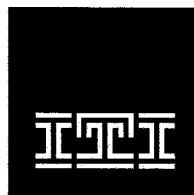


# LifeGard System

## INSTALLATION INSTRUCTIONS

This document describes the procedures necessary for an experienced installer to install a LifeGard System. Refer to the *LifeGard System Reference Manual* (86-011-ITI) for UL installation requirements or if you need more detailed information.

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WIRELESS

Security

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Access Control

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# INSTALLATION INSTRUCTIONS

## Installing the Panel

This section describes how to install the system. Before beginning the installation, plan out your system, using the worksheets provided in Appendix A.

Installing the system consists of the following procedures:

- Finding a location for the panel
- Running wire to the panel
- Connecting the panel to the phone line
- Wiring devices to the panel
- Connecting primary panel power
- Installing backup batteries
- Installing the battery door
- Plugging in the panel
- Adjusting the panel speaker volume

## Finding a Location for the Panel

Locate the panel on a table or countertop where it is convenient to use (for example, on a nightstand near a bed).

## Running Wire to the Panel

You must run wire from the panel to phone, power, and hardwire devices. Do not run wires near fluorescent lighting or parallel to AC power lines.

### How to run wires to the panel's wire access area

- 1) Run the appropriate wire between each device and the panel.
- 2) Mark each wire run, so that you know which wires are for each device.
- 3) Tie-wrap or secure the wires to a solid structure whenever possible.

## Connecting the Panel to the Phone Line

The panel can be connected to the phone line

- without line seizure
- with line seizure

## Connecting the Panel to the Phone Line without Line Seizure

### How to connect the panel to the phone line without line seizure

Connect a phone cord (not included) between the nearest phone jack and the LINE IN JACK on the panel as shown in Figure 1.

**Note:** If desired, a phone can be connected to the PHONE IN JACK, as shown in Figure 1. However, any phone connected to this jack will not work when the panel is reporting to the central station.

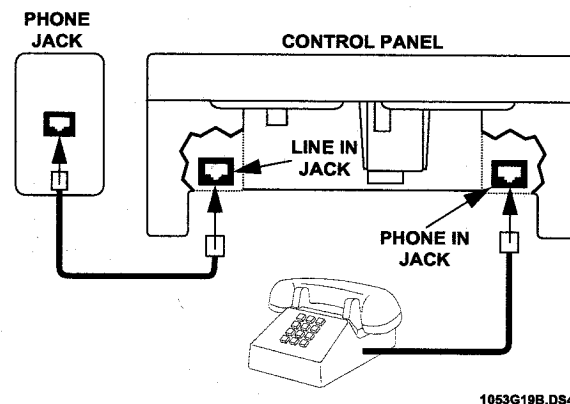


Figure 1. Connecting the Panel to the Phone Line

## Connecting the Panel to the Phone Line with Line Seizure

See Section 3 of the *LifeGard System Reference Manual* for information on connecting the panel to the phone line with line seizure.

## Wiring Devices to the Panel

Wire the following devices to the system, as necessary:

- Hardwire sensors
- Hardwire sirens and/or piezos

For information on installing peripheral and hardwire devices, see the *LifeGard System Reference Manual* and the installation sheets that accompany each device. Refer to Table A.2 to calculate the hardwire device limit for the system.

## Connecting Primary Panel Power

Normally, the panel receives primary power from an AC power transformer, which plugs into a standard outlet. Use only one of the two AC power transformers that are available for the system:

- Class II Power Transformer
- Line Carrier Power Transformer

**Note:** If you are installing X-10 Lamp Modules or a WIS, you must use the Line Carrier Power Transformer to power the system.

## Installing the Class II Power Transformer

### How to install the Class II Power Transformer

- 1) Locate the power cord (included) with a round power plug on one end and a Class II Power Transformer on the other end.
- 2) Insert the power plug into the power jack on the back of the panel as shown in Figure 2.

**Note:** Do not plug the transformer into the outlet at this time.

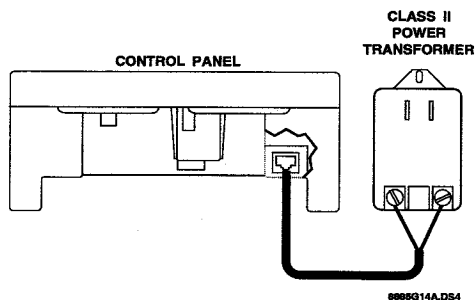


Figure 2. Installing the Class II Power Transformer

## Installing the Line Carrier Power Transformer

See Section 3 of the *LifeGard System Reference Manual* for information on installing the Line Carrier Power Transformer.

## Installing and Replacing Backup Batteries

The panel uses six NiCd or alkaline backup batteries. Because of the different voltages and charging requirements of these batteries, you cannot interchange battery types. Once the battery bucket is wired for a battery type, that type must be used. You must rewire the battery bucket before switching battery types. Warn your customer that battery types are not interchangeable.

**Note:** When installing NiCd batteries, make sure the batteries are fully charged before installing them (see Appendix D "Troubleshooting"). Fully charged batteries are at least 1.2 VDC per battery or 7.2 VDC for six batteries.

### How to install backup batteries

- 1) Remove the battery door and battery bucket from the panel.

**WARNING:** If batteries are in the battery bucket, don't let the exposed ends of the red and black leads touch each other. The batteries could drain, the wires could heat up, and the batteries could explode.

- 2) Connect the black wire from the battery bucket to panel terminal 6 (GND) as shown in Figure 3.

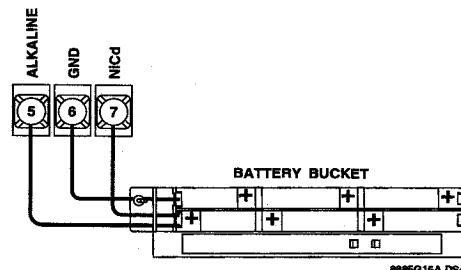


Figure 3. Backup Battery Connections

- 3) Remove the appropriate plastic tab to expose the alkaline or NiCd screw terminal (see Figure 4).

**Note:** Do not remove both plastic tabs. The tab left in place indicates to the user the battery type installed.

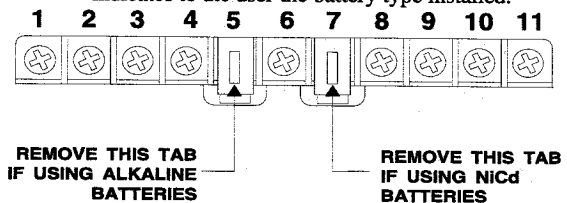


Figure 4. Selecting Tab to Indicate Battery Type

- 4) For NiCd battery use, connect the red battery bucket wire to panel terminal 7 (see Figure 3).
- or-- For alkaline battery use, connect the red battery bucket wire to panel terminal 5 (see Figure 3).

**CAUTION:** To avoid the risk of personal injury, equipment damage, and/or battery failure, only install the battery type that the battery bucket is wired for, either alkaline or NiCd.

- 5) Install six of the appropriate AA batteries in the order and direction shown in Figure 5

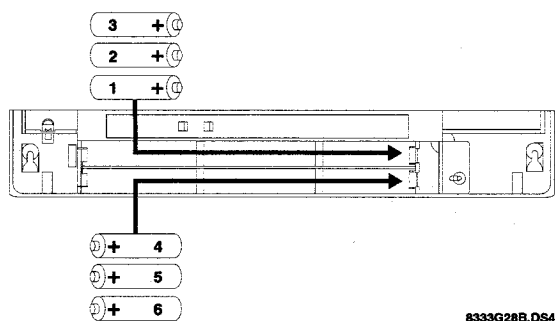


Figure 5. Battery Polarity and Order of Installation

- 6) Put the battery bucket in the panel, so that the battery indicator tab extends through the hole in the battery bucket.
- 7) Secure the battery bucket in the panel using the screw removed earlier.

#### How to replace backup batteries

- 1) Remove the battery door from the panel.
- 2) Remove the backup batteries from the battery bucket, in reverse order of the installation shown in Figure 5. Then proceed to step 7 in "To install backup batteries" to complete the replacement.

### Installing the Battery Door

While in program mode, once you install the battery door, the panel automatically returns the panel to normal operation mode.

#### How to install the battery door

- 1) Position the battery door on the panel as shown in Figure 6.
- 2) Slide the battery door straight up until it fits squarely on the panel.
- 3) Gently tighten the two screws loosened earlier to secure the battery door.

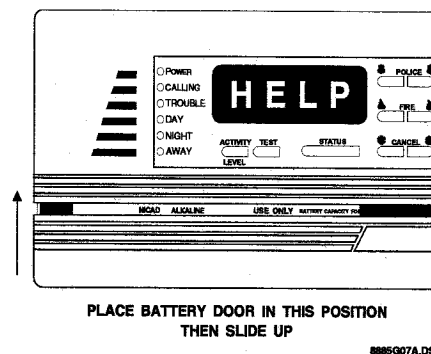


Figure 6. Positioning the Battery Door

### Plugging In the Panel

After you have made all the connections to the panel and installed the backup batteries, plug in the panel to power up the system and activate the backup batteries.

#### How to plug in the panel

- 1) Plug the transformer into an outlet that is not controlled by a switch.

The Power LED turns on, and the panel announces, *System n, sensor m*, where *n* is the software version number and *m* is the wireless sensor capacity for the panel.

If the Power LED is off and no voice message is announced, unplug the transformer and refer to Appendix D "Troubleshooting."

- Notes:**
- a. If the TROUBLE LED flashes, it may be because the NiCd batteries are low. The batteries may need to charge for up to 24 hours. Although the panel can charge low batteries, the TROUBLE LED stays on during charging.
  - b. If you're installing NiCd batteries, make sure the batteries are fully charged before installing them (see Appendix D "Troubleshooting"). Fully charged batteries are at least 1.2 VDC per battery or 7.2 VDC for six batteries.

- 2) Unplug the transformer, and then remove the existing screw securing the AC outlet cover.

**CAUTION:** Use extreme caution when securing the transformer to a metal outlet cover. You could receive a serious shock if the metal outlet cover drops down onto the prongs of the plug while you are securing the transformer and cover to the outlet box.

- 3) Hold the outlet cover in place and plug the transformer into the lower receptacle.

- 4) Use the screw supplied with the transformer to tighten the transformer to the outlet cover.

## Adjusting the Panel Speaker Volume

The panel speaker has eight volume levels for status sounds and status messages. Alarm sounds and messages are always at full volume.

### How to adjust the panel speaker volume

- Press and hold both CANCEL buttons until the system reaches the volume level you want.

The panel announces, *Hello!...hello....hello... hello...* with a steadily decreasing volume and then returns to full volume and starts again.

## Programming the Panel

This section describes how to complete system configuration programming, which is the basic information that determines how the system operates.

**Note:** User-updated information is set through user operations, summarized in Table C.1 and described in the *LifeGard System Owner's Manual* (46-962).

To program the panel you must understand the following topics:

- 1) Using programming codes
- 2) Entering and exiting program mode
- 3) Selecting communication locking
- 4) Clearing memory
- 5) Programming system devices
- 6) Programming panel configuration options
- 7) Reviewing panel configuration options
- 8) Programming upper sensor numbers
- 9) Programming feature numbers
- 10) Requesting CS-4000 programming

## Using Programming Codes

The *dealer programming code* and *installer programming code* allow two different service personnel entry into program mode. The dealer programming code allows the dealer to change all programmable values. The installer programming code allows the installer to change all values, except the dealer programming code and the primary phone number. Table 1 shows the defaults for the codes used with the system.

The dealer programming code and installer programming code share the same default. The installer programming code can never be changed from the default. If the dealer

Table 1. Default Code Settings

Name of Code	Default
Dealer Programming Code	4 3 2 1
Installer Programming Code	4 3 2 1

programming code is changed from the default, the dealer programming code and primary phone number are protected, but the installer can perform all other panel programming.

**WARNING:** A wireless touchpad must be added into the system in order to use the dealer programming code.

**WARNING:** CommLock settings determine if the dealer or the central station has control over an account. Read "Selecting Communication Locking" before attempting to program this panel. Also, check your company's procedure for using CommLock.

## Entering and Exiting Program Mode

The panel must be in program mode to perform the following procedures:

- Selecting Communication Locking
- Clearing memory
- Programming system devices
- Programming panel configuration options
- Programming upper sensor numbers
- Programming feature numbers
- Reviewing panel configuration options

## Entering Program Mode

You can enter program mode from the panel or from a wireless touchpad.

### How to enter program mode from the panel

- 1) Unplug the transformer from its outlet.
- 2) Remove the battery door from the panel.

**Note:** Every time the panel's tamper switch is activated (including when the battery door is removed), the system begins a 2-minute backup battery test. The charging voltage (9-12 V without the battery wired) normally present for NiCd rechargeable batteries is not available during the battery test.

- 2a) If the panel was operating when you started this procedure, you must also disconnect the black wire from terminal 6 on the panel. This disconnects the batteries.

- 3) Plug the transformer back into its outlet.  
The panel LEDs begin to flash, and the speaker sounds six beeps every minute to indicate that the system is in program mode.
- 3a) If you performed step 2a of this procedure, you must reconnect the black wire to terminal 6 on the panel. This reconnects the batteries.
- 4) Remove the HELP button to expose the panel's operation buttons. Perform all desired programming and replace the HELP button before exiting program mode.

**Note:** If the panel is new, with no values programmed yet, perform the "Clearing Memory" procedure before beginning to program.

#### How to enter program mode from a wireless touchpad

**Note:** Wireless touchpads must be programmed into the system before attempting to program LifeGard.

- 1) Remove the battery door from the panel.

**Note:** Every time the panel's tamper switch is activated (including when the battery door is removed), the system begins a 2-minute backup battery test. The charging voltage (9-12 V without the battery wired) that is normally present for NiCd rechargeable batteries is not available during the battery test.

**Note:** If the panel is new, with no values programmed yet, perform the "Clearing Memory" procedure before beginning to program.

- 2) Enter the DEALER PROGRAMMING CODE or INSTALLER PROGRAMMING CODE at the wireless touchpad.

The panel LEDs begin to flash, and the speaker sounds six beeps every minute to indicate that the system is in program mode. Perform all desired programming before exiting program mode.

### Exiting Program Mode

You must exit program mode after completing programming to return the panel to normal operation.

#### How to exit program mode

- Attach the battery door to the panel.  
The LEDs on the panel stop flashing, and the speaker stops sounding six beeps every minute.

## Selecting Communication Locking

The Communication Locking feature determines if the dealer or the central station has control over the customer account. The Communication Locking feature accomplishes this with two independent locking methods:

- Phone Lock
- Central Station Lock

If your company does not own the CS-4000 that will provide monitoring, but you want to maintain control over customer accounts, Phone Lock must be enabled before the panel reports to a central station.

**WARNING:** The CS-4000 can place a central station lock on any panel account that has not already been phone locked by the dealer.

**Note:** A panel can operate with or without a locking method; however, it is not possible for a panel to use both methods simultaneously. If the panel's dealer programming code is not the default, Phone Lock is enabled and a CS-4000 cannot enable Central Station Lock for that panel. If the panel's security code is not the default, Central Station Lock is enabled and the panel will not allow the dealer to change the dealer programming code.

Refer to the *CS-4000 Central Station Installation and User's Manual* (46-056) for a complete discussion of the Central Station Locking feature.

### Phone Lock

Phone Lock uses the dealer programming code to determine who has programming privileges for the primary phone number, used for panel reports to the CS-4000.

The dealer programming code and installer programming code share the same default. When the dealer programming code is changed from the default, the dealer programming code and phone number are protected, but the installer can perform all other panel programming.

**WARNING:** Clearing memory does not reset the dealer programming code. When Phone Lock is used, other than using the dealer programming code, the primary phone number and dealer programming code can only be reset by sending the panel to ITI for repair. If the dealer programming code is changed from the default, make sure to document the new code in a safe place.

**How to change the dealer programming code**

- 1) While in program mode, press CANCEL + CANCEL + TEST.
- 2) Enter the new DEALER PROGRAMMING CODE twice.

**Note:** If possible, avoid using the same code as any other code being used with the system.

**Example 54325432**

The system confirms the change by announcing *OK*.

If the code was not repeated exactly, or if Central Station Lock is enabled, the system announces, *Invalid, Try Again*. Return to step 1 to try again.

- 3) Exit program mode by replacing the battery door, or continue on to perform any desired programming procedures listed below.

**Clearing Memory**

Before programming a new panel, clear the memory. If the dealer programming code is different from the installer programming code, clearing memory does *not* clear the primary phone number or the dealer programming code.

**How to clear panel memory**

**Notes:** a. When entering command sequences, both POLICE, FIRE, and CANCEL buttons must be pressed at the same time, to register a single entry. If two entries are listed in a step, both buttons must be pressed twice.

- b. If you are not in program mode when you attempt this procedure, pressing both POLICE and FIRE emergency buttons can result in an emergency alarm. You must replace the battery door or close the tamper switch, before you can cancel the alarm.

- 1) While in program mode, press POLICE + POLICE. The panel beeps each time you press the buttons.
- 2) Immediately press CANCEL + CANCEL. The panel beeps each time you press the buttons.

The panel announces, Memory good-bye, system *n*, sensor *m*, where *n* is the software version and *m* is the number of wireless sensors the system can support.

**Example Memory good-bye, System 2, sensor 17**

- 3) To begin programming the panel, enter the DEALER PROGRAMMING CODE or INSTALLER PROGRAMMING CODE if you are programming from a wireless touchpad. If you are programming from the panel, you can just start programming.

**Programming System Devices**

All system devices must be programmed to communicate with the panel. This section includes topics for programming sensors and touchpads. See Section 4 of the *LifeGuard System Reference Manual* for information on programming hardwire sensors.

- Adding wireless sensors
- Deleting wireless sensors
- Adding wireless touchpads
- Adding 2-Button keychain touchpads
- Deleting wireless touchpads

**Adding Wireless Sensors**

After completing the group assignment for each sensor in Table A.3, use the following procedure to add all sensors.

**How to add a sensor to a group**

- 1) While in program mode, press ACTIVITY LEVEL + [group #]. Group number can be from 00 to 29 (see Table B.1 for group characteristics).

The panel announces, *Sensor level [group #]*.

- 2) Enter [sensor #]. Sensor number can be from 01 to 17. The panel announces, *Sensor [sensor #]*. Proceed to step 3.

If the panel announces, *Invalid, try again*, you have selected a sensor number that has already been programmed or does not exist, or time has run out. Return to step 1 to try again.

- 3) Trip the tamper switch of the sensor you are programming within 4 minutes. Table 2 describes how to trip the tamper switch for each type of sensor.

The panel announces, *[sensor #] OK. Sensor [next available sensor #]*.

- 4) Repeat step 3 until the desired sensors are programmed into the current group. Return to step 1 to select a new group.

**How to exit from adding sensors**

- Press STATUS.

The system announces, *Invalid, try again*, and the panel exits from adding sensors.

**Note:** When you exit from adding sensors, the panel is still in program mode.

Table 2. Methods for Tripping Learn Mode Sensors

Sensor *	Action
Door/Window †	Open sensor cover.
Fire Pull Station	Push the fire button.
Freeze	Open sensor cover.
Portable Emergency Buttons	Press the appropriate emergency button(s).
PIR Motion	Open PIR case.
Rate of Rise Heat	Open sensor cover and press learn switch on circuit board.
Recessed Door/Window	Open sensor cover and remove transmitter circuit board.
Slim Line Door/Window	Remove sensor from mounting base.
System Smoke	Press test button and hold for 30 seconds until the test alarm begins sounding.

\* Refer to the particular sensor's *Installation Instructions* for more details on tripping sensors.

† When using an external contact with this sensor, the contact must be in the alarm state while tripping the sensor to properly learn it into memory.

## Deleting Wireless Sensors

If you want to reassign a sensor to another group, you must delete that sensor first. The panel must be in program mode when deleting sensors, but it should not be in learn sensors mode.

### How to delete a sensor from a group

- While in program mode, press TEST + [sensor #]. Sensor number can be from 01 to 17.  
The panel announces, *Sensor [sensor #] good-bye.*

## Adding Wireless Touchpads

Wireless touchpads allow you to enter program mode when Phone Lock is used. See "Selecting Communication Locking" for an explanation of Phone Lock. The system supports up to four wireless touchpads.

### How to add wireless touchpads

- 1) While in program mode, press ACTIVITY LEVEL + ACTIVITY LEVEL + [ID #], where [ID #] is a touchpad ID number from 1 to 4.  
The panel announces, *[ID #] hello.*
- 2) Press BYPASS on the wireless touchpad that you want to add.  
The panel announces, *[ID #] OK.*
- 3) Repeat steps 1 and 2 for each wireless touchpad.

## Adding 2-Button Keychain Touchpads

The 2-Button Keychain Touchpads allow the user to control the system without having to go to the panel. Most operations can be done with a 2-Button Keychain Touchpad. The system accepts up to four wireless touchpads.

### How to add a 2-Button Keychain Touchpad

- 1) With the panel in program mode, press ACTIVITY LEVEL + ACTIVITY LEVEL + [ID#], where [ID#] is the touchpad ID number from 1 to 4.  
The panel announces, *[ID#] hello.*
- 2) Trip the keychain touchpad by pressing and holding both the Lock and Unlock buttons, until its LED flashes.  
The panel announces, *[ID#] OK.*
- 3) Repeat steps 1 and 2 for each keychain touchpad.

## Deleting Wireless Touchpad

### How to delete a wireless touchpad from memory

- While in program mode, press TEST + TEST + [ID #]. ID number is a touchpad ID number from 1 to 4.  
The panel announces, *[ID #] good-bye.*

## Programming Panel Configuration Options

Panel configuration options are numeric settings that affect how the system operates and communicates. Use the panel configuration settings you recorded in Table A.4 to program the system.

**Note:** You can program these options in any order.

### How to program panel configuration options

- While in program mode, enter the command sequence found in Table C.2, supplying your configuration setting variable.  
The panel announces the variable and *OK.*



## Reviewing Panel Configuration Options

You can review the current setting for the following panel configuration options:

- Account number
- House code
- Primary phone number
- Reporting format
- Siren time-out
- Day activity time-out
- Night activity time-out
- Pill reminder times (1-4)
- Programmed sensors and groups

### How to review panel configuration options

- While in program mode, enter the appropriate command from Table C.2, leaving off the [n] variable.

**Example** Pressing FIRE + FIRE + ACTIVITY LEVEL reviews the current account number setting, followed by *OK*. If set to AB123, the panel announces, *On, on, one, two, three, OK*. The panel announces, *on* to signify any letter entry. Letter entries can only be programmed from the CS-4000.

- While in program mode, press STATUS to review sensor numbers and group numbers.

## Programming Upper Sensor Numbers

Upper sensor numbers let you customize panel operation for the user. These programming options are already programmed in the panel's memory.

Upper sensor numbers can be turned on or off, but if an upper sensor number defaults to *on*, we recommend that you leave it on. Use the settings you recorded in Table A.5 when programming upper sensor numbers.

### How to turn on upper sensor numbers

- While in program mode, press ACTIVITY LEVEL + [upper sensor #].

The panel announces, *[upper sensor #] OK*.

### How to turn off upper sensor numbers

- While in program mode, press TEST + [upper sensor #].

The panel announces, *[upper sensor #] good-bye*.

## Programming Feature Numbers

Feature numbers determine how the panel communicates with the central station, the hardwire input, and the user. Use the settings you recorded in Table A.6 to program feature numbers into the system.

### How to toggle feature numbers on and off

- While in program mode, press CANCEL + CANCEL + ACTIVITY LEVEL + [feature #].

**Note:** The panel announces, *[feature #] on* or *[feature #] off*.

## Requesting CS-4000 Programming

Although most information can be programmed from the panel, some information must be programmed from the central station. Use the information you recorded in Table A.7 to inform the central station of your installation's programming requirements for the following:

- Secondary phone number
- Phone modes (PMODEs)
- Automatic phone test frequency

**Note:** The CS-4000 requires version 5.2 software (80-139) or greater to support LifeGuard System reporting in the ITI format and LifeGuard System programming from the CS-4000.

### How to request CS-4000 Central Station programming

- 1) Contact your central station and ask the operator to program the panel for the values you have recorded in Table A.7.
- 2) Give the operator the panel's account number and the phone number of the premises, and ask them to call back immediately.
- 3) Hang up the phone.
- 4) When the phone rings, press and hold the TEST button on the panel for 3 seconds.  
The LEDs scroll. The premises phone line remains tied up while the central station is programming the system.
- 5) When the central station releases the panel, the LEDs stop scrolling. The operator may call you to discuss the programming.

## Programming the Interrogator Module

Not all systems have an Interrogator module. Check your system to verify that this section applies to you.

If your system does have Interrogator module, it may or may not be programmed to fit your needs. In most cases, the Interrogator's factory set default settings will work with your LifeGuard panel. Please review Table C.3 to see if you should modify default settings for your situation.

If you do not need to change the Interrogator's default settings, skip to the "Installing Wireless Devices" section.

However, if you do need to change the Interrogator's default settings, continue reading this section.

This section describes the following:

- Programming the module
- Off-site programming access
- On-site programming access

The following describes requirements for programming the module. To program the password, dialing format, and phone number, you must be interactive with the Interrogator Module.

- A touch-tone phone must be used to program the Interrogator Module.
- Some touch-tone phones may not program or operate the Interrogator Module if they require too much power to operate or if they don't generate true DTMF tones.
- You must program from a phone line other than the one that the Interrogator Module and security panels are using.

## Off-Site Programming Access

Use one of the following methods for gaining off-site programming access:

### 8-ring Method

- 1) Call the Interrogator Module.  
After 8 rings, the Interrogator Module picks up the line. The module transmits a beeping tone, indicating the module is waiting for a response.
- 2) Press \* on your phone.  
This stops the beeping. If you do not respond with a \* within 20 seconds, the module hangs up, and will not accept another call for 5 minutes.
- 3) Enter the Log On command (\* + # + 10 + PSWD + #).

### 3 Rings, Hang-up, 1-Ring Method

- 1) Call the Interrogator Module, and hang up after 3 rings.
- 2) Wait 10 seconds and call the Interrogator Module back. The module picks up after the first or second ring. The module transmits a beeping tone, indicating the module is waiting for a response.
- 3) Press \* on your phone. This stops the beeping. If you do not respond with a \* within 20 seconds, the module hangs up, and will not accept another call for 5 minutes.
- 4) Enter the Log On command (\* + # + 10 + PSWD + #).

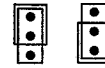
## On-Site Programming

The following describes the method for gaining on-site programming access. To program the password, dialing format, and phone number, you must be interactive with the Interrogator Module.

- 1) Connect a DTMF phone to screw terminal 2 on terminal strip 1 and the programming post.

**Note:** If you are using a lineman's telephone handset (a phone with wiring clips instead of a plug connection), connect one clip to the programming post and the other to the top of the diode above terminal #1 on terminal strip 1 (See Figure 7)

- 2) With the Interrogator Module powered up and the vertical jumper in the Normal position, remove the jumper and place it in the down position.



Insert vertical jumper in normal and down position.

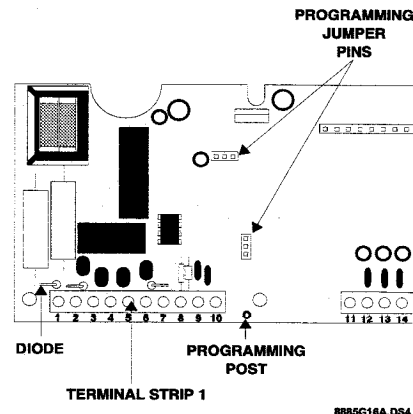


Figure 7. Locations of Programming Post, Programming Jumpers, and Diode.

- 3) With the Interrogator Module powered up and the programming (horizontal) jumper in the Normal position (right), remove the jumper and place it in the Program position (left). The programming jumper is above and to the left of the jumper described in step 2.



Insert horizontal jumper in normal and program position.

## What to Listen for When Programming

During programming, the module responds in one of two ways:

- ACK - high-frequency tone indicating the module accepted the programming command.
- NACK - low-frequency tone indicating the module rejected the programming command.

## Programming for the LifeGard

The following steps describe the basic programming:

- 1) Set trip input to 2 by pressing \* + # + 40 + 2 + y + #, where y is the trip action (see Table C.3).
- 2) Set off-site access by pressing \* + # + 33 + n + #, where n is 0 (off) or 1 (on).

**Note:** The default is 1.

- 3) Set any additional programming features (see Table C.3).

**Notes:** a. Sensor number 18 cannot be programmed into sensor group 26 when the module is used.

- b. Feature F20 must be turned on to work with the module.

## Operating the Interrogator Module with Hot Key Commands

Hot keys are operational commands that work only if an alarm has just occurred (within 5 minutes) or when the proper password (log-on procedure) is used. Table 3 describes the hot key commands:

Table 3. Hot Keys Command Option

Hot Key	Interrogator Function	Procedure
0 (3)	All Mics ON (gain toggle)	Press 0 and press 0 again to increase the gain on all microphones.
1 (4)	Mic 1 ON (gain toggle)	Press 1 and press 1 again to increase the gain on microphone 1.
2	Mic 2 ON (gain toggle)	Press 2 and press 2 again to increase the gain on microphone 2.
3 (0)	Mic 3 ON (gain toggle)	Press 3 and press 3 again to increase the gain on microphone 3.
4 (1)	Turn speaker ON.	Press 4 to speak (press 0 to listen).
5	Play recording.*	Press 5.
6	Turns ON the auxiliary relay for the time specified by command 42.	Press 6.
7	Extend connection time.	Press 7.
8	Dial back (at preset number).	Press 8 8.

Table 3. Hot Keys Command Option

Hot Key	Interrogator Function	Procedure
9	Hang up.	Press 9 9.

\* Only available if record module (60-559 is installed).

**Note:** Numbers in parenthesis () indicate the switched setting when command 44 is set to 1.

**Note:** Sometimes, the audio on-site may be so loud it interferes with central station communication. To correct this, press and hold the 5 button 5 seconds on a touch-tone phone. This switches all microphones to low gain.

## Installing Wireless Devices

After you have completed the system programming, you can install the additional wireless devices.

### Installing Wireless Sensors

After you have learned the sensors into groups and programmed the system, see the *Installation Instructions* packaged with each sensor for installation procedures. Verify the sensor numbers so that you install each sensor in its correct location.

### Installing the Wireless Interior Siren (WIS) and X-10 Lamp Module

See Section 6 of the *LifeGard System Reference Manual* for information on installing the WIS and X-10 Lamp Module.

## Testing the System

This section describes how to perform the following test procedures:

- Testing sensors
- Testing phone communication
- Testing central station communication
- Testing the Interrogator Module

You should test the system after installing a new system, after servicing the system, and after adding or removing devices from the system.

## Testing Sensors

We recommend that you do a sensor test at the beginning of every installation, before the sensors are permanently mounted. You should also do a sensor test whenever a sensor-related problem occurs.

**Note:** While the sensor test is a valuable installation and service tool, it only tests sensor operation for the current conditions. You should perform a sensor test after any change in environment or equipment.

## Performing the Sensor Test

### How to perform the sensor test

- 1) Place all sensors in their secured state, normally open or normally closed.
- 2) Replace the battery door on the panel if the door is off.
- 3) Cover PIR lenses.
- 4) Press the TEST button on the panel once.  
The system sounds one long beep and then announces, *Sensor test is on*. You have 15 minutes to complete the sensor test.
- 5) Trip each sensor as described in Table 4.  
The panel sounds transmission beeps as each sensor is tripped. Each beep represents one data round.

Table 4. Trip Sensors for Sensor Test

Sensor *	Action
D/W † §	Open the door or window. After counting the beeps, close the door or window.
Freeze	Apply ice or freeze spray to the detector. Do not allow the sensor to get wet.
PIR Motion	Avoid the PIR's view for 5 minutes. Enter its view, or use the PIR's walk test feature.
Rate of Rise Heat	Rub your hands together until warm, and then place one hand on the detector for 30 seconds.
System Smoke	Press and hold the test button until the system sounds transmission beeps.
Emergency buttons on Touchpads and panel ‡	Press the appropriate button(s) until the system transmission beeps stop.

\* Refer to a particular sensor's *Installation Instructions* for details on tripping sensors.

† D/W includes standard, Recessed, and Slim Line Door/Window Sensors.

‡ Activate all portable Emergency buttons and wireless touchpads from various locations on the premises.

§ Listen for the appropriate number of beeps before restoring the sensor. Restoring the sensor too soon results in a mixture of transmission and restoral beeps.

- 6) Count the number of transmission beeps and refer to Table 5 for minimum requirements.  
After the beeps, the panel speaker announces, *Sensor [sensor #] OK*, confirming the sensor number tested. If

the system does not respond or if the sensor does not meet the minimum transmission beep requirements, refer to "If a Sensor Fails the Sensor Test."

Table 5. Minimum Transmission Beeps

Type of Sensor	Number of Beeps
Activity Sensors	7 - 8 beeps
24-Hour/Emergency Sensors	7 - 8 beeps
Hardwire Loops	1
Panel Emergency Buttons	1

- 7) Press the STATUS button when you think all the sensors have been tested.  
The system announces untested sensor numbers.
- 8) Test all untested sensors.
- 9) Press the TEST button while the system is still in sensor test if you need more time to complete the sensor test.  
The system stays in sensor test for an additional 15 minutes, preserving the list of untested sensors.
- 10) Press both CANCEL buttons to exit sensor test.  
The panel announces, *Sensor test is off*.

If the system does not beep when the sensor is tripped, use an RF Sniffer (60-401) to verify that the sensor is transmitting. Constant beeps from the RF Sniffer indicate a runaway sensor. Remove the sensor's battery and replace the sensor.

Locate sensors within 100 feet of the panel whenever possible. While a transmitter may have a range of 500 feet or more, the environment at the installation site can have a significant effect on transmitter range. Sometimes a change in sensor location can help overcome adverse premises conditions.

### To improve sensor communication, you can

- reposition the sensor,
- relocate the sensor, or
- if necessary, replace the sensor.

### How to reposition the sensor

- 1) Rotate the sensor and test for improved sensor communication at 90° and 180° from the original position.
- 2) If poor communication persists, relocate the sensor as described in the next procedure "How to relocate the sensor."

### How to relocate the sensor

- 1) Test the sensor a few inches from the original position.
  - 2) Increase the distance from the original position and retest until an acceptable location is found.
  - 3) Mount the sensor in the new location.
- or-- If no location is acceptable, replace the sensor as described in the next procedure "How to replace the sensor."

**How to replace the sensor**

- 1) Test a working sensor at the same location.
  - 2) If the transmission beeps remain below the minimum level, avoid mounting a sensor at that location.
- or-- If the replacement sensor works, contact ITI for repair or replacement of the problem sensor.

**Testing Phone Communication**

Perform a phone test to check the phone communication between the panel and the central station. A phone test takes a maximum of 15 minutes to complete; however, most of the time the phone test is much shorter.

**WARNING:** Before performing a phone test, read "Selecting Communication Locking" in the "Programming the Panel" section.

**How to perform a phone test**

- 1) Press and hold the TEST button on the panel for 3 seconds.

The panel speaker and all interior sirens sound one long beep, and the panel announces, *Phone test is on.*

When the phone test is complete, the panel announces, *Phone test is off.*

- 2) Press the STATUS and TEST buttons at the same time for 3 seconds.

The panel announces, *Phone test OK.* Proceed to "Testing Central Station Communication."

If the panel announces, *Phone test failure,* check to be sure the panel is plugged into the panel's phone jack. Proceed to the next procedure "If the phone test fails."

**If the phone test fails,**

- 1) check to be sure the phone cord is connected between the panel's in jack and the nearest phone jack.
- 2) Press and hold the TEST button for 3 seconds.
- 3) If the phone test fails again, check the phone number programmed into the panel.
- 4) If the phone test fails again, check the phone connection wiring. Refer to "Connecting the Panel to the Phone Line" described in the "Installing the Panel" section.

**Testing Central Station Communication**

After performing the sensor and phone test, check that the system is reporting alarms successfully to the central station. Also verify that the X-10 Lamp Module is operating correctly.

**WARNING:** Before performing a central station communication test, read "Selecting Communication Locking" in the "Programming the Panel" section.

**How to test communication with central station**

- 1) Call the central station and tell the operator that you will be testing the system.
- 2) Trip at least one sensor of each type—fire, auxiliary/medical, etc.—to verify that the appropriate alarms are working correctly.
- 3) If X-10 Lamp Modules are installed, check to be sure they operate correctly.  
The lights should remain steadily lit during fire and auxiliary/medical alarms.
- 4) When you finish testing the system, call the central station to verify that the alarms were received.

**Testing the Interrogator Module**

This section describes the testing procedures for the following:

- Off-Site access testing
- On-Site testing with the central station
- Microphone and speaker testing
- Auxiliary output testing

Before you begin the following test procedures, the CS-4000 operator must have a parallel phone connected to line the panel calls in on. (Radio Shack Part No. 279-357 can be used to parallel a touch-tone phone.)

**Off-Site Access Testing**

This procedure describes how to test both off-site access methods, along with the dial-back and hang-up commands.

**How to test the two off-site access methods**

**Note:** While testing the off-site accessing methods, the dial back and hang up commands will be tested also.

- 1) Use the 8-ring method to gain access to the module.
- 2) Test the Log On command by pressing \* + # + 10 + PSWD + #. The module responds with an ACK.

**Note:** The default password is 1234.

- 3) Program the phone number in the module to the phone number where you are by pressing \* + # + 32 desired phone number + #. The module responds with an ACK.

- 4) Press 9 9 to disconnect.
- 5) Use the ring 3 times, hang up, wait, and ring 1 method to gain access again. (See "Off-Site Programming Access.")

**Note:** If no phone number is programmed for dial back, skip to step 11.

- 6) Press 8 8. The module disconnects.
- 7) Hang up your phone.
- 8) The module calls back. Pick up the phone, and listen for the beeps, and acknowledge the module by pressing \*.
- 9) Enter Log On command.
- 10) Press \* + # + 12 + #. The Interrogator Module responds with DTMF tones, which represent the account number.
- 11) Press 9 9 to disconnect.

## On-Site Testing with the Central Station

The following describes how the central station becomes interactive with the module to test for listen-in/talk-back, recording playback, and microphone gain adjustment.

### Steps for the On-Site Operator

- 1) Program the panel phone number for the CS-4000 receiver line with the parallel phone, if not already done.
- 2) Trip a medical or police sensor. No sirens will be heard for 17 seconds while the module is in the record mode (if record board is used). The phone line is seized.

### Steps for the Central Station Operator

The following describes the testing procedure for CS-4000 with software version 4.0. For CS-4000s with software version 5.0, use the ATRAP commands described in your *CS-4000 Release Notes* (46-700).

- 1) Use the following procedure that matches the module trip action setting:
  - a) **Trip Action 0 or 1-** Once the panel is trapped, pick up the in-parallel phone. You hear the data communication between the CS-4000 and the panel. Type REL and press ENTER on the CS-4000 keyboard.

**Note:** The system Trip Action default is 0.

- b) **Trip Action 2, 3, or 4-** When the panel is trapped, type REL and press ENTER.

- 2) Use the procedure that matches the module trip action setting:

- a) **Trip Action 0-** After releasing the panel and hearing the module beeping on the phone, press \*. The microphones are active. Neither the central station operator, the on-site operator, or the on-site technician should hear sirens.
- b) **Trip Action 1-** Pick up the phone and press \*. The microphones are active. Neither the central station operator or the on-site technician should hear sirens.
- c) **Trip Action 2-** Pick up the phone and dial the number at the module site. After the module picks up and your hear beeping tones, press \*. The microphones are active. Neither the central station operator or the on-site technician should hear sirens.
- d) **Trip Action 3-** The module dials back immediately. Pick up the phone and listen for the module beeping, then press \*. The microphones are active. Neither the central station operator, the on-site operator, or the on-site technician should hear sirens.
- e) **Trip Action 4-** Pick up the phone and dial the number at the module off-site. After the first ring the module picks up the line and starts beeping, press \*. The microphones are active. Neither the central station operator, the on-site operator, or the on-site technician should hear sirens.

**Note:** On-site telephones will not ring before the module picks up the line and begins beeping.

- 3) Press 5 to play back the 17-second recording (if the record board is installed).
- 4) Press 4 to turn the speakers on enabling you to talk.
- 5) Press 0 and all the microphones turn on. Once completed, the on-site technician can respond.

**Note:** The module is half duplexed, which means that if the microphones are turned on to listen, you cannot talk through the speakers and vice versa.

- 6) Press 0 again and the volume of the microphones increases. If you press 0 again, the volume decreases to the previous level.
- 7) Repeat steps 4 through 7 for each microphone at the installation site, button 1 for Mic 1, button 2 for Mic 2, and so on.

## Auxiliary Output Testing

If no device is connected to the auxiliary output, you can still test the output by connecting an LED in series with a 4.7 K ohm resistor to terminals 1 (6 VDC+) and 8 on the module.

- 1) Press \* + # + 11 + 1. If the LED is used, it will light up. If you are using a relay to activate a door strike or other device, the output activates until you press \* + # + 11 + 0. The on-site technician should verify test results through the microphones.
- 2) Inform the on-site technician that you are done testing, then press 9 9 to disconnect.

## Appendix A: System Planning Worksheets

Fill in customer information about this installation below.

Customer_____
Address_____
City_____State/Zip_____

**Table A.1** Wireless Sensors

Part No.	Description	Qty.
60-362	Door/Window Sensor	
60-409	Recessed Door Sensor	
60-499	Slim Line Door/Window Sensor	
60-512	DS924 PIR Motion Sensor	
60-506	System Smoke Sensor	
60-460	Rate-of-Rise Heat Sensor	
60-589-319.5	Manual Fire Pull Sensor	
60-504	Freeze Sensor	
60-452	Pendant Emergency Sensor	
60-458	Single Button Emergency Sensor	
60-457	Dual Button Emergency Sensor	
60-578-10-95	Water-Resistant Emergency Sensor	
60-607	2-Button Keychain Touchpad	

**Table A.2** Hardwire Devices

Part No.	Description	Qty.	mA	Sub.
Hardwire Sensors				
13-068	Magnetic Contact 3/8" press fit		N/A	
13-070	Magnetic Contact – surface mount		N/A	
13-077	ESL 445AT Smoke Detector		100 mA	
79-004	Fire Pull Station		N/A	
Hardwire Sirens				
60-483	Slim Line Hardwire Interior Siren & Piezo		60 mA	

**Table A.2** Hardwire Devices (Continued)

Part No.	Description	Qty.	mA	Sub.
60-278	Hardwire Interior Siren and Piezo		75 mA	
30-006	Piezo Status Beeper		5 mA	
13-046	Hardwire Exterior Siren		100 mA	
Miscellaneous Components				
60-391	Power Supervision Module		1 mA	
60-471	Interrogator Module *		290 mA	
Total Power Consumption cannot exceed				290 mA*

\* When the Interrogator Module requires all Panel power (290 mA), sirens can still be used with the Interrogator Module, provided they are all wired through the Interrogator Module and do not exceed 290 mA. Sirens are turned off when the Interrogator Module is on.

**Table A.3** Sensor Groups and Locations

No.	Group	Type and Location
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		Hardwire input



**Table A.4** Panel Configuration Settings

Feature	Choices	Setting
House Code	001-254	
Siren Time-out	02-15 minutes	
Account Number	00000-99999	
Primary Phone Number	Up to 18 digits, including pauses	
Panel Reporting Format	00 (ITI) 01 (4/2, 2300 Hz) 03 (4/2, 1400 Hz)	
Day Activity Time-out	02-24 hours	
Night Activity Time-out	02-24 hours	
Pill Reminder Time (1)	00:00-24:00 hours	
Pill Reminder Time (2)	00:00-24:00 hours	
Pill Reminder Time (3)	00:00-24:00 hours	
Pill Reminder Time (4)	00:00-24:00 hours	

**Table A.5** Upper Sensor Numbers

No.*	Description	Default	Setting
79	No Activity Report	OFF	
80	Touchpad Fire Emergency	ON	
81	Touchpad Police Emergency	ON	
82	Touchpad Auxiliary/Medical Emergency	ON	
83	Manual Phone Test	ON	
84	Opening Report	OFF	
85	Closing Report	OFF	
89	RF Touchpad Low Battery/Supervisory	OFF	
90	AC Power Failure	OFF	
91	Panel Shut Down	ON	
91	Low Panel Battery	ON	
92	CPU Tamper	ON	
93	Automatic Phone Test	OFF	
94	Receiver Failure	OFF	
95	Panel Back in Service	ON	
96	Phone Failure	ON	
98	Auto Event Buffer Dump	OFF	

\* See Table C.2 for the command sequence to set these upper sensor numbers from the Panel.

**Table A.6** Feature Numbers

No.*	Feature Name	Default	Setting
F20	Interrogator Enable	OFF	
F21	Panel Power Source	OFF	
F22	DTMF (touch-tone) Dialing	ON	
F23	Opening/Closing Reports in Event Buffer	OFF	
F24	Hardwire Input Configuration	OFF	
F27	Panel Alarm Mute	OFF	
F30	Low Battery Report Option	OFF	
F32	Disable Away Mode Supervision of Panics	OFF	
F34	External Output Option	OFF	
F35	Activity Levels	OFF	

\* See Table C.2 for the command sequence to set these feature numbers from the Panel.

**Table A.7** Central Station Programming

Feature	Choices	Setting
Automatic Phone Test Frequency *	1-255 days	
BATTLIFE	002- 255	
Secondary Phone Number	Up to 18 digits, including pauses	
PMODE	0 = PMODE0 1 = PMODE1 2 = PMODE2 3 = PMODE3 (ITI only) 4 = PMODE4 (ITI only) 5 = PMODE5	
STIME	hh = 00-23 mm = 00-59	
SUPSYNC	hh = 03-24	

\* This feature only functions if upper sensor 93 is ON.

## Appendix B: Programming Tables

This appendix contains tables for selecting sensor group numbers and X-10 Lamp Module house codes. Table notes for Table B.1 appear at the bottom of the table, on the next page.

**Table B.1** Sensor Group Characteristics

No.	Name	Application	Alarm	Restoral	Supervisory	CS Report
00	Fixed Panic	24-hr. audible fixed emergency buttons.	Police		√	√
01	Portable Panic	24-hr. audible portable emergency buttons.	Police			√
02	Fixed Panic	24-hr. silent fixed emergency buttons.	Silent		√	√
03	Portable Panic	24-hr. silent portable emergency buttons.	Silent			√
04	Fixed Auxiliary/ Medical	24-hr. auxiliary sensor, such as Pendant Panic or holdup button.	Auxiliary/Medical		√	√
05	Fixed Auxiliary/ Medical	24-hr. auxiliary emergency button. Siren shutoff confirms CS report.	Auxiliary/Medical		√	√
06	Portable Auxiliary/ Medical	24-hr. portable auxiliary alert button.	Auxiliary/Medical			√
07	Portable Auxiliary/ Medical	24-hr. portable auxiliary button. Siren shutoff confirms CS report.	Auxiliary/Medical			√
10	Activity	Interior or exterior doors and windows. Resets Activity Timer.	N/A		√	
15	Activity	PIR motion sensors. Resets Activity Timer.	N/A		√	
21	Local Instant Interior	24-hr. local alarm zone protecting anything that opens and closes.	Police	√	√	
22	Local Instant Interior	Same as group 21.	Police	√	√	
23	Local Instant Auxiliary/Medical	24-hr. local alarm zone protecting anything that opens and closes. *	Auxiliary/Medical	√	√	
24	Local Instant Auxiliary/Medical	24-hr. local alarm zone protecting anything that opens and closes. Sirens shut off at restoral. *	Auxiliary/Medical	√	√	

**Table B.1** Sensor Group Characteristics (Continued)

No.	Name	Application	Alarm	Restoral	Supervisory	CS Report
25	Local Special Chime	Notify the user when a door or window is opened. Sounds emit from a local annunciator. *	Special Chime	√	√	
26	Fire	24-hr. fire, rate-of-rise heat, and smoke sensors. †	Fire	√	√	√
27	Custom	Door/Window sensor. ‡	Silent	√	√	
29	Auxiliary/Medical	Freeze sensor.	Auxiliary/Medical	√	√	√

**Note:** Check marks (√) represent characteristics that are present in a group.

\* This group is not certified as a primary protection circuit for UL listed systems and is for supplementary use only.

† This group is required for UL listed residential fire alarm applications.

‡ This group has not been investigated by UL.

**Table B.2** X-10 Lamp Module House Code Settings

X-10 Codes	Corresponding Panel House Codes														
A	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
B	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225
C	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226
D	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227
E	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228
F	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229
G	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230
H	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231
I	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232
J	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233
K	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234
L	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235
M	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236
N	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237
O	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238
P	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239

\* This house code is reserved for demo panels only.

## Appendix C: Command Summary

This appendix contains a summary of all system commands and what each command does.

### User Command Summary

Table C.1 provides a description of all commands for operating the system. While these are called *user commands*, you may need to use some or all of these commands during the installation and programming process.

**Table C.1 Summary of User Commands**

Action	Command	Voice Message Confirmation
Phone test On.	TEST (press and hold for 3 seconds)	<i>Phone test is ON.</i>
Sensor test On.	TEST	<i>Sensor test is ON.</i>
Review alarm memory.	STATUS and TEST (press both buttons at the same time for 3 seconds)	<i>Alarm Memory is OK, or Sensor [sensor #] [alarm type] alarm memory.</i>
Review panel status.	STATUS	(See Owner's Manual for possible messages.)
Adjust speaker volume.	CANCEL Chancelleries and hold both buttons)	<i>Hello! ...hello...hello..hello...</i>
Cancel cancel	CANCEL CANCEL	<i>Sensor (number), (alarm type) alarm memory, system battery is OK. AC power is OK.</i>

## Program Mode Command Summary

Table C.2 provides a description of all system commands you can use when the panel is in program mode. To enter program mode, you can use either the installer programming code or the dealer programming code, unless otherwise indicated.

**Table C.2 Summary of Program Mode Commands**

Action	Command	[n] Variable	Voice Message Confirmation	Default *
Add wireless touchpad.@	ACTIVITY LEVEL + ACTIVITY LEVEL + [touchpad ID]	From 1 to 4	<i>n Hello</i>	
Add 2-Button Keychain Touchpad.@	ACTIVITY LEVEL + ACTIVITY LEVEL + [ID#]	From 1 to 4	[ID#] Hello	
Clear panel memory.	POLICE + POLICE + CANCEL + CANCEL		<i>Memory good-bye [system # ] [version #]</i>	
Delete a learned sensor.	TEST + [sensor #]	From 01 to 18	<i>Sensor nn good-bye</i>	
Delete primary phone number.	FIRE + FIRE + TEST + 1	Clears primary phone number	<i>Phone...OK</i>	
Delete wireless touchpad.	TEST + TEST + [touchpad ID]	From 1 to 4	<i>n good-bye</i>	
Exit selected group during sensor programming.	STATUS	n/a	<i>Invalid, try again</i>	
Select group number for sensor programming.	ACTIVITY LEVEL + [group #]	From 00 to 07, 10, 15, 21 to 27, 29	<i>Sensor level nn</i>	
Set account number.	FIRE + FIRE + ACTIVITY LEVEL + [account number]	Any five digits	<i>nnnnn OK</i>	00-000
Set day activity time-out.	STATUS + FIRE + FIRE + [activity time-out]	From 2-24 hours	<i>nn OK</i>	12
Set night activity time-out.	STATUS + STATUS + [activity time-out]	From 2-24 hours	<i>nn OK</i>	12
Set dealer programming code. †	CANCEL + CANCEL + TEST + [new dealer programming code] + [new dealer programming code]	Any four digits, except 1234, repeated		4321
Set feature number. ‡	CANCEL + CANCEL + ACTIVITY LEVEL + [feature number]	From 20 to 24, 27, and 30, 32, 34, and 35	<i>nn On or nn Off</i>	
Set house code.	FIRE + FIRE + [house code]	From 001 to 254	<i>nnn OK</i>	001
Set pill reminder time (1).	STATUS + POLICE + POLICE + 1 + [pill reminder time]	From 00:00 to 23:59	<i>nnnn OK</i>	00:00 (OFF)
Set pill reminder time (2).	STATUS + POLICE + POLICE + 2 + [pill reminder time]	From 00:00 to 23:59	<i>nnnn OK</i>	00:00 (OFF)
Set pill reminder time (3).	STATUS + POLICE + POLICE + 3 + [pill reminder time]	From 00:00 to 23:59	<i>nnnn OK</i>	00:00 (OFF)
Set pill reminder time (4).	STATUS + POLICE + POLICE + 4 + [pill reminder time]	From 00:00 to 23:59	<i>nnnn OK</i>	00:00 (OFF)
Set primary phone number. † §	FIRE + FIRE + TEST + [primary phone number]	From 2 to 14 digits. Press FIRE + FIRE to insert pauses.	<i>Phone nnnnnnn OK</i>	none
Set reporting format.	STATUS + CANCEL + CANCEL + [reporting format]	00 = ITI, 01 = 4/2 (2300 Hz), 03 = 4/2 (1400 Hz)	<i>nn OK</i>	00
Set siren time-out.	CANCEL + CANCEL + [siren time-out]	From 02 to 15	<i>nn OK</i>	05

**Table C.2 Summary of Program Mode Commands**

Action	Command	[n] Variable	Voice Message Confirmation	Default *
Turn off upper sensor number. **	TEST + [upper zone number]	From 79 to 98, except 86-88, and 97	<i>Sensor nn good-bye</i>	
Turn on upper sensor number. **	ACTIVITY LEVEL + [upper zone number]	From 79 to 98, except 86-88, and 97	<i>Sensor nn OK</i>	

@ You may use a maximum of 4 touchpads.

\* All programmed options with entries in the Default column, except dealer programming code, can be reviewed for the current setting. Review programmed settings by entering the corresponding command, leaving off the [n] variable.

† If the dealer programming code has been changed, Phone Lock is enabled and the primary phone number can only be changed using the new dealer programming code. The installer programming code will not allow you to program the primary phone number.

‡ Refer to Table A.6 for feature number descriptions.

§ Primary phone number can be up to 18 digits including pauses, if set from the CS-4000. A secondary phone number is also programmable from the CS-4000.

\*\* Refer to Table A.5 for upper sensor number descriptions.

## Interrogator Commands

Table C.3 describes the commands used for programming the Interrogator Module.

**Table C.3 Commands and Descriptions**

Command Name	Command	Command Description
Log On	* + # +10 + PSWD + #	Log on for programming from on or off-site.
Auxiliary Output Manual Control	* + # +11 + PSWD +0 (OFF) * + # +11 + PSWD +1 (ON)	Manually turns the auxiliary output OFF and ON. (Default = none)
Retrieve Account Number	* + # +12 +1 + #	Retrieves Interrogator account number, which is given in DTMF tones. (Default = none)
Interrogator Password	* + # +30 + nnnn + # (n = any 4 digits)	Sets the password for Log On. (Default = 1 2 3 4)
Dialing Format	* + # +31 +0 + n + # (pulse) * + # +31 +1 + n + # (DTMF)	Sets the dialing format for either DTMF or pulse. (Default = DTMF)
Interrogator Phone Number	* + # +32 + n + # (n = up to 20-digit phone number)	Stores the phone number used by the Interrogator Module when the dial-back feature is used. (Default = none) For pauses, press and hold 7 for five seconds.
Off-Site Access	* + # +33 +0 + # (OFF) * + # +33 +1 + # (ON)	Controls whether the Interrogator Module can be accessed from off-site. (Default = 1)
Unit Number	* + # +34 + n + # (n = 0-7)	Sets the unit identification number for the ITI bus. (Default = none)
Microphone Mapping	* + # +35 + nn + n + # nn = sensor number n = 0 (all microphones) 1 (microphone 1) 2 (microphone 2) 3 (microphone 3)	Determines which sensor numbers activate which microphone(s). (Default = none)
Delete Microphone Mapping	* + # +35 + nn + n + # nn = sensor number	Deletes programmed microphone mapping. To delete all microphone mapping, enter the command without a sensor number. (Default = none)
Control Panel Type	* + # +39 + n + #	Sets the Interrogator Module for use with the connected control panel. (Default = 1)

**Table C.3 Commands and Descriptions**

Command Name	Command	Command Description
Trip Input and Trip Action	* + # + 40 + x + y + # x = Trip Input 2 (ITI trip) y = Trip Action 0 = instant on with activation beeps from Interrogator Module 1 = instant on without activation beeps from Interrogator Module 2 = call back and answer after first ring 3 = dial out after trip detect 4 = call back without on-site phones ringing	Sets the trip input to match the output from the connected Control panel, and sets the trip action mode.  (Trip input default = 2) (Trip action default = 0)
Auxiliary Output Option	* + # + 41 + n + # n = 0 (disabled) 1 (enabled)	When the Interrogator trip input is activated and command 41 is set to 1 (ON), the Interrogator Module provides a switched closure to ground, providing up to 50 MA at the auxiliary output (#8 on terminal strip 1). For example, this could be used to trip a relay that controls an electric door strike. If set to 0 (OFF), the auxiliary output is disabled. (Default = 0)
Auxiliary Output Time/ Recording Save time	* + # + 42 + x + y + # x = Auxiliary Output Time 0 (5 seconds) 1 (10 seconds) 2 (5 minutes) 3 (10 minutes) y = Recording Save Time 0 (10 minutes) 1 (20 minutes) 2 (1 hour) 3 (5 hours)	Sets the auxiliary output time and the recording save time.  The auxiliary output time determines how long the auxiliary output is active, after the Interrogator Module is tripped. (Default = 0)  The recording save time determines how long the Interrogator Module saves the recording. (Default = 0)  Notes: Command 11 overrides command 41 unless there is time left on the timer (command 42).  If command 41 is set to 1 (enabled), the time period that the auxiliary output will be ON is determined by command 42.
House Code	* + # + 43 + n + # (n = 001-255)	Sets the house code. If used, it must match the control panel house code. (Default = none)
Switch Hot Key Assignment	* + # + 44 + n + # n = 0 (default) 1 (switch)	When set to 1, switches hot key assignments as follows: 0 to 3, 3 to 0, 1 to 4, or 4 to 1.
Reset	* + # + 49 + #	Resets all programming to default settings

## Appendix D: Troubleshooting

This appendix contains a summary of system troubleshooting techniques.

**Table D.1** Troubleshooting System Problems

Device	Problem	Solution
<b>Batteries</b>		
	Panel announces, <i>System Battery Failure</i> .	
		Replace the panel backup batteries.
	Panel announces, <i>Sensor [sensor #] low battery</i> .	
		Replace the sensor batteries.
<b>Central Station Reporting</b>		
	Central station is not receiving reports.	
		<ol style="list-style-type: none"> <li>1. Check that the DB-8 Cord is plugged into the RJ-31X Jack.</li> <li>2. Check for proper wiring of the RJ-31X Jack.</li> <li>3. Verify the phone number of the receiver line with the central station operator. Reprogram the phone number and retest, if necessary.</li> <li>4. Replace the RJ-31X Jack.</li> <li>5. Check that the DB-8 Cord is properly wired to the panel terminals.</li> <li>6. Replace the DB-8 Cord.</li> <li>7. Check that the premises phone line is working.</li> <li>8. Perform a phone test.</li> </ol>
<b>False Alarm</b>		
	Alarm is being sent.	
		Press both CANCEL buttons to cancel the alarm. This command bypasses the alarm if done within 8 to 20 seconds.
<b>Hardwire Input</b>		
	Panel does not respond to hardwire input activation.	
		Check that sensor 18 is programmed into panel memory, and add if necessary.
	Panel announces, <i>Sensor one eight, trouble</i> .	
		<ol style="list-style-type: none"> <li>1. Check that the 4.7K ohm resistor is installed correctly in the circuit.</li> <li>2. Check a normally open (N/O) circuit for a break in the wires.</li> <li>3. Check a normally closed (N/C) circuit for a short in the wires.</li> <li>4. Check feature number F24 for the correct setting.</li> </ol>



**Table D.1** Troubleshooting System Problems (Continued)

Device	Problem	Solution
Hardwire Siren	Exterior sirens are not producing alarm sounds.	Check for correct wiring at the siren and panel terminals.
	Exterior sirens produce status sounds.	Move the siren's positive (+) wire from panel terminal 12 to 14.
	Interior sirens are not producing sounds.	Check for correct wiring at both the siren and panel terminals.
	Interior sirens produce low-volume alarm and high-volume status sounds.	Reverse the interior siren wires at panel terminals 12 and 14.
Lights	Light using X-10 Lamp Module does not work.	<ol style="list-style-type: none"> <li>1. Check light bulbs.</li> <li>2. Check that the light switch on the lamp is turned ON.</li> <li>3. Check that the lamp is plugged into an X-10 Lamp Module.</li> <li>4. Check that the lamp is plugged into a non-switched outlet.</li> </ol>
Panel	Panel does not power up.	<ol style="list-style-type: none"> <li>1. Check the circuit breaker to be sure the circuit is live.</li> <li>2. Check that the backup batteries are installed correctly, the battery bucket wires are connected to the panel, and the transformer is plugged in.</li> <li>3. Check for proper wiring at the panel and the transformer.</li> <li>4. Measure the incoming voltage at the panel terminals. A standard transformer reads 9 VAC at terminals 1 and 4. A 4-wire line carrier transformer reads between 9-12 VDC at terminals 1 (+) and 2 (-).</li> </ol>

**Table D.1** Troubleshooting System Problems (Continued)

Device	Problem	Solution
Panel (Continued)		
	POWER LED is flashing, the TROUBLE LED is flashing, and pressing the STATUS button announces, <i>System Battery Failure</i> .	<ol style="list-style-type: none"> <li>1. Check the circuit breaker to be sure the circuit is live.</li> <li>2. Check that the backup batteries are installed correctly, the tabs are making contact, the battery bucket wires are connected to the panel, and the transformer is plugged in.</li> <li>3. Check for proper wiring at the panel and the transformer.</li> <li>4. Measure the incoming voltage at the panel terminals. A standard transformer reads 9 VAC at terminals 1 and 4. A 4-wire line carrier transformer reads between 9-12 VDC at terminals 1 (+) and 2 (-).</li> </ol> <p>If using alkaline batteries, install new batteries. If using NiCd batteries, perform steps 5 and 6.</p> <ol style="list-style-type: none"> <li>5. Remove the backup battery power by either disconnecting the battery bucket's red wire from terminal 7 or by taking the batteries out of the bucket.</li> <li>6. With a voltmeter, check the voltage at panel terminals 6 and 7. The reading may range from 9 to 12 VDC.</li> </ol> <p>When the panel is running a backup battery test, the reading at terminals 6 and 7 may range from 3.6 to 5.2 VDC. The panel automatically runs a backup battery test (1) during the sensor test, (2) during the first 2 minutes after activating the panel's tamper (including removing or installing the battery door), and (3) once every 24 hours, at the programmed STIME. The panel will not run a battery test under any condition within 24 hours of the initial power-up.</p> <p>If the voltage at terminals 6 and 7 is <b>not</b> within the range described in step 6, call Technical Support. If the voltage at terminals 6 and 7 is within the range described in step 6, continue on to step 7.</p> <ol style="list-style-type: none"> <li>7. Restore the backup battery power by either reconnecting the battery bucket's red wire to terminal 7 or by reinstalling the batteries in the battery bucket.</li> </ol> <p>While the AC power transformer is plugged in, the panel charges the batteries. Once the batteries reach 6.8 VDC (measured while in battery test), the TROUBLE LED turns off and the POWER LED stops flashing. If the trouble condition persists after 24 hours, replace the NiCd batteries.</p>

**Table D.1** Troubleshooting System Problems (Continued)

Device	Problem	Solution
Panel (Continued)		
	Incoming voltage reading is 0.	<ol style="list-style-type: none"> <li>1. Unplug the transformer.</li> <li>2. Disconnect the wires from the transformer and the panel.</li> <li>3. Check for continuity (short) between any two wires or any open circuit on any wire.</li> </ol>
	POWER LED is off, and pressing the STATUS button confirms, <i>AC Power Failure</i> .	<ol style="list-style-type: none"> <li>1. Check if the transformer is plugged into an outlet. Secure the transformer to the outlet with the screw provided.</li> </ol> <p><b>CAUTION:</b> Use extreme caution when securing the transformer to a metal outlet cover. You could receive a serious shock if the metal outlet cover drops down onto the prongs of the plug while you are securing the transformer and cover to the outlet box.</p> <ol style="list-style-type: none"> <li>2. Check the connection from the transformer to the panel.</li> </ol>
Phones		
	Loss of dial tone on-premises phones after wiring the RJ-31X Jack, or connecting the DB-8 Cord.	<ol style="list-style-type: none"> <li>1. Check the RJ-31X Jack's wiring.</li> <li>2. Check the wiring from the panel terminals to the DB-8 Cord.</li> <li>3. Replace the RJ-31X Jack.</li> <li>4. Replace the DB-8 Cord.</li> <li>5. Perform a phone test after troubleshooting the phone line.</li> </ol>
Phones (Continued)		
	Constant dial tone, preventing dial-out on premises phones.	Polarity-sensitive phones exist on the premises. Reverse the wires you connected to the brown and gray wire terminals on the RJ-31X Jack.
Sensor		
	Panel announces, <i>Sensor [sensor #] Trouble</i> .	Put the sensor's cover on, if it is off. Activate the sensor.
	Panel announces, <i>Sensor [sensor #] Failure</i> .	The sensor is not communicating with the panel.
	Panel announces, <i>Sensor [sensor #] low battery</i> .	Replace the sensor's battery.

**Table D.1** Troubleshooting System Problems (Continued)

Device	Problem	Solution
Smoke Sensor	Beeps once every minute.	Batteries are low. Replace the smoke sensor batteries.
Telephone	Telephone does not work.	Disconnect the panel from the phone jack. If the phone still doesn't work, the system is OK.
Trouble Beeps (see also panel)		
	Press the STATUS button for a voice message of the problem. This disables the trouble beeps until the panel calls in its daily report.	
Wireless Interior Siren (WIS)		
	No sound or LED activity from the WIS.	<ol style="list-style-type: none"> <li>1. Check that the panel transformer is plugged into an outlet.</li> <li>2. Check that the WIS is not plugged into an outlet controlled by a switch. Relocate, if necessary.</li> <li>3. Program the house code into the panel and set the DIP switches on the WIS.</li> <li>4. Check that the panel is powered by the 4-wire Line Carrier Transformer, not the Class II Power Transformer.</li> <li>5. The WIS may not be on the same electrical phase as the Line Carrier Transformer. Relocate the WIS to various outlets to identify compatible locations.</li> <li>6. Move the WIS to a circuit that is not used by any other appliances.</li> </ol>
	Intermittent WIS operation.	<ol style="list-style-type: none"> <li>1. Check that the WIS is not plugged into an outlet controlled by a switch. Relocate, if necessary.</li> <li>2. Move the WIS to a circuit that is not used by any other appliances.</li> </ol>
	The WIS sounds one beep every minute.	<ol style="list-style-type: none"> <li>1. The WIS may have a low battery. Replace the battery.</li> <li>2. The WIS has no battery. Install the appropriate battery based on the setting of DIP switch 1. (ON = NiCd, OFF = alkaline or lithium)</li> </ol>
Wireless Interior Siren (WIS) (Continued)		
	WIS will not shut off for record time	<ol style="list-style-type: none"> <li>1. Make sure the Interrogator Module and panel house codes match.</li> </ol>

**Table D.1** Troubleshooting System Problems (Continued)

Device	Problem	Solution
<b>Wireless Sensors</b>		
	The panel does not respond to sensor activity. There are no alarm, chime, or sensor test sounds.	<ol style="list-style-type: none"> <li>1. Check that the sensor battery is installed.</li> <li>2. Check the sensor battery for low voltage. Replace alkaline or lithium batteries, if necessary.</li> <li>3. Check that the sensor number is programmed into panel memory. Program the sensor, if necessary.</li> </ol>
	The panel responds intermittently to sensor signals.	<ol style="list-style-type: none"> <li>1. Rotate the position of the sensor from 90° to 180°.</li> <li>2. Mount the sensor in a different location.</li> </ol>
<b>Wireless Touchpads</b>		
	The panel does not respond to touchpad commands.	<ol style="list-style-type: none"> <li>1. Operate touchpads from different locations within the premises to identify areas of intermittent operation.</li> <li>2. Program the touchpads into the panel.</li> </ol>
<b>X-10 Lamp Modules</b>		
	Lights controlled by the X-10 Lamp Module do not work.	<ol style="list-style-type: none"> <li>1. Check that the lamp has a working bulb.</li> <li>2. Confirm the lamp's operation at a working outlet.</li> <li>3. Check that the lamps are plugged into X-10 Lamp Modules and the X-10 Lamp Modules are plugged into outlets that are not controlled by a switch. Relocate to nonswitched outlets, if necessary.</li> <li>4. Check that the panel is powered by the 4-wire Line Carrier Power Transformer, and not the 2-wire standard Class II Power Transformer.</li> <li>5. Check that the HOUSE dial on the X-10 Lamp Module matches the house code programmed into the panel.</li> </ol>
<b>Interrogator Module</b>		
	Hardware sirens do not shut off for the record time.	<ol style="list-style-type: none"> <li>1. Check for proper siren connections to the module relays terminals 18 through 23.</li> </ol>
	Interrogator Module won't program from on-site.	<ol style="list-style-type: none"> <li>1. Make sure programming jumpers are in programming positions.</li> <li>2. Try a different DTMF phone.</li> </ol>
	No recording heard on playback.	<ol style="list-style-type: none"> <li>1. Be sure a record board is installed correctly.</li> </ol>
	Microphone gain is low with pot adjustment set to maximum.	<ol style="list-style-type: none"> <li>1. Microphone polarity is reversed. Correct wiring.</li> </ol>