiation or notification). Polarity for each type is shown in the sections of this manual that apply.

Terminal # and Label		Description	Voltage Measurements (in relation to GND, Term. 12)	
			Nominal	**Open Terminal**
1	Z1	Zone 1 Input	0.17	0
2	+SMK	Smoke Power for Zones 1 and 2	27.25	27.25
3	Z2	Zone 2 Input	0.17	0
4	Z3	Zone 3 Input	0.17	0
5	+SMK	Smoke Power for Zones 3 and 4	27.25	27.25
6	Z4	Zone 4 Input	0.17	0
7	01	I/O Circuit 1	27.25	27.25
8	X1	I/O Circuit 1	0.17	0
9	02	I/O Circuit 2	26.00	26.00
10	X2	I/O Circuit 2	0.48	0.32
11	+24AUX	24V Accessory Power	27.25	27.25
12	GND	Accessory Ground	0	0
13	+12AUX	12V Accessory Power	13.85	13.85
14	KEY	External Keyswitch Input	6.2	12.1
15	SK-	Annunciator Ground	0	0
16	SK+	Annunciator Power	13.85	13.85
17	SKO	Annunciator Data Out	4 - 9	7 - 14
18	SKI	Annunciator Data In	6.55	8.55
19	B2-	Notification Circuit 2 (-)	18.65	19.85
20	B2+	Notification Circuit 2 (+)	14.45	12.45
21	B1-	Notification Circuit 1 (-)	22.95	27.25
22	B1+	Notification Circuit 1 (+)	14.45	0
23	NO	Relay 2 Normally Open	Rated at 2.5 A	
24	C2	Relay 2 Common		
25	NC	Relay 2 Normally Closed		
26	NO	Relay 1 Normally Open	Rated at 2.5 A	
27	C1	Relay 1 Common		
28	NC	Relay 1 Normally Closed		

Table 3-1 *continued on next page*

Table 3-1 continued on next page

Terminal # and Label	Description	Voltage Measurements (in relation to GND, Term. 12)
29 P2_T	Phone Line 2, Premises Tip	Voltage depends on phone system.
30 P2_R	Phone Line 2, Premises Ring	
31 T2_T	Phone Line 2, Telco Tip	
32 T2_R	Phone Line 2, Telco Ring	
33 P1_T	Phone Line 1, Premises Tip	
34 P1_R	Phone Line 1, Premises Ring	
35 T1_T	Phone Line 1, Telco Tip	
36 T1_R	Phone Line 1, Telco Ring	

3.6 Wiring Overview

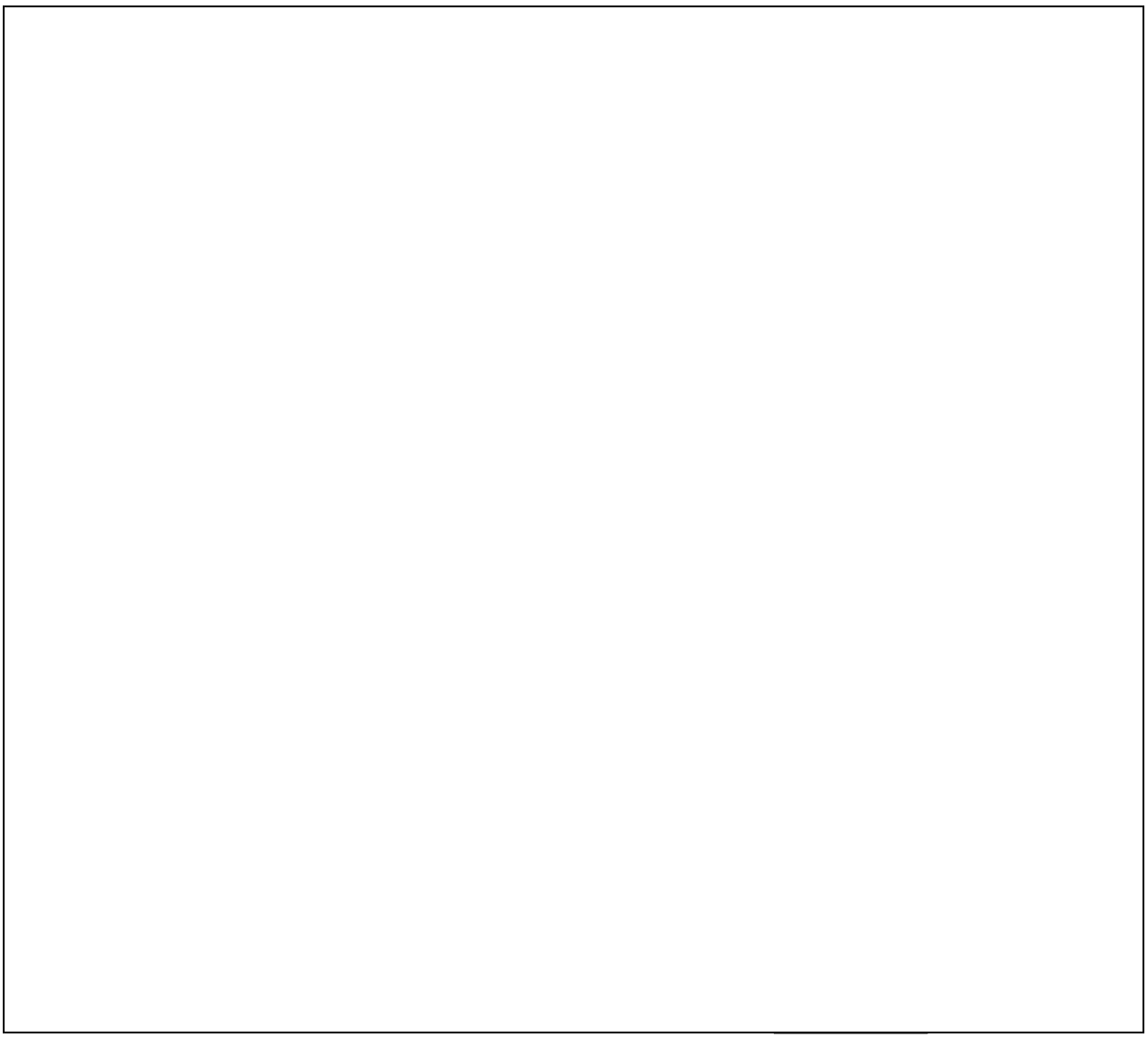


Figure 3-3. Model C-6000 Wiring

Total current draw for panel: 5.0 A @ 28 V

3.7 Calculating Current Draw and Standby Battery

This section is for helping you determine the current draw and standby battery needs for your installation.

3.7.1 Worksheet Requirements

The following steps must be taken when determining C-6000 current draw and standby battery requirements.

A. Fill in the Currrent Draw Worksheet, Table 3-2 (Section 3.7.2)

See Section 3.7.2.1 for a completed worksheet example.

1. For the Model C-6000, you must measure the alarm current. If only one current rating is listed, the draw for that device is the same whether the system is in alarm or standby condition. The exception is for notification devices, which are rated at alarm current only—standby current is 0 mA.
2. To measure the maximum alarm current of the panel, measure the current draw (with no devices connected to the panel) by connecting a DC amp meter in series with one of the batteries. Disconnect the AC power source. Put the panel in alarm. The meter will indicate the alarm current, which will be in the range of 120-400 mA. Fill in the system alarm current in the Current per Device column on the Current Draw worksheet. You can estimate without measuring the alarm current by filling in the maximum total alarm current of 400 mA.
3. For smoke detectors, notification devices and devices not mentioned in the manual, refer to the device manual for the current ratings.
4. Make sure that the total alarm current you calculated, including current for the panel itself, does not exceed 5.0 A. This is the maximum alarm current allowable.

B. Fill in the Battery Calculation Worksheet, Table 3-3 (Section 3.7.3)

See Section 3.7.3.1 for a completed worksheet example.

1. Use Table 3-3 to determine the battery amp hour rating needed for your installation.
2. Refer to Table 3-4 to verify the battery size you need to provide at least the total standby current you have calculated.

3.7.2 Current Draw Worksheet

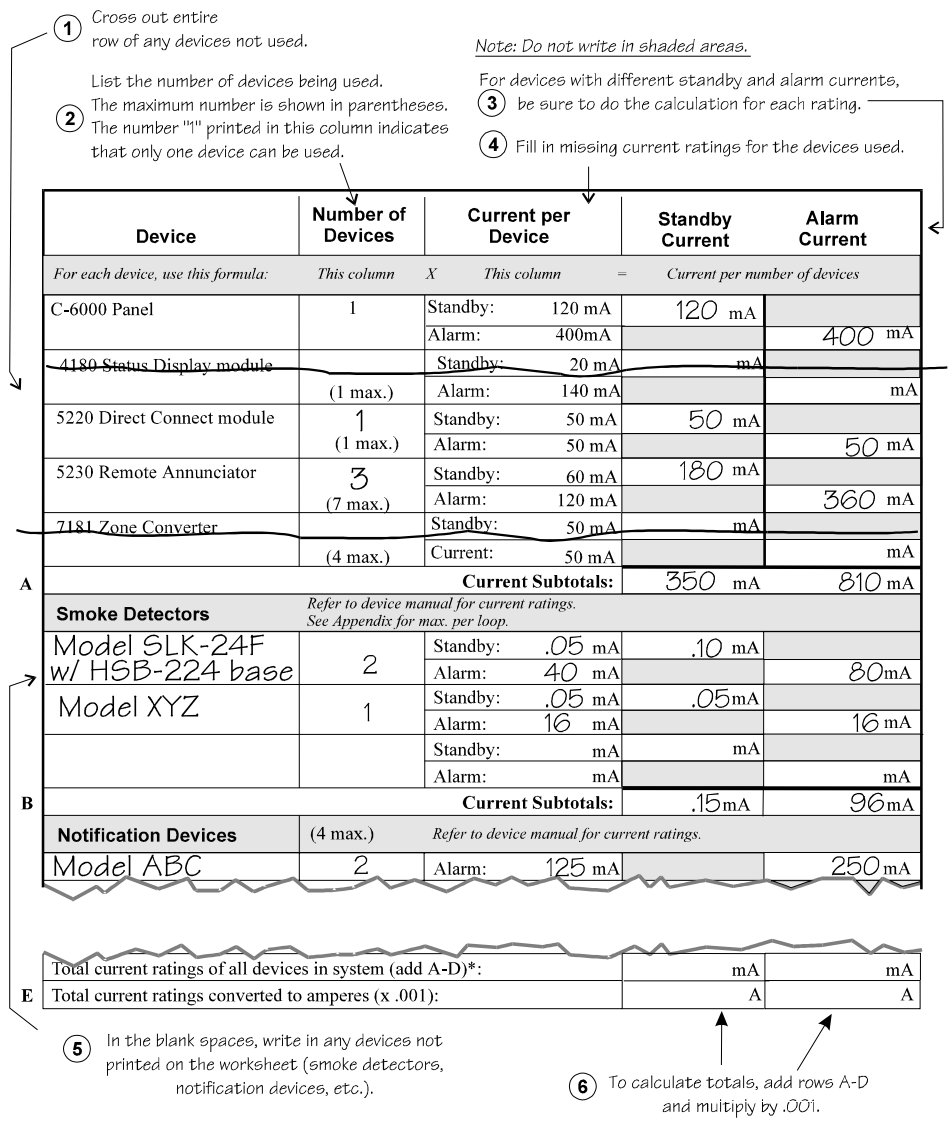
Use this worksheet to determine current requirements. See Section 3.7.2.1 for an example of how to fill out the worksheet. (Copy this page if additional space is required.)

Table 3-2. Current Draw Calculations

	Device	Number of Devices	Current per Device		Standby Current	Alarm Current
	For each device, use this formula:	*This column*	*X* *This column*	*=*	*Current per number of devices*	
	C-6000 Panel	1	Standby:	120 mA	mA	
			Alarm:	400 mA		mA
	4180 Status Display module		Standby:	20 mA	mA	
		(1 max.)	Alarm:	140 mA		mA
	5220 Direct Connect module	1	Standby:	50 mA	mA	
			Alarm:	50 mA		mA
	5230 Remote Annunciator		Standby:	60 mA	mA	
		(7 max.)	Alarm:	120 mA		mA
	7181 Zone Converter		Standby	35 mA	mA	
		(4 max.)	Alarm	65 mA		mA
A				**Current Subtotals:**	mA	mA
	Smoke Detectors	*Refer to device manual for current ratings. See Appendix to this manual for max. # per loop.*				
			Standby:	mA	mA	
			Alarm:	mA		mA
			Standby:	mA	mA	
			Alarm:	mA		mA
			Standby:	mA	mA	
			Alarm:	mA		mA
B				**Current Subtotals:**	mA	mA
	Notification Devices	*Refer to device manual for number of devices and current ratings .*				
			Alarm:	mA		mA
			Alarm:	mA		mA
			Alarm:	mA		mA
			Alarm:	mA		mA
C				**Current Subtotals:**	mA	mA
	Additional Devices					
			Standby:	mA	mA	
			Alarm:	mA		mA
			Standby:	mA	mA	
			Alarm:			mA
D				**Current Subtotals:**	mA	mA
	Total current ratings of all devices in system (add A through D):				mA	mA
E	Total current ratings converted to amperes (x .001):				A	A

3.7.2.1 Current Draw Worksheet Example

A worksheet is included to help you calculate the amount of current the system draws on standby (idle) and in active (trouble or alarm) conditions. Refer to Table 3-4 to see the battery sizes available and the maximum standby current load each can support.



	Device	Number of Devices	Current per Device	Standby Current	Alarm Current
	For each device, use this formula:	*This column*	*X This column*	*= Current per number of devices*	
	C-6000 Panel	1	Standby: 120 mA	120 mA	
			Alarm: 400mA		400 mA
	~~4180 Status Display module~~		~~Standby: 20 mA~~	~~mA~~	
		(1 max.)	Alarm: 140 mA		mA
	5220 Direct Connect module	1	Standby: 50 mA	50 mA	
		(1 max.)	Alarm: 50 mA		50 mA
	5230 Remote Annunciator	3	Standby: 60 mA	180 mA	
		(7 max.)	Alarm: 120 mA		360 mA
	~~7181 Zone Converter~~		~~Standby: 50 mA~~	~~mA~~	
		(4 max.)	Current: 50 mA		mA
A			**Current Subtotals:**	350 mA	810 mA
	Smoke Detectors	*Refer to device manual for current ratings. See Appendix for max. per loop.*			
	Model SLK-24F w/ HSB-224 base	2	Standby: .05 mA	.10 mA	
			Alarm: 40 mA		80mA
	Model XYZ	1	Standby: .05 mA	.05mA	
			Alarm: 16 mA		16 mA
			Standby: mA	mA	
			Alarm: mA		mA
B			**Current Subtotals:**	.15mA	96mA
	Notification Devices	(4 max.)	*Refer to device manual for current ratings.*		
	Model ABC	2	Alarm: 125 mA		250mA
	Total current ratings of all devices in system (add A-D)*:			mA	mA
E	Total current ratings converted to amperes (x .001):			A	A

Figure 3-4. Current Draw Worksheet Example

Maximum current draw for panel: **5.0 A**
Maximum current draw for notification devices: **3.0 A per output**
Maximum Loop resistance for smoke detectors: **100 ohms**

To measure maximum loop resistance, connect an ohmmeter across the leads of a disconnected loop. (See *Appendix* to this manual, for maximum number of smoke detectors per loop.)

3.7.3 Battery Calculation Worksheet

Table 3-3. Battery Calculations

		Total Standby Current	Total Alarm Current
A	Total supervisory current from the Current Draw worksheet (Row E).	A	
B	Number of standby hours (24 and 60 for NFPA 72, Chapter 1, 1-5.2.5).	H	
C	Multiply Lines A and B.	AH	
D	Total alarm current from the Current Draw worksheet (Row E).		A
E	Alarm sounding period in hours. (For example, 5 minutes = .084 hours.)		H
F	Multiply lines D and E.		AH
G	Add lines C and F.	AH	
H	Multiply line G by 1.2. (Total ampere/hours required*)	AH	

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

3.7.3.1 Battery Calculation Worksheet Example

This calculation is based on the Current Draw worksheet example data.
From this table, the installer would use a 17 AH battery

		Total Standby Current	Total Alarm Current
A	Total supervisory current from the Current Draw worksheet (Row E).	0.360 A	
B	Number of standby hours (24 and 60 for NFPA 72, Chapter 1, 1-5.2.5.).	24 H	
C	Multiply lines A and B.	8.64 AH	
D	Total alarm current from the Current Draw worksheet (Row E).		0.957 A
E	Alarm sounding period in hours. (For example, 5 minutes = .084 hours.)		.084 H
F	Multiply lines D and E.		0.08 AH
G	Add lines C and F.	8.72 AH	
H	Multiply line G by 1.2. (Total ampere/hours required*)	10.46 AH	

EXAMPLE

Figure 3-5. Battery Calculation Example

3.7.3.2 Maximum Battery Standby Load

Table 3-4 shows the maximum battery standby load for the C-6000 based on 24 hours and 60 hours of standby.

Table 3-4. Maximum Battery Standby Load

Rechargeable Battery Size	Max. Load for 24 hrs. Standby, 5 mins. Alarm	*Max. Load for 60 hrs. Standby, 5 mins. Alarm
17 Amp Hours	500 mA	200 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 dialer.*

Warning

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

The following formula was used to calculate the standby battery load in Table 3-4:

$$AH = 1.2 \times (I \times H)$$

Where:
- I = Standby current
- AH = Ampere-hour rating of battery
- H = Standby hours
- 1.2 = A constant used to de-rate the battery to assure a 5-year life.

3.8 Model 5197 Power Supply Installation

The C-6000 is connected to the 5197 power supply at the factory. These connections are shown in Figure 3-6 in case you should ever need to repair or troubleshoot the 5197 in the field.

At installation, connect the 5197 to 120VAC source as shown in Figure 3-6. (It may be necessary for a professional electrician to make this connection.)

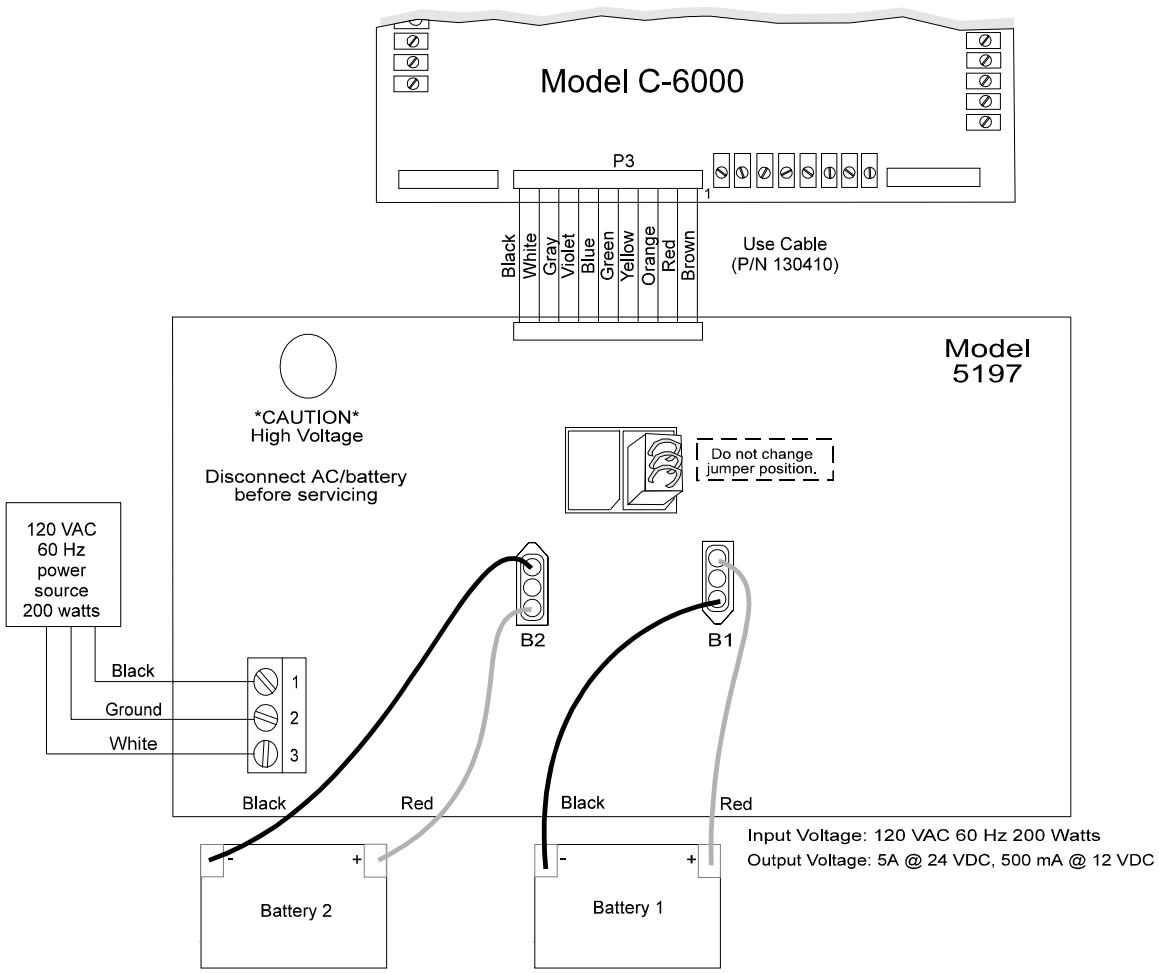


Figure 3-6. Model 5197 Power Supply Installation

3.8.1 Connecting the Batteries to the Power Supply

Two 12 VDC, 17 AH rechargeable batteries can be used with the system. Connect as shown Figure 3-6, matching red battery leads to the positive side of the battery and black leads to the negative side of the battery. Silent Knight recommends that both batteries be of the same ampere (AH) rating and approximately the same age.

3.9 Telephone Line Connection

The C-6000 has two telephone lines available. For NFPA 72 Central Station Fire Alarm Systems installations, both telephone lines must be installed.

Connect the C-6000 to the phone line using an RJ31X type phone jack. The Model 7860 Phone Line Connector, shown in Figure 3-7 is available for this purpose. (The telephone company will install an RJ31X jack upon request.)

Program the phone number(s) in the Accounts Menu (Menu 8).

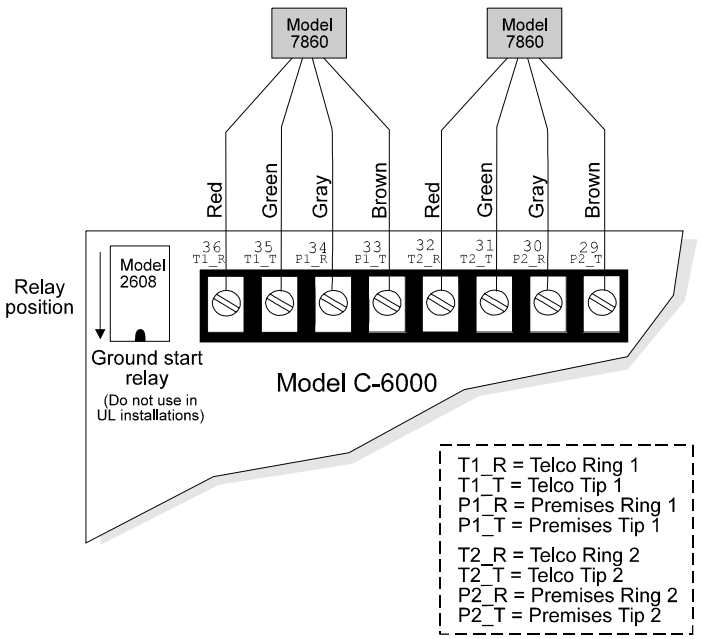


Figure 3-7. Telephone Connection

IMPORTANT:

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 fire system. Normally, this condition will last approximately one minute, but under adverse telephone circuit conditions, could last for as long as 15 minutes.

3.9.1 Ground Start Relay (Model 5211)

The ground start relay is required in installations that use the ground start telephone network. It cannot be used in UL installations.

To install, connect the Model 5211 ground start relay to the C-6000 as shown in Figure 3-7. Select the ground start relay option in programming (Menu 7, Step 4).

3.10 Types of Circuits

The C-6000 has class A and class B initiation and notification circuits available.

- Four class B, style B or D initiation circuits (terminals 1-6)
- Two class B, style Y or Z or 1 class A, style Y or Z notification circuit(s) (terminals 19-22)
- Two flexible I/O circuits, which can be configured to add one class A or two class B circuits (terminals 7-10). Available configurations are:

  1 class A, style B or D initiation circuit
  OR
  1 class A, style Y or Z notification circuit
  OR
  2 class B, style B or D initiation circuits
  OR
  2 class B, style Y or Z notification circuits

3.10.1 Initiation Circuit Installation

Figure 3-8 shows how to wire the class B initiation circuits available from terminals 1-6. These circuits do not need to be enabled through programming.

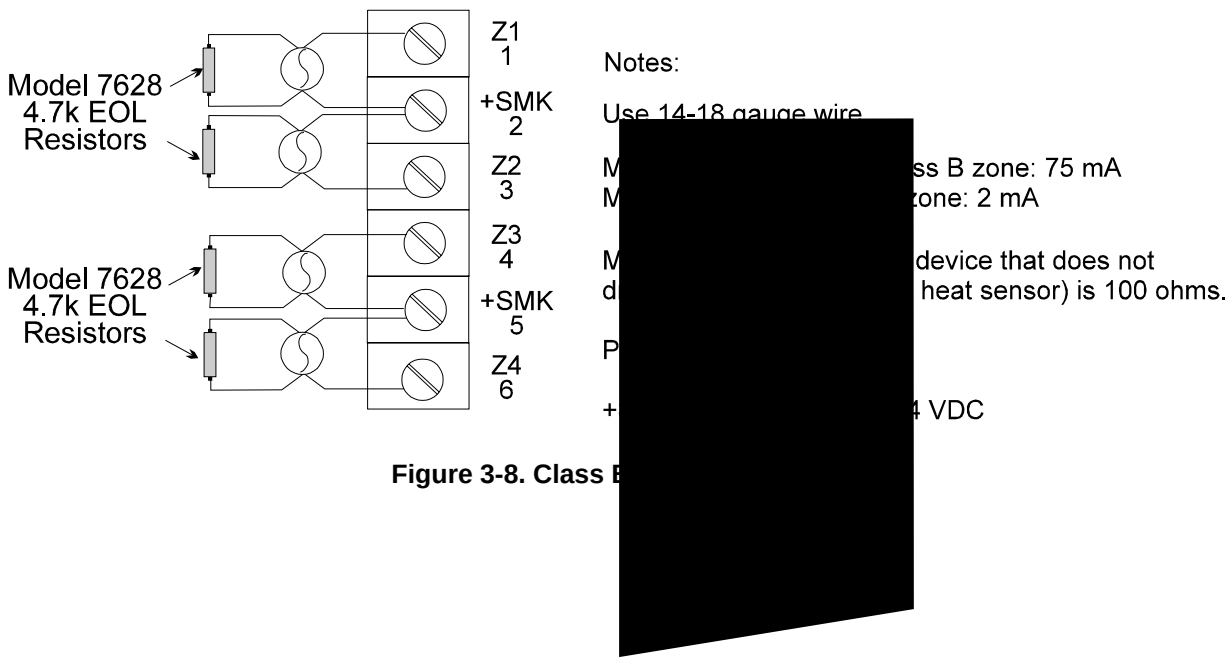


Figure 3-8. Class B

3.10.2 Notification Circuit Wiring

For proper operation, you must use polarized notification devices with a model 7628 4.7k ohm end-of-line (EOL) resistor on each loop.

Refer to the *Appendix* to this manual for a list of notification appliances that can be used with the C-6000.

To install two class B notification circuits:

1. Wire as shown in Figure 3-9.
2. Enable the circuits in programming. Select “2 class B notification circuits” for Notification Circuit programming (Menu 2, Step 8).
3. Select the bell cadence pattern (Menu 4). Bell cadence patterns are described in Section 4.4.

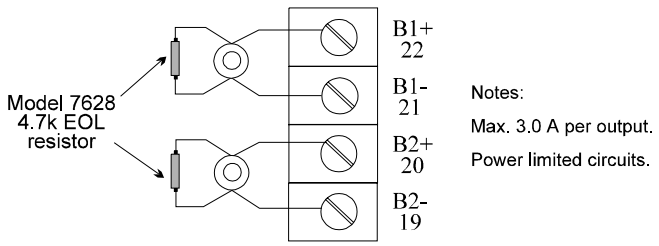


Figure 3-9. Class B Notification Appliance Wiring

To install one class A notification circuit:

1. Wire as shown in Figure 3-10.
2. Enable the circuit in programming. Select “1 class A notification circuit” for Notification Circuit programming (Menu 2, Step 8).
3. Select the bell cadence pattern (Menu 4). Bell cadence patterns are described in Section 4.4.

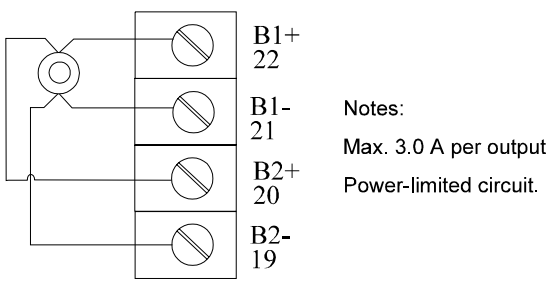


Figure 3-10. Class A Notification Appliance Wiring

3.10.3 I/O Circuit Installation

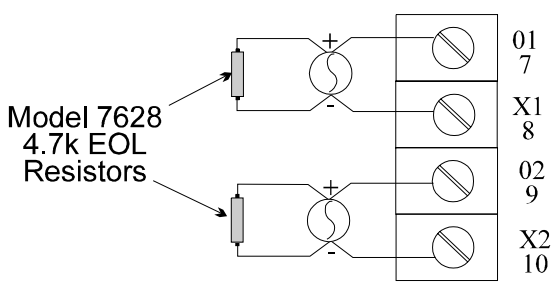
The following sections describe the uses that can be made of the flexible I/O circuits. I/O circuits can be used for either of the following:

- Adding two class B circuits (either initiation or notification). Both circuits must be the same type, either initiation or notification.
- Adding one class A circuit (either initiation or notification).
- Polarity is *not* the same for initiation and notification circuits. The drawings in the following sections show correct polarity depending on the type of circuit.

3.10.3.1 Additional Initiation Circuit(s) Via the I/O Circuits

To add **two class B initiation circuits** from the I/O circuit:

1. Wire as shown in Figure 3-11.
2. In programming, select "2 B Initiation" for the I/O Circuit (Menu 2, Step 7).



I/O circuit used as
Class B initiation device

Term.	Polarity
7	+ out
8	- out
9	+ out
10	- out

Notes:

Max. alarm current per class B zone: 75 mA
Max. standby current per zone: 2 mA

Max. loop resistance for a device that does not draw current (for example, heat sensor) is 100 ohms.

Circuits are power-limited.

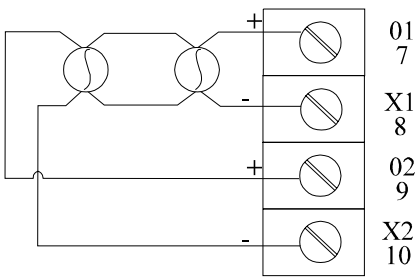
Install in accordance with NFPA 70.

Figure 3-11. I/O circuit used for Class B initiation devices

See next page for adding one class A initiation circuit from the I/O circuit.

To add **one class A initiation circuit** from the I/O circuit:

1. Wire as shown in Figure 3-12.
2. In programming, select “1 A Initiation” for the I/O Circuit (Menu 2, Step 7).



I/O circuit used as
Class A initiation device

Term.	Polarity
7	+ out
8	- out
9	+ Return
10	- Return

Notes:

Max. total alarm current for all zones: 1000 mA
Max. standby current per zone: 2 mA

Max. loop resistance for a device that does not draw current (for example, heat sensor) is 100 ohms.

Power-limited circuit.

Install in accordance with NPFA 70.

Figure 3-12. I/O circuit used for Class A initiation devices

3.10.3.2 Additional Notification Circuit(s) Via the I/O Circuits

To add **two class B notification circuits** from the I/O circuit:

1. Wire as shown in Figure 3-13.
2. In programming, select “2 B Notification” for the I/O Circuit programming option (System Options, Menu 2, Step 7).

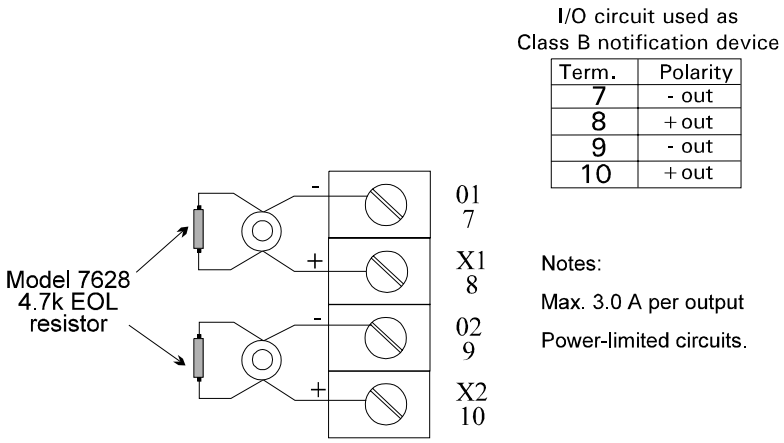


Figure 3-13. I/O circuit used for Class B notification devices

To add one **class A notification circuit** from the I/O circuit:

1. Wire as shown in Figure 3-14.
2. In programming, select “1 A Notification” for the I/O Circuit programming option (System Options, Menu 2, Step 7).

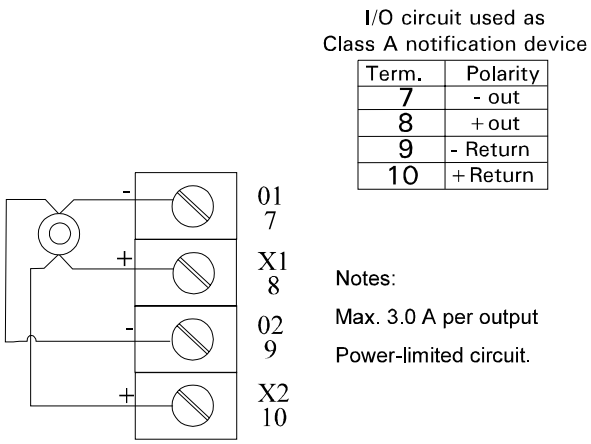


Figure 3-14. I/O circuit used for Class A notification devices

3.11 Smoke Detector Installation

The following sections describe installation of 2-wire and 4-wire smoke detectors. Make sure the smoke detectors you attach to the system are UL listed for compatibility (see the *Appendix* to this manual).

You must also be sure to install smoke detectors that are compatible with any alarm delay option used with the system. Smoke verification and cross alarm features are available. See Section 4.3 for descriptions of how these features operate.

Pre-releasing is available for use with a releasing solenoid. See Section 4.3 for more information.

3.11.1 Two-Wire Smoke Detector Connection

Figure 3-15 illustrates how to connect a UL listed two-wire smoke detector to a class B circuit.

Maximum loop resistance: 100 ohms

Maximum alarm current: 75 mA

If you are using the smoke verification feature, see Section 4.3.3 for smoke detector requirements.

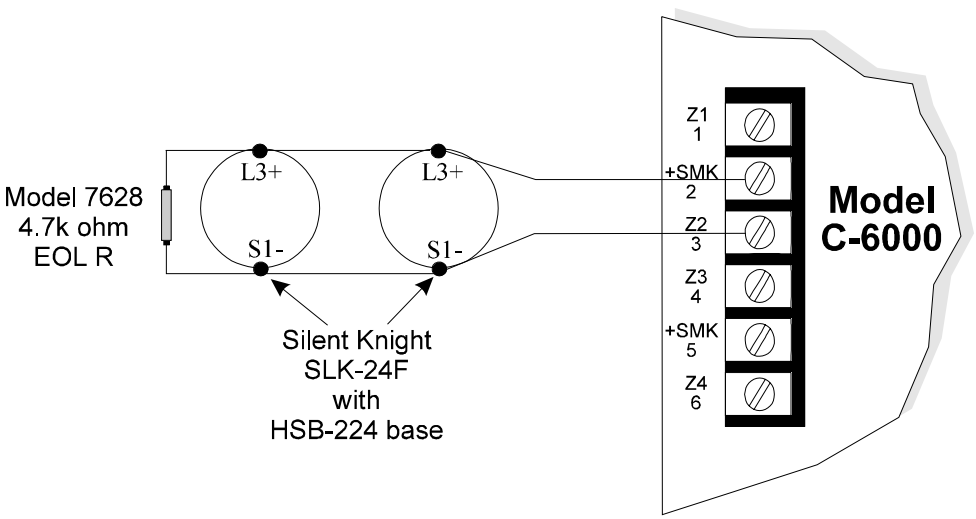


Figure 3-15. Two-Wire Smoke Detectors (Class B)

Silent Knight's Model SLK-24F with HSB-224 base used as an example. Any compatible smoke detector can be used. Refer to the *Appendix* of this manual for a list of smoke detectors (and notification appliances) that can be used with the C-6000.

See next page for a two-wire, class A connection.

Two-wire smoke detectors can be wired as Class A to the I/O circuit (Terminals 7-10). Wire as shown in Figure 3-16.

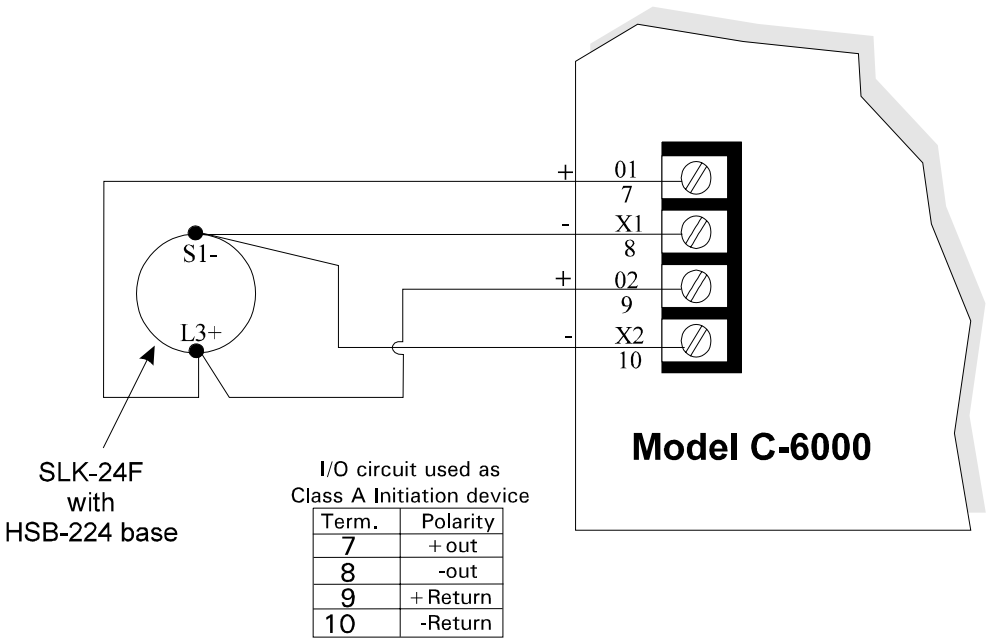


Figure 3-16. Two-Wire Smoke Detectors (Class A, connected on I/O circuit)

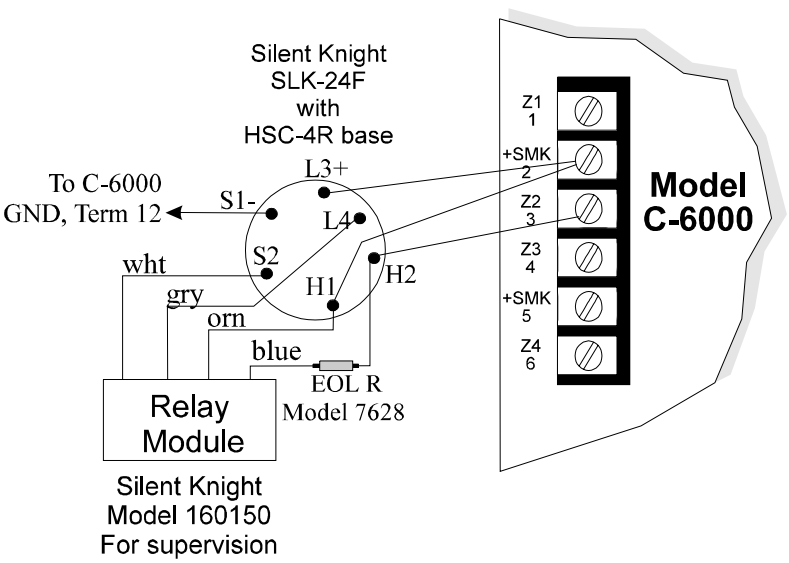
3.11.2 Four-Wire Smoke Detector Connection

Figure 3-17 illustrates how to connect Silent Knight's Model SLK-24F smoke detector to a class B circuit. Refer to the instructions that come with the SLK-24F for complete information. Figure 3-18 (next page) is a generic diagram, showing how to connect any four-wire smoke detector detector to a class B circuit. Refer to the *Appendix* to this manual for a list of smoke detectors that can be used with the C-6000.

When wiring a four-wire smoke detector to a class B circuit, you must use a power supervision unit.

Maximum loop resistance: 100 ohms

Maximum smoke detector power: 1 A



Connections in this Example

Detector Terminal	Supervision Module Wire Color	C-6000 Terminal
H2	Blue (with EOL)	Z2 (#3)
H1	Orange	+SMK (#2)
L3+		+SMK (#2)
L4	Gray	
S1		GND (#12)
S2	White	

Figure 3-17. Wiring Silent Knight's Four-Wire Smoke Detector to the C-6000

Wire a four-wire smoke detector as shown in Figure 3-18. Use a UL listed model and follow manufacturer's instructions for complete information.

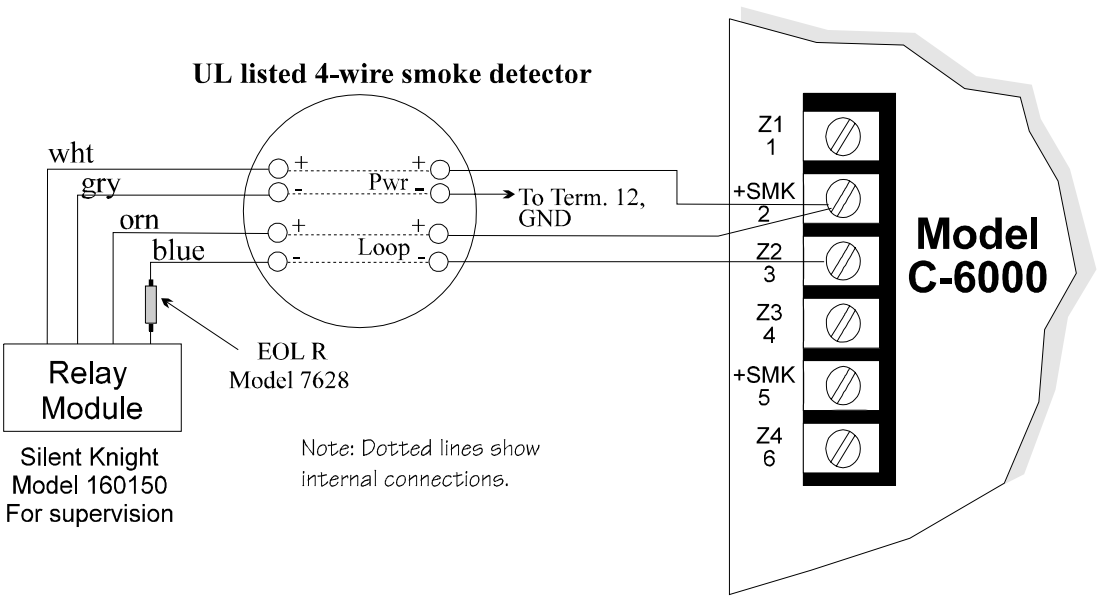


Figure 3-18. Example Four-Wire Smoke Detector (any 4-Wire Detector)

3.12 Model 7181 Zone Converter

The Model 7181 Zone Converter converts zones from class B to class A or from class A to class B. Figure 3-19 shows a typical installation. Refer to the *Model 7181 Installation Manual (P/N 150632)* for further information.

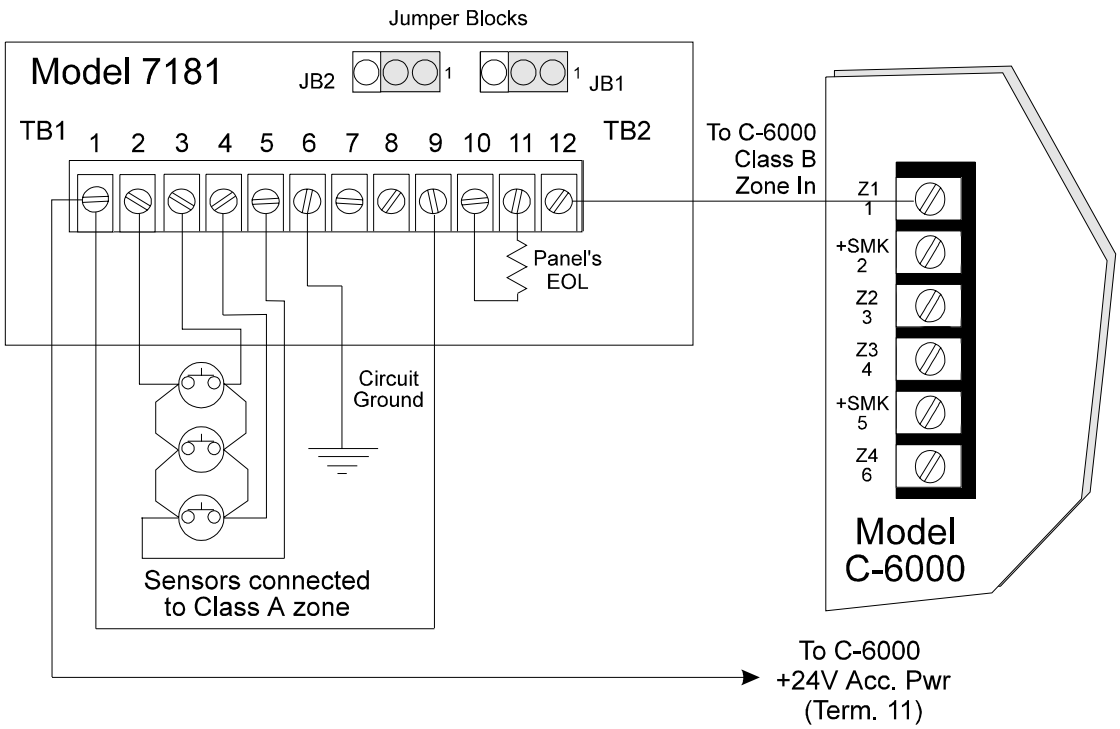


Figure 3-19. Connecting Class A Sensor to Class B Circuit

3.13 Model 5230 Remote Annunciator

The Model 5230 Remote Annunciator is an optional annunciator you can use for on-site programming. The 5230 also provides trouble and alarm information. Up to 7 annunciators can be used per system.

Steps for permanently installing annunciators appear below. Section 3.13.4 describes connection of a temporary annunciator for programming and troubleshooting.

1. Set annunciator ID codes (see Section 3.13.1).
2. Connect annunciators to the C-6000 (see Section 3.13.2).
3. Mount the annunciators (see Section 3.13.3).
4. If annunciators are to be supervised, select the correct number of supervised annunciators in programming (System Options, Menu 2).

3.13.1 Setting Annunciator ID Codes

Each annunciator to be supervised must be given its own identification codes. Before permanently installing the 5230 annunciator, set its ID code. ID numbers start at 1 and progress sequentially to 7 (7 annunciators max.). Upon initial power up, the address of each annunciator is displayed.

Use the 4-position dip switch on the back of the annunciator to set the ID code. Table 3-5 shows the positions (up or down) of the various switches for specific ID codes.

Table 3-5. Model 5230 Dip Switch Settings

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

Up = On
Down = Off

* *Not supervised*

3.13.2 Wiring the 5230 Remote Annunciator

A 4-position terminal block is provided with the annunciator to connect them to the C-6000. Figure 3-20 shows the wiring for the Model 5230.

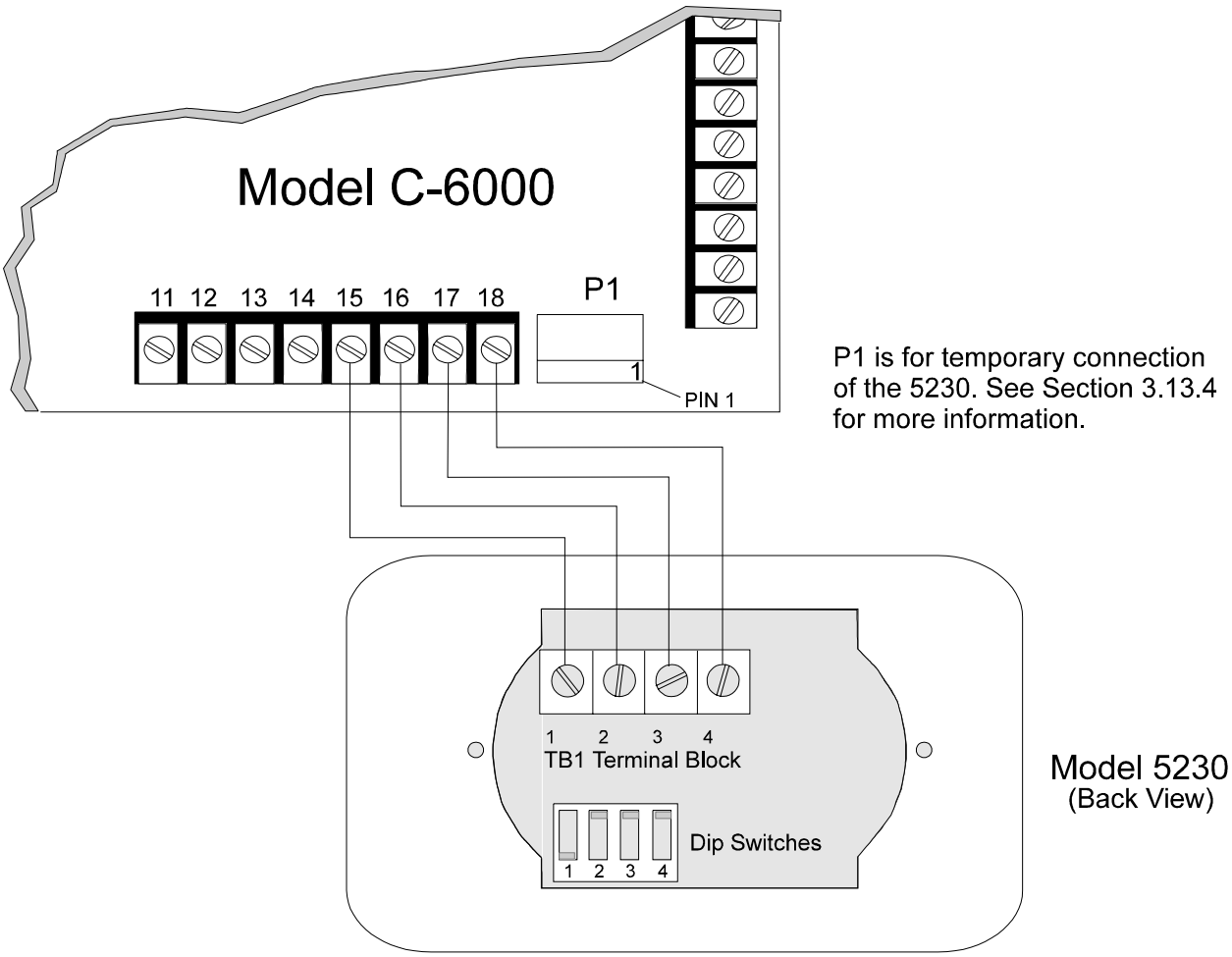


Figure 3-20. Model 5230 Connection

3.13.3 Mounting the 5230 Remote Annunciator

For UL installations, the 5230 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 located on the bottom edge of the annunciator. Gently turn the screwdriver until the mounting plate pulls away from the frame.
2. Secure the mounting plate 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.
3. Run the wiring to the annunciator through the square hole in the mounting plate.
4. When all of the wires are connected to the annunciator, set the top of the annunciator over the tabs on the top of the mounting plate. Make sure the wires are not 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 into place.

Note: You may have to gently squeeze the annunciator (top to bottom) to align it while snapping the bottom edge into place.

3.13.4 Temporary Annunciator Connection

If you are using an annunciator for programming or troubleshooting only, you can use cable P/N 130294 (ordered separately) to temporarily attach the 5230 at connector P1. The chart below shows the connections. See Figure 3-20 (previous page) for location of P1. A temporary annunciator does not require an ID code and does not need to be enabled through programming.

Table 3-6. Temporary 5230 Connection

C-6000 P1	5230 TB1
1	1
2	2
3	3
4	4

3.14 Model 4180 Status Display Module

The Model 4180 Status Display module provides remote annunciation of alarm and trouble status information for each zone.

The 4180 has 2 connectors, each of which has 8 outputs available for annunciation. These outputs are active high at +12 VDC. Each output can provide up to 100 mA of current, with a total limitation of 175 mA (when used with the C-6000). The module has 4 normally open relays that are nondedicated, and therefore can be wired to be active with any of the outputs. The 4180 is not supervised. Table 3-7 shows the system status indicated by each LED.

To install the 4180:

1. Connect the 4180 to the C-6000 as shown in Figure 3-21 (next page).
2. Use Connector P2 and P3 on the 4180 board to connect to the 4180 relays, other LEDs, relays, and so on, as required by your application.

The 4180 does not need to be enabled through programming.

Table 3-7. Model 4180 Connection

Connector P2	System Status
1	Alarm Zone 1
2	Alarm Zone 2
3	Alarm Zone 3
4	Alarm Zone 4
5	Alarm Zone 5
6	Alarm Zone 6
7	Dialer Trouble
8	AC/Battery Trouble

Connector P3	System Status
1	Trouble Zone 1
2	Trouble Zone 2
3	Trouble Zone 3
4	Trouble Zone 4
5	Trouble Zone 5
6	Trouble Zone 6
7	Notification Circuit Trouble
8	Trouble Silenced

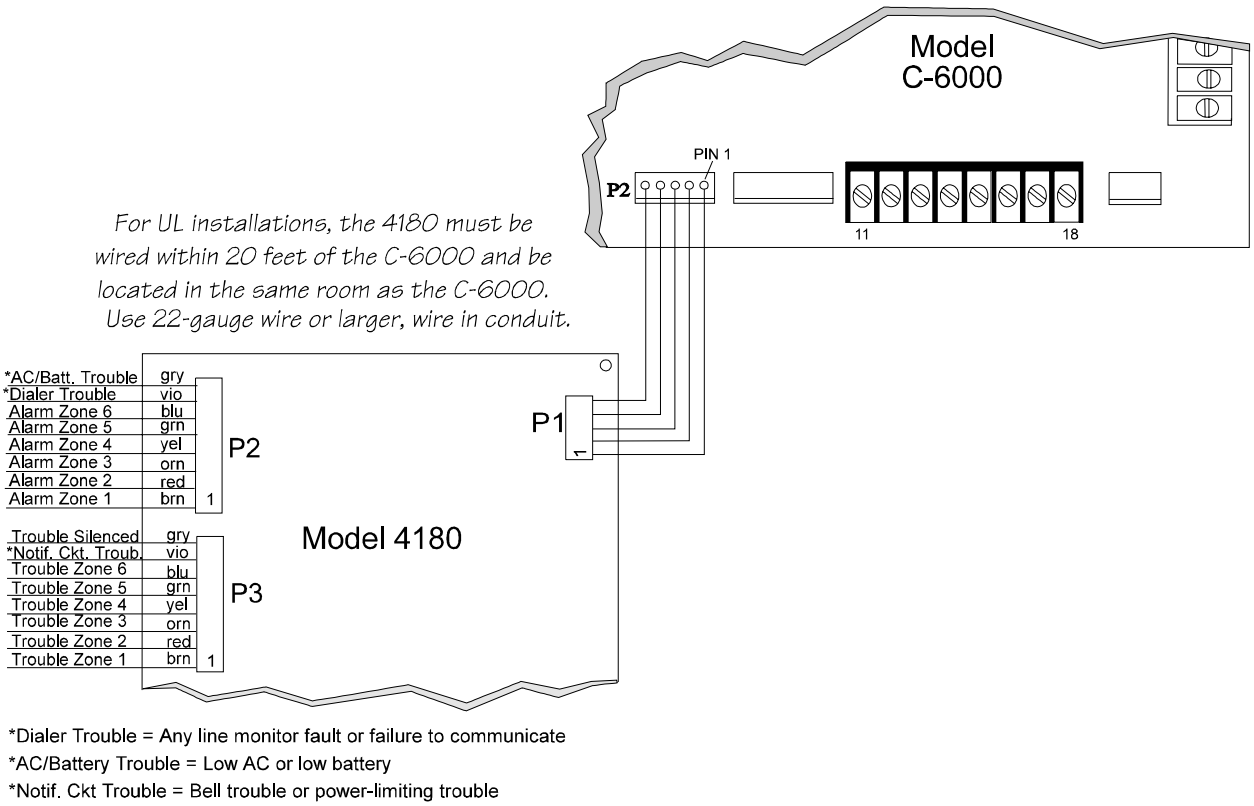


Figure 3-21. Model 4180 Connection

3.15 Model 5220 Direct Connect Module

The 5220 Direct Connect Module can be used with the C-6000 to meet NFPA 72 Remote Signaling or Local Protective Signaling standards. The 5220 requires four connections to the C-6000 and provides outputs for city box and polarity reversal applications.

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

The 5220 cannot be used for sprinkler supervisory.

3.15.1 Polarity Reversal Connection

To install the 5220 for polarity reversal, follow the steps below. Normal loop current is 4-8 mA with a 1k ohm remote station receiving unit.

1. Locate the knockout on the right side of the C-6000 cabinet to connect the 5220 using a short piece of conduit (must not exceed 20 feet in length).
2. Wire the 5220 to the C-6000 using the four-wire pigtail provided as shown in Figure 3-22.
3. Program by selecting “5220 Direct” for Relay 2 (Menu 5, Step 2).
4. Adjust the loop current if necessary using potentiometer R10 on the 5220.

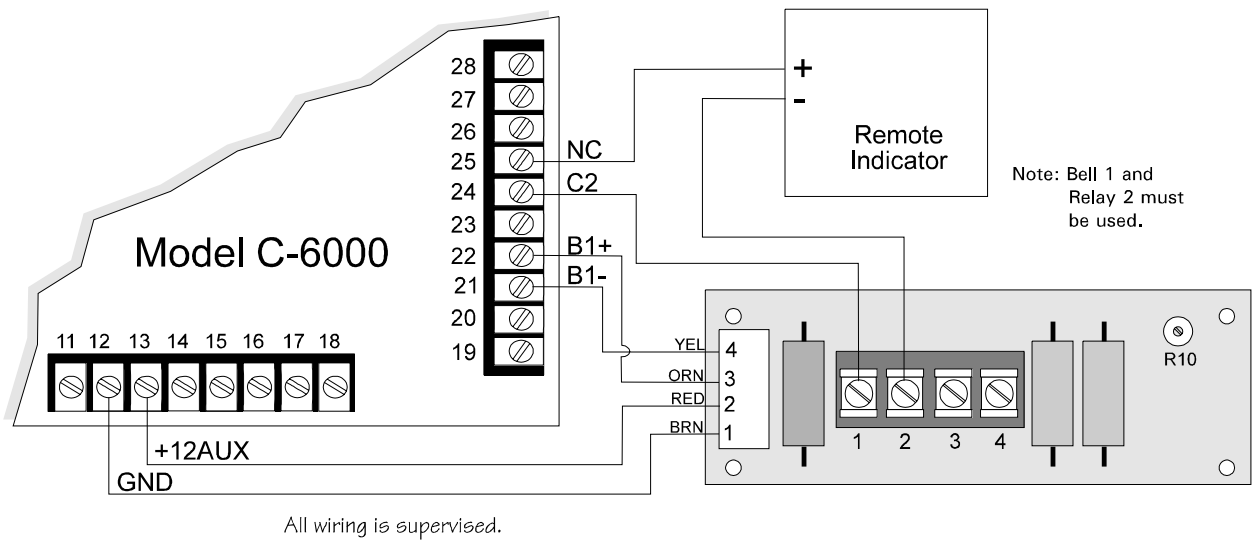


Figure 3-22. Wiring the 5220 for Polarity Reversal

3.15.2 City Box Connection

This section describes how to connect the C-6000 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 C-6000 cabinet to connect the 5220 using a short piece of conduit (must not exceed 20 feet in length).
2. Wire the 5220 to the C-6000 using the four-wire pigtail provided as shown in Figure 3-23. Figure 3-23 also shows how to wire the city box coils to the 5220.
3. Program by selecting "5220 City Box" for Relay 2 (Menu 5, Step 2).

It is not possible to reset the remote indication until you clear the condition and reset the C-6000 panel.

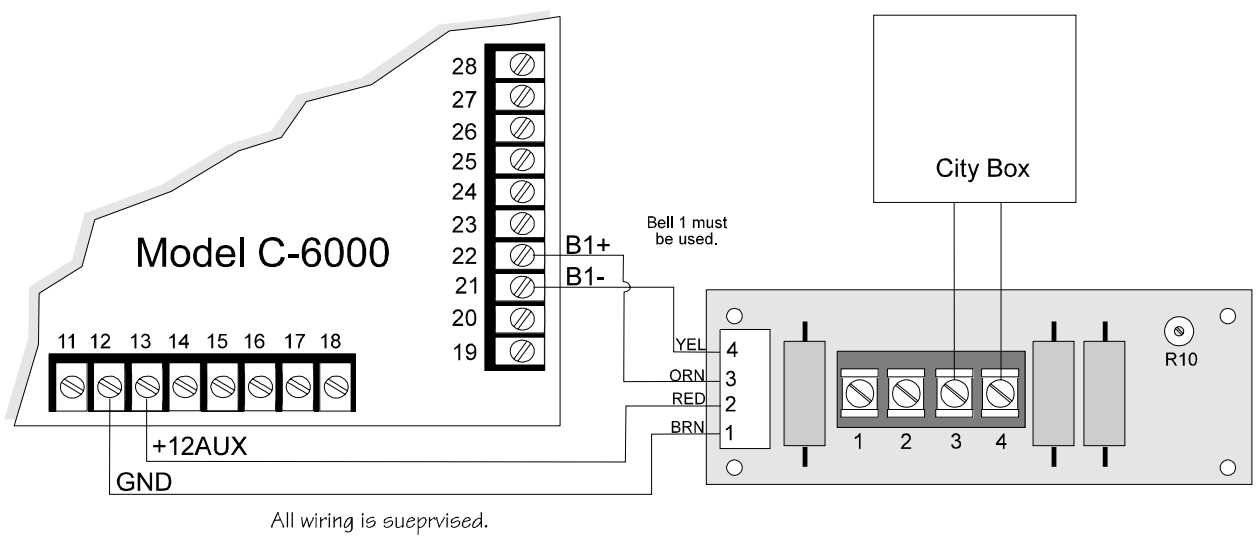


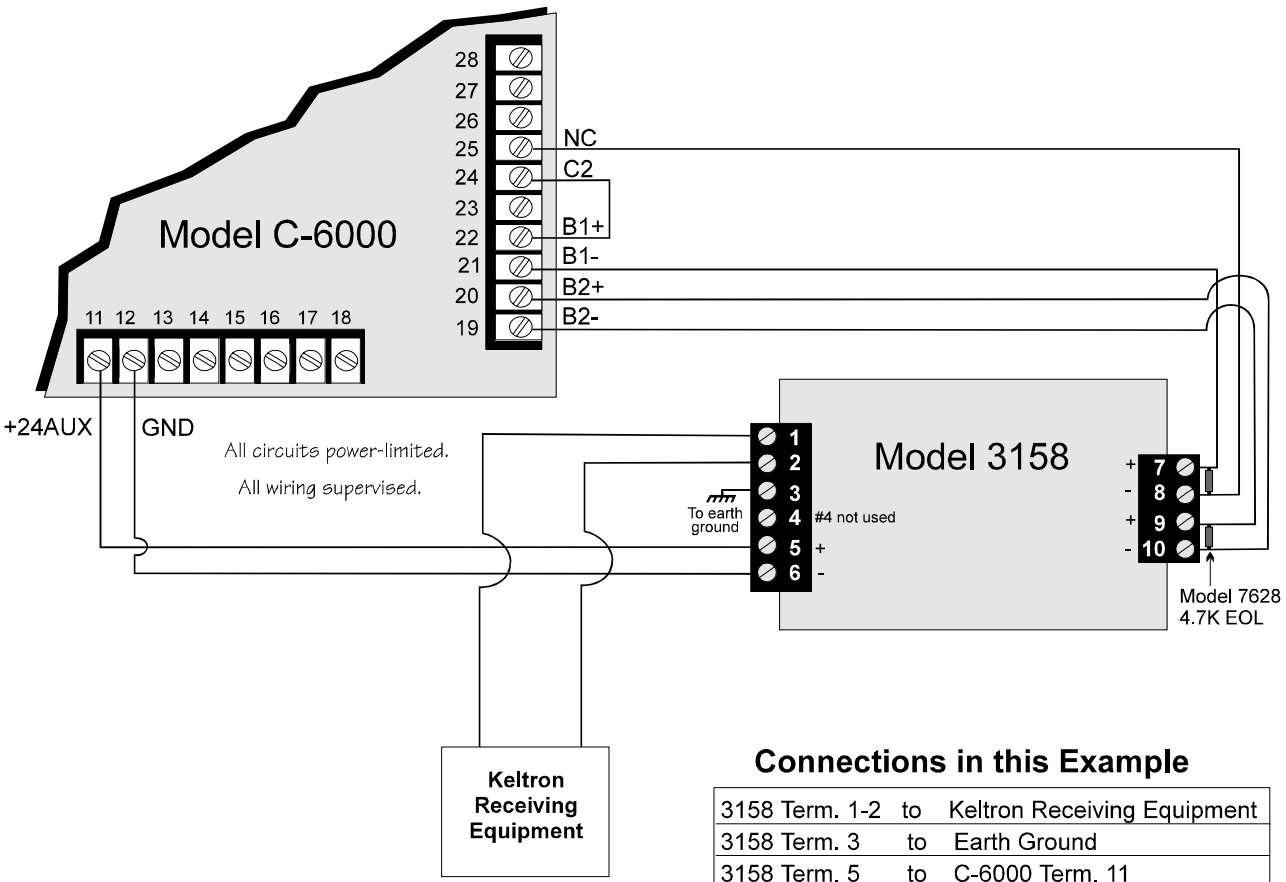
Figure 3-23. Wiring the 5220 for Connection to a City Box

3.15.3 Keltron Model 95M3158 Tones Transmitter Module

This section of the manual shows the specific connections you will make when wiring the C-6000 to the Keltron 95M3158 Tones Transmitter Module (3158). Refer to the installation sheet shipped with the 95M3158 for complete information.

1. Wire the 3158 to the C-6000 as shown in the figure below.
2. Program by selecting "5220 Direct" for Relay 2 (Menu 2, Step 2).
3. Program Bell 2 for supervisory signals.

Use the flexput circuits (Terminals 7-10) to power notification appliances.



Connections in this Example

3158 Term. 1-2	to	Keltron Receiving Equipment
3158 Term. 3	to	Earth Ground
3158 Term. 5	to	C-6000 Term. 11
3158 Term. 6	to	C-6000 Term. 12
3158 Term. 7	to	C-6000 Term. 21
3158 Term. 8	to	C-6000 Term. 25
3158 Term. 9	to	C-6000 Term. 19
3158 Term. 10	to	C-6000 Term. 20
C-6000 Term. 22	to	C-6000 Term. 24

Figure 3-24. Wiring the Keltron 95M3158 to the C-6000

3.16 Releasing Panel Installation and Operation

The C-6000 can be installed as a releasing panel. Any of the notification circuits can be connected to a releasing solenoid. The releasing solenoid can be used with manual pull stations and can be programmed to abort through an external switch.

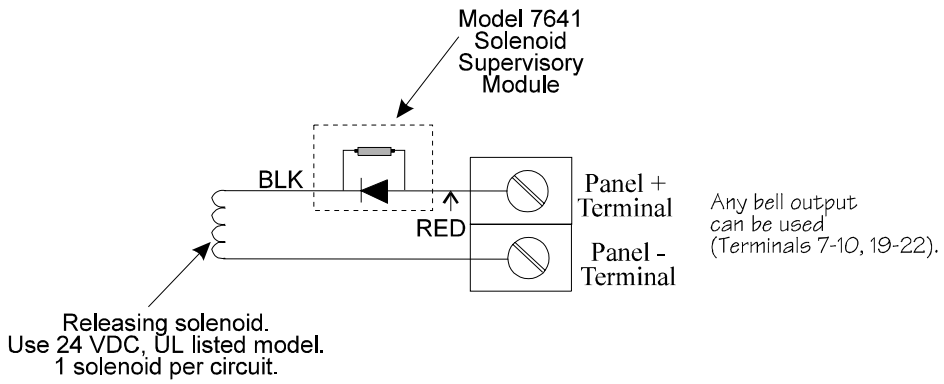


Figure 3-25. Releasing Solenoid Installation

To install a releasing solenoid:

1. Wire as shown in Figure 3-25. You must use Silent Knight Model 7641 Solenoid Supervisory Module.
2. Select the options in programming as needed for your application. See Section 5.11 for examples of how to program Cross Alarm Release and Pre-Release applications.
3. If you are installing a manual abort switch, see Section 3.16.2.

3.16.1 Releasing Operation

The basic operation of a releasing panel is that when an alarm occurs, a timer begins counting down the *programmed number of seconds before water will be released. Water will flow for the *programmed number of minutes. Actuation of a manual release switch at any time will cause water to be released immediately. The action chart below shows the general sequence of events for releasing operation. There are several types of abort operations available with the C-6000. See Section 3.16.2 for specific information about the type of switch you are using.

**Note: Duration programmed in Menu 2.*

Table 3-8. Releasing Operation

If this occurs:	This happens:
An on-site operator presses a manual release switch at any time.	Water will release immediately. Actuation of a manual release switch overrides any other occurrence.
An on-site operator resets an alarm condition before the pre-release timer expires.	Water will not be released. The alarm condition will be reset.
An on-site operator presses and holds an abort switch before the pre-release timer expires. (See Section 3.16.2 for complete details.)	Water will not be released if the operator is still holding the abort switch when the timer expires. Timing depends on the abort operation you have selected. See Table 3-9 (next page).
The pre-release timer runs out (an alarm reset has not occurred during the pre-release time).	Water will be released.

3.16.2 Abort Switch Installation and Operation

Installation

You can connect an external abort switch to control the releasing solenoid.

To install an abort switch:

1. Wire as shown in Figure 3-26 (next page).
2. In programming, select the appropriate operation of the abort switch for your installation in System Options (Menu 2) at Step 1.

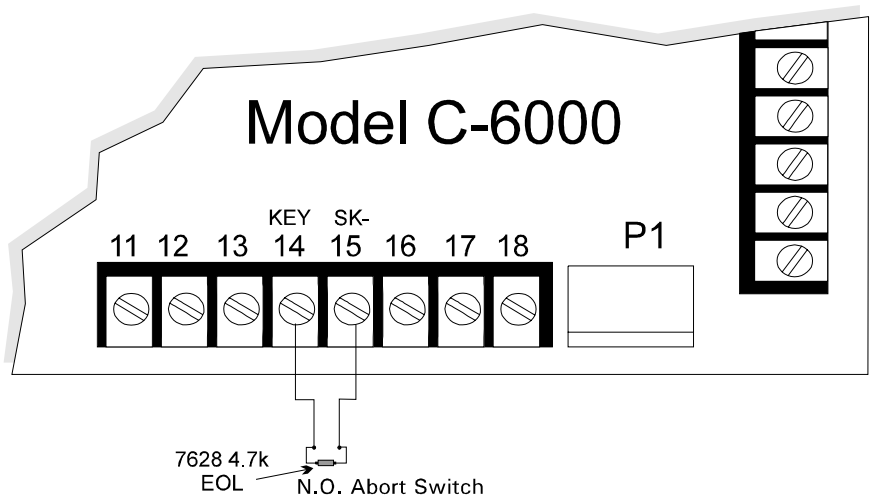


Figure 3-26. Wiring an External Abort Switch

Operation

Table 3-9 describes operation of the various types of aborts available with the C-6000. The abort switch can be used with pre-release or cross alarm zones.

In a pre-release application, if a user holds the abort switch, the pre-release timer will be suspended until the switch is released. Once the user releases the abort switch, the countdown continues.

In a cross release application, if the user is holding the abort switch before a second zone trips, the release will be delayed (even though a second zone has tripped).

Table 3-9. Abort Operation Types Available with the C-6000

Operation Type	Description
UL Abort	The pre-releasing timer continues to count down after the switch has been activated. When it reaches 10 seconds, the timer will pause until the switch has been released. Once the switch has been released, the timer will continue to count down the remaining 10 seconds.
IRI Abort *Type of abort required by Industrial Risk Insurers.*	This type of abort will occur only if the abort switch is pressed before a second zone goes into pre-release or alarm. If a second alarm does occur before the abort is pressed. The abort switch will not function.
NYC Abort *Type of abort required by New York City, MEA.*	Once the pre-releasing timer starts to count down from its programmed duration, pressing the abort switch will reset the timer to its original value plus 90 seconds. The timer will not restart until the abort switch is released. Any other aborts that occur will repeat this process.
Restart Abort	Once the pre-releasing timer starts to count down from its programmed duration, pressing the abort switch will reset the timer to its original value. The timer will not restart until the abort switch is released. Any other aborts that occur will repeat this process.

3.17 Model 5395

Figure 3-27 shows you how to connect the Model 5395 Distributed Power Module to the Model C-6000 panel. Refer to the 5395 Installation Manual (P/N 150933) for complete information.

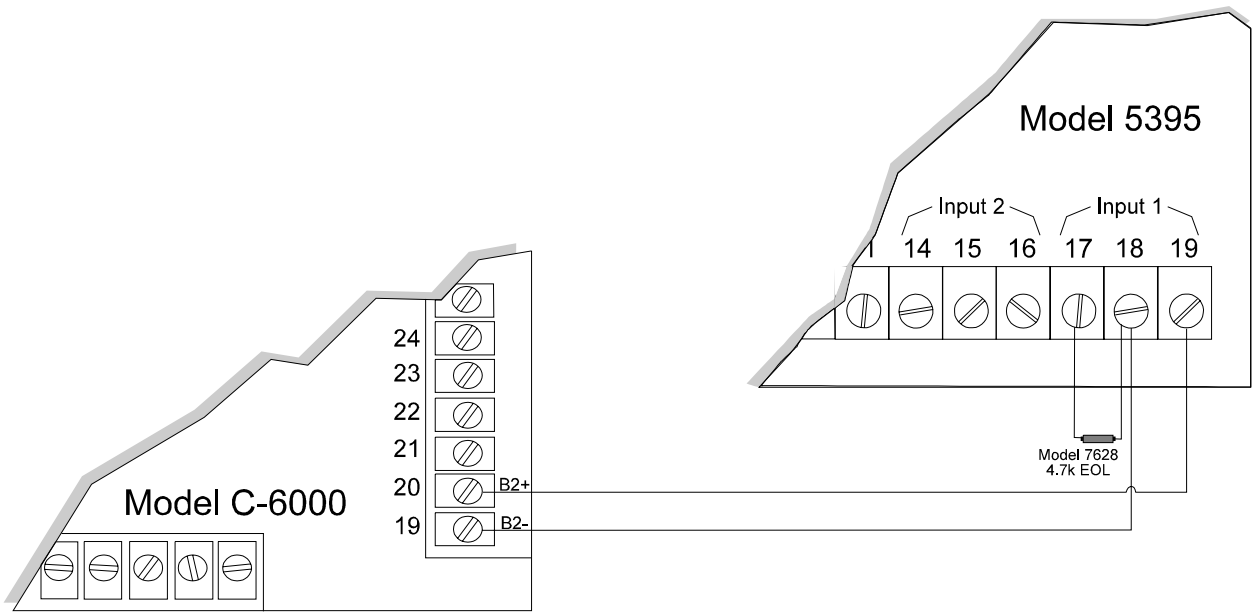


Figure 3-27. Model 5395 Connection

3.18 Auxiliary Relays

The C-6000 provides two auxiliary relay outputs. One relay output activates for alarms or troubles (depending on programming). The other can be programmed to annunciate either alarm or trouble conditions or can be used to activate the Model 5220 Direct Connect Module. (Figure 3-28 shows the relay contact connections.)

Note: Relay outputs do not reset when an alarm or trouble is silenced. The alarm must be reset or the trouble restored.

Relay 1 can be used for one of the following:

- Activate in an alarm condition
- Activate in a trouble condition

Relay 2 can be used for one of the following:

- Activate in an alarm condition
- Activate in a trouble condition
- Control of the 5220 Direct Connect Module (see Section 3.15 for more information).

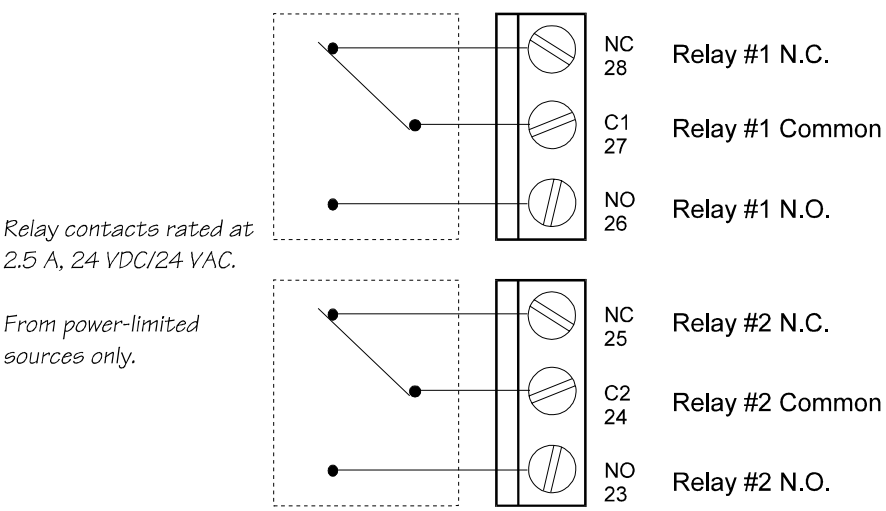


Figure 3-28. Auxiliary Relays

3.19 External Operation Keyswitch

You can attach a UL listed remote keyswitch to the C-6000 for manual silencing or resetting.

The keyswitch is supervised and operates as Normally Open Momentary at 24 VDC/.25 A minimum.

Notes: If you are using a pushbutton reset, it must be placed within a firefighter's lockbox.

If you are using an abort switch (as with a releasing panel), you cannot use the external operation keyswitch feature because Terminals 14-15 are the abort switch inputs.

To install the external keyswitch:

1. Wire as shown in Figure 3-29.
2. In programming, select the keyswitch operation for "Silence" or "Reset" in System Options (Menu 2) at Step 1. If silence is selected, the keyswitch turns off an annunciator that is signaling a trouble or alarm condition. If reset is selected, the keyswitch removes smoke detector power allowing the the smoke detector to sense new alarm conditions.

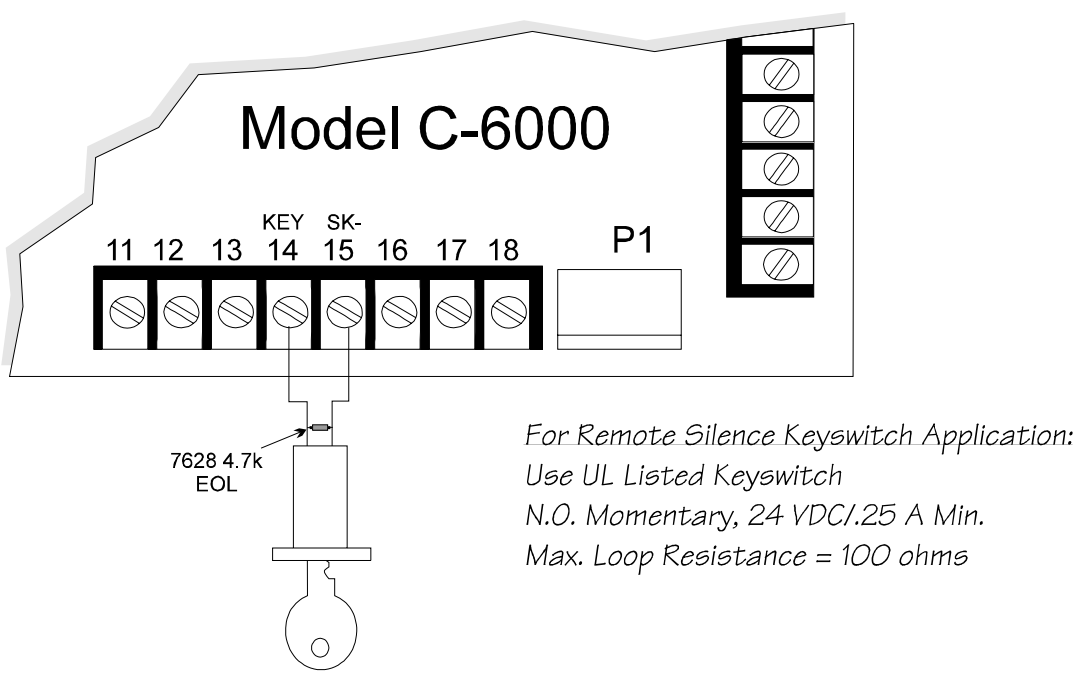


Figure 3-29. Wiring an External Keyswitch

Section 4.
Operation

This section describes operation of the C-6000.

4.1 Installer's and Operator's Codes

Many system operations require a code. There are two codes, Installer's and Operator's. The Installer's Code allows access to all functions, including programming. The Operator's Code allows access to most system operations.

The instructions in this manual always tell which codes can be used to perform an operation. A code is always required when using the 5230 annunciator. In some cases, you do not need to enter a code with the built-in annunciator. Section 4.5 describes system operation and lists required codes.

Factory-programming: Installer's Code = 6000
Operator's Code = 1111

These codes can be changed through the Codes Menu (Menu 6). See Section 5.8 for more information.

4.2 Annunciators Used with the C-6000

Two types of annunciators can be used to perform system operation, the built-in annunciator, which is located on the the C-6000 board, and the optional Model 5230 Remote Annunciator.

The built-in annunciator is for system operation only, not for programming or troubleshooting. The 5230 annunciator can be used for all system functions, including programming and troubleshooting. Figure 4-1 (next page) shows the built-in annunciator. Refer to Section 3 for location of the annunciator on the C-6000 board. Meaning of the two-character codes are described in Section 7.

Figure 4-1. Built-in Annunci

Figure 4-2 shows the 5230 Remote Annunciator.

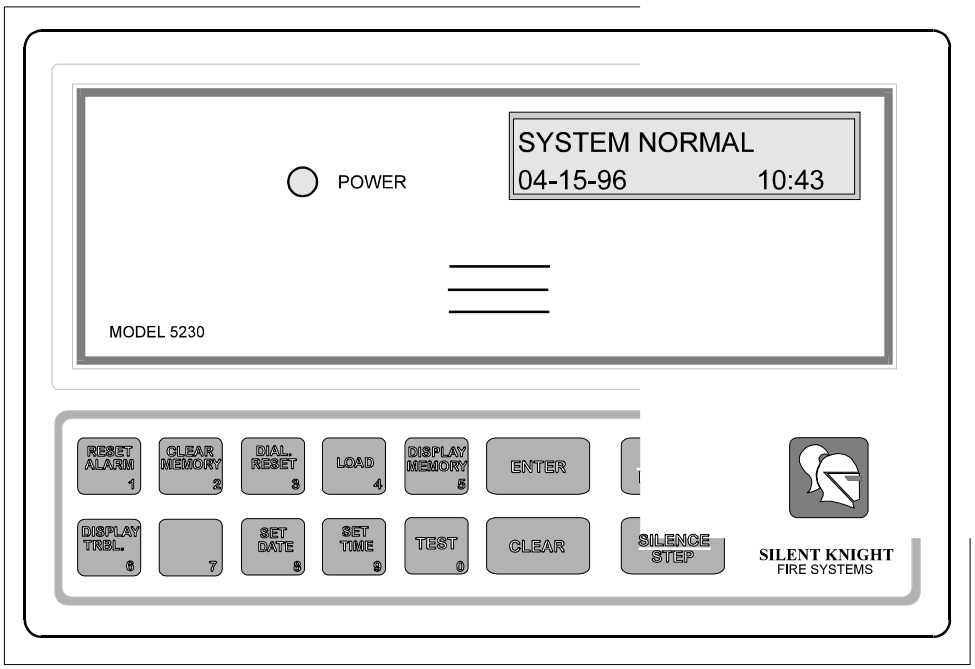


Figure 4-2. Model 5230 Remote Annunciator

This annunciator has a liquid crystal display (LCD) for displaying English-language messages. If the C-6000 is not being programmed, the LCD scrolls through system status messages. These messages are explained in Section 7.

When AC power is being supplied, and the battery is fully charged, the Power LED is on steadily. If the Power LED is flashing, the AC power has been removed or the backup battery is low. If neither AC nor battery power is being supplied, the Power LED is off. The annunciator beeps when keys are pressed. It also emits a long, high-pitched tone when a trouble condition occurs or when an incorrect keystroke has been made.

4.3 Alarm Delays Available with the C-6000

4.3.1 Cross Alarm for Open Area Protection

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. The first detector that trips will activate the pre-release notification circuits, alarm bells, alarm relays and 4180 alarm output. If a second detector trips, it will activate the releasing circuit as well as all audibles. The alarm will also be reported to the central station.

Do not use cross-alarming if smoke verification or pre-release will be used. There must be at least two automatic detection devices in each protected space.

To enable cross alarming, select cross alarm zones in Menu 3, Zone Options.

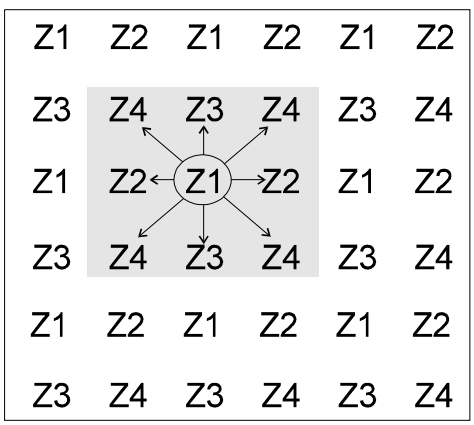


Figure 4-3. Example of Smoke Detector Cross Alarm Application

4.3.2 Pre-release

Pre-releasing is an optional feature that is intended to be used with the releasing solenoid. When a zone goes into pre-releasing, the system will delay for the programmed duration before releasing.

Pre-release can be used only in UL Local Protected Fire Alarm Systems. Do not mix pre-release zones with cross-alarm or smoke verification zones.

Pre-releasing is selected in Menu 3, Zone Options. Pre-release duration is programmed in Menu 2, Step 3.

4.3.3 Smoke Verification

Smoke verification is an optional false alarm prevention feature that verifies an alarm condition by resetting the smoke detector. If the alarm condition still exists by the time the reset cycle has completed, the detector will go into alarm. If the detector is no longer in alarm, no report will go to the central station. Smoke verification is ignored if another zone is already in alarm when an alarm occurs in a smoke verification zone.

Enable smoke verification for each zone through zone programming, Menu 3.

Figure 4-4 shows the C-6000 smoke verification cycle.

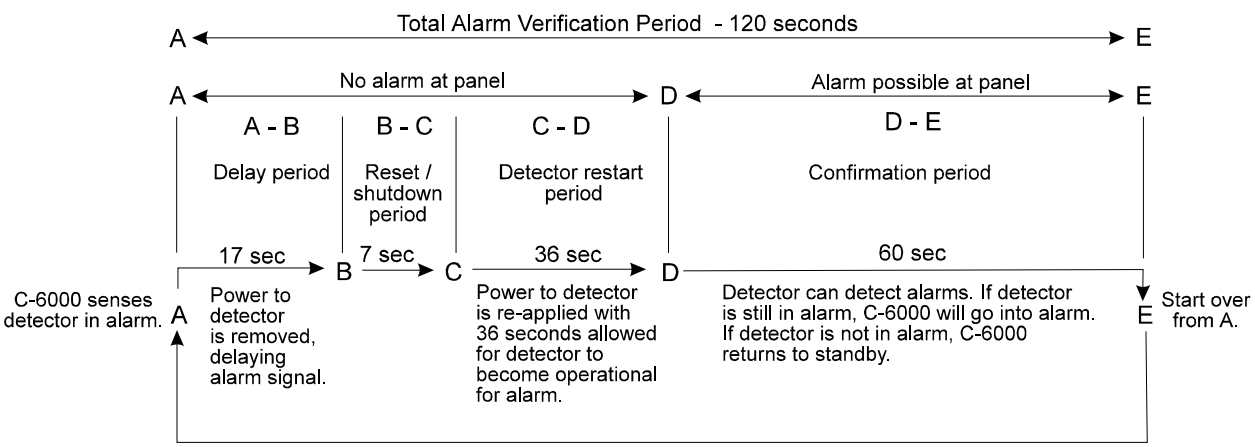


Figure 4-4. C-6000 Smoke Verification Cycle

Notes:

If you are using the smoke verification feature:

1. Do not use smoke detectors with built-in alarm verification.
2. Do not use in a zone that has been programmed for cross-alarm or pre-release.
3. Do not use pull stations or waterflow switches in smoke verification zones.

Select the 1-1.25 second zone response speed (fastest possible response time) for smoke verification zones.

4.4 Bell Cadence Patterns Available with the C-6000

Bell cadence patterns are programmable per zone through the Bells Menu (Menu 4). Figure 4-5 shows the patterns that are available. See Section 5.6 for information about how to select cadence patterns in programming.

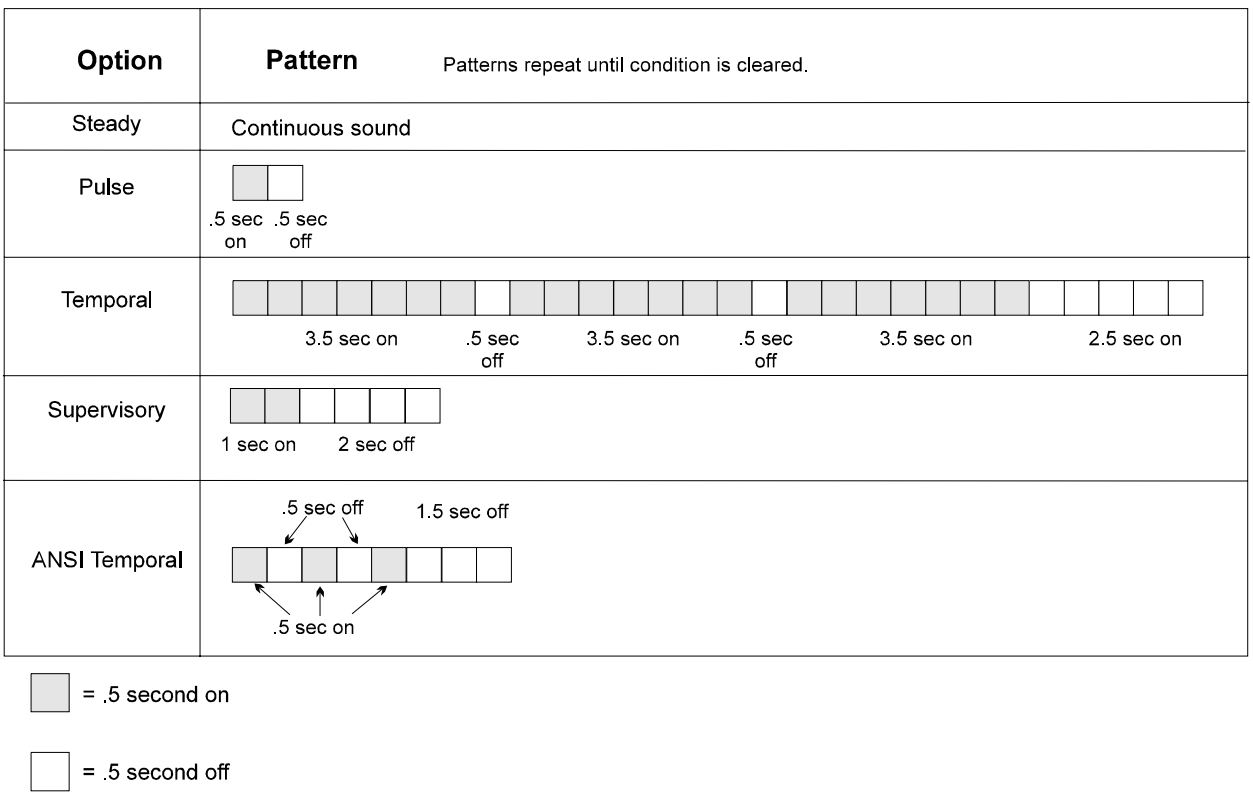


Figure 4-5. Bell Cadence Patterns

4.5 System Operation

The following chart shows basic operating functions using either the built-in annunciator or the Model 5230. Section 7 describes the system messages that could be displayed. If no keys are pressed for 4.5 minutes while in program mode, the system will time out and resume normal operation. The message `TRY AGAIN` appears on the 5230 display if you do not press any keys for 5 seconds while accessing a function, or, if you attempt to access a function before exiting from another function.

IMPORTANT: Only one annunciator can be used at a time.

To:	Press:		Additional Information
	5230 Annunciator	**Built-in Annunciator**	
Reset alarms, including cross alarm or pre-release conditions	[1] [ENTER] [Installer's or Operator's Code] *Installer's Code Default=6000* *Operator's Code Default=1111*	[1] [ENTER] [Code]	After a smoke alarm has been triggered, this function removes smoke detector power for the programmed length of time. This allows the smoke detector to sense new alarm conditions.
Reset the dialer	[3] [ENTER] [Installer's Code]	[3] [ENTER] [Installer's Code]	Aborts an in-progress call to the central station.
Silence trouble or alarm conditions	[SILENCE] [Installer's or Operator's Code]	[SILENCE]	Silences signaling devices that are in trouble or alarm.
Disable/Enable (shunting / unshunting)	(Zone #) + [DISABLE] + [Installer's or Operator's Code]	(Zone #) + [DISABLE] + [Installer's or Operator's Code]	Disables a zone (prevents it from responding to an alarm condition) or reactivates a disabled zone. When you disable a zone, a trouble buzzer will sound. The 5230 LCD displays "Disable Zone #". The on-board annunciator displays "b#".
Display troubles	[6] [ENTER] [Installer's or Operator's Code]	[6] [ENTER]	Displays trouble conditions.

continued on next page

To:	Press:		Additional Information
	5230 Annunciator	**Built-in Annunciator**	
Display event memory	5 ENTER [Installer's or Operator's Code]	5 ENTER	Memory LED turns on. Last 20 events display on the LCD.
Clear event memory	2 ENTER [Installer's Code]	2 ENTER [Installer's Code]	Clears all data out of event memory.
Clear (erase) a keystroke mistake	CLEAR	CLEAR	Enables you to start again if you enter the wrong keystrokes. If you enter a function incorrectly on the 5230, the annunciator's buzzer will emit a long, high-pitched tone.
Test the system	0 ENTER [Installer's or Operator's Code]	0 ENTER	The system will test the 4180 outputs, the built-in annunciator LED display, signaling devices, sirens, and dialer.
Walk test	2 2 ENTER [Installer's Code] To exit, press STEP STEP CLEAR CLEAR.	2 2 ENTER [Installer's Code] To exit, press SILENCE SILENCE CLEAR CLEAR.	Enables you to test the system. When you enter this mode, the LCD will indicate that you are in Walk Test mode. When a zone is violated, the signaling device outputs will become active for approximately 3 seconds. You cannot enter the walk test if the dialer is busy. The dialer will be disabled while you are running a walk test.
Fire drill	2 0 ENTER [Installer's or Operator's Code] To end a fire drill: press SILENCE [Installer's or Operator's Code]	2 0 ENTER [Installer's or Operator's Code] To end a fire drill: press SILENCE	Causes the system to sound an alarm and report a FIRE TEST. 5230 LCD displays "Fire #0".
Set date	8 ENTER [Installer's or Operator's Code] followed by 6 digits for date. (Use MMDDYY format.)	8 ENTER [Installer's or Operator's Code] followed by 6 digits for date. (Use MMDDYY format.)	When 6th digit is pressed, touchpad returns to normal operation. No need to press ENTER.

continued on next page

To:	Press:		Additional Information
	5230 Annunciator	Built-in Annunciator	
Set time	9 ENTER [Installer's or Operator's Code] followed by 4 digits for time in 24-hour military format.	9 ENTER [Installer's or Operator's Code] followed by 4 digits for time in 24-hour military format.	When 4th digit is pressed, touchpad returns to normal operation. No need to press ENTER.
Initiate download	4 ENTER [Installer's Code]	4 ENTER [Installer's Code]	Starts the downloading process. Exit downloading mode by pressing CLEAR CLEAR.
Enter Step Programming mode	Using the 5230 annunciator, press: 2 7 ENTER [Installer's Code] To exit, press STEP STEP CLEAR CLEAR.	This operation is not available from the built-in annunciator.	Step programming is described in detail in Sec. 5. You cannot enter step programming if the dialer is busy. The dialer will be disabled until you exit step programming.
Enter Zone Trouble-shooting mode	Using the 5230 annunciator, press: 2 5 ENTER [Installer's Code] To exit, press STEP STEP CLEAR CLEAR.	This operation is not available from the built-in annunciator.	Enables you to locate and correct problems. See Section 7.

4.5.1 Silencing the System

To silence an alarm or trouble, press SILENCE. If you are using the 5230, you must enter a code.

When silencing alarms, all audibles, including bells, 5230s, and the on-board buzzer will be silenced.

4.5.2 LED Indicators

Six light emitting diodes (LEDs) appear in the C-6000 cabinet window. Some LEDs have other meanings when they turn on in conjunction with codes that display on the built-in annunciator (see Section 7 for more information).

LED	Status	Condition
ALARM (red)	OFF	No alarm condition exists.
	ON	A fire alarm condition exists in the zones shown on the annunciator.
SILENCED (yellow)	OFF	An alarm or trouble has not been silenced.
	ON	An alarm or trouble condition exists and the audible annunciators have been silenced.
AC / DC (green)	OFF	Panel has lost all power.
	ON	Panel is running on AC and battery power (normal condition).
	FLASHING	Panel is running on battery power only or AC power only.
MEMORY (yellow)	OFF	Memory is currently not being displayed.
	ON	Memory is currently being displayed.
TROUBLE (yellow)	OFF	No trouble condition exists.
	ON	A trouble condition exists.
SET MODE (yellow) REPORT	OFF	Normal operating mode and not reporting.
	ON	System is in a test or program mode.
	FLASHING	System is reporting

4.6 System Testing

The C-6000 can perform a walk test, 24-hour automatic communication test, and a fire drill. The following sections describe the tests in detail.

4.6.1 Fire Drill (Mode 20)

If you are using the built-in annunciator, press [2][0][ENTER] [Installer's or Operator's Code] to begin the fire drill. Press [SILENCE] to end the fire drill.

If you are using the 5230 annunciator, press [2][0][ENTER] [Installer's or Operator's Code] to begin the fire drill. Press [SILENCE] [Installer's or Operator's Code] to end the fire drill.

When the fire drill begins, the system will sound an alarm and report "FIRE TEST BEGIN". The system will send a "FIRE TEST END" report when the fire drill ends.

4.6.2 Walk Test (Mode 22)

The Walk Test mode enables you to test individual sensors.

To enter Walk Test mode, press [2][2][ENTER] [Installer's Code]. The internal buzzer will sound during the walk test and the LCD will indicate that you are in Walk Test mode. When a zone is violated, the bell outputs will become active for approximately three seconds. During a walk test, cross-alarm, pre-release, and smoke verification are disabled. Follow the manufacturer's directions for testing sensing devices.

Zones can be disabled individually to facilitate testing and troubleshooting.

To exit Walk Test mode, press [STEP][STEP][CLEAR][CLEAR]. If using the built-in annunciator, press [SILENCE][SILENCE][CLEAR][CLEAR].

4.6.3 Automatic Self Test

The Model C-6000 lets you select the time of day to send the 24-hour automatic test signal to the central station.

The Auto Test (a dialer test sent automatically at specified times) also sends all unrestored events. Events listed before AUTO TEST on the printout at the central station are new events. Events listed after AUTO TEST are old events that have not been restored.

4.7 Watchdog Circuit

During normal operation, the control microprocessor of the C-6000 is constantly running programs to check inputs and carry out other routine functions. If this program should stop running, the watchdog circuit will automatically 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 5.
Programming

There are two ways to program the C-6000 panel. You can use of the Model 5541 Download Software (Revision 4.0 and higher) or the 5230 Remote Annunciator. Section 5.1 of this manual shows the menu structure of the 5541 software. Section 5.2 describes how to program using the 5230 annunciator.

> **IMPORTANT**
>
> A full system checkout must be performed any time the panel is programmed.

5.1 Programming with 5541 Download Software

The C-6000 can be programmed from a remote site using the Model 5541 Download software. The Model 5530 Modem and an IBM-compatible computer are required. Refer to the Model 5541 Downloading Software Installation and Operation Manual (P/N 150497) for more information.

Note: Downloading must be initiated from the installation site. It cannot be initiated remotely.

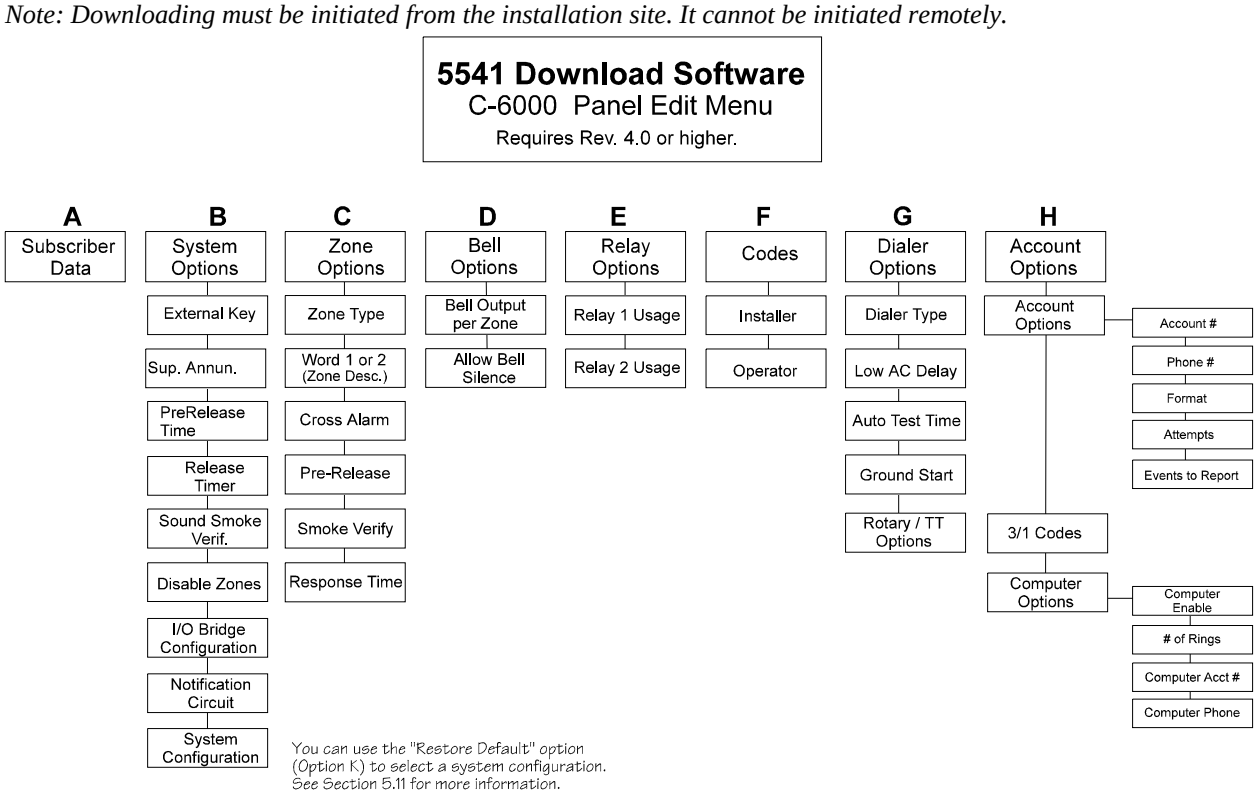


Figure 5-1. Model 5541 Download Software Menu Structure for Programming the C-6000

5.2 Programming from the 5230 Remote Annunciator

5.2.1 Menu Structure

The diagram below shows the menu structure for programming the C-6000 using the 5230 Remote Annunciator.

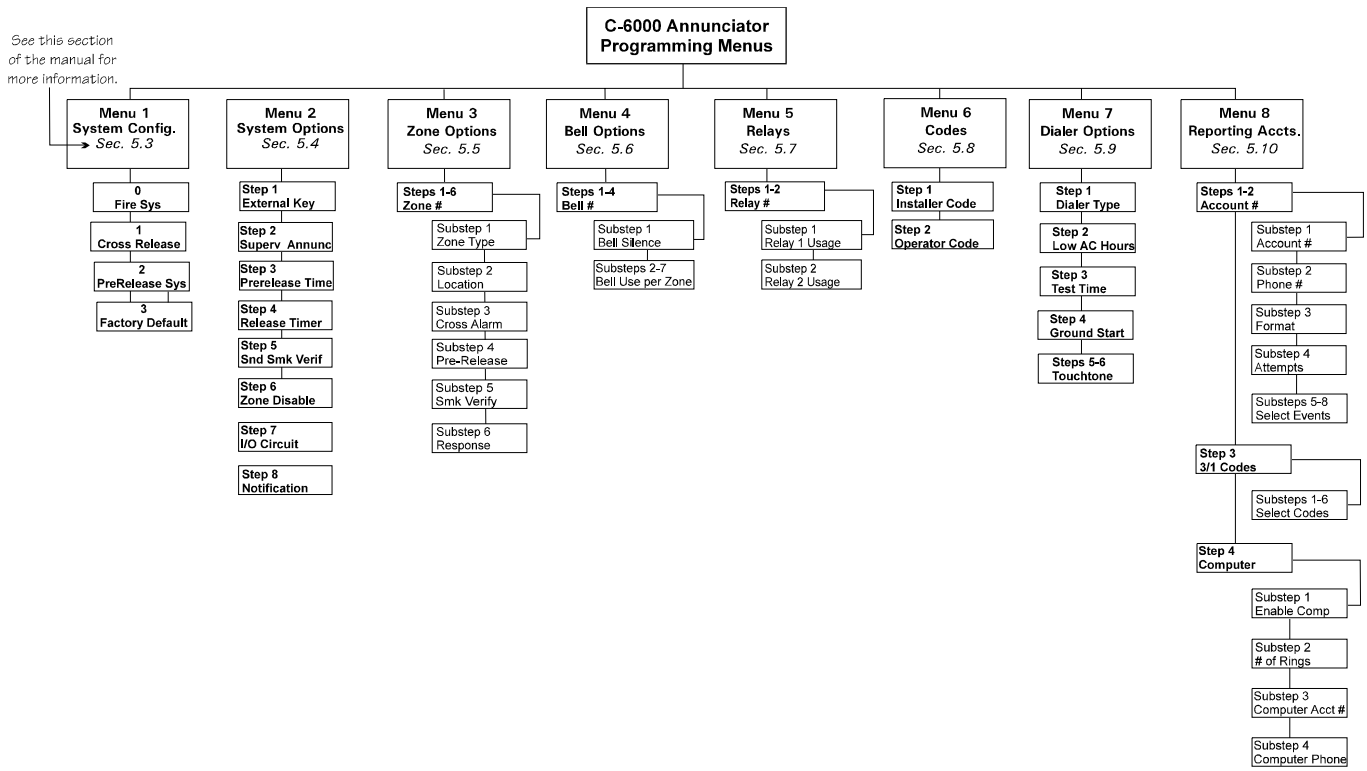


Figure 5-2. C-6000 Step Programming Menu Structure

5.2.2 Entering / Exiting Programming Mode

To enter annunciator programming, press [2] [7] [ENTER] [*Installer's Code]. From here you can select a menu for programming.

*Installer's Code is factory-programmed as `6000`.

To exit programming, press [STEP] [STEP] [CLEAR] [CLEAR].

5.2.3 Moving through the Menus

To scroll through the menus:	Press [ENTER].
To select a menu:	Enter the menu number followed by [ENTER].
To move to a new step in the menu:	Press Step # [ENTER].
To move to a new substep in the menu:	Press [STEP] Substep # [ENTER].
To move to a different menu:	Press [STEP] [STEP] Menu# [ENTER].
To move to a specific step in a different menu:	Press [STEP] [STEP] Menu# Step# [ENTER].
To move to a specific substep in a different menu:	Press [STEP] [STEP] Menu# Step# Substep# [ENTER].

5.2.4 Making Selections

You make programming selections by entering numeric data from the annunciator. For many options, you will either enable or disable an option. In other cases, you will enter a number to represent a choice or to indicate a numeric value.

For enable/disable (yes/no) options, press any numeric key to toggle the option on or off.

5.2.5 Default Values / System Configuration Feature

All options have been factory-programmed. In most cases, options have been factory-programmed to their most frequently used value. Factory programming is shown for each option in Sections 5.3 through 5.10.

Many options also have a “system configuration” option. The system configuration feature is intended to help you easily program an installation. When you select the type of system you are installing, system options pertaining to that type of installation will be pre-selected. Other options will remain unchanged. You can change the pre-selections as necessary. The types of configurations available are:

Fire System	Options will be pre-selected for a typical fire installation.
Cross Release	Options will be pre-selected for a typical cross release panel. A cross release panel does not release water until two cross release zones are in alarm.
Pre-Release	Options will be pre-selected for a typical pre-release panel. A pre-release panel does not release water until the pre-release timer has expired.
Factory Default	Normal factory programming. (Same as a fire system.)

To select the system configuration for your installation:

If you are using the 5230 annunciator to program, the System Configuration Menu is Menu 1, the first menu you will encounter when you enter programming mode. See Section 5.3 for more information.

If you are using the 5541 download software to program, select the Restore Default option (option “K”), to select system configuration.

The defaults for the four types of configurations are listed in Section 5.11.

5.2.6 Programming Options Chart

The tables in sections 5.3 - 5.10 can be used to keep a record of how the installation has been programmed. These pages have been perforated for your convenience.

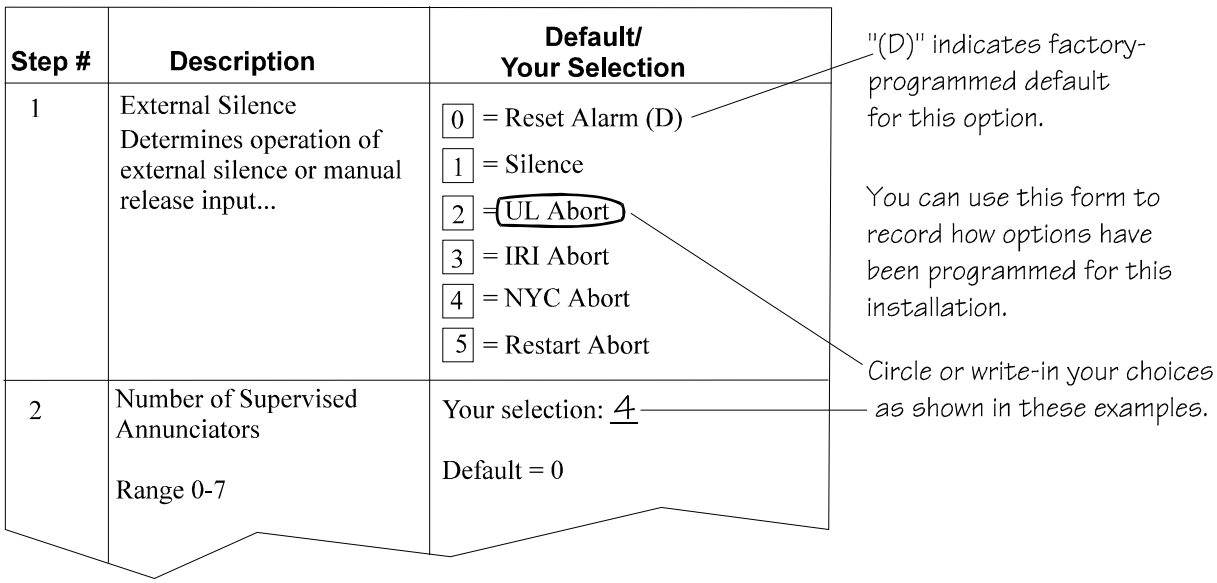


Figure 5-3. Using the Step Programming Chart

5.3 System Configuration (Menu 1)

Step #	Description	Default / Your Selection
1	System Configuration The System Configuration menu is for selecting the type of application you are installing. Based on your selection, the system automatically programs various system options. You can change the pre-programmed options to meet the needs of your application. Options are: Options are: 0 = Fire Sys 1 = Cross Release 2 = PreRelease Sys 3 = Factory Default	Default = 3 Your selection: _____ *Note: Throughout this chart the Factory Default options are shown. See Section 5.11 of this manual for a list of all defaults.*

5.4 System Options (Menu 2)

Step #	Description	Default / Your Selection
1	External Key Determines operation of external silence or manual release input, if used. Options 0 and 1 are for programming operation of an external keyswitch. Options 2-5 program operation of an abort switch.	[0] = Reset Alarm (D) (Select this option if you want alarms to be reset when external keyswitch is activated.) [1] = Silence (Select this option if you want alarms and troubles to be silenced when the external keyswitch is activated.) [2] = UL Abort [3] = IRI Abort [4] = NYC Abort [5] = Restart Abort
2	Superv Annunc Entering zero means no annunciators are supervised. Range: 0 - 7	Your selection: __ Default = 0
3	Pre-release Time Number of seconds before water begins releasing. Range: 5 - 60 seconds	Your selection: __ __ Default = 20
4	Release Timer Number of minutes that water will flow. (Selecting zero means output is continuous until the alarm is reset.) Range 0-60 minutes	Your selection: __ __ Default = 0
5	Sound Smk Verify	No = Smoke verification will not be audible. (D) Yes = Smoke verification condition in any zone will cause 5230s and on-board buzzer to beep.
6	Zones Disable	No = No zones can be disabled. Yes = All zones can be disabled. (D)

System Options continued on next page

System Options continued from previous page

Step #	Description	Default / Your Selection
7	I/O Circuit Determine the use of the I/O circuit.	[0] = 1 class A notification circuit [1] = 2 class B notification circuits [2] = 1 class A initiation circuit [3] = 2 class B initiation circuits (D)
8	Notification Determine use of notification circuit(s)	[0] = 1 class A notification circuit [1] = 2 class B notification circuits (D)

5.5 Zone Options (Menu 3)

Select options for each zone. Record your choices in the chart below.

Step #	Description	Options / Your Selection
1 - 6	Select Zone to program, 1-6. The substeps shown below will display for each zone.	
	Substep #	
	1	Zone Type [0] = Manual Release [1] = Fire [2] = Waterflow [3] = Undefined (User preference.) [4] = Sprinkler (Use with sprinkler supervisory zones.)	Zone 1 = Zone 2 = Zone 3 = Zone 4 = Zone 5 = Zone 6 = Default for Zones 1-5 = Fire Default for Zone 6 = Sprinkler
	2	Select one or two words from the list in Section 5.5.1 to describe this zone.	Word 1 / Word 2 Zone 1 = / Zone 1 = Zone 2 = / Zone 2 = Zone 3 = / Zone 3 = Zone 4 = / Zone 4 = Zone 5 = / Zone 5 = Zone 6 = / Zone 6 = Default for all zones = (blank)

Zone Options continued on next page

Zone Options continued from previous page

Step #	Description		Options / Your Selection
	Substep #		
	3	Cross alarm Selecting Yes enables the cross alarm feature. (See Section 4.3.1.)	Zone 1 = Zone 2 = Zone 3 = Zone 4 = Zone 5 = Zone 6 = Default for all zones = No
	4	Pre-release Selecting Yes enables the pre-release feature. The pre-releasing feature is described in Section 4.3.2. The duration of the pre-releasing delay is programmed in Menu 2, Step 3.	Zone 1 = Zone 2 = Zone 3 = Zone 4 = Zone 5 = Zone 6 = Default for all zones = No
	5	Smk Verify If you select Yes for this option, smoke detectors will enter a reset cycle before going into alarm. Do not select this option if cross alarm has also been selected. The smoke verify feature is described in Section 4.3.3.	Zone 1 = Zone 2 = Zone 3 = Zone 4 = Zone 5 = Zone 6 = Default for all zones = No
	6	Zone Response Select the timeframe for this zone to respond to an alarm. Selection made here must be compatible with type of smoke detector used and other alarm characteristics. (See Section 4.3 for complete information.) Choices are: [0] = 1-1.25 seconds* [1] = 10-11.25 seconds [2] = 30-33.75 seconds [3] = Not used *(You must select 1-1.25 seconds for all zones except waterflow.)	Zone 1 = Zone 2 = Zone 3 = Zone 4 = Zone 5 = Zone 6 = Default for all zones = 1 - 1.25 seconds

5.5.1 Zone Description Word List

To select a word from the word list:

1. Press [SHIFT].
2. Press [1] or [2] for first or second word.
3. Press the number of the word from the word list in Table 5-1 below.
4. Press [ENTER].

EXAMPLE: To program "East Warehouse," the keystrokes are:

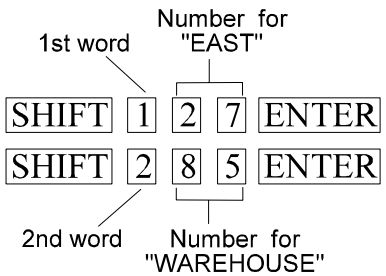


Table 5-1. Zone Description Word List

00 Blank	23 CONFERENCE	46 LAB	69 SHIPPING
01 #1	24 DOCK	47 LEVEL	70 SHOP
02 #2	25 DOOR	48 LOADING	71 SMOKE
03 #3	26 DUCT	49 LOBBY	72 SOUTH
04 #4	27 EAST	50 LOCATION	73 SPRINKLER
05 #5	28 ELECTRICAL	51 LOFT	74 STAGE
06 #6	29 ELEVATOR	52 LOWER	75 STAIRWELL
07 #7	30 ENTRY	53 LUNCHROOM	76 STORAGE
08 #8	31 EQUIPMENT	54 MECHANICAL	77 SUPERV
09 #9	32 EXIT	55 MEZZANINE	78 TAMPER
10 #10	33 1ST	56 NORTH	79 3RD
11 AC	34 1ST FLR	57 OFFICE	80 3RD FLR
12 ACCOUNT	35 FLOOR	58 OPERATOR'S	81 TROUBLE
13 ALARM	36 4TH	59 PHONE	82 UPPER
14 AREA	37 4TH FLR	60 PULL	83 VALVE
15 ATTIC	38 FRONT	61 PULL STATION	84 VAULT
16 BACK	39 GARAGE	62 REMOTE	85 WAREHOUSE
17 BANQUET	40 GATE	63 REST	86 WATERFLOW
18 BASEMENT	41 GENERATOR	64 ROOF	87 WEST
19 BOILER	42 GROUND	65 ROOM	88 WHSE
20 CELL	43 HALL	66 2ND	89 ZONE
21 CENTER	44 HEAT	67 2ND FLR	
22 COMPUTER	45 HVAC	68 SENSOR	

5.6 Bells Menu (Menu 4)

Step #	Description		Default / Your Selection	
1 - 4	Select the bell to program, 1-4. The substeps shown below will display for each zone.			
	Substep #			
	1	Determine if Bells 1-4 can be silenced.	Yes = Bell can be silenced. No = Bell cannot be silenced. (D)	
	*2-7	Bell response in Zone 1 - Zone 6 Cadence patterns are described in Section 4.4. Choices are: [0] = Steady [4] = ANSI temporal [1] = Pulse [5] = Releasing [2] = Temporal [6] = Pre-releasing [3] = Supervisory [7] = Not used	Default for Zones 1-5 = ANSI Default for Zone 6 = Not used Bell 1: Zone 1 = ____ Zone 2 = ____ Zone 3 = ____ Zone 4 = ____ Zone 5 = ____ Zone 6 = ____ Default for Zones 1-6 = Not used Bell 3: Zone 1 = ____ Zone 2 = ____ Zone 3 = ____ Zone 4 = ____ Zone 5 = ____ Zone 6 = ____	Default for Zones 1-5 = ANSI Default for Zone 6 = Not used Bell 2: Zone 1 = ____ Zone 2 = ____ Zone 3 = ____ Zone 4 = ____ Zone 5 = ____ Zone 6 = ____ Default for Zones 1-6 = Not used Bell 4: Zone 1 = ____ Zone 2 = ____ Zone 3 = ____ Zone 4 = ____ Zone 5 = ____ Zone 6 = ____

**Note: Zones 5-6 will be available for programming only if the I/O circuit option (System Options, Menu 2) has been programmed accordingly. See Section 5.4 for more information.*

5.7 Relays Menu (Menu 5)

Step #	Description		Default / Your Selection
1 - 2	Select the relay to program, 1-2. The substeps shown below will display for each relay.		
	Substep #		
	1	Select condition that will activate Relay 1.	[0] = Alarms (D) [1] = Troubles
	2	Select condition that will activate Relay 2.	[0] = Alarms (D) [1] = Troubles [2] = 5220 Direct (see Sec. 3.15.1) [3] = 5220 City Box (see Sec. 3.15.2)

5.8 Codes Menu (Menu 6)

Step #	Description	Default / Your Selection
1	Installer's Code Enter 4 digits for the installation code. This code gives access to all features.	__ __ __ __ Default: 6000
2	Operator's Code Enter 4 digits to give access to some operational features that require a code.	__ __ __ __ Default: 1111

5.9 Dialer Options (Menu 7)

Step #	Description	Default / Your Selection	
1	Dialer Type	[0] = Not Used (local system) (D) [1] = USA [2] = 9000 Direct [3] = European	
2	Low AC Hours Enter number of hours that AC power is off before a low AC report is sent to the central station. For NFPA 72, Central Station Fire Alarm systems, select 6-12 hours. For NFPA 72, Remote Station, select 15 hours.	Range: 6 - 15 Your selection: __ __ Default = 6	
3	Test Time Set time that dialer test will occur. Enter 4 digits in 24-hour military format.	Range: 00:00 - 23:59 __ __ : __ __ Default = 01:30	
4	Ground Start See Sec. 3.9.1 for hardware installation information. Do not select in UL installations.	Yes = Ground start telephone network will be used. Default = No Your selection: Yes No	
5-6	Line 1 and Line 2 Use these steps to select type of dialing for each phone line.	Line 1 [0] = Rotary Only [1] = Tone Only [2] = Rotary or Tone Default = Tone Only Your selection: 0 1 2	Line 2 [0] = Rotary Only [1] = Tone Only [2] = Rotary or Tone Default = Rotary Only Your selection: 0 1 2

5.10 Accounts (Menu 8)

Step #	Description		Default / Your Selection	
1 - 2	When you select an account to program (Account 1 or Account 2), the following substeps will display allowing you to select options for the account.			
	Substep #			
	1	Enter six digits to identify this account. Add leading zeros as required by the reporting format you are using. For example, if you are reporting to the Contact ID format, which sends a 4-digit account number, Account 1234 should be entered as 001234.	Account 1: — — — — — — Default = 106000	Account 2: — — — — — — — Default = 206000
	2	Phone # Enter the central monitoring station phone number. Up to 16 characters can be used. The following special characters are available: A (press [SHIFT] [1]) = 2-second pause B (press [SHIFT] [2]) = * (asterisk) C (press [SHIFT] [3]) = # (pound or number symbol) D (press [SHIFT] [4]) = 2nd dial tone	Account 1: _____ (Overwrite the factory-programmed digits when you enter the phone number.)	Account 2: _____ (Overwrite the factory-programmed digits when you enter the phone number.)
	3	Format Select the reporting format that will be used with this account. 0 = SIA8 1 = SK 4/2 2 = BFSK14 3 = BFSK23 4 = SIA20 5 = 3/1 14 6 = 3/1 23 7 = Contact ID	Account 1: ___ Default = SIA8	Account 2: ___ Default = SIA8
	4	Attempts Select the number of attempts that the dialer should make to report to this account before a dialer-failed condition occurs. Range: 3-5	Account 1: Default = 3	Account 2: Default = 3

Step #	Description		Default / Your Selection	
1-2 (cont.)		For substeps 5-8, program 0, 1, or 2. [0] = Event will *not* be reported. [1] = Event can report to this account [2] = Event Must be reported. The dialer will continue to attempt to report must events until all attempts have been made. If the dialer was not able to report the event, the event will remain in the buffer until a new event needs to be reported. The dialer will then attempt to report the old Must event.		
	5	Report Alarms Select Yes or Must if alarms should be reported to this account.	Account 1 Must Yes No Default = Must	Account 2 Must Yes No Default = Must
	6	Report Troubles Select Yes or Must if troubles should be reported to this account.	Account 1 Must Yes No Default = Must	Account 2 Must Yes No Default = Must
	7	Report Disables Select Yes or Must if disabled zones should be reported to this account.	Account 1 Must Yes No Default = Must	Account 2 Must Yes No Default = Must
	8	Report Tests Select Yes or Must if tests should be reported to this account.	Account 1 Must Yes No Default = Must	Account 2 Must Yes No Default = Must
3	3/1 Report Codes If you will be using a 3/1 reporting format, use the substeps that follow to determine what codes should be reported in the specified condition. For each substep, enter 1 character, 0-9 or A-E. To enter A-E, use [SHIFT] [1] for A, [SHIFT] [2] for B and so on. See Section 6.3.4 for a list of C-6000 events that report for each code.			
	Substep #			
	1	3/1 Alarm Code	Your choice: ___ Default = 1	
	2	3/1 Sprinkler Code	Your choice: ___ Default = 2	
	3	3/1 Trouble Code	Your choice: ___ Default = 8	
	4	3/1 Disable Code	Your choice: ___ Default = 5	
	5	3/1 Restore Code	Your choice: ___ Default = 7	
	6	3/1 Test Code	Your choice: ___ Default = 9	

Step #	Description		Default / Your Selection
4	Computer When you enter Step 4, the following substeps display.		
	1	Enable computer Select Yes to enable a computer at the remote site if downloading will be used.	Yes No Default = No
	2	# Rings Enter the number of rings before the panel will answer for up- or downloading. Range: 0 - 15	Your selection: __ __ Default = 2
	3	Computer Account Enter six digits for the computer account. (Add leading zeros as needed.)	Your selection: __ __ __ __ __ __ Default = 006000
	4	Computer Phone Number Enter up to 16 characters for the number that the panel will call for up- and downloading. The following special characters are available: A (press SHIFT 1) = 2-second pause B (press SHIFT 2) = * (asterisk) C (press SHIFT 3) = # (pound or number symbol) D (press SHIFT 4) = 2nd dial tone	Your selection: _____ (Overwrite the factory-programmed digits when you enter the phone number.)

5.11 System Configuration Defaults

The charts in the following sections show what options the system will select automatically when you select one of the configurations in the System Configuration Menu (Menu 1).

5.11.1 Fire System

If you select Option 0 for Fire System, the following options will be programmed as shown below. Other options will remain unchanged.

Menu / Option **Programmed As:**

System Options (Menu 2)	
External Key	Resets alarms
Number of Supervised Annunciators	0
Pre-Release Time	20
Release Timer	0
I/O Bridge Configuration	B Initiating
Notification Circuit	B Notification

Zone Options (Menu 3)	**Zone 1**	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Zone Type	FIRE	FIRE	FIRE	FIRE	FIRE	SPRINKLER
Word 1 and Word 2	blank	blank	blank	blank	blank	blank
Cross Alarm	No	No	No	No	No	No
Pre-Release	No	No	No	No	No	No
Smoke Verify	No	No	No	No	No	No
Response Time	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.

Bell Options (Menu 4)	**Bell 1**	**Bell 2**	**Bell 3**	**Bell 4**
Allow Bell Silence	No	No	No	No
Zone 1	ANSI	ANSI	Not used	Not used
Zone 2	ANSI	ANSI	Not used	Not used
Zone 3	ANSI	ANSI	Not used	Not used
Zone 4	ANSI	ANSI	Not used	Not used
Zone 5	ANSI	ANSI	Not used	Not used
Zone 6	Not used	Not used	Not used	Not used

5.11.2 Cross Release System

If you select Option 1 for Cross Release System, the following options will be programmed as shown below. Other options will remain unchanged.

Menu / Option	Programmed As:
System Options (Menu 2)	
External Key	UL Abort
Number of Supervised Annunciators	0
Pre-Release Time	20
Release Timer	0
I/O Bridge Configuration	B Notification
Notification Circuit	B Notification

Zone Options (Menu 3)	**Zone 1**	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Zone Type	FIRE	FIRE	SPRINKLER	MANUAL RELEASE	FIRE	FIRE
Word 1 and Word 2	blank	blank	blank	blank	blank	blank
Cross Alarm	Yes	Yes	No	No	No	No
Pre-Release	No	No	No	No	No	No
Smoke Verify option	No	No	No	No	No	No
Response Time	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.

Bell Options (Menu 4)	**Bell 1**	**Bell 2**	**Bell 3**	**Bell 4**
Allow Bell Silence	No	No	No	No
Zone 1	Releasing	ANSI	Pre-release	Releasing
Zone 2	Releasing	ANSI	Pre-release	Releasing
Zone 3	Not used	Not used	Not used	Not used
Zone 4	Releasing	ANSI	Not used	Releasing
Zone 5	Not used	Not used	Not used	Not used
Zone 6	Not used	Not used	Not used	Not used

5.11.3 Pre-Release System

If you select Option 2 for Pre-Release System, the following options will be programmed as shown below. Other options will remain unchanged.

Menu / Option **Programmed As:**

System Options (Menu 2)	
External Key	UL Abort
Number of Supervised Annunciators	0
Pre-Release Time	20
Release Timer	0
I/O Bridge Configuration	B Notification
Notification Circuit	B Notification

Zone Options (Menu 3)	**Zone 1**	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Zone Type	FIRE	FIRE	SPRINKLER	MANUAL RELEASE	FIRE	FIRE
Word 1 and Word 2	blank	blank	blank	blank	blank	blank
Cross Alarm	No	No	No	No	No	No
Pre-Release	Yes	No	No	No	No	No
Smoke Verify	No	No	No	No	No	No
Response Time	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.

Bell Options (Menu 4)	**Bell 1**	**Bell 2**	**Bell 3**	**Bell 4**
Allow Bell Silence	No	No	No	No
Zone 1	Releasing	ANSI	Pre-release	Releasing
Zone 2	Not used	ANSI	Not used	Not used
Zone 3	Not used	Not used	Not used	Not used
Zone 4	Releasing	ANSI	Not used	Releasing
Zone 5	Not used	Not used	Not used	Not used
Zone 6	Not used	Not used	Not used	Not used

Section 6.
Central Station Reporting

6.1 UL Listed Receivers Compatible with the C-6000

Table 6-1. UL Listed Compatible Receivers

Manufacturer	Receiver Model	Formats
Silent Knight	*Model 9000	SIA-8 SIA-20 SK 4/2 BFSK 14 BFSK 23 3/1 14 3/1 23
Ademco	Model 685	3/1 14 3/1 23
Sur-Gard (Ver. 1.64 or higher)	SG-MLR2-DG	SIA8 SIA20 Contact ID
Osborne Hoffman	Quickalert	SIA8 SIA20
Radionics	6500	BFSK 14 BFSK 23

**Notes: If you are using the model 9000 and receive the message "HELP" on the 9000 printer after attempting to download, it means you need to upgrade the 9000 software.*

If you are reporting to a Silent Knight Model 9000 Receiver, the 9000 must have the Model 9307 software package, Revision 900501 or later, to print the PROGRAMMING PASS *and* PROGRAMMING FAIL *messages.*

6.2 Reporting Formats

The Model C-6000 can transmit information in the following formats. The type of format you select is determined by the type of receiver used at the central station. Reporting format is selected in the Reporting Accounts Menu (Menu 8).

SIA8 and SIA20	Security Industry Association standard.
Silent Knight 3/1	Old format, transmits a 3-digit account number and a 1-digit alarm code. Transmissions are acknowledged at 1400 Hz.
Sescoa 3/1	Old format, transmits a 3-digit account number and a 1-digit alarm code. Transmissions are acknowledged at 2300 Hz.
Silent Knight 4/2	Silent Knight tone burst format, transmits a 4-digit account number and a 2-digit alarm code.
BFSK14 and BFSK23	High-speed, single-round, 3-digit account Radionics format.
Contact ID	Ademco's DTMF format using 4-digit account number.

Table 6-2 (next page) show the digits that are transmitted for each event reported by the dialer and the message printed out by the Model 9000 receiver at the central station.

Caution

Some formats do not distinguish between certain types of reports, such as between waterflow and fire alarms, or between supervisory and trouble reports. The central station must keep records of how the various zones are programmed at each account, so they can determine what condition is being reported for a particular zone.

6.3 Dialer Output

The tables in the following sub-sections show the dialer output for reporting formats that can be used with the C-6000.

6.3.1 SIA Format Dialer Output

Table 6-2. Dialer Output for SIA Format

SIA Format Output	C-6000 Condition
AR0	AC Restore
AT0	AC Trouble
ER16	External Key Restore
ER17-23	Annunciator Restore 1-7
ER32-35	Bell Restore 1-4
ER38	Earth Ground Restore
ER39	Earth Power Restore
ER40	Smoke Power Trouble Restore
ER42	+24AUX Power Trouble Restore
ET16	External Key Trouble
ET17-23	Annunciator Trouble 1-7
ET32-35	Bell Trouble 1-4
ET38	Earth Ground Trouble
ET39	Earth Power Trouble
ET40	Smoke Power Trouble
ET42	+24AUX Power Trouble
FA1-6	Fire Alarm in Zone 1-6
FB1-6	Fire Zone Disabled 1-6
FH1-6	Fire Alarm Restore in Zone 1-6
FI0	Fire Drill Begin
FJ1-6	Trouble Restore in Fire Zone 1-6
FK0	Fire Drill End
FT1-6	Trouble in Fire Zone 1-6
FU1-6	Fire Zone Disable Restore 1-6
LR1	Phone Line 1 Restore
LR2	Phone Line 2 Restore
LT1	Phone Line 1 Trouble
LT2	Phone Line 2 Trouble
RP0	Auto Test
RS0	Downloading Pass
RT0	Data Lost
RU0	Downloading Fail

Table 6-2 continued on next page

Table 6-2 continued

SIA Format Output	C-6000 Condition
RX0	Manual Test
SA1-6	Waterflow in Zone 1-6
SB1-6	Sprinkler Supervisory or Waterflow Zone Disabled 1-6
SH1-6	Waterflow Alarm Restore in Zone 1-6
SJ1-6	Trouble Restore in Sprinkler Supervisory or Waterflow Zone 1-6
SS1-6	Sprinkler Supervisory in Zone 1-6
ST1-6	Trouble in Sprinkler Supervisory or Waterflow Zone 1-6
SU1-6	Sprinkler Supervisory or Waterflow Disable Restore 1-6
TE0	Walk Test End
TS0	Walk Test Begin
UA1-6	Undefined Alarm in Zone 1-6
UB1-6	Undefined Zone Disabled 1-6
UH1-6	Undefined Alarm Restore in Zone 1-6
UJ1-6	Trouble Restore in Undefined Zone 1-6
UT1-6	Trouble in Undefined Zone 1-6
UU1-6	Undefined Zone Disable Restore 1-6
YR0	Battery Restore
YT0	Battery Trouble

6.3.2 4/2 Format Dialer Output

The Silent Knight 4/2 format transmits a 4-digit account number and a 2-digit alarm code. When an event is reported in either of these two formats, the dialer transmits the two digits shown in the second column.

Table 6-3. Dialer Output for 4/2 Formats

Dialer Output in 4/2 Format	C-6000 Condition
01-06	Alarm in Zone 1-6 (Supervisory condition in sprinkler supevisory zones)
21-26	Alarm or Disable Restore in Zone 1-6 (Supervisory restore in sprinkler supevisory zones)
30	Manual Test, Auto Test, Fire Drill Begin/End, Walk Test Begin/End. Could also indicate Downloading Pass or Downloading Fail.
31	Phone Line 1 Trouble
32	Phone Line 2 Trouble
33	Trouble with: Annunciator 1-7, Bell 1-4, Earth Ground, Earth Power, Smoke Power, +24AUX Power, Annunciator (Key) Power, External Key
35	Phone Line 1 Restore
36	Phone Line 2 Restore
37	Restore of: Annunciator 1-7, Bell 1-4, Earth Ground, Earth Power, Smoke Power, +24AUX Power, Annunciator (Key) Power, External Key
39	Data Lost
51-56	Zone Disabled 1-6
60	AC Trouble
61-66	Trouble in Zone 1-6
69	Battery Trouble
70	AC Restore
71-76	Trouble Restore in Zone 1-6
79	Battery Restore

6.3.3 BFSK Format Dialer Output

BFSK format uses 3-digit account numbers.

Table 6-4. Dialer Output for BFSK Formats

Dialer Output in BFSK Format	C-6000 Condition
01 - 06	Alarm in Zone 1-6 (Supervisory in sprinkler supervisory zones.)
E01 - E06	Restore in Zone 1-6 (Alarm, Trouble, Sprinkler Supervisory, or Disable)
E09	Battery Restore
E00	AC Restore
E0B	Phone Line 1 Restore
E0C	Phone Line 2 Restore
E0D	Device/System Restore: Annunciator 1-7, Bell 1-4, Earth Ground, Earth Power, Annunciator (Key) Power, Smoke Power, +24AUX Power, External Key
E0E	Manual Test, Auto Test or Fire Drill
E0F	Downloading Pass
F01 - F06	Trouble or Disable in Zone 1-6
F09	Battery Trouble
F00	AC Trouble
F0B	Phone Line 1 Trouble
F0C	Phone Line 2 Trouble
F0D	Device/System Trouble: Annunciator 1-7, Bell 1-4, Earth Ground, or Earth Power, Annunciator (Key) Power, Smoke Power, +24AUX Power, External Key
F0F	Downloading Fail or Data Lost

6.3.4 3/1 Formats

The 3/1 formats transmit a 3-digit account number and a 1-digit event code. These 1-digit codes are programmable through the Reporting Accounts Menu (Menu 8) at Step 3. See Section 5.10 for more information about how to program these codes. Section 5.10 also shows the factory-programmed defaults for each type of event and provides room for you to record 3/1 codes you have programmed.

It is a good idea to standardize the codes sent for all accounts to avoid confusion at the central station.

There are six types of codes available for 3/1 formats. The chart below shows which codes will be sent for various C-6000 events.

Code Programmed as:	Will Be Sent for these Events:
Alarm Code	Alarm in Zone 1-6
Supervisory Code	Supervisory alarm condition in Zone 1-6
Disable Code	Zone 1-6 Disabled
Trouble Code	Trouble in Zone 1-6, Zone 1-6 Disabled, Annunciator 1-7 Trouble, Bell 1-4 Trouble, Earth Ground Trouble, Earth Power Trouble, Smoke Power Trouble, +24Aux. Power Trouble, Phone Line 1-2 Trouble, AC Trouble, Battery Trouble
Restore Code	Trouble restore in Zone 1-6, Disable Restore in Zone 1-6, Annunciator 1-7 Restore, Bell 1-4 Restore, Earth Ground Restore, Earth Power Restore, Smoke Power Restore, +24Aux. Power Restore, Phone Line 1-2 Restore, AC Restore, Battery Restore
Test Code	Auto Test, Manual Test, Fire Drill Begin/End, Walk Test Begin/End, Downloading Pass/Fail

6.3.5 Ademco Contact ID Format

The Ademco Contact ID format sends a four-digit account number followed by an event qualifier, an event code and the number of the zone where the event occurred or the user who activated it.

Table 6-5. Dialer Output for Ademco Contact ID Format

Contact ID Output			C-6000 Condition
Qualifier	**Event Code**	**Zone / User**	
1	110	001 - 006	Fire Alarm in Zone 1-6
3	110	001 - 006	Fire Alarm Restore in Zone 1-6
1	113	001 - 006	Waterflow Alarm in Zone 1-6
3	113	001 - 006	Waterflow Alarm Restore in Zone 1-6
1	140	001 - 006	Undefined Alarm in Zone 1-6
3	140	001 - 006	Undefined Alarm Restore in Zone 1-6
1	203	001 - 006	Sprinkler Supervisory in Zone 1-6
3	203	001 - 006	Sprinkler Supervisory Restore in Zone 1-6
1	203	001 - 006	Sprinkler Trouble in Zone 1-6
3	203	001 - 006	Sprinkler Trouble Restore in Zone 1-6
1	300	000	Smoke Power Trouble
3	300	000	Smoke Power Restore
1	300	001	Annunciator (Key) Power Trouble
3	300	001	Annunciator (Key) Power Restore
1	300	002	+24 AUX Power Trouble
3	300	002	+24 AUX Power Restore
1	301	000	AC Trouble
3	301	000	AC Restore
1	302	000	Battery Trouble
3	302	000	Battery Restore
1	310	000	Earth Ground or Earth Power Trouble
3	310	000	Earth Ground or Earth Power Restore
1	320	001 - 004	Bell 1-4 Trouble
3	320	001 - 004	Bell 1-4 Restore
1	330	000	External Key Trouble
3	330	000	External Key Restore
1	330	001 - 007	Annunciator 1-7 Trouble
3	330	001 - 007	Annunciator 1-7 Restore
1	351	000	Phone Line 1 Trouble
3	351	000	Phone Line 1 Restore
1	352	000	Phone Line 2 Trouble
3	352	000	Phone Line 2 Restore
1	354	000	Data Lost
1	370	001 - 006	Undefined Trouble in Zone 1-6
3	370	001 - 006	Undefined Trouble Restore in Zone 1-6
1	373	001 - 006	Fire or Waterflow Trouble in Zone 1-6

Table 6-5 continued on next page

Table 6-5 continued

Contact ID Output			C-6000 Condition
Qualifier	**Event Code**	**Zone / User**	
3	373	001 - 006	Fire or Waterflow Trouble Restore in Zone 1-6
1	412	000	Downloading Passed
1	413	000	Downloading Failed
1	552	001 - 006	Undefined Zone 1-6 Disabled
3	552	001 - 006	Undefined Zone 1-6 Disable Restore
1	570	001 - 006	Sprinkler Supervisory Zone 1-6 Disabled
3	570	001 - 006	Sprinkler Supervisory Zone 1-6 Disable Restore
1	571	001 - 006	Fire or Waterflow Zone 1-6 Disabled
3	571	001 - 006	Fire or Waterflow Zone 1-6 Disable Restore
1	601	000	Manual Test
1	602	000	Auto Test
1	604	000	Fire Drill Begin
3	604	000	Fire Drill End
1	607	000	Walk Test Begin
3	607	000	Walk Test End

Section 7.
Troubleshooting

When the system is configured properly, the voltage readings on the input and output terminals should be the same as those shown in the terminal description in Section 3.5. Zone Troubleshooting (Section 7.2.1) can help you with this.

7.1 System Messages

When the 5230 annunciator is powered up, it will show its ID number followed by the cycle of messages describing conditions that are currently in effect.

While the C-6000 is communicating with the central station, the LCD will display `REPORTING` on the second line. If two or more zones are in alarm, the top line will cycle through the status messages for these zones. When the transmission is completed, the 5230 annunciator memory is reset (cleared) and the annunciator ID number is displayed.

Note: Some of the messages listed below indicate normal conditions.

Table 7-1. System Messages

5230 Annunciator	Built-in Annunciator Display / LEDs	Explanation
ALARM ZONE 1-6 ZONE DESCRIPTION	1 through 6	Indicates an alarm condition in the specified zone. Could also indicate an event history display, depending on the condition. The Alarm, Alarm Memory, or Trouble LED will display depending on the condition.
ALARM ZONE #0 FIRE DRILL	-0 Set Mode LED on	Fire drill (with Alarm, Alarm Memory, or Trouble LED).
UNDEFINED ALARM ZONE 1-6	u1 - u6	Undefined alarm condition in specified zone.

Table 7-1 *continued on next page*

Table 7-1 *continued from previous page*

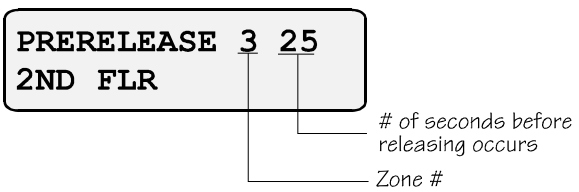
5230 Annunciator	Built-in Annunciator Display / LEDs	Explanation
PRERELEASE # ## ZONE DESCRIPTION	Zone number	A pre-release condition exists in the indicated zone. The two numbers that display after "PRERELEASE" indicate the zone number where alarm is occurring and the number of seconds before releasing occurs.  If a zone description has been programmed, it will display on the second line of the 5230 LCD. During the pre-release time, you press [RESET ALARM] [ENTER] [Code] to prevent an alarm from sounding and reporting.
SMOKE ZONE #	d1 - d6	Smoke verification delay in progress in specified zone.
SUPRV ZONE# ZONE DESCRIPTION	c1 - c6	Sprinkler supervisory condition in specified zone. A zone description appears on the second line of the 5230 LCD if zone descriptions have been programmed.
DISABLED ZONE# ZONE DESCRIPTION	b1 - b6	Zone disabled in specified zone. A zone description appears on the second line of the 5230 LCD if zone descriptions have been programmed.
TROUBLE BELL #	A1 through A4	Indicates trouble with a particular bell output.
TROUBLE AC	Ac Trouble LED flashes	AC power has been lost. Check connection to AC power source.
EXTERNAL KEY TRBL	F0	Trouble with the external key.
TROUBLE KEYSTATION #	F1 through F7	Indicates trouble with a particular annunciator.
TROUBLE LINE 1 TROUBLE LINE 2	L1 L2	Phone Line 1 Fault Phone Line 2 Fault
TROUBLE SMK PWR	P1	Indicates trouble with the smoke detector power.
TROUBLE 24V AUX	P2	Indicates trouble with accessory power.

Table 7-1 *continued on next page*

Table 7-1 *continued from previous page*

5230 Annunciator	Built-in Annunciator Display / LEDs	Explanation
TROUBLE GROUND	P3 and P4 Trouble LED on.	P3 indicates a short between Earth Ground and Common Ground. P4 indicates a short between Earth Ground and loop or bell power. See Section 7.2 for more information.
DC	dC	Low battery condition.
DF	dF	Dialer failed condition. (The dialer failed to communicate after making the programmed number of attempts.)
WALK TEST DATE TIME	-2	The system is in Walk Test mode.
UP/DOWNLOAD DATE TIME	-4	The system is currently downloading.
DATE?	-8	The system is in date set mode, waiting for input.
TIME?	-9	The system is in time set mode, waiting for input.
TRY AGAIN	not applicable	A keystroke error has been made. Press [CLEAR] and re-enter.
REPORTING	Set Time LED flashes	An event is being reported to the central station.
SILENCED	Silence LED is on	A trouble condition has been silenced but still exists.
not applicable	P5	Annunciator power trouble.
not applicable	-5	Event history is being displayed.
not applicable	-6	You have entered Hex programming mode by mistake. Exit this mode by pressing [STEP] [STEP] [CLEAR] [CLEAR] with the 5230 annunciator or [SILENCE] [SILENCE] [CLEAR] [CLEAR] with the built-in annunciator.
not applicable	-7	You are in step programming mode. If you are working with the built-in annunciator, you have entered this mode by mistake. Press [SILENCE] [SILENCE] [CLEAR] [CLEAR] to exit.
not applicable	E7	Indicates trouble with the EEPROM memory.

7.2 Earth Ground Faults (P3 and P4)

A P3 trouble indicates that the control has detected a short between circuit ground and earth ground. A P4 trouble indicates a short between one of the control power terminals and earth ground.

To determine the location of the short, remove field wiring circuits until the control returns to normal operation. When the circuit that caused the trouble is found, use an ohmmeter to measure the resistance between each wire in the circuit and earth ground mounting screw (located in the bottom left corner of the PC board). The resistance should be higher than 5k ohms from any terminal and from earth ground.

7.2.1 Accu-Zone® Troubleshooting (Mode 25)

Accu-Zone® Troubleshooting allows you to determine the voltage on any zone input and most system supervisory input (including AC power and battery power) without using a voltmeter. All alarms and troubles are disabled while you are using mode 25 allowing you to trip sensors, adjust wiring, and so on. You must use the 5230 Annunciator to use mode 25. The steps below show how to use troubleshooting mode. Table 7-1 (next page) explains the meaning of the values that appear.

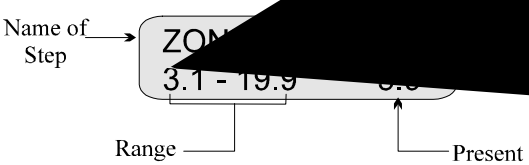
To enter troubleshooting mode	Press [2][5][ENTER] [Installer's Code]. The first line of the display shows the name of the step (input). The second line shows the range of values and the present measurement. 
To move to the next step	Press [ENTER].
To skip to a different step	1. Press [STEP] [STEP]. The LCD will display ENTER STEP #. 2. Enter the step number and press [ENTER].
To exit troubleshooting mode	Press [STEP][STEP][CLEAR][CLEAR] to exit mode 25.

Table 7-1. Significance of Mode 25 Readings

Step #	Displays:	Range	Typical	Significance
1 - 4	Zone 1 - Zone 4 (Class B)	3.1 - 19.9 mA	5.6	19.9 and higher = Alarm Below 3.1 = Trouble
5	Class B circuit	3.1 - 19.9 mA	5.6	19.9 and higher = Alarm Below 3.1 = Trouble
	Class A circuit	3.1 - 19.9 mA	11.9	19.9 and higher = Alarm Below 3.1 = Trouble
6	Class B circuit only	15.4 - 32.2 mA	17.1	32.2 and higher = Alarm Below 15.4 = Trouble
7	Bell 1, Class B circuit	1.2 - 2.1 mA	1.3	Below 1.1 or above 1.3 = Trouble
	Bell 1, Class A circuit	not applicable	1.1	Any value other than 1.1 indicates trouble.
8	Bell 2, Class B circuit	1.2 - 2.0 mA	1.3	Below 1.3 or above 1.4 = Trouble
9	24V Acc. Power	17.0 - 22.0 mA	27.2	Below 17.0 = Trouble Must go above 22.0 to restore
10	Smoke Power	17.0 - 22.0 V	27.2	Below 17.0 = Trouble Must go above 22.0 to restore
11	AC Power	6.0 - 6.4 Units (See Note below.)	13.1	Below 6.0 = Trouble Must go above 6.0 to restore
12	Battery Power	20.4 - 22.2 V	27.1	Below 20.4 = Trouble Must go above 22.2 to restore
13	Earth Ground	10.2 - 15.0 V	12.3	Above 24 or below 7.1 = Trouble
14	External Key	3.2 - 10.5 Units (See Note below.)	6.0	Below 4.1 = Key is on Above 8.1 = Trouble

Note: This step is shown in "supervisory units." It is not directly related to voltage or current.

Appendix A
System Configurations

The charts in the following sections show what options the system will select automatically when you select one of the configurations in the System Configuration Menu (Menu 1).

Fire System

Fire System, Option 0, in the System Configuration Menu (Menu 1).

Menu / Option **Programmed As:**

System Options (Menu 2)	
External Key	Resets alarms
Number of Supervised Annunciators	0
Pre-Alarm Time	20
Release Timer	0
Sound Smoke Verification	No
Disable Zones	Yes
I/O Bridge Configuration	B Initiating
Notification Circuit	B Notification

Zone Options (Menu 3)	**Zone 1**	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Zone Type	FIRE	FIRE	FIRE	FIRE	FIRE	SPRINKLER
Word 1 and Word 2	blank	blank	blank	blank	blank	blank
Cross Alarm option	No	No	No	No	No	No
Pre Alarm option	No	No	No	No	No	No
Smoke Verify option	No	No	No	No	No	No
Response Time	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.

Bell Options (Menu 4)	**Bell 1**	**Bell 2**	**Bell 3**	**Bell 4**
Zone 1	ANSI	ANSI	Not used	Not used
Zone 2	ANSI	ANSI	Not used	Not used
Zone 3	ANSI	ANSI	Not used	Not used
Zone 4	ANSI	ANSI	Not used	Not used
Zone 5	ANSI	ANSI	Not used	Not used
Zone 6	Not used	Not used	Not used	Not used
Allow Bell Silence	No	No	No	No

Relay Options (Menu 5)	
Relay 1 Usage	Alarm
Relay 2 Usage	Alarm

Codes Menu (Menu 6)	
Installer Code	6000
Operator Code	1111

continued on next page

Fire System continued from previous page

Menu / Option **Programmed As:**

Dialer Options (Menu 7)	
Dialer Type	Not used
Low AC delay (hours)	6
Auto Test Time	01:30
Ground start (Must be disabled in UL installations.)	No
Line 1	Touchtone only
Line 2	Rotary only

Reporting Accounts (Menu 8)	**Account 1**	**Account 2**
Account number	106000	206000
Phone number	6482	6482
Format	SIA8	SIA8
Attempts (before dialer failed occurs)	3	3
Report alarms	Must	Must
Report troubles	Must	Must
Report disables	Must	Must
Report tests	Must	Must

3/1 Reporting Codes (Menu 8 cont.)	
3/1 Alarm Code	1
3/1 Trouble Code	8
3/1 Disable Code	5
3/1 Restore Code	7
3/1 Test Code	9
3/1 Sprinkler Code	2

Computer Options (Menu 8 cont.)	
Computer Enable	No
# of Rings	2
Computer Account	6001FF
Computer Phone	3

Cross Release System

Cross Release System, Option 1, in the System Configuration Menu (Menu 1).

Menu / Option **Programmed As:**

System Options (Menu 2)	
External Key	UL Abort
Number of Supervised Annunciators	0
Pre-Alarm Time	20
Release Timer	0
Sound Smoke Verification	No
Disable Zones	Yes
I/O Bridge Configuration	B Notification
Notification Circuit	B Notification

Zone Options (Menu 3)	**Zone 1**	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Zone Type	FIRE	FIRE	SPRINKLER	MANUAL RELEASE	FIRE	FIRE
Word 1 and Word 2	blank	blank	blank	blank	blank	blank
Cross Alarm option	Yes	Yes	No	No	No	No
Pre Alarm option	No	No	No	No	No	No
Smoke Verify option	No	No	No	No	No	No
Response Time	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.

Bell Options (Menu 4)	**Bell 1**	**Bell 2**	**Bell 3**	**Bell 4**
Zone 1	Releasing	ANSI	Pre-alarm	Releasing
Zone 2	Releasing	ANSI	Pre-alarm	Releasing
Zone 3	Not used	Not used	Not used	Not used
Zone 4	Releasing	ANSI	Not used	Releasing
Zone 5	Not used	Not used	Not used	Not used
Zone 6	Not used	Not used	Not used	Not used
Allow Bell Silence	No	No	No	No

Relay Options (Menu 5)	
Relay 1 Usage	Alarm
Relay 2 Usage	Alarm

Codes Menu (Menu 6)	
Installer Code	6000
Operator Code	1111

continued on next page

Cross Release continued from previous page

Menu / Option **Programmed As:**

Dialer Options (Menu 7)	
Dialer Type	Not used
Low AC delay (hours)	6
Auto Test Time	01:30
Ground start (Must be disabled in UL installations.)	No
Line 1	Touchtone only
Line 2	Rotary only

Reporting Accounts (Menu 8)	**Account 1**	**Account 2**
Account number	106000	206000
Phone number	6482	6482
Format	SIA8	SIA8
Attempts (before dialer failed occurs)	3	3
Report alarms	Must	Must
Report troubles	Must	Must
Report disables	Must	Must
Report tests	Must	Must

3/1 Reporting Codes (Menu 8 cont.)	
3/1 Alarm Code	1
3/1 Trouble Code	8
3/1 Disable Code	5
3/1 Restore Code	7
3/1 Test Code	9
3/1 Sprinkler Code	2

Computer Options (Menu 8 cont.)	
Computer Enable	No
# of Rings	2
Computer Account	6002FF
Computer Phone	3

Pre-Release System

Pre-Release System, Option 2, in the System Configuration Menu (Menu 1).

Menu / Option **Programmed As:**

System Options (Menu 2)	
External Key	UL Abort
Number of Supervised Annunciators	0
Pre-Alarm Time	20
Release Timer	0
Sound Smoke Verification	No
Disable Zones	Yes
I/O Bridge Configuration	B Notification
Notification Circuit	B Notification

Zone Options (Menu 3)	**Zone 1**	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Zone Type	FIRE	FIRE	SPRINKLER	MANUAL RELEASE	FIRE	FIRE
Word 1 and Word 2	blank	blank	blank	blank	blank	blank
Cross Alarm option	No	No	No	No	No	No
Pre Alarm option	Yes	No	No	No	No	No
Smoke Verify option	No	No	No	No	No	No
Response Time	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.	1-1.25 sec.

Bell Options (Menu 4)	**Bell 1**	**Bell 2**	**Bell 3**	**Bell 4**
Zone 1	Releasing	ANSI	Pre-alarm	Releasing
Zone 2	Not used	ANSI	Not used	Not used
Zone 3	Not used	Not used	Not used	Not used
Zone 4	Releasing	ANSI	Not used	Releasing
Zone 5	Not used	Not used	Not used	Not used
Zone 6	Not used	Not used	Not used	Not used
Allow Bell Silence	No	No	No	No

Relay Options (Menu 5)	
Relay 1 Usage	Alarm
Relay 2 Usage	Alarm

Codes Menu (Menu 6)	
Installer Code	6000
Operator Code	1111

continued on next page

Pre-Release System continued from previous page

Menu / Option **Programmed As:**

Dialer Options (Menu 7)	
Dialer Type	Not used
Low AC delay (hours)	6
Auto Test Time	01:30
Ground start (Must be disabled in UL installations.)	No
Line 1	Touchtone only
Line 2	Rotary only

Reporting Accounts (Menu 8)	**Account 1**	**Account 2**
Account number	106000	206000
Phone number	6482	6482
Format	SIA8	SIA8
Attempts (before dialer failed occurs)	3	3
Report alarms	Must	Must
Report troubles	Must	Must
Report disables	Must	Must
Report tests	Must	Must

3/1 Reporting Codes (Menu 8 cont.)	
3/1 Alarm Code	1
3/1 Trouble Code	8
3/1 Disable Code	5
3/1 Restore Code	7
3/1 Test Code	9
3/1 Sprinkler Code	2

Computer Options (Menu 8 cont.)	
Computer Enable	No
# of Rings	2
Computer Account	6003FF
Computer Phone	3