

SX-V SPECIAL
SECURITY SYSTEM
PROGRAMMING

PROGRAMMING THE 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 it's RAM memory. If it finds a problem, the display will show "b ad".

NOTE: Panel will not power-up on battery alone. AC power must be applied.

- 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 power fuse is good (check with ohmmeter)
 - 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 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 in installation sections for location of jumper. 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.

PROGRAMMING TOUCHPADS

PROCEDURE

- 1 Slide the Program Review Switch to up (on).
- 2 Press 4 3 2 1 on a touchpad (puts CPU in Program Mode)
{Display shows P PP}
- 3 Press the "STATUS" button. A bouncing ball will appear on the protection level display. If nothing occurs for 10 seconds, the display shows P PP and you must repeat step 3.
- 4 Press 11, then the "COMMAND" button.
- 5 Either press the "COMMAND" button again or enter touchpad number, then the "COMMAND" button.
- 6 Press the "BYPASS" buttons on all touchpads to be programmed for this system. All "BYPASS" buttons must be pressed in a 4 minute window or the display returns to P PP.
- 7 Press the "COMMAND" button when done.

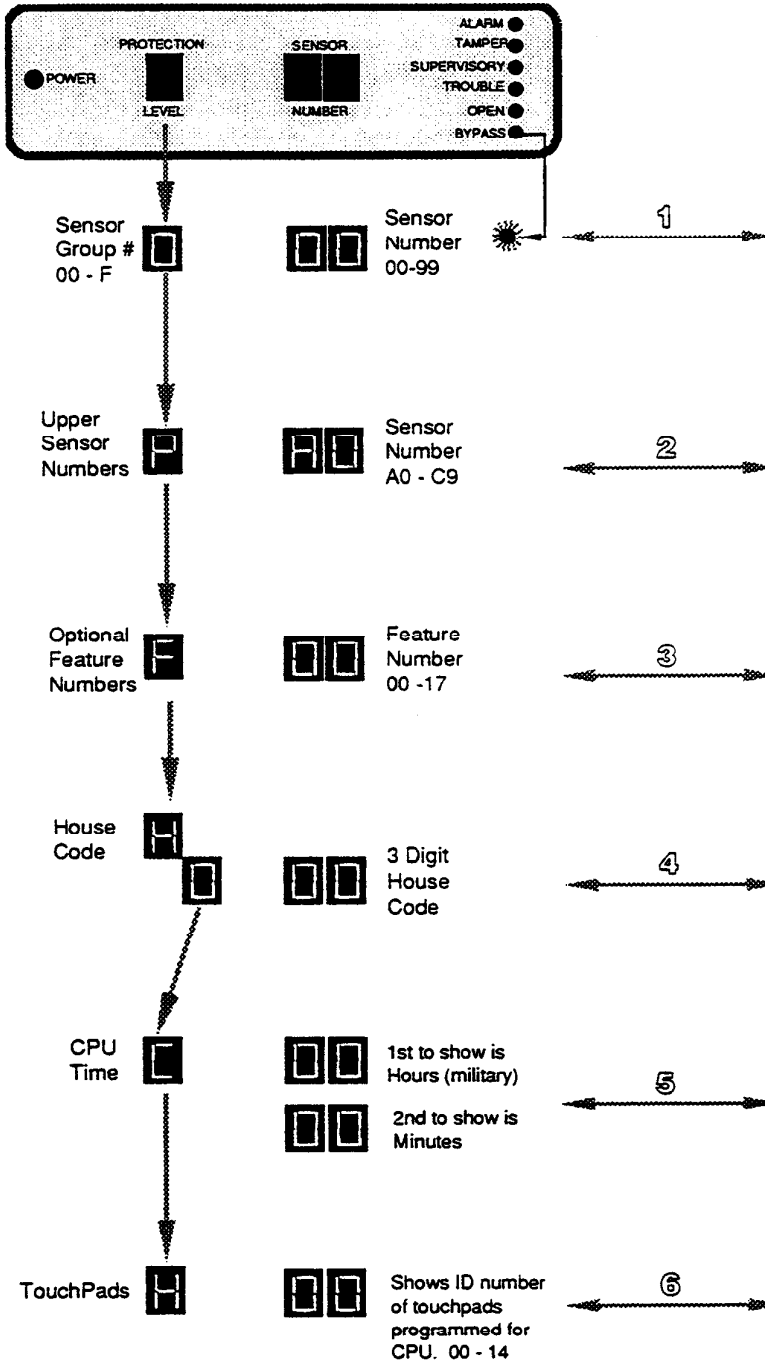
DELETING A TOUCHPAD

PROCEDURE

- 1 Slide the Program Review Switch to up (on).
- 2 Press 4 3 2 1 on a touchpad (puts CPU in Program Mode)
{Display shows P PP}
- 3 Press the "STATUS" button. A bouncing ball will appear on the protection level display. If nothing occurs for 10 seconds, the display shows P PP and you must repeat step 3.
- 4 Press 12, then the "COMMAND" button. A "H" should appear on the protection level display.
- 5 Enter the touchpad number "xx" to be deleted.
- 6 After 8 seconds, bouncing ball will confirm the touchpad has been deleted.
- 7 Repeat steps 3-6 for each touchpad to be deleted.

PROGRAM REVIEW MODE DISPLAY SEQUENCE

Slide the Program Review Switch to up (on).



Sequence One shows how the sensor is grouped in the CPU memory. The protection level window shows the group number of the sensor currently displayed in the sensor number windows. The BYPASS LED when lit, indicates the current sensor displayed is programmed for a normally open switch.

Sequence Two indicates the Upper Sensor Numbers that are initialized in the CPU memory. The protection level window will show a "P" continuously while the sensor number windows will scroll the Upper sensor numbers A0, A1, A2 - C9.

Sequence Three indicates the Optional Features that are initialized in the CPU memory. The protection level window will show an "F" continuously while the sensor number windows will scroll the feature numbers (00 - 17) if active.

Sequence Four indicates the CPU house code. The protection level display will show an "H" prior to changing to the first digit of the house code. The sensor number windows will show the last two digits of the house code. The display will then move on to the next sequence.

Sequence Five indicates the time of day programmed into the CPU's memory. The protection level window will show a "C" continuously while the sensor number windows will show the hour first (in military time 00 - 23 hundred hours), and then show the minutes (00 - 59).

Sequence Six indicates the ID number of the Touchpads programmed for this CPU. The "H" in the protection level display will be lit continuously while the sensor number windows scroll from 00 - 14.

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 Sensor Number assigned to each transmitter (a unique number for every sensor) must be programmed into the CPU memory.

DETERMINE GROUP NUMBERS FOR SENSORS

If you have not yet determined which group numbers to use for the installation refer to the Group Number Chart and description below before proceeding.

SENSOR GROUP CHART

GROUP NUMBER	SENSOR TYPE	ACTIVE LEVELS	SIREN SOUND
00	Police / Emergency	0 - 8	Loud Intermittent
01	Auxiliary / Medical	0 - 8	Low Level Siren
02	Special	1 - 7	Loud Intermittent
03	Main Entry	3 - 7	Loud Intermittent
04	Perimeter	Reports in	2
		Chimes in	2
05	Interior Delayed	Reports in	3 - 7
		Chimes in	2
06	Interior Delayed	4 - 7	Loud Intermittent
07	Interior (starts delay)	5 - 7	Loud Intermittent
08	Interior (starts delay)	4 - 7	Loud Intermittent
09	Silent Panic	5 - 7	Loud Intermittent
F (10)	Fire	0 - 8	Silent
		0 - 8	Loud Steady Tone

NOTE: Burglary sensors are silent in level 7.

PROGRAMMING PROCEDURE

- 1) Enter the Program Mode and press the "STATUS" button on the Wireless Touchpad. This will momentarily clear the Sensor Number display and a bouncing ball will appear in the protection level window.
- 2) Before the display returns to all P's, press the TWO DIGITS (i.e.: 05 not 5) on the Wireless Touchpad which make up the group number of the sensor you wish to add and then press the "COMMAND" button. The group number will move to the protection level display, and the next available sensor number will appear flashing in the sensor number displays. (Data must be entered within 8 seconds or display resets to P PP.)
- 3) Press the "COMMAND" button (if you wish to use that number) OR enter the sensor number you wish to use, then the "COMMAND". The sensor number will quit flashing.
- 4) Activate the tamper button on all transmitters in that group (for smoke sensors, press the test button). NOTE: If you want the external input programmed for a normally open switch, make sure the two contacts are shorted together before activating the tamper switch.
- 5) When done with the group, press the "COMMAND" button. (4 minutes after the last sensor is activated, the display returns to P PP.)
- 6) Repeat for all other groups.

After adding all desired sensors, check the Sensor Number Window (when in program review mode) to verify all are there. The bypass LED will be lit if the sensor has been programmed for a normally open switch.

DELETING A SENSOR

- 1** Enter program mode.
- 2** Press BYPASS and the two digit sensor number to be deleted. After 8 seconds, the "bouncing balls" will confirm your actions.
If you delete several sensors, you must push the BYPASS button each time.
- 3** After deleting any sensors, check the Sensor Number Window (when in program review mode) 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, except for sensor numbers.

SENSOR NUMBER of every transmitter

ENTRY DELAY TIME

EXIT DELAY TIME

ACCESS CODE

DURESS CODE

Any OPTIONAL SENSOR NUMBERS 100, 102, 107, 108, 110, 111, 114.

Any OPTIONAL FEATURE NUMBERS F00 through F07, F10 through F17 (F00 On at Power-up).

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 programmed in the CPU.
- Turn the Program Switch "ON" (up) to select program review mode.
- Press 4 3 2 1

The protection level and sensor number window should show "P PP".

FAST FORWARD PROGRAM VIEWING

If you wish to look at a specific entry in the program while in the program review 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 mode is entered and "P PP" is displayed.
- 2 Press the two MEDICAL 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 mode is entered and "P PP" is displayed.
- 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 mode is entered and "P PP" is displayed.
- 2 Press both POLICE buttons then STATUS (1E will display on sensor number display) 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: Entry delay shall not exceed 45 seconds.

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

CHANGING EXIT DELAY TIME (preset at 32 seconds)

- 1 Be sure the program mode is entered and "P PP" is displayed.
- 2 Press both POLICE buttons then BYPASS (0E will display on sensor number display) 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.
- 3 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. The Secondary Access Code cannot be used to direct bypass sensors.

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

PROGRAM HOUSE CODE

- 1 Be sure the program mode is entered and "P PP" is displayed.
- 2 Press both FIRE buttons and then enter the 3 digit house code (002 not 2).
- 3 The "bouncing balls" and audible indication confirm CPU acceptance of your programming. If they do not appear repeat sequence.

NOTE: The house code is used for the WIS and the X-10 light modules. The house code that is entered (001-254) is mapped to the X-10 house code using the following chart.

CPU HOUSE CODE													X-10 HOUSE CODE				
016	032	048	064	080	096	112	128	144	160	176	192	208	224	240		A	
001	017	033	049	065	081	097	113	129	145	161	177	193	209	225	241	B	
002	018	034	050	066	082	098	114	130	146	162	178	194	210	226	242	C	
003	019	035	051	067	083	099	115	131	147	163	179	195	211	227	243	D	
004	020	036	052	068	084	100	116	132	148	164	180	196	212	228	244	E	
005	021	037	053	069	085	101	117	133	149	165	181	197	213	229	245	F	
006	022	038	054	070	086	102	118	134	150	166	182	198	214	230	246	G	
007	023	039	055	071	087	103	119	135	151	167	183	199	215	231	247	H	
008	024	040	056	072	088	104	120	136	152	168	184	191	216	232	248	I	
009	025	041	057	073	089	105	121	137	153	169	185	192	217	233	249	J	
010	026	042	058	074	090	106	122	138	154	170	186	193	218	234	250	K	
011	027	043	059	075	091	107	123	139	155	171	187	194	219	235	251	L	
012	028	044	060	076	092	108	124	140	156	172	188	195	220	236	252	M	
013	029	045	061	077	093	109	125	141	157	173	189	196	221	237	253	N	
014	030	046	062	078	094	110	126	142	158	174	190	197	222	238	254	O	
015	031	047	063	079	095	111	127	143	159	175	191	198	223	239		P	

UPPER SENSOR NUMBERS

The following is a description of pre-programmed sensor numbers resident in the CPU's memory. Those numbers that are marked with a PRE are pre-programmed. Those numbers that are marked with OPT are optional sensors that can be turned on at the time of installation if desired. You can delete or re-initialize a pre-programmed sensor according to your customer's specific installation requirements.

CPU DISPLAY	SENSOR NUMBER	ACTIVE LEVELS	DESCRIPTION
A0	100	0-8 (OPT)	PHONE TAMPER (Buddy System). If the CPU cannot report a VIOLATION for sensor numbers 01-99, 103, 104, 105, 109 or 113 to the Central Station because it detects a FAIL to COMMUNICATE (pre-programmed sensor 117) or because of NO PHONE LINE (sensor 118) it has a hardwire output that can activate a transmitter. This transmission can be heard by another CPU which is within receiving range. The CPU which hears the transmission will silently call the Central Station and report "100 ALARM! PHONE TAMPER" and identify itself with the account number of the CPU which experienced the alarm condition. Each CPU can be programmed to monitor up to 4 other 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.
A1	101	0-8 (OPT)	TOUCHPAD TAMPER. If 102 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 "102 TOUCHPAD TAMPER" to the Central Station.
A2	102	0-8 (OPT)	HARDWIRE DEVICE -- If a hardwire buss device quits reporting in a 102 supervisory will be reported along with the unit number of the buss device.
A3	103	0-8 (PRE)	24 -HOUR FIRE CALL from a Touchpad. Audible.
A4	104	0-8 (PRE)	24 -HOUR POLICE CALL from a Touchpad. Audible.
A5	105	0-8 (PRE)	24 -HOUR AUXILIARY CALL from a Touchpad. Audible.
A6	106	8 (PRE)	PHONE TEST initiated by customer. After a successful test, all sirens sound briefly at the customers home <u>or</u> the Central Station operator should call. In addition, the 106 will clear from the CPU display and the CPU will return to Level 0.

Optional Sensor Numbers Cont.

CPU DISPLAY	SENSOR NUMBER	ACTIVE LEVELS	DESCRIPTION
A7	107	0-8 (OPT)	<p>OPENING REPORT. If 107 is initialized, the CPU will report "107 OPENING REPORT" if an arming level is changed and the level being left was a closed level (3,4,5, 6 or 7). A7 will clear from the CPU display after successfully reporting to the Central Station. You MUST initialize 108 for this feature to work properly. **</p>
A8	108	0-8 (OPT)	<p>CLOSING REPORT. If 108 is initialized, the CPU will report "108 CLOSING REPORT" if an arming level is changed and the level being entered is a closed level (3,4,5, or 6). A8 will clear from the CPU display after successfully reporting to the Central Station. You MUST also initialize 107 this feature to work properly. **</p> <p>** The CPU can be programmed from the Central Station to understand up to 34 different access codes from 34 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.</p>
A9	109	0-8 (PRE)	<p>DURESS CODE. 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 109 is pre-programmed, it will not report unless the installer has entered a duress code into the CPU memory.</p>
C0	110	0-8 (OPT)	<p>FORCE ARMED. If 110 is initialized, the CPU will report "110 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. C0 will clear from the CPU display after successfully reporting to the Central Station.</p> <p>The CPU will automatically force arm whether or not 110 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 3 minute timeout. The CPU will arm to the protection level the user attempted to select and bypass any sensors which were not restored. A 110 Forced Armed Auto, will always be sent even if sensor 110 is not Initialized. The ID number of the user whose access code was used will also be reported.</p>

Optional Sensor Numbers Con.

CPU DISPLAY	SENSOR NUMBER	ACTIVE LEVELS	DESCRIPTION
C1	111	0-8 (OPT)	A/C FAILURE. If 111 is initialized, the CPU will report "111 A/C 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 111 A/C FAILURE will report at once.
C2	112	0-9 (PRE)	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 112 A/C POWER RESTORED when the power comes back on. Up to two back up batteries can be installed in the CPU. Using two batteries will approximately double the standby time. The CPU could report 112 as 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 chip has failed.
C3	113	1-7 (OPT)	CPU TAMPER 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 phone cord tamper connected to it. The tamper input can be configured either N/O or N/C. The central station report will be 113 alarm tamper loop.
C4	114	0-8 (OPT)	AUTOMATIC PHONE TEST. If 114 is initialized the CPU will report "114 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.
C5	115	0-9 (PRE)	RECEIVER FAILURE The CPU will report "115 RECEIVED FAILURE" if it <u>does not hear from any</u> transmitter for 2 hours.
C6	116	0-8 (OPT)	CPU BACK IN SERVICE 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 116 signal is sent when the AC power has been restored. 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.

Optional Sensor Numbers Cont.

CPU DISPLAY	SENSOR NUMBER	ACTIVE LEVELS	DESCRIPTION
C7	117	0-8 (PRE)	FAIL TO COMMUNICATE The CPU makes 3 attempts to contact the Central Station. If the CPU can't get through (after 3 attempts), a 117 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. 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.
C8	118	0-8 (PRE)	NO PHONE LINE. If 118 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 118 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. This is a local indication only.
C9	119	0-9 (PRE)	PROGRAM CHANGE / TOUCHPAD (low BAT or SUPER). This signal is sent if a change is made to the panel while in program mode such as initializing a sensor, deleting a sensor, change the access code etc. A Supervisory or Low Battery on C9 (119) is a supervisory or low battery on a wireless touchpad. The touchpads number is sent to the CS-4000.

NOTE: For the purposes of this document, when sensor numbers are referred to, they will be in the Central Station Format (3 digits). Remember, the display will show the 2 digit representation of the sensor number.

EXAMPLE: Central station receives 113
 Customers Touchpad shows C3

ADDING AN UPPER SENSOR NUMBER

- 1 First, be sure the program switch is ON.
- 2 Press 4 3 2 1 on touchpad. Display should show "P PP".
- 3 Press the STATUS button, then 13, then "COMMAND", then the lowest digit of the sensor number you wish to add first. For example: when programming sensor number 100, you would enter 00; for sensor number 102, you would enter 02, etc.
- 4 The "bouncing balls" will confirm the CPU's acceptance.
- 5 Repeat steps 1 to 4 for each optional sensor number.

NOTE: The optional sensor numbers toggle on and off by using the above method. Repeat the above to remove an optional sensor number from the CPU.

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" (except F00, and must be programmed into the CPU to be "ON").

FEATURE	DESCRIPTION
F00 - EXIT DELAY SOUNDS	<p>WHEN NOT SET - Exit delay beeps will sound only once at the beginning of the exit delay.</p> <p>WHEN SET - Exit delay beeps will sound continuously throughout the exit delay time.</p> <p>RECOMMENDATION - Set under normal circumstances (default sets this feature "on").</p>
F01 - TAMPER POLARITY	<p>WHEN NOT SET - The Tamper input to the CPU is Normally Closed and opens on alarm.</p> <p>WHEN SET - The Tamper input to the CPU is Normally Open.</p> <p>RECOMMENDATION - Do not set under normal circumstances as most tamper inputs will be N/C. Set if you are connecting a N/O Hardwire input to these terminals.</p>
F02 - EXTERIOR SIREN DELAY	<p>WHEN NOT SET - Exterior Sirens will activate at the same time as Interior Sirens.</p> <p>WHEN SET - Exterior Sirens will be delayed for 15 seconds before sounding.</p> <p>RECOMMENDATIONS - For highest security, leave it off.</p>
F03 - DIGITAL COMMUNICATOR	<p>WHEN NOT SET - System WILL dial the Central Station.</p> <p>WHEN SET - System will NOT report to the Central Station. The CPU should NOT be wired to the phone lines if F03 is set.</p> <p>RECOMMENDATION - Set ONLY if system is to be local non-reporting system. In U.L. applications, the dialer must be installed.</p>
F04 - LOW BATTERY REPORTS	<p>WHEN NOT SET - Low batteries will report daily at STIME.</p> <p>WHEN SET - Low batteries will report to the weekly at STIME.</p> <p>RECOMMENDATION - We recommend that this feature NOT BE SET so low batteries will report daily.</p>

Optional Feature Numbers Cont.

FEATURE	DESCRIPTION
F05 - SUPERVISORY REPORTS	<p>WHEN NOT SET - Supervisories will report DAILY until repaired.</p> <p>WHEN SET - Supervisories will report WEEKLY until repaired.</p> <p>RECOMMENDATION - We recommend that this feature NOT BE SET so supervisories will re-report daily.</p>
F06 - DIALER ABORT	<p>WHEN NOT SET - System will report VIOLATION and CANCEL even if a customer cancels an alarm within the first 15-20 seconds.</p> <p>WHEN SET - 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, Panic Alarms and status reports.)</p> <p>RECOMMENDATION - Leave off under normal circumstances.</p>
F07 - ALARM LED OPTION	<p>WHEN NOT SET - Terminal 14 outputs hardwire buss information.</p> <p>WHEN SET - Terminal 14 controls an Alarm output LED.</p> <p>RECOMMENDATION - Do not set unless using an Alarm LED.</p>
F10 - SIGNAL STRENGTH INDICATOR	<p>WHEN NOT SET - The standard Level 9 Sensor Test is performed.</p> <p>WHEN SET - The CPU will cause Interior Sirens to beep up to 8 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.</p> <p>RECOMMENDATION - See the section of this manual called TESTING YOUR WORK, SENSOR TEST for details.</p>

Optional Feature Numbers Cont.

FEATURE	DESCRIPTION
F11 - INTERIOR SIREN SOUND	<p>WHEN NOT SET - The Hardwire Interior sirens will sound Status and Alarm sounds.</p> <p>WHEN SET - The Hardwire Interior Sirens will Sound Alarm Sounds only - not Status sounds.</p> <p>RECOMMENDATION - The location of the Hardwire Interior Siren will determine whether or not to set this feature. A siren located in a sleeping area, for example, typically would sound alarm sounds but not status to minimize disturbances.</p>
F12 - RESTORAL REPORTING	<p>WHEN NOT SET - Violation signals will not be followed up with a Restored report when the sensor is returned to a non-alarm condition.</p> <p>WHEN SET - 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.</p> <p>RECOMMENDATION - Leave not set for most installations unless the additional information of restoral time is desirable.</p>
F13 - KEY SWITCH ENABLE	<p>WHEN NOT SET - Terminal 9 is a Buddy Option output.</p> <p>WHEN SET - Terminal 9 is a key switch input.</p> <p>RECOMMENDATION - Do not set unless a key switch is used.</p>
F14 - HOURLY PHONE TEST	<p>WHEN NOT SET - 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.</p> <p>WHEN SET - 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 C8 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.</p>

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 do not set unless this is a high security application requiring frequent phone line checks. In most installations adding optional sensor number C4 AUTOMATIC PHONE TEST to test once a day provides adequate security.

FEATURE	DESCRIPTION
F15 - SENSOR TAMPER	<p>WHEN NOT SET - 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".</p> <p>WHEN SET - 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".</p> <p>RECOMMENDATION - NEVER set except in very high security applications to prevent nuisance alarms.</p>
F16 - TROUBLE BEEPS	<p>WHEN NOT SET - 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 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.</p> <p>WHEN SET - 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.</p> <p>RECOMMENDATION - Leave "not set".</p>
F17 - DIRECT BYPASS TOGGLE	<p>WHEN NOT SET - Sensors which have been "Bypassed" can only be "unbypassed" by changing the CPU arming level.</p> <p>WHEN SET - 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.</p> <p>RECOMMENDATION - Leave "not set".</p>

Optional Feature Numbers Cont.

ADDING OR DELETING AN OPTIONAL FEATURE NUMBER

(All optional feature numbers power up OFF except F00 and F02).

- 1 Put the CPU in the program mode
- 2 Press both MEDICAL 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 Put into review mode and 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.

CONNECTING THE CPU TO THE CENTRAL STATION

PRELIMINARY STEPS

- Use an RJ-31X analyzer to confirm that the jack is properly wired.
- Verify that the CPU is plugged into the RJ-31X jack.
- Do not use a headset to attempt to listen to the programming while it is in progress. If you do, the CPU will not program properly.
- Remember **DO NOT** hang up the telephone until **AFTER** you put the CPU on line by entering the Access Code and Level 8 (PHONE TEST).
- Under most circumstances, programming the account number and telephone numbers takes only a couple of minutes to complete and verify. If you do not receive an acknowledgment call from the Central Station operator within 10 minutes, then either the Central Station missed the call or the call was terminated abnormally. This might tie up your customers phone line indefinitely, so you need to check to be sure the phone line is not still seized. If the line is seized then:
 1. Unplug the RJ-31X phone cord to free the line.
 2. Shut off the CPU power switch.
 3. Call the Central Station for further instructions.

CENTRAL STATION CONNECTION

- 1 Call the Central Monitoring Station, identify yourself, and tell the operator you wish to connect a new system.
- 2 Provide the operator with the telephone number that the CPU's RJ-31X jack is connected to.
- 3 Tell the operator about any unusual requirements to access the telephone network. For example, sometimes you must:
 - Dial "1" or "120" then the number.
 - Dial "8" or "9" to get an outside line.
 - Any pauses needed.
- 4 Inform the operator of any special programming requirements.
- 5 Hang up so the operator can call back on the same line as the CPU and RJ-31X jack.
- 6 Make sure that the CPU is in the normal operating mode, *NOT* program mode.
- 7 The operator will call you back and have you run a PHONE TEST by arming the system to protection Level 8.
- 8 When you arm to Level 8, the phone will go dead. You should hang up. The Operator will program the CPU for you. The phone line will be reconnected to the house phones when the programming is completed.

The following will be programmed:

 - The customer's central station account number.
 - The central station number(s) the CPU will dial.
 - Any special programming requirements you arranged for with the operator.
- 9 Write the account number on your copy of the Customer Emergency Data Form.
- 10 To be sure that the account number and phone number(s) have been correctly programmed, initialize a PHONE TEST (Level 8). You should get acknowledgment of a successful test within 2 - 3 minutes.

CENTRAL STATION RECEIVER PROGRAMMING

Although you can program most of the CPU's functions using a Wireless Touchpad, the following features and functions are typically programmed or changed from the Central Station.

1. CUSTOMER ACCOUNT NUMBER.

2. CENTRAL STATION RECEIVER PHONE NUMBER(s) - one or two numbers can be dialed by the CPU.

3. PMODE: There are five phone number PMODES or options to choose from. These can be **programmed or changed only from the Central Station Receiver**, using the PMODE Command.

PMODE 0: In PMODE 0 Only 1 phone number is dialed, the second phone number is not used. The CPU powers up in PMODE 0 and no programming need be done if only 1 phone number is to be dialed.

PMODE 1: In PMODE 1 the second phone number is called only if the CPU fails to get through to the first number. The CPU will make 3 attempts to reach the first number before dialing the second number.

PMODE 2: In PMODE 2 the CPU dials the first number to report all alarms and cancels. The CPU dials the second number to report TROUBLE and SUPERVISORY signals only.

This PMODE would be selected by a company that wants alarm calls to go to their Central Station operators and trouble & supervisory calls to go to a different receiver in the service department.

PMODE 3: In PMODE 3 the CPU dials the first number to report all alarms and openings and closings. The CPU dials the second number to report everything.

This PMODE would be used by a company who has an ITI receiver and is monitored by someone else. The monitoring service would receive only alarm calls, but the alarm company would receive both a record of alarm calls and all trouble reports and supervisory reports.

PMODE 4: In PMODE 4 the CPU dials the first number to report all alarms. The CPU dials the second number to report everything.

This PMODE would be used by a company who has an ITI receiver and is monitored by someone else. The monitoring service would receive only alarm calls, but the alarm company would receive both a record of alarm calls and all trouble, supervisory all opening/closing reports.

4. **REPORT TIME** - The time of day that unrepaired trouble or supervisory conditions are reported to the Central Station can be changed from the Central Station. This time is preset to 12 hours upon first powering up the CPU. For example, if you first connected the battery to the CPU at 12 noon, the CPU would report any trouble and supervisories at 12 midnight. The Central Station operator will use the STIME command to change the time.

5. **SIREN TIMEOUT** - This is preset to 5 minutes but can be set to anywhere from 1 to 15 minutes by the Central Station Operator using the TIMEOUT Command. U.L. installations require a minimum 4 minute TIMEOUT for burglary, 5 minutes for medical.

6. **PROTECTION LEVEL CONTROL** - The Central Station operator can control each protection level to determine whether it is:
 - Active or disabled entirely.
 - Accessible using Hi level Access Codes only.
 - Accessible using Hi or Low level Access Codes.

For example, in a commercial installation you may want to disable or restrict all arming levels except 0,5, 8 & 9. That way the system can only be completely disarmed (Level 0), armed for maximum protection (Level 5) or tested (levels 8 & 9). The Central Station LEVEL Command is used.

7. **MULTIPLE ACCESS CODES** - The Central Station operator can program up to 10 Access Codes, in addition to the primary Access Code, into the CPU. Each of these Access Codes can be defined as Hi or Low privileged using the MACCESS command. If a code is Low privileged, only certain protection levels will be accessible. (See Protection Level Control).

CODE	DESCRIPTION	PROGRAM FROM	PRIVILEGE STATUS
0	Primary Access Code	CS, or WT	Always Hi
2	Alternate Primary Access Code	CS only, using MACCESS command	Always Hi
1	Temporary Access Code	CS , using MACCESS command or Touchpad	Always Low
3-10	Multi User Access Codes	CS only, using MACCESS command	Can be defined Hi or Low
11-33	Multi User Access Codes	CS only using XACCESS command	Always Low
34	Duress	CS only using XACCESS command	Always Low
35	Command	CS only using XACCESS command	Always Low

Connecting The CPU to the Central Station Cont.

8. **PHONE TAMPER** - (Buddy System Programming) the Central Station operator can program the CPU with the Account Numbers, of up to 4 other CPU's within its receiver range. If one of the other CPU's can't communicate with the Central Station because of a **PHONE TAMPER**, it can trip a transmitter programmed to Sensor Number 100. The "BUDDY" CPU will hear the transmission and relate the House Code to one stored in its memory. It will then report a **PHONE TAMPER** using the account number of the CPU which couldn't communicate.
9. **CPU TIME and DATE** - The Central Station Operator can program the time of day and day of the year into the CPU. This is to keep track of events as they occur in the CPU event buffer.
10. **EVENT BUFFER** - The CPU keeps a record of all arming and disarming, alarm, trouble, cancel, and supervisory signals in an event buffer. The last 64 events are stored. The Central Station Operator can review this data using the **EVENT COMMAND** and can also clear the buffer from the CS.
11. **AUTOMATIC PHONE TEST** - From the Central Station, the operator can program how often the CPU will perform an Automatic Phone Test (optional sensor number 113). This is programmable from once daily to once every 255 days using the **PTFREQ Command**.
12. In addition, the Central Station operator can change the **DURESS CODE**, turn options **ON** or **OFF**, change **ENTRY** and **EXIT DELAYS**, etc.

BUDDY SYSTEM BACK-UP REPORTING CAPABILITIES

The CPU has a hardwire output which can activate a transmitter in the event of a phone tamper condition. This output is activated only if the CPU is trying unsuccessfully to report an alarm condition. It does not activate for trouble, supervisory or other reports. Another CPU installed within receiving range of the transmitter can be programmed to "listen" for signals from the transmitter. The "listening" CPU will look at the Identification Number of the signal it hears. If it matches an Identification Number stored in the CPU memory, it will silently report the ALARM PHONE TAMPER condition and the account number of the CPU which tried to report the original alarm signal.

PRELIMINARY CONSIDERATIONS

- The transmitter must be within range of the "listening" CPU.
- Each CPU can monitor up to 4 other CPU's for Phone Tamper.
- CPU's can back-up each other, for example: CPU A could store the ID Number and Account Number of CPU B and vice versa.
- Both CPUs must have sensor 100 in memory.
- Only the Model CS-4000 Central Station can set up CPUs for this feature.
- The door/window transmitter shall be mounted within 30 feet of the CPU.

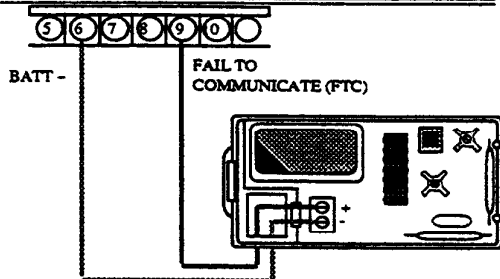
PROGRAMMING

- 1 Place CPU in the program mode.
- 2 Press "STATUS", then 14, then "COMMAND". The CPU will display the next available buddy number..

NOTE: Install Jumper on Transmitter before tripping.

- 3 Trip the tamper on the transmitter that is connected to the CPU to be monitored. Bouncing Balls will confirm programming.
- 4 Connect dependent CPU to the programmed transmitter.
- 5 Repeat steps 1 - 3 for each buddy CPU to be monitored.
- 6 Call the monitoring center with data to program host CPU with dependent account.
- 7 Program ACCOUNT numbers into each CPU from the Central station (CS-4000).
- 8 Test your work.

TRANSMITTER CONNECTIONS



Connect the programmed sensor to the CPU as shown in the drawing at left. Remove the unused reed switches if maximum security is desired.

Transmitter	CPU
+Terminal	Screw 9 (FTC)
-Terminal	Screw 6 (-BATT)

WARNING: The buddy CPU (host) supervised the dependent CPU's transmitter (#00) and vice versa. A buddy supervisory in this context is actually a defective or otherwise inoperative transmitter which is connected to the dependent CPU.