PROGRAMMING THE SX-V CPU

CPU POWER-UP PROCEDURE

1 Turn the power switch ON. Panel will show "**r rr**" in the protection level and sensor number display windows. During the next 2 1/2 - 4 minutes the CPU completely checks its RAM memory. If it finds a problem, the display will show "**b ad**".

2 When the self test is complete the CPU will respond as follows:

- Audible trouble beeps will sound once every 60 seconds if interior sirens are installed.
- Protection level display window will show "0".
- CPU sensor number display will show "CS" (checksum).

3 If the CPU does not respond as described above:

- Verify that the transformer is supplying 9-13.6 VDC to the CPU panel.
- Verify that the outlet the transformer is plugged into is providing 110 VAC.
- Verify that the transformer is providing approximately 7 - 10 VAC on screw terminal 4.

4 Clear the RAM only if the CPU comes on without giving the "CS" indication in the sensor number display following these steps:
The RAM Memory may have to be manually reset by the technician;

- If data from factory testing remained in the memory causing the CPU to not enter the RAM clear function upon initial power up,

or

- For troubleshooting to set all CPU parameters to known values.

Clearing the memory on the SX-V CPU causes the CPU to perform a 2 1/2 - 4 minute RAM test. The RAM is thoroughly tested and if irregularities are discovered the CPU will indicate that there is a problem. Any programmable features, sensor numbers, phone numbers, account number etc. will be erased when the RAM is cleared. ***The CPU must be completely reprogrammed to become functional again.***

1 The CPU must be turned ON and the power transformer must be supplying voltage.

2 Locate the RAM CLEAR PINS and jumper on the CPU board. See wiring diagram on page 18 for location. The jumper will be installed connecting the Top and Center pins.

3 Remove the jumper from the Top and Center pins and install it on the Bottom and Center pins. This will force the CPU into its RAM check routine. (The display will show "**r rr**")

4 ***IMPORTANT:*** As soon as the CPU display shows **"r rr"** remove the jumper from the Bottom and Center pins and reinstall it on the Top and Center pins.

SET CPU HOUSE CODE

1 Slide the CPU's PROGRAM SWITCH to "ON" (up) to select Program Mode.
- Protection level display will show "P".
- Pre-programmed number 01,77,80,81,82,83,86,91,94,95 & 97 will display.

2 Obtain a Touchpad that will be used in the installation. The unprogrammed CPU is going to accept and be programmed to the HOUSE CODE of the Wireless Touchpad.

PROCEDURE-

Using the SX-V Hand Held Programmer

1 Open the rear cover of the Touchpad.

2 Plug in the programmer cable to the Touchpad programmer socket.

3 Turn on the Programmer, the display should show "Hello".

4 Press the HOUSE CODE key and then enter the desired House Code (1 to 254).

5 Press the ENTER key to program the House Code into the Touchpad.

6 Press the READ key to verify proper House Code setting.

7 Disconnect the programmer cable from the Touchpad.

8 Place the CPU programming switch to the program position.

9 Press the BYPASS key on the Touchpad. This will program the CPU with the same House Code as the Touchpad.
- The protection level display will show "P" and the sensor number display will go blank for a few seconds.

The following three steps verify that the CPU and Touchpad have the same House Code and that sensor number 34 is in the CPU's memory.

10 Use the Touchpad to program one sensor number into the CPU memory. Sensor Number 34 is a good one to use since almost every installation will have a delay entry door.

11 Press the "STATUS" key and then immediately press "3" then "4".

12 Watch the sensor numbers cycle through the display. Sensor 34 should appear along with the pre-programmed sensor numbers. If sensor number 34 does not appear repeat the above step.

PROGRAMMING ADDITIONAL TOUCHPADS

All other WT and HHWT that will be used in the installation must be programmed with the correct House Code. This is the only programming necessary for proper Touchpad operation.

PROCEDURE

Using the SX-V Hand Held Programmer.

1 Open the Touchpad battery compartment door to gain access to the programmer socket.

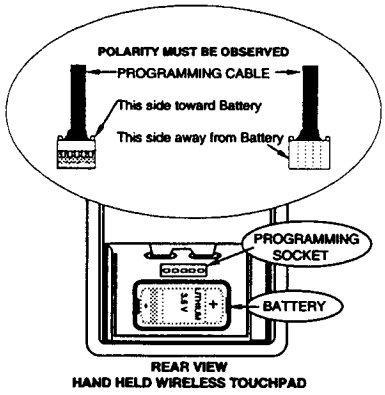
2 Plug the programmer cable into the socket.

3 Press the HOUSE CODE key on the SX-V Hand Held Programmer and then enter the desired House Code using the numeric keys (1 to 254).

4 Press the ENTER key to program the House Code into the Touchpad.

5 Press the READ key to verify proper House Code settings.

6 Disconnect the cable from the Touchpad.



SENSOR PROGRAMMING

This section describes how to program sensors. As discussed earlier, sensors are RF transmitters. They communicate with the CPU which has a built-in radio receiver. In order to successfully communicate:

1. The Sensor frequency must match the frequency of the CPU Receiver.
2. The House Code of the Sensor must match the House Code of the CPU.
3. The Sensor Number assigned to each transmitter (a unique number for every sensor) must be programmed into the CPU memory.
4. Each Sensor must be programmed with its individual sensor number.

VERIFY THE SYSTEM HOUSE CODE

You should have recorded the system House Code on the Central Station Data Card and the CPU Data Card when you first powered up the CPU. Follow these steps if you want to verify the House Code on the CPU display.

1 Turn the program switch ON.

2 Watch the CPU display until the "H" appears in the protection level display.

3 The three-digit House Code will follow in the protection level and sensor display windows.

DETERMINE SENSOR NUMBERS FOR THE INSTALLATION

If you have not yet determined which sensor numbers to use for the installation refer to the Sensor Number Chart and description below before proceeding. Record the sensor number information on the Central Station Data Card and the Customer Data Card (provided at back of manual) to serve as a reference.

PROGRAMMING PROCEDURE

Sensors can be programmed to the desired Sensor Number and House Code using the Hand Held Programmer.

The SX-V Hand Held Programmer allows you to program transmitters before or after they are installed. You can define sensor transmission options for special circumstances. You can put a transmitter to "Sleep". You are also able to "Read" the House Code, Sensor Number, and Sensor Type.

The SX-V Hand Held Programmer is a battery operated device used to program ITI transmitters and Wireless Touchpads. The programmer is used to establish the sensor's HOUSE CODE, SENSOR (zone) NUMBER, and SENSOR TYPE.

1 Press the "ON" key of the SX-V Hand Held Programmer. The display will show "HELLO".

2 Press the HOUSE CODE key on the SX-V Hand Held Programmer. The 3 House Code digits in the display will flash.

3 Enter the desired House Code, a number from 1 to 254. A number outside of the range cannot be entered. The programmer will automatically remove any number that puts the house code out of its range.

4 Press the Sensor Number Key on the programmer. The 2 sensor digits in the display will flash.

5 Enter the desired Sensor Number. The sensor number you entered will display and flash.

6 Press the SENSOR TYPE key on the programmer. The display will flash.

7 Select the SENSOR TYPE for the transmitter.

NOTE: Most sensors installed in a system will typically be one of the following types:

SENSOR TYPE	NUMERIC KEY
Door/Window Sensor	1
Motion Sensor	2
Sound Sensor	3
Shock/Glass	4
Carpet Mat/Type Sensor	5
Fixed Panic Sensors	6
Portable Panic Sensors	7
Smoke Sensors	8
Heat Sensors	9
Freeze Sensors	0

8 Press the numeric key (0 - 9) which corresponds to the type of sensor you are programming. The individual option LED's for the sensor number you are programming will light. (See SX-V Hand Held Programmer Options.)

9 Attach the programming cable to the programmer and the sensor.

10 With all the options set, and the programmer cable securely attached, press the ENTER KEY.

11 If programming is successful then "donE" is displayed. If FAIL is displayed, check the cable connections and press ENTER again.

12 Verify proper programming by pressing the READ key. The display should show the desired House Code, Sensor Number and Sensor Type.

PROGRAMMING ADDITIONAL TRANSMITTERS.

NOTE: To program additional transmitters within the same system, it is not necessary to enter the House Code again.

1 Press the SENSOR NUMBER key, then the new sensor number, (0 thru 76).

2 If the sensor is a different type, press the SENSOR TYPE key and the new type, (0 thru 9). Set options. (See SX-V Hand Held Programmer Options)

3 With the programmer cable connected to the new sensor, press ENTER. If success ful, donE is displayed.

4 Verify your programming by pressing the READ key.

REVIEW SENSOR CHARACTERISTICS TO DETERMINE ANY SPECIAL REQUIREMENTS

The following chart lists sensor numbers and their standard or default programming options which can be changed only by using the SX-V Hand Held Programmer.

Sensor Type	Sensor Number	Supervised	Normally Open	Restore	Motion Lockout	Fire/Panic Priority	Smoke Delay
1 Door/ Window	30-47 50-57 70-76	X X X		X X X			
2 Motion	60-67	X	X				
3 Sound				X	X	X	
4 Shock/ Glass				X	X		
5 Carpet Mat				X	X X	X	
6 Fixed Panic	06-07	X	X		X		
7 Port. Panic	02-05 10,11	X X see note1	X X		X X		
8 Smoke	20-27	X	X	X	X	X	
9 Heat				X	X X	X	
0 Freeze	12-17	X	X	X			

NOTE 1: The Portable Panic Transmitter is programmed with the supervisory bit turned on in order to detect a low battery condition in its 9 volt battery. This transmitter is not supervised in the traditional sense as the transmitter can be carried away from the premise.

NOTE 2: While many of the operating characteristics of sensors can be modified with the SX-V Hand Held Programmer, the memory location in the CPU may have to be changed to conform to these modifications. The selection of specific Sensor Num bers for some Sensor Types may require Central Station programming. See Central Station Programming section.

SENSOR TYPE

Six options may be selected in addition to the House Code and sensor number. The SENSOR TYPE key is used to set these options. The options may be turned on or off by pressing the individual option keys with the LEDs. If the LED is 'ON' the option is selected. Press the key once to turn it OFF, once again to turn it back on. A detailed description of the six programmable transmitter options is listed below.

1. **SUPERVISED**
   - IF this LED is on, the sensor will transmit a Supervisory signal every 69 minutes.

2. **NORMALLY OPEN**
   - When a transmitter is connected to contacts, such as a reed switch or a push button, this LED should be on only if the contacts are normally separated, and close for an alarm condition.

   - If the Transmitter is connected to an electronic output from a sensing device, (PIR, SMOKE etc) this LED should be lit if the output voltage is normally high and goes low for Alarm. If the output voltage is normally low and goes high for alarm, this LED should be OFF. Thus you can interface most equipment that provides a change in a voltage condition to trip an SX-V transmitter.

3. **RESTORE**
   - If this LED is ON, the transmitter sends a Restoral signal when the sensor returns from the violated (alarm) to the normal (restored) condition.

4. **LOCKOUT TIMER**
   - If this LED is on, one alarm transmission is allowed, then further transmissions are prevented until the sensor returns to its restored condition and stays undisturbed for at least 148 to 169 seconds. If the sensor detects motion before this "rest" time is up, the lock out timer is started over again.

5. **FIRE/PANIC PRIORITY**
   - If this LED is on, alarm transmissions are sent more than the usual number of times when an alarm occurs. It is very important to fully understand THE EMERGENCY PRIORITY OPTION FUNCTION before changing the sensor type from the preset condition.

   - FCC regulations require that THE EMERGENCY PRIORITY OPTION MUST BE USED ONLY FOR EMERGENCY 24 HOUR SENSORS SUCH AS SMOKE DETECTORS OR PANIC BUTTONS.

   - ANY OTHER USE OF THIS OPTION CAN INHIBIT THE PROPER OPERATION OF THE SYSTEM.

6. **SMOKE DELAY**
   - If this LED is on, alarm transmissions will be delayed for about 10 seconds after an alarm occurs. In the case of smoke detectors, this can help prevent false alarms caused by short "CHIRPS" the detectors make when their batteries become low.

PROGRAMMING OPTIONS

ADDING A SENSOR

There are two methods which can be used to add a sensor into the CPU memory.

The simplest method of adding sensors into the CPU memory is to have all the transmitters pre-programmed (House Code, Number, Type) using the SX-V Hand Held Programmer, and simply initialize them into the CPU by activating or tripping the transmitters.

When the CPU is in the program mode and hears a sensor with the proper House Code transmit, it automatically adds the sensor number into the CPU memory.

The second method uses the Wireless Touchpad. Make sure that the CPU program switch is ON.

Press the STATUS button on the Wireless Touchpad. This will momentarily clear the Sensor Number display. Before the display starts to cycle through again, press the TWO DIGITS (i.e.: 05 not 5) on the Wireless Touchpad which make up the sensor number you wish to add. No wait is required before entering the next sensor number, but you must press the STATUS key before each sensor number. (i.e. STATUS + 35; STATUS + 36).

After adding all desired sensors, check the Sensor Number Window to verify all are there.

NOTE: If the Sensor is connected to the CPU using the Special Programming cable at the time you add the sensor using this method, the CPU will program the sensor num ber into the transmitter as well as its memory. Confirmation is signified by the "bouncing balls".

DELETING A SENSOR OR PRE-PROGRAMMED SENSOR

1 Be sure the program switch is ON.

2 Press BYPASS and the two digit sensor number to be deleted. The "bouncing balls" will confirm your actions.

If you delete several sensors, you must push the BYPASS button each time. No wait is required. The "bouncing balls" will display after you stop deleting sensor numbers for about 5 seconds.

3 After deleting any sensors, check the Sensor Number Window to be sure they are gone.

NOTE: Entering the wrong number of digits or a number out of the proper range prevents the change from taking effect.

PROGRAMMING CPU OPTIONS

These instructions describe how to program the following information into the memory of the CPU. For many installations only a few of these items will need to be programmed. All of these parameters can be programmed or changed from a Central Station as well.

SENSOR NUMBER of every transmitter
ENTRY DELAY TIME
EXIT DELAY TIME
ACCESS CODE
DURESS CODE
Any OPTIONAL SENSOR NUMBERS 00,77,84,85,87,90,92 or 93.
Any OPTIONAL FEATURE NUMBERS F00 thru F07, F10 thru F17.
CPU ACCOUNT NUMBER
CENTRAL STATION PHONE NUMBER
CPU REAL TIME CLOCK

TO BEGIN PROGRAMMING YOU MUST:

- Be sure the CPU is in Protection Level 0.
- Be sure to use a Wireless Touchpad set to the proper House Code.
- Turn the Program Switch "ON" (up) to select program mode.

The protection level window should show "P". The sensor number window will scroll all preprogrammed numbers and any regular sensor numbers that you programmed previously.

FAST FORWARD PROGRAM VIEWING

If you wish to look at a specific entry in the program while in the program mode, press the fast forward button on the CPU board to quickly advance the program list.

CHANGING ACCESS CODE (preset to 1234)

1 Be sure the program switch is ON.

2 Press the two AUXILIARY buttons and then the desired four digit access code.

3 Wait for the "bouncing balls" to appear in the Sensor Number Window and for an audible beep from the interior sirens. This indicates the data was accepted.

4 If the bouncing balls don't appear, try again.

ENTERING DURESS CODE (preset OFF)

1 Be sure the program switch is ON.

2 Press both POLICE buttons and the desired last two digits of the duress code, and wait for the "bouncing balls". The first two digits are the same as the Access Code set above.
WARNING: Make the last two digits of the Duress Code totally different from ALL DIGITS of the Access Codes.

CHANGING ENTRY DELAY TIME (preset at 32 seconds)

1 Be sure the program switch is ON.

2 Press both POLICE buttons, then STATUS, and then the two digit entry time in seconds (from 0 to 60) and wait for the "bouncing balls". The number entered is rounded down to a multiple of four seconds.
For U.L. listed systems, the entry delay shall not exceed 45 seconds.

CHANGING EXIT DELAY TIME (preset at 32 seconds)

1 Be sure the program switch is ON.

2 Press both POLICE buttons, then BYPASS, and then the two digit exit time in seconds (from 0 to 60) and wait for the "bouncing balls". The number entered is rounded down to a multiple of four seconds.

CHANGING THE CPU ACCOUNT NUMBER USING A TOUCHPAD (preset to 00-000)

This is the Account Number which reports to the Central Station.

1 Be sure the program switch is ON.

2 Press both FIRE buttons on the Touchpad and the display should clear. Immediately press the STATUS button, the display should show "CF". Enter the five-digit Account Number
- For example, to enter the account number 55-109, you would enter: FIRE + STATUS + 55109.

3 The "bouncing balls" and audible indication from connected interior sirens confirm CPU acceptance of your programming. If they do not appear repeat sequence.

PROGRAM THE CENTRAL STATION PHONE NUMBER

This is the Phone Number the CPU will call to report to the Central Station.

1 Be sure the program switch is ON.

2 Press both FIRE buttons on the Touchpad, immediately followed by the BYPASS key (Display shows "CE"), then up to an eleven digit phone number.
- For example, to enter the phone number 1-612-555-1212, you would enter: FIRE + BYPASS + 16125551212

3 The "bouncing balls" and audible indication confirm CPU acceptance of your program ming. If they do not appear, repeat sequence.

PROGRAM THE CPU REAL TIME CLOCK

The CPU clock will be updated automatically for some commands issued from the CS-4000.

1 Be sure the program switch is ON.

2 Press both AUXILIARY buttons and hold. Listen for 6 beeps (at touchpad), then press the BYPASS key (display shows "C").

3 Enter the current time of day, hours then minutes, using "military time" (ie: using a 24 hour clock. Example: 1:00 pm = 1300, 1:00 am = 0100)
- For example, to enter 6:30 pm, you would enter: AUXILIARY + BYPASS + 1830.

4 The "bouncing balls" and audible indication confirm CPU acceptance of your programming. If they do not appear repeat sequence.

SETTING TEMPORARY ACCESS CODE

Your customer can set a Temporary Access Code (for use by baby-sitter, etc.)

1 The program switch in the CPU must be in the OFF (down) position.

2 Enter the primary access code.

3 Press STATUS and immediately enter the desired four-digit Temporary Access Code.

4 Wait for the "bouncing balls" to appear in the Sensor number window of the Central Processing Unit and listen for the protection level sound that accompanies the bouncing balls.

NOTE: When not used, program the Temporary Access Code to be the same as the primary access code.

CAUTION!! Do not make the Secondary Access Code similar to the Duress Code!

NOTE: The Secondary Access Code cannot be used to direct bypass sensors.

OPTIONAL SENSOR NUMBERS

The following are OPTIONAL SENSOR NUMBERS. These sensor numbers need to be programmed into the CPU memory if you want their respective features to work. They can also be deleted if a customer decides to have a feature removed from the system.

	SENSOR NUMBER	ACTIVE LEVELS	DESCRIPTION
00		0-8	**ALARM! BUDDY SYSTEM!** If the CPU cannot report a VIOLATION for sensor numbers 02-82, 86 or 92 to the Central Station because it detects a FAIL to COMMUNICATE (preprogrammed sensor #96) or because of NO PHONE LINE (sensor #97), it has a hardwire output that can activate a transmitter programmed to sensor #00. This transmission can be heard by another SX-V CPU which is within receiving range. The CPU which hears the transmission will silently call the Central Station and report "00 ALARM! BUDDY SYSTEM!" and identify itself with the account number of the CPU which experienced the alarm condition. Each SX-V CPU can be programmed to monitor up to 4 other SX-V CPUs within range. This programming can only be done by the Central Station. Non-Alarm reports such as Trouble or Supervisory conditions will not activate this sensor number.
84		0-8	**OPENING REPORT USER N.** If 84 is initialized, the CPU will report "84 OPENING REPORT" if an arming level is changed and the level being left was a closed level (3,4,5,6 or 7). 84 will clear from the CPU display after successfully reporting to the Central Station. You MUST initialize 85 and you MUST NOT initialize F06 for this feature to work properly. The SX-V CPU can be programmed from the Central Station to understand up to 10 different access codes from 10 different users - when OPENING REPORTS and CLOSING REPORTS are sent to the Central Station the ID Number of the User whose access code armed or disarmed the system will also be reported.
85		0-8	**CLOSING REPORT USER N.** If 85 is initialized, the CPU will report "85 CLOSING REPORT" if an arming level is changed and the level being entered is a closed level (3,4,5,6 or 7). 85 will clear from the CPU display after successfully reporting to the Central Station. You MUST also initialize 84 and you MUST NOT initialize F06 for this feature to work properly.

SENSOR NUMBER	ACTIVE LEVELS	DESCRIPTION
		The SX-V CPU can be programmed from the Central Station to understand up to 10 different access codes from 10 different users - when OPENING REPORTS and CLOSING REPORTS are sent to the Central Station the ID Number of the User whose access code armed or disarmed the system will also be reported.
87	0-8	**AUTO FORCE ARMED.** If 87 is initialized, the CPU will report "87 AUTO FORCE ARMED" whenever the BYPASS button is used to bypass a sensor or gain access to a protection level. The sensor number that was bypassed will also report. 87 will clear from the CPU display after successfully reporting to the Central Station. 87 must be initialized for U.L. installations. The SX-V CPU will automatically force arm whether or not 87 is initialized if the user fails to respond to the "PROTEST" beeps by restoring the open sensor and rearming or by deliberately bypassing the open sensor. If the user leaves the CPU protesting, it will automatically force arm after a pre-determined amount of time. (The length of time is the same as the siren timeout). The CPU will arm to the protection level the user attempted to select and bypass any sensors which were not restored. It will report "87 AUTO FORCE ARMED" to the Central Station.
90	0-8	**AC POWER FAILURE.** If 90 is initialized, the CPU will report "90 A/C POWER FAILURE" when the AC power to the CPU has been off for 15 minutes. The "Trouble" beeps will annunciate locally. Use this feature only when there is a special need. Remember, if there was a city wide power failure, all systems set to report a 90 A/C POWER FAILURE will report at once. 90 must be initialized for all U.L. installations.
92	4-7	**ALARM! TAMPER LOOP.** The CPU is shipped with provisions for its door to be connected to a N/C hardwire tamper input. This hardwire tamper input can also have other devices such as the exterior siren tamper or RJ-31X (CA 38A) phone cord tamper connected to it. The tamper loop is N/C. See Optional Feature F01 if you wish to change it to N/O .

SENSOR NUMBER	ACTIVE LEVELS	DESCRIPTION
93	0-8	**AUTOMATIC PHONE TEST.** If 93 is initialized the CPU will report "93 AUTO PHONE TEST" to the Central Station once every 7 days. The Central Station has the ability to change this time period to report from daily up to once every 255 days. No audible indication is given at the subscribers to indicate this test was sent.

ADDING AN OPTIONAL SENSOR NUMBER

You add an OPTIONAL SENSOR NUMBER just like you would add a regular sensor number:

1 First, be sure the program switch is ON.

2 Press the STATUS button, then immediately press the optional sensor number desired (00,77,84,85,87,90,92,93).

NOTE: If you add several optional sensors, you must push the STATUS button each time.

3 The "bouncing balls" will confirm the CPU's acceptance.

DELETING AN OPTIONAL SENSOR NUMBER

You delete an OPTIONAL SENSOR NUMBER just like you would delete any other sensor number:

1 First, be sure the program switch is ON.

2 Press the BYPASS button, then immediately press the optional sensor number to be deleted.

3 The "bouncing balls" will acknowledge the change.

NOTE: If you delete several optional sensors, you must push the BYPASS button each time.

PRE-PROGRAMMED SENSORS

The following sensors are pre-programmed in the CPU's memory and do not need to be programmed at installation time. You can, however, delete or reinitialize a pre-programmed sensor according to your customer's specific installation requirements.

SENSOR NUMBER	ACTIVE LEVELS	DESCRIPTION
01	0 - 8	**BAD SENSOR NUMBER** If the CPU hears a transmitter with the correct House Code, but an invalid sensor number for its system program, (i.e., a number not stored in its memory) it silently reports 01 bad sensor number and the number of the invalid sensor to the Central Station. The CPU displays 01 alarm locally. This would determine whether or not the house code you have selected for the installation is available or if an alternative should be chosen.
77	0-8	**TOUCHPAD TAMPER** If 77 is initialized and the CPU hears 40 Touchpad signals that do not equal the proper access code, plus a protection level, then the sirens will go into audible alarm (Police Siren) (silent in Level 5), and report "77 TOUCHPAD TAMPER" to the Central Station.
80	0 - 8	**ALARM FIRE PANIC** from a Touchpad. Audible.
81	0 - 8	**ALARM POLICE PANIC** from a Touchpad. Audible.*
82	0 - 8	**ALARM AUXILIARY PANIC** from a Touchpad. Audible.* *** Sensor numbers 81 and 82 shall not be programmed in U.L. listed systems when the 60-101 touchpad is used.**
83	8	**PHONE TEST** initiated by customer. After a successful test, all sirens sound briefly at the customers home or the Central Station operator should call. In addition, the 83 will clear from the CPU display and the CPU will return to Level 0.
86	0 - 9	**ALARM! SILENT DURESS.** A specially programmed access code that will send a 24 -hour POLICE EMERGENCY CALL silently to the Central Station. The Duress Code must be followed by any protection level number to activate. This sensor number will not display on the CPU, it will just report. Even though sensor number 86 is pre-programmed, it will not report unless the installer has entered a duress code into the CPU memory.
91	0 - 9	**LOW CPU BATTERY** After this report is sent to the Central Station (typically 2 to 3 days after AC failure), the CPU is about to shut down until the AC POWER is restored. This shut down prevents deep battery discharge and loss of CPU memory. The memory will be OK for several weeks without AC, however, the battery may need to be replaced. When the AC power is restored, the CPU will re-arm itself to the same protection level that it was in when it powered down. The CPU will report 95 A/C POWER RESTORED when the power comes back on. Up to two back up batteries can be installed in the SX-V CPU. Using two batteries will approximately double the standby time. The CPU could report 91 as

SENSOR NUMBER	ACTIVE LEVELS	DESCRIPTION
		a POWER SUPPLY FAILURE. This condition is usually due to a blown DC Input Fuse, a back-up battery that won't take a charge, or if the power supply has failed.
94	0 - 8	**RECEIVER TROUBLE** The CPU will report "94 RECEIVER TROUBLE" if it does not hear from any transmitter for 2 hours.
95	0 - 8	**CPU BACK IN SERVICE** This signal is sent after the CPU has gone into its battery saver shut down routine, which is designed to prevent deep battery discharge and CPU memory loss. The 95 signal is sent when the AC power has been restored and the CPU is BACK IN SERVICE. The CPU will come back on armed to the same protection level it was in when it shut down.
96	0 - 8	**FAIL TO COMMUNICATE** The CPU makes 3 attempts to contact the Central Station. If the CPU can't get through (after 3 attempts) a 96 will be displayed at the CPU and a trouble tone will sound every 60 seconds. The tone can be silenced by entering the ACCESS CODE + 0. If the CPU is armed to level 5 (silent) and it was trying to report an alarm, then it will sound the police siren. If the customer has elected not to connect to the Central Station then 96 will not exist, as it is only added to the program by the Central Station operator when the hookup is first made. This alarm gives a local indication only. The control unit will continue to make a total of 8 attempts to reach the central station in any of the PMODES programmed.
97	0 - 8	**NO PHONE LINE.** If 97 is initialized the CPU will check the phone line before attempting any communication with the Central Station. If the phone line is not operational a 97 alarm is initialized, and will be displayed at the CPU. A Trouble tone will sound. The tone can be silenced by entering the ACCESS CODE + 0. If the CPU is armed to Level 5 (silent) and the CPU was trying to report an alarm signal then it will sound the police siren immediately. This is a local indication only.

OPTIONAL FEATURE NUMBERS

The following OPTIONAL FEATURES can also be programmed into the CPU memory. They can also be added from the model CS-4000 Central Station as the other sensors can. All optional features power up "OFF" and must be programmed into the CPU to be "ON".

FEATURE	DESCRIPTION
F00 - EXIT DELAY SOUNDS	OFF - Exit delay beeps will sound only once at the beginning of the exit delay. ON - Exit delay beeps will sound continuously throughout the exit delay time. RECOMMENDATION - Set to OFF under normal circumstances.

FEATURE	DESCRIPTION
F01 - TAMPER POLARITY	OFF - The Tamper input to the CPU is Normally Closed and opens on alarm. ON - The Tamper input to the CPU is Normally Open. RECOMMENDATION - Off under normal circumstances as most tamper inputs will be N/C. Set on if you are connecting a N/O Hardwire input to these terminals.
F02 - EXTERIOR SIREN DELAY	OFF - Exterior Sirens will activate at the same time as Interior Sirens. ON - Exterior Sirens will be delayed for 15 seconds before sounding. RECOMMENDATIONS - By turning this feature on, exterior sirens will be delayed and neighbors will not be aware of some accidental alarms. For highest security, leave it off.
F03 - LOCAL ALARM	OFF - System WILL dial the Central Station. ON - System will NOT report to the Central Station. The CPU should NOT be wired to the phone lines if F03 is set. RECOMMENDATION - Set ON if system is to be local non-reporting system. In U.L. applications, the dialer must be installed.
F04 - LOW BATTERY REPORT	OFF - Low batteries will report when detected LOW and then weekly until replaced. ON - Low batteries will report to the Central Station ONLY upon first detection and never again. RECOMMENDATION - We recommend that this feature be set off so low batteries will report weekly.
F05 - SUPERVISORY REPORT	OFF - Supervisories will report DAILY until repaired. ON - Supervisories will report WEEKLY until repaired. RECOMMENDATION - We recommend that this feature be set off so supervisories will re-report daily.
F06 - DIALER ABORT	OFF - System will report ALARM! and CANCEL even if a customer cancels an alarm within the first 15-20 seconds. ON - System will automatically abort the call to the central station if the customer disarms within 15-20 seconds of accidentally tripping the system. (Except for Smoke and Panic Alarms)

FEATURE	DESCRIPTION
	RECOMMENDATION - To reduce unnecessary Central Station traffic we recommend this feature ALWAYS BE ON, unless Openings and Closings (84 + 85) have been selected then this feature MUST NOT be set.
F07 - OPEN SENSOR DISPLAY	OFF - Open sensors are not displayed at the CPU when it is armed to protection level 0,1 or 2. ON - Sensors not armed in protection levels 0,1 or 2, which are open will display on the CPU. No condition LED's will be lit.
F10 - DEALER SENSOR TEST	OFF - The standard Level 9 Sensor Test is performed. ON - The CPU will cause Interior Sirens to beep up to 16 times as each data round is received. This feature must be turned on every time you want to hear the data rounds as it turns off as the arming level is changed. RECOMMENDATION - See the section of this manual called TESTING YOUR WORK, DEALER SENSOR TEST for details.
F11 - INTERIOR SIREN SOUND	OFF - The Hardwire Interior sirens will sound Status and Alarm sounds. ON - The Hardwire Interior Sirens will Sound Alarm Sounds only - not Status sounds. RECOMMENDATION - The location of the Hardwire Interior Siren will determine whether or not to turn this feature on. A siren located in a sleeping area, for example, typically would sound alarm sounds but not status to minimize disturbances. **NOTE:** If used in a system where the 60-193 touchpad has its siren switch in the "off" position, then F11 shall be programmed to off.
F12 - RESTORAL REPORTING	OFF - Violation signals will not be followed up with a Restored report when the sensor is returned to a non-alarm condition. ON - Violation signals set to the Central Station will be followed by a Restored report when the sensor is returned to the non-alarm state. The report will indicate the time, sensor number, and RESTORED condition. RECOMMENDATION - Leave off for most installations unless the additional information of restoral time is desirable.

FEATURE	DESCRIPTION
F13 -	Not Used.
F14 - HOURLY PHONE TEST	OFF - The CPU will not test the telephone line it is connected to once every hour to see if there is DC current in the line. ON - The CPU will test the telephone line once every hour to see if there is DC current in the line. If the CPU detects a problem with the line it will sound the "trouble" beeps (a single beep every 60 seconds from the Interior Sirens) and display a 97 Alarm on the CPU panel. The trouble beeps can be silenced by changing the arming level. If the phone line is not restored in six hours the trouble beeps will begin again.

NOTICE -When the CPU checks the phone line, it seizes the line for 1/2 second to sample it. If the user is on the phone at the time, a brief "click" will be heard but the line will not be cut off. However, if the line the CPU is connected to is ringing and the CPU checks the line while it is ringing the CPU will answer the call then hang up on it.

	RECOMMENDATION - Typically off unless this is a high security application requiring frequent phone line checks. In most installations adding optional sensor number 93 AUTOMATIC PHONE TEST to test once a day provides adequate security.
F15 - SENSOR TAMPER	OFF - The CPU will go into alarm and report to the Central Station when it hears a "TAMPER" signal from a sensor - provided the CPU is armed to a protection level in which that sensor number is active. If the CPU is armed to a level that the sensor number is not active, the CPU will remember the "Tamper" signal and "PROTEST" as if sensor is open when the system is armed to a level in which the sensor is active. The report to the Central Station identifies the alarm as a "TAMPER". ON - The CPU will go into alarm and report to the central station as soon as it hears a "TAMPER" signal from a sensor regardless of the protection level the CPU is set to. The only exception is if the CPU is armed to protection level 9 - sensor test or if the sensor is bypassed. The report to the Central Station identifies the alarm as a "TAMPER". RECOMMENDATION - Set to off except in very high security applications to prevent nuisance alarms.
F16 - TROUBLE BEEPS	OFF - The system will sound 6 quick trouble beeps once each minute to indicate a trouble condition. These beeps will sound for a supervisory 10 hours after detection, a

FEATURE	DESCRIPTION
	low sensor battery 7 days after detection, a low CPU battery, if the CPU is unable to communicate, or if the CPU is left in the program mode. ON - The system will protest only if a sensor is open. It will not protest if there is a trouble condition with the exception of fire sensors. Smoke and heat sensors will operate as if the feature were not set. RECOMMENDATION - Typically set this feature on unless it is a high security application. Setting F16 may avoid customer confusion with the protest beeps.
F17 - DIRECT BYPASS	OFF - Sensors which have been "Bypassed" can only be "unbypassed" by changing the CPU arming TOGGLE level. ON - Sensors which are presently "bypassed" can be un-bypassed by entering the access code + bypass + the sensor number. See the section on the Wireless Touchpad and Bypassing for more details. RECOMMENDATION - Leave off for U.L. listed installations.

ADDING OR DELETING AN OPTIONAL FEATURE NUMBER
(All optional feature numbers power up OFF)

1. Put the CPU in the program mode.
2. Press both AUXILIARY buttons on the Touchpad for one second, then immediately press the STATUS button.
3. The letter "F" will appear in the sensor number display.
4. Press the desired feature number (from 00 - 17). Wait for the "bouncing balls" to confirm your entry.
5. Watch the CPU display to confirm that the feature number has been added to memory.

NOTE: THESE OPTIONAL FEATURES TOGGLE ON AND OFF BY USING THE SAME PROGRAMMING METHOD. REPEAT STEPS 1 THROUGH 5.

ITI Programmer (SX-V, Caretaker, Commander Panels only)

Press ON, programmer will say HELLO, if long tone sounds its connected backwards
Connect to sensor, press READ, current sensor programming will show

1. House Code
To change press HOUSE CODE (number will flash)
enter new 3 digit house code then press ENTER, screen will say OK

2. Sensor (Zone) Number
Press SENSOR NUMBER, (number will flash), Enter 2-digit zone number
then press ENTER, screen will show OK

3. Sensor Type
Press SENSOR TYPE (number will flash), Press key relating to type of
sensor (1 = Door/Window Sensor etc) then press ENTER, screen will say OK

If sensor says SLEEP the sensor battery is low and needs replaced

Disconnect from sensor when done

Caretaker - Wiring "Pigtail" must be removed and connected directly to board, the programmer cannot be used on this panel

SX-V - Programmer must be put in Octal format by pressing "Sensor Number" key twice (not needed on "SX-V only" programmers)

Decimal to Octal Zone Conversion (get out the calculator)

	Zones																							
SX-V Panel	1	2	3	4	5	6	7	10	11	12	13	14	15	16	17	20	21	22	23	24	25	26	27	30
Programmer	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24