

# **INSTALLATION/PROGRAMMING INSTRUCTIONS**



## **SPARTAN 650 ALARM SYSTEM**



**MODEL SP650F**

**RESIDENTIAL BURGLAR ALARM SYSTEM  
RESIDENTIAL FIRE-WARNING SYSTEM**

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# SECTION I: INSTALLATION INSTRUCTIONS

## 1.0 SYSTEM DESCRIPTION

The SCANTRONIC Model SP650F "SPARTAN 650" is a multi-zone control panel/digital communicator alarm system that consists of one SP650F panel and one model KP600F Digital Control Station. The SP650 can be custom tailored for each installation by programming an Electrically Erasable Programmable Read Only Memory (EEPROM) which is included with the system. Programming can be accomplished using the KP600F keypad on the SPARTAN 650 or SCANTRONIC Model P-4000 EEPROM Programmer or a SCANTRONIC AV-6000, or AV-8000 system. The SP650F also may be programmed using SCANTRONIC ScanPro Uploading/Downloading software. Zones which may be programmed include 6 EOL supervised zones; 5 keypad activated Emergency zones plus Fire Trouble, Opening, Closing, Automatic Low Battery and A.C. Power Failure Reporting Zones. Unit is shipped with factory program to allow out of box testing.

**Read and become familiar with the information contained in the SPARTAN 650 Owner's Manual before proceeding with the installation instructions.**

The material in this publication is for information purposes only and is subject to change without notice. SCANTRONIC assumes no responsibility for any error which may appear in this publication.

This equipment and wiring should be installed by a professional installer. The control unit and keypad are to be installed in accordance with the Standard of the National Fire Protection Association for Household Fire Warning Equipment, NFPA 74 and Installation and Classification of Residential Burglar Alarm Systems, UL 1641. Installation wiring locations and wiring methods should be in accordance with the National Electrical Code, ANSI/NFPA 70-1978 or the most recent revision. For further information contact the NFPA, 1 Battery March Park, Quincy MA 02269. The installer should also observe any State or Local codes that may exist.

## 1.1 INSTALLATION

**CAUTION: CONNECTIONS MUST BE MADE WITH ALL POWER REMOVED.**

1. Don't connect battery until installation is complete.
2. Do not apply power until after step 10.

1. Mount control panel in a convenient location.
2. Mount KP600F Keypad may be either surface mounted or flush mounted into a double gang plastic gem box. DO NOT USE A METAL GEM BOX. The GEM Back box must be U.L. LISTED.
3. Connect a U.L. listed bell, 12.5 Vdc, to terminals 5 and 6. Observe polarity. For U.L. fire installation a Bell must be mounted indoors.
4. Unswitched 12.5 Vdc is available at terminals 4 and 7 for auxiliary devices. All devices connected to terminals 4 and 7 are to be U.L. listed and must operate over a voltage range of twelve (12) to fourteen (14) volts DC.

**NOTE: The total amount of allowed auxiliary, keypad, and fire power current is 300 mA.**

**Each KP600F keypad requires 40 mA.**

5. Connect the six (6) input zones to terminals 11-19 using the 2.2K End of Line resistors provided as shown in Figure I.

**NOTE: Closed circuit loops are wired in series with the resistor. Open circuit loops are wired across the resistor.**

6. Connect the F.C.C. Approved telephone connection cable to terminals 20, 22, 23 and 24 as shown. Insulate all unused leads. THE CABLE MUST BE PHYSICALLY SEPARATED FROM POWER AND SIGNAL LINES.
7. Connect the KP600F arming station to the SP650F. Red lead to terminal 8. Blue lead to terminal 9. Black lead to terminal 3. Yellow lead to terminal 10. WIRES CONNECTING KP600F TO SP650F MUST BE KEPT AWAY FROM A.C. AND TELCO WIRING TO MINIMIZE TRANSIENT PROBLEMS DUE TO LIGHTNING.

## 1.1 INSTALLATION (continued)

8. Connect Terminal 21 to an EARTH GROUND.

**NOTE:** 1) *Suggested earth ground and protection levels are:*

*A) Preferred Protection - Separate metal grounding rod*

*B) Acceptable Protection - Metal cold water pipe.*

2) *Use at least 16 gauge wire between terminal 21 and earth ground.*

3) *Keep wire run as short as possible and away from other panel wiring.*

4) *Do not use an existing lightning rod ground; it can provide a path for lightning strikes to panel.*

9. Check all connections, verifying polarity.
10. Connect the transformer to terminals 1 and 2. Polarity is not important.
11. Plug the transformer to an unswitched 120 Vac receptacle. The indicators on the KP600F should light.
12. Connect the BLACK FLYING LEAD to the negative (-) terminal of a 12 volt, rechargeable gel type battery. Connect the RED FLYING LEAD to the positive (+) terminal of the battery. If the battery is not fully charged, allow 36 hours for battery to reach full charge.
13. As soon as battery is partially charged, disconnect AC power. VERIFY that AC fault condition exists at keypad.
14. Make sure you have programmed the EEPROM for the desired system configuration and features. Refer to the SP650F Programming Instructions (Section II) for proper procedures.
15. Plug the telephone connection cable into the RJ31-X jack.
16. The system may now be Disarmed and Armed from the KP600F using the Installer (Factory Programmed) Access code 2345. Leave system disarmed.
17. TESTING COMMUNICATION TO THE CENTRAL REPORTING STATION: Arm the panel. Violate a zone. The Bell should turn on, the appropriate zone LED should flash and the premises telephone should be inoperable (DEAD). After the Central Reporting Station receives a good transmission of this violation, it will send a kiss-off signal back to the panel and disconnect from the telephone line. The panel will restore the telephone line back to the premises telephone.
18. Fill in the appropriate information in the Owner's Manual, and give it to your customer when you explain how the system operates. Provision is made on the back page for your business card.
19. Select a testing method as outlined in the Owner's Manual. If the Bell/Battery/Fire test push button Switch (SCANTRONIC P/N AC058) is not installed, program SP650F for Bell test from keypad (Memory Location 98).

## 1.2 TROUBLESHOOTING

### SYMPTOM

### CHECK

- No indicator lights ..... Make sure system is connected to either a good battery or AC. (Test battery under load). Check ..... Auxiliary output fuse and Protective Device F3.
- Fault Analysis Condition ..... This mode provides diagnostic troubleshooting for AC Power failure, low battery, trouble, and failure (Yellow LED flashing) ..... to communicate. See "Fault Analysis" in SP650F Owner's Manual.
- (Pre-alert pulsing)
- Bell won't ring ..... Check Protective Device F3.

## 1.3 SPECIFICATIONS

### POWER REQUIREMENTS

120 Vac, 20 VA, 16.5 Volts, 50/60 Hz, transformer supplied.  
12 Volt 4 AH (NP4.12) Yuasa Battery or 6 AH (NP6-12) (not supplied, available on request) or 12 Volt Power Sonic 8AH battery (Model PS-1282L)  
AUXILIARY POWER OUTPUT: 12.5 Volts D.C., 300 mA.

<b>BELL POWER OUTPUT:</b>	Burglary and Fire outputs, 12.5 VDC. In order to meet the operational requirements in the standard for Household Fire Warning Systems, UL985, the Bell output shall be connected to a maximum combined load of 230 mA. The unit is capable of delivering 1A from the bell output specified above. If loaded to 1A, the unit does not comply with the operational requirements of UL985 however, it does meet the safety requirements of this standard.
<b>OPERATING TEMPERATURE:</b>	32° - 120° F.
<b>TRANSIENT AND LIGHTNING PROTECTION:</b>	Lightning and surge protection provided on all input, power, and telephone lines.
<b>ZONE RESPONSE TIME:</b>	300 mSec. During reporting cycle, response time increases to approximately 1 sec.
<b>ZONE LOOP MAXIMUM RESISTANCE:</b>	Do not exceed 300 OHMS on any loop (not including EOL resistor).
<b>DIMENSIONS:</b>	8 1/4" H x 11" W x 3" D.
<b>SHIPPING WEIGHT:</b>	6 lbs.
<b>FCC REGISTRATION NUMBER:</b>	AB7USA-67793-AL-E AB7CSR-18717-AL-E.
<b>RINGER EQUIVALENCE:</b>	0.1B

## 1.4 OPTIONAL ACCESSORIES

### KP600F

Flush mounted keypad with rubberized backlighted keys that display system status from one or more convenient locations. 6 LEDs display zone status and alarm memory for each zone. These same LEDs display armed status of each burglary zone if so programmed. Single yellow LED displays general armed status as well as any fault conditions that may exist. The instant/delay mode is explained in the users manual. When armed in the instant mode a short ½ second tone will be heard when the # key is pressed. Up to 4 KP600F's may be used.

### ScanPro

Uploading/Downloading software used to program the panel and also change its Arm status.

### EOL2200

Underwriters Laboratories Inc. requires that the End-of-line resistor Model EOL2200 be used for Fire zones.

### BELL/BATTERY/FIRE TEST SWITCH - AC058

A D.P.D.T. push-button switch (order SCANTRONIC part number AC058) may be installed to reset smoke detectors and/or provide convenient battery/bell test. Wire as shown in Figure 1. The switch should be mounted on the LEFT side of the cabinet as shown in Figure 1A. Mount switch and complete wiring. If smoke detectors are not used the violet wire need not be connected. Make sure all splices are soldered and not exposed.

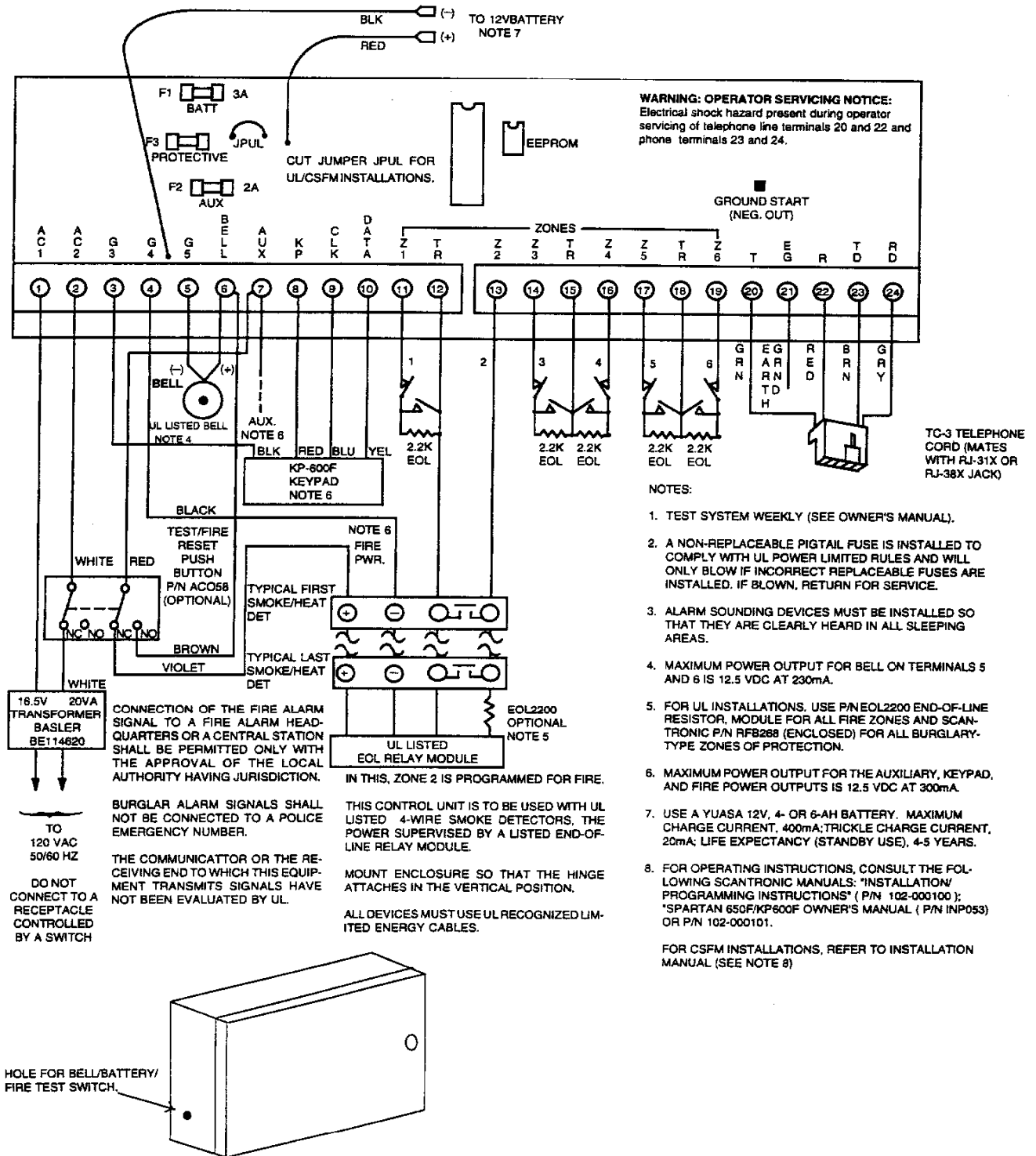
**Warning: This part is required for proper testing of Fire Protection System.**

## 1.5 FCC COMPLIANCE

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications of Subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient the TV or radio antenna.
2. Relocate or move the alarm control away from the receiver.
3. Plug the transformer for the alarm control into a different outlet so that the receiver and the alarm are on different branch circuits.
4. If necessary, the user should consult the alarm dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems". The booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, stock #004-000-00345-3.

**FIGURE 1  
WIRING DIAGRAM  
FOR MODEL SP650F**



**FIGURE 1A  
TEST SWITCH INSTALLATION**

# SECTION II: PROGRAMMING INSTRUCTIONS

## Using the KP-600F as a Programmer

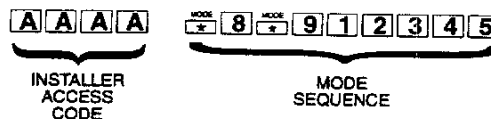
### GENERAL

#### 2.0 INTRODUCTION

The EEPROM in the SP-650 may be programmed either by a separate programmer, remotely programmed by using SCANTRONIC's ScanPro, Uploading/Downloading software, or by the KP-600F, which comes with the system. These instructions describe how the KP-600F is used for this purpose. A free permanent overlay for the KP-600F is available from your distributor or SCANTRONIC to simplify the use of the keypad, or use the temporary overlay printed on the KP-600F box.

#### 2.1 PROGRAMMING MODE

The SP-650 can be programmed from the keypad by entering the following key sequence. The AAAA is the Installers Code. The Default from the factory is 2345:



The SP-650 is now in the "PROGRAM" mode. When programming is complete, return the SP-650 to the "PANEL" mode by pressing the and simultaneously.

### DISPLAY

#### 2.2 BINARY LED DISPLAY

The Binary Display (see Figure 2) uses the zone LEDs to display both the memory locations and data that resides in its associated memory location. When the piezo sounder is silent the display shows the binary number equivalent of that memory location. When the sounder is operating (either pulsating or steady) the display shows data. All numerical data is shown in binary. Zone selected data is shown by zone number (see Figure 4). The LED display cannot show more than 7 selected zones. When zone 8 is selected (for example memory location 57 is programmed with an 8 for A.C. Restoral) the sounder will emit a steady tone instead of a pulsating one.

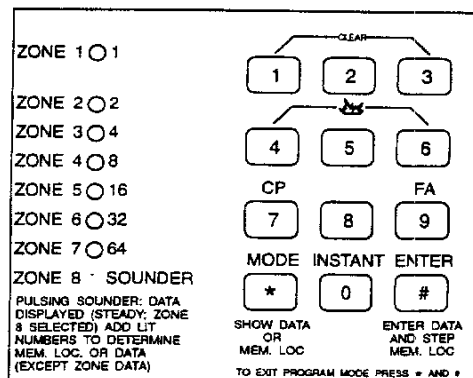


FIGURE 2


Binary values may be converted to decimal simply by adding the overlay values to the right of the lit LEDs.

The SPARTAN does not use memory locations above 128. However, the SPARTAN may be used to program other SCANTRONIC products. If a memory location higher than 128 is used, the zone LEDs will flash. In this case 128 must be added to the displayed value.

A programming overlay is provided with each KP600F.



## 2.2 BINARY LED DISPLAY (continued)

The  is used to switch back and forth between the two display modes. When in the memory location mode, the display shows the current memory location and the keypad can be used to move to any desired location.

When in the data mode (the sounder on), the display shows the contents of the current memory location and the keypad can be used to modify that data. The EEPROM is capable of storing two types of data, each of which is displayed and manipulated differently.

## 2.3 NUMERIC DATA

Numeric data is used to store telephone numbers, account codes, entrance/exit delays, etc.

## 2.4 SELECTION DATA - (SELECT ZONES)

SELECTION DATA displays specific data selected for zone configuration selections and special functions. Selection Data is used when configuring zones and is also needed in a location like 053 or 098 where multiple options can be selected.

DISPLAY of Selection data uses the LEDs and Sounder and specifies the functions selected. For example, Figure 3 indicates that zones 2, 4, and 6 have been selected.

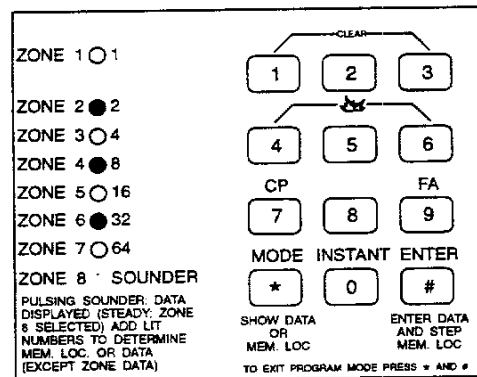


FIGURE 3

## KEYPAD

### 2.5 CHANGING MEMORY LOCATIONS AND VIEWING DATA






Changing Memory Locations and Viewing Data is accomplished in the following manner. If the display is not showing a Memory Location (Sounder OFF), press the Mode key.



THE NUMERIC KEYS enter numbers into the display in the same way as a standard calculator; that is, each entry shifts the contents of the units digit into the tens digit and then places the new entry in the units digit. For example: To go to location 76, enter 076. To go to location 1, enter 001.

**NOTE:** To avoid confusion, each entry should be 3 digits long.




### 2.6 PROGRAMMING NUMERIC DATA

The following example shows how to program a telephone number. Let's program the primary phone number to dial 3647200.

A review of the programming worksheet (Pages 10 & 11) shows that the first digit of the first telephone number starts in memory location "1". To program the telephone number, display memory location "1". Next press the  to switch the display to show data. Next, press , press , press key 6, press , press key 4, press , and continue this sequence until the last digit "0" is entered. Notice that the digit "0" is displayed as a 10. This is similar to the "0" on a rotary telephone dial. Although the dial is marked with a "0", the actual number of pulses transmitted is 10.

After programming the last telephone digit the  &  must be pressed simultaneously. This will "clear" the next memory location by entering a blank, which must be done to inform the SP-650 that the dialing sequence is complete.

## 2.7 REVIEWING THE DATA


In order to review the telephone number or any other data, the following procedure is used. Go to memory location "1" (start of the the first telephone number). Switch the display to view data, a 3 will be displayed (first dialed digit); press  again, a 6 will be displayed; press , a 4 will be displayed. Every time the  is pressed, the memory location is advanced and the associated data is displayed. When the last digit is displayed, switch the display to show the Memory Location. Since the last dialed digit is the 7th digit, the display will show 7. This last step is not necessary, and is intended to show the relationship between the Memory Location and its associated data. It also shows a way to check for errors.

## 2.8 REPROGRAMMING NUMERIC DATA


It is not necessary to "clear" existing numeric data when reprogramming, just reprogram over the old data — unless the data is a one (1). In this case the location must first be cleared (pressing  and  simultaneously). Then enter the new data.

## 2.9 PROGRAMMING SELECTION DATA

The following example shows how to select Zones 2, 4, and 6 for Burglary. A review of the Programming worksheet shows Burglary Functions are assigned to Memory Location 84.


Set the display to Memory Location 084. Change display to show data. If random data appears, press clear key combination (1 & 3). The display will indicate no zones selected. Press key 2, press key 4, press key 6. Notice as you press each key, its associated LED lights up indicating you have selected that zone. If the information is correct press . That location is now programmed. If incorrect press the clear keys again and reselect zones. Unlike numeric data (where a new entry overwrites an old entry) selection data must be cleared if an error is made.

PROGRAMMING SELECTION DATA other than Zone data is the same as Programming Zone Data. Example: Select Touch Tone Dialing and Extended Format. The Memory Assignment Chart shows location 53 contains the numbers to be entered. A "1" for Touch Tone Dialing and a "6" for Extended Format.



Set the display to show the data in Memory Location 53. If clearing is required, do so. If not, press the "1" then the "6" key. Display will now show the "1" and "6" LEDs lit. Press the . This location is now programmed.

## SUMMARY OF KEYS USED IN PROGRAMMING

### 2.10 MODE KEY

Changes the display. Display can view a memory location or its associated data, but not both at the same time. Pressing the  allows alternating between viewing a memory location or its contents (data).

### 2.11 ENTER KEY




When the display shows a memory location, pressing the  will advance that memory location. When the display shows data, pressing the  enters the displayed data into EEPROM and advances to the next memory location.

### 2.12 NUMERIC KEYS

WHEN DISPLAY SHOWS MEMORY LOCATIONS. This display is used to change memory locations. Examples: display shows 76 and 1 is desired, enter the following key sequence 0 0 1. The display now shows 1.

WHEN DISPLAY SHOWS DATA AND NUMERIC DATA ENTRY IS REQUIRED. Use numbers 0 thru 15 to enter data. A "0" entry will program and display 10.

WHEN DISPLAY SHOWS DATA AND SELECTION DATA ENTRY IS REQUIRED. Use keys 1 thru 8 to enter Zone Selection or Function data.

WHEN THE DISPLAY SHOWS DATA AND THE CLEAR FUNCTION IS REQUIRED. Pressing the clear key combination keys  &  simultaneously followed by the  key programs a blank in the associated memory location. This function is used to "clear" data when necessary.

**NOTE:** This function must be used after programming the last telephone number digit.

**SP - 650 PROGRAMMING WORKSHEET**  
**FOR WORKING WITH THE ScanPro Downloader Software**  
**AND CONVENTIONAL PROGRAMMING**

CUSTOMER NAME \_\_\_\_\_

ACCOUNT # \_\_\_\_\_

CUSTOMER ADDRESS \_\_\_\_\_

ScanPro ITEM	MEMORY LOCATION	DESCRIPTION	DATA ENTERED ( NEW )																				FACTORY DEFAULT	
1	( 1 - 21 )	TELEPHONE # MEMORY LOCATIONS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	#	18	19	20	21	
		FIRST TELEPHONE NUMBER DIGITS																						
2	( 22 - 41 )	EXT. TELEPHONE MEMORY LOCATIONS	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	#	38	39	40	41		
		EXT. TELEPHONE DIGITS																						
3	( 43 - 46 )	ACCOUNT NUMBER MEMORY LOCATIONS	4 3	4 4	4 5	4 6																		
		ACCOUNT NUMBER DIGITS THREE OR FOUR DIGITS																						
4	53	1 = TOUCHTONE DIALING DIAL FUNCTION 4 = EUROPEAN MAKE/BREAK AND FORMAT 6 = EXTENDED FORMAT 8 = SILENT KNIGHT 4+2 FORMAT	(SELECT ZONES)																				ROTARY	
			1	2	3	4	5	6	7	8														
			ENTER NUMBERS																					
5	54	REPORTING ATTEMPTS 0 = CONTINUOUS																					8	
6	55	RINGS ON ANSWERING A CALL (1 - 15)	(SELECT ZONES)																				10	
7	57	RESTORE ZONES																						
8	58	ZONE RESTORE CODE (1 - 15)																						
9	59	TEST CANCEL ZONES																						
10	60	ZONE TEST CANCEL CODE (1 - 15)																						
11	61	REPORTING DELAY ZONES																						
12	62	ZONE REPORTING DELAY (x 10 secs)																						
13	64	ZONE 1 REPORT CODE (1 - 15)																						
14	65	ZONE 2 REPORT CODE (1 - 15)																						
15	66	ZONE 3 REPORT CODE (1 - 15)																						
16	67	ZONE 4 REPORT CODE (1 - 15)																						
17	68	ZONE 5 REPORT CODE (1 - 15)																						
18	69	ZONE 6 REPORT CODE (1 - 15)																						
19	70	ZONE 7 Low Battery Report Code (1 - 15)																						
20	71	ZONE 8 A/C Loss Report Code (1 - 15)																						
21	72	KEYPAD (1 & 3) REPORT CODE (1 - 15)																						
22	73	FIRE TROUBLE REPORT CODE (1 - 15)																						
23	74	KEYPAD (4 & 6) REPORT CODE (1 - 15)																						
24	75	KEYPAD (7 & 9) REPORT CODE (1 - 15)																						
25	76	DURESS REPORT CODE (1 - 15)																						
26	77	KEYPAD (* & #) REPORT CODE (1 - 15)																						
27	78	OPENING REPORT CODE (1 - 15)																						
28	79	CLOSING REPORT CODE (1 - 15)	(SELECT ZONES)																					
29	80	FOLLOWER ZONES																						
30	81	24-HOUR AUDIBLE ZONES																						
31	83	FIRE ZONES																						
32	84	AUDIBLE BURGLARY ZONES																						
33	85	DELAYED BURGLARY ZONES																						

34	86	EXIT DELAY TIME (x 10 secs) (0 - 15)								3
35	87	ENTRANCE DELAY TIME (x 10 secs) (0 - 15)								3
36	88	BELL OFF TIMER (x 2mins) (0 - 15)								3
37	89	FIRE BELL (1=MANUAL, 0=AUTO)								AUTO
38	90	CALLBACK REPORT CODE (0 - 15)								BLANK
39	(91 - 94)	INST. ACCESS CODE MEMORY LOCATIONS		91	92	93	94			
		INSTALLER ACCESS CODE DIGITS								2345
				(SELECT ZONES)						
40	*95	BYPASSABLE ZONES								
41	96	CHIME ZONES								
42	98	BURGLARY AND FIRE	BURG OUTPUT (1 & 3)	1				FIRE OUTPUT (1 & 3)	5	
		BELL SELECT FOR	BURG OUTPUT (4 & 6)	2				FIRE OUTPUT (4 & 6)	6	
		EMERG. KEY PAIRS:	BURG OUTPUT (7 & 9)	3				FIRE OUTPUT (7 & 9)	7	
		FIRE HAS PRIORITY	BURG OUTPUT (* & #)	4				FIRE OUTPUT (* & #)	8	5
43	(99 - 102)	USER 2 ACCESS CODE MEMORY LOCATIONS		99	100	101	102			
		USER 2 ACCESS CODE DIGITS								
44	(103 - 106)	USER 3 ACCESS CODE MEMORY LOCATIONS		103	104	105	106			
		USER 3 ACCESS CODE DIGITS								
45	(107 - 110)	USER 4 ACCESS CODE MEMORY LOCATIONS		107	108	109	110			
		USER 4 ACCESS CODE DIGITS								
46	(111 - 114)	USER 5 ACCESS CODE MEMORY LOCATIONS		111	112	113	114			
		USER 5 ACCESS CODE DIGITS								
47	(117 - 120)	PANEL PASSWORD MEMORY LOCATIONS		117	118	119	120			
		PANEL PASSWORD DIGITS								1234
48	(121 - 124)	UPLOADING ACCT # MEMORY LOCATIONS		121	122	123	124			
		UPLOADING ACCOUNT NUMBER DIGITS								
49	125	ZONE 1 REPORT ID								1
50	126	ZONE 2 REPORT ID								2
51	127	ZONE 3 REPORT ID								3
52	128	ZONE 4 REPORT ID								4
53	129	ZONE 5 REPORT ID								5
54	130	ZONE 6 REPORT ID								6
55	131	LOW BATTERY REPORT ID								7
56	132	A/C LOSS REPORT ID								8
57	133	EMERGENCY KEYPAD REPORT ID								0
				(SELECT ZONES)						
58	ARMED ZONE STATUS									
59	SYSTEM STATUS FLAGS									
	INSTANT MODE="YES" SHOWS OR ALLOWS CHANGING OF INSTANT MODE				INSTANT MODE ON			5		
	ARMED STATUS="YES" SHOWS OR ALLOWS CHANGING OF THE STATUS				ARMED STATUS FLAG			6		
	OF THE PANEL ZONES SHOWN IN ITEM 58				(RESERVED)			7		
					(RESERVED)			8		

\* DO NOT ALLOW FIRE ZONES TO BE BYPASSED

To force panel to call PC - AAAA\*1\*6

To force panel to answer telephone - AAAA\*1\*3

#### INSTALLATION NOTES


# SECTION III: PROGRAMMING

## Programming Instructions

Programming the EEPROM that is included with the system can be done with a SPARTAN 650 or a SCANTRONIC model P-4000 programmer or an AVENGER IV, VI, OR VIII system. Entering numbers (programming) in the EEPROM is explained in the manuals of the above products however the SPARTAN programming worksheet and it's accompanying definitions should be used to identify memory locations and their associated data. Along with the definitions below are STEP #'s that correspond to the steps used in the ScanPro Downloader Software to program this panel.

MEMORY LOCATION	DEFINITIONS
1-21	<p><b>STEP 1 TELEPHONE NUMBER</b></p> <p>Telephone numbers are entered into the appropriate memory locations. The SPARTAN's memory location may be used to dial a single number of up to 21 digits. If the communicator function is not to be used, memory Location 1 must be cleared.</p>
22-41	<p><b>STEP 2 EXTENTION TELEPHONE NUMBER</b></p> <p>Telephone numbers entered into these memory locations are used for Uploading/Downloading and should be programmed to call an IBM PC(R) or compatible computer equipped with a modem, listed by SCANTRONIC, and SCANTRONIC's ScanPro software. If you are using the Secure Upload/Download this number must be programmed with the phone number of your modem that is running the ScanPro software.</p> <p>In addition to telephone dialing digits, three special function numbers may be inserted into the first 21 memory locations. They are second dial tone, dialing pause, and 11 (Delete Call Waiting, Tone Dialing Only).</p> <ol style="list-style-type: none"><li><b>1) 11 or B - (DELETE CALL WAITING)</b> The "11" is used to delete call waiting in tone dialing only. 11, 7, and 0 is programmed before the dialed phone number. Use first three Memory Locations. Check with your local telephone company to make sure of the exact digit sequence.</li><li><b>2) 12 or C - (*) KEY</b> Some telephone exchanges require that the (*) key be used to call out. Simply program a "12" where needed.</li><li><b>3) 13 or D - (#) KEY</b> Some telephone exchanges require that the (#) key be used to call out. Simply program a "13" where needed.</li><li><b>4) 14 or E - SECOND DIAL TONE</b> In installations where two dial tones are received (first for internal line and second for outside line). The SPARTAN may be programmed to detect a second dial tone by entering a "14" between the internal line number and the outside line number.</li><li><b>5) 15 or F - DIALING PAUSE</b> In areas where a dialing pause is required a dialing pause may be programmed after any dialing digit by entering a "15". The dialing pause is approximately 5 seconds.</li></ol>
43-46	<p><b>STEP 3 ACCOUNT NUMBER DIGITS</b></p> <p>A three or four digit account number may be programmed starting in Memory Location 43. If the fourth digit is not used then then location 46 must be cleared.</p>
53	<p><b>STEP 4 DIALING/REPORTING FORMAT CONTROL</b></p> <p>Rotary dialing is factory programmed. If Touch Tone Dialing is desired, a "1" must be programmed in this location. Entering a 4 will adjust the make to break ratio from 60/40 to 70/30 (used in most European countries). Entering a 6 will program the reporting format to be extended. Entering an 8 will program the reporting format for Silent Knight 4+2. Fast or slow transmission speeds are automatically adjusted during analysis of the receiver handshake tone. If this memory location is cleared dialing will be rotary, make to break will be 60/40 and transmission format will be non-extended (standard fast or slow).</p>

## MEMORY LOCATION

## DEFINITIONS

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- 54 STEP 5 NUMBER OF ATTEMPTS**  
If this location is cleared the SPARTAN will continue to dial until a shut down signal is received from the receiver (in countries where allowed). If any number 1-15 is entered the unit will shut down after the entered number of attempts. Example: 8 is programmed and the central station is temporarily down. After 8 attempts the SPARTAN will not attempt to communicate until another alarm occurs or is powered down (AC and DC).
- 55 STEP 6 ANSWER ON RING NUMBER (0-15)**  
The system may be programmed to automatically pick-up and answer the telephone line after 1 to 15 rings. This function must be programmed if remote up/downloading is desired. If an answering machine is connected to the same phone line as the system, the system must be programmed for a minimum of 2 rings greater than the answering machine ring counter. A value of "0" will disable the ring detector.
- 57 STEP 7 RESTORE SELECT ZONES**  
Zone numbers entered (1-6), Low Battery (7), and AC Loss (8) will report restores. More than one number may be entered. Example: enter 1, 2 and 3, zones 1, 2 and 3 will report restores.  
  
A restore is defined as a return to normal after a zone has been previously tripped.  
  
Restores report as they occur unless they are combined with reporting delays or assigned to burglary zones. When combined with a reporting delay, a report will not be sent unless the restore occurs after the reporting delay expires. When combined with a burglary zone the report will not occur until the SPARTAN is disarmed.
- 58 STEP 8 RESTORE CODE**  
Enter desired restore code in this location.
- 59 STEP 9 TEST CANCEL SELECT ZONES**  
Test cancel zones are assigned the same way as restore zones are. Select zones which will report test cancels. If a test cancel zone is tripped and restored before transmission of the alarm code is completed, the Test Cancel Code will be sent. On burglary or any audible zones the Test Cancel Code will be sent if the system is Disarmed prior to transmission. Silent zones report Test Cancel only if the zone restores before the transmission is completed.
- 60 STEP 10 TEST CANCEL CODE**  
Enter the desired test cancel code in this location.
- 61 STEP 11 REPORTING DELAY SELECT ZONES**  
Zones may be selected for reporting delays (abort delays) the same way that restore zones are selected. A tripped zone that is selected for a reporting delay will not report (unless it's a burglary zone) unless the trip signal exist for a longer period than the reporting delay time. Burglary zones combined with reporting delays will not report if the SPARTAN is disarmed before the reporting delay time expires.
- 62 STEP 12 REPORTING DELAY TIME**  
Enter the reporting delay time desired in this location. Delays from 10 to 150 seconds may be selected in 10 second increments. Enter a "1" for 10 seconds and "2" for 20 seconds and a "15" for 150 seconds.
- 64-79 STEPS 13-18 ZONE 1 THROUGH 6 EVENT CODES**  
Memory Locations 64-79 are reserved for entering reporting codes. Numbers 0-9 may be entered for all receivers and 0-15 may be entered for receivers that can handle hexadecimal numbers. Zones 9-16 (Memory Location 72-79) will not report if cleared. They must be assigned zone codes to report.
- 70 STEP 19 ZONE 7 EVENT CODE (LOW BATTERY)**  
An automatic low battery report is generated when battery voltage falls to a low level when a reporting code is selected in this memory location.
- 71 STEP 20 ZONE 8 EVENT CODE (A.C. POWER FAILURE)**  
An A.C. Power failure condition report is generated when a reporting code is selected in this memory location.

## MEMORY LOCATION

## DEFINITIONS

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- 72\***      **STEP 21 ZONE 9 EVENT CODE (KEYPAIR 1-3)**  
Pressing keys 1-3 simultaneously will report the 24-hour emergency code programmed.
- NOTE:** *There is no indication for keypad activated alarms.*
- 73\***      **STEP 22 ZONE 10 EVENT CODE (FIRE TROUBLE)**  
Enter a code if fire trouble reports are desired.
- 74\***      **STEP 23 ZONE 11 EVENT CODE (KEYPAIR 4-6)**  
Pressing keys 4-6 simultaneously will report the 24-hour emergency code programmed.
- 75\***      **STEP 24 ZONE 12 EVENT CODE (KEYPAIR 7-9)**  
Pressing keys 7-9 simultaneously will report the 24-hour emergency code programmed.
- 76\***      **STEP 25 ZONE 13 EVENT CODE (DURESS)**  
Entering a code in 76 will report when the duress function is activated from the keypad. This occurs when a 0 is entered at the keypad immediately after the access code is entered.
- 77\***      **STEP 26 ZONE 14 EVENT CODE (KEYPAIR ★ - #)**  
Pressing ★ - # simultaneously will report the 24-hour emergency code programmed.
- 78**      **STEP 27 ZONE 15 EVENT CODE (OPENING REPORT)**  
Enter reporting code to represent an opening (disarming) report. Opening report is sent when system is disarmed.
- 79**      **STEP 28 ZONE 16 EVENT CODE (CLOSING REPORT)**  
Enter reporting code to represent a closing (arming) report.
- NOTE:** *Opening and closing reports are used to notify the central station when the system is disarmed (opening) and armed (closing).*
- Opening and closing "By User" can identify up to 5 users per keypad in the extended format. (See SP-650 Owner's Manual)
- 80**      **STEP 29 FOLLOWER ZONE SELECT**  
Selecting follower zones deactivates these zones during entrance and exit delay times. This feature allows the system user to walk in front of an intrusion detector when entering or exiting the premise via an entrance exit delay zone. If a follower zone is violated when an exit delay is not in progress (when system is armed) or when an entrance delay is not in progress (entrance to premise was not through a delay zone) then the follower zone will instantly go into alarm. A follower zone must be selected initially for burglary.
- 81**      **STEP 30 AUDIBLE PANIC, SELECT ZONES (24 HR.)**  
Select zones to be programmed for audible panic. The zone LED will flash on alarm whether the panel is armed or disarmed. Zones selected for Audible Panic are always on. Any combination of zones 1-6 may be selected.
- 83**      **STEP 31 AUDIBLE FIRE, SELECT ZONES (24 HR.)**  
Select zones to be programmed for audible fire. The zone LED will flash on alarm whether the panel is armed or disarmed. Zones selected for Audible Fire are always on. Any combination of zones 1-6 may be selected.
- SILENT ALARM (24 HR.)**  
Zones not programmed for any panel functions will be silent. The zone LED will flash during a silent alarm (except key pair activated). In non U.L. applications the LED may be disabled by cutting the copper leading to it.
- \*NOTE:**      *When an AV-8000 or AV-6000 is used to program the EEPROM for the SPARTAN and memory locations 72 thru 77 are programmed, add the following:*  
If memory location 72 is programmed — add a 1 to memory location 190.  
If memory location 73 is programmed — add a 6 to memory location 190.  
If memory location 74 is programmed — add a 2 to memory location 190.  
If memory location 75 is programmed — add a 3 to memory location 190.  
If memory location 76 is programmed — add a 5 to memory location 190.  
If memory location 77 is programmed — add a 4 to memory location 190.

## MEMORY LOCATION

## DEFINITIONS

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- 84 STEP 32 AUDIBLE BURGLARY, SELECT ZONES**  
Select zones to be programmed for audible burglary. Zones that are selected for Audible Burglary are on when armed and not bypassed. These zones can be armed and disarmed from the keypad. Any combination of zones 1-6 may be selected.
- 85 STEP 33 DELAYED BURGLARY, SELECT ZONES**  
Select zones to be programmed for delayed burglary. These zones must be selected if an Entrance Delay or Exit Delay is desired. Any combination of zones 1-6 may be selected. These zones must also be selected for audible burglary.
- 86 STEP 34 EXIT DELAY TIME**  
Delays from 10 to 150 seconds may be selected in 10-second increments. For U.L. installations the maximum exit delay may not exceed 60 seconds. When using a closing report an exit delay time should be entered even though an exit delay zone is not selected. This will prevent nuisance reports caused by user immediately disarming the system after arming.  
  
Enter a "1" for 10 seconds, a "2" for 20 seconds, up to "15" for 150 seconds. There is a blank space in the owner's manual to enter the Exit Delay time. This delay time should be entered in the provided space.
- 87 STEP 35 ENTRANCE DELAY TIME**  
Delays from 10 to 150 seconds may be selected in 10-second increments. For U.L. installations the maximum entrance delay may not exceed 40 seconds. Enter a "1" for 10 seconds, a "2" for 20 seconds, up to a "15" for 150 seconds. There is a blank space in the owner's manual to enter the Entrance Delay time. This delay time should be entered in the provided space.
- 88 STEP 36 BELL SHUT OFF TIME (X2 MIN.)**  
Times from 2 to 30 minutes may be entered in 2-minute increments. Enter a "1" for 2 minutes, a "2" for 4 minutes, etc., up to a "15" for 30 minutes.  
  
U.L. installations require a "3" or greater programmed in this location.
- 89 STEP 37 FIRE BELL SHUT-OFF**  
The Fire Bell will time out as determined by Memory Location 89 (Auto Shut-Off). If set to "1", the fire bell will not turn off unless manually reset. This is a requirement in some states (i.e., California). If the manual shut-off mode is to be changed to the auto shut-off mode, the "1" must be cleared. UL installations require a "1" in this location.
- 90 STEP 38 CALL BACK REPORT CODE**  
Commonly used in higher security applications. A code (0-9, A-F) **must be** programmed in this location. This allows the SP-650 panel to "call back" the computer.  
  
In addition, when using the call back feature, the telephone number of the computer must be programmed starting in memory location 22. The upload account number (memory locations 121-124) and the panel password (memory locations 117-120) must be identical to the customer's account information selected in the customer profile section of the ScanPro Software.
- 91-94 STEP 39 INSTALLERS ACCESS CODE DIGIT LOCATIONS (USER 1) - DEFAULT = 2345**  
User 1 is also known as the "Installers Code". Programming the system can only be accomplished by using the installer code in the program sequence. The Installer code may be used to change any or all system features including changing additional user codes. If the installer code is lost or forgotten it may be reprogrammed using a SCANTRONIC P-4000 programmer or any other SCANTRONIC system that allows programming from the keypad. All four digits must be entered. Numbers 0-9 may be used. Digits in sequence 1-2-3-4 shall not be used for the access code. When in the programming mode, reprogramming the installer code or any additional user codes, each location that contains a one (1) must be cleared before entering the new data.  
  
See Section 2.8 PROGRAMMING NUMERIC DATA on page 10 of this manual.
- 95 STEP 40 BYPASS ENABLE**  
Select zones to be programmed to allow bypassing. Zones(s) selected can be bypassed on arming. Zone(s) will remain bypassed until the system is re-armed. **DO NOT ALLOW FIRE ZONES TO BE BYPASSED.**  
  
**NOTE: 24 Hour zones may be bypassed to allow testing of tampered enclosures or safes. When 24 hour zones are enabled for bypass, if the zone is violated, it must be restored or bypassed for the panel to arm.**



## MEMORY LOCATION

## DEFINITIONS

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- 96**                    **STEP 41 CHIME ENABLE**  
Any Audible Burglary zone can be programmed to activate the piezo sounder briefly to annunciate that a door (typically) has opened or closed during the disarm period.
- NOTE: These zones must be initially programmed for burg.**
- 98**                    **STEP 42 KEYPAD AUDIBLE ALARM SELECT (FIRE OR BURGLARY)**  
Any or all of the four keypad pair combinations may be programmed to sound an audible alarm when a key pair is activated. Each key pair may sound either an audible burglary or fire alarm but not both. Row 1 pair (1 & 3) will sound burglary when a "1" is entered and fire when a "5" is entered. Row 2 key pair (4 & 6) will sound burglary when a "2" is entered and fire when a "6" is entered. Row 3 key pair (7 & 9) will sound burglary when a "3" is entered and fire when a "7" is entered. Row 4 key pair ( \* & # ) will sound burglary when a "4" is entered and fire when a "8" is entered. Examples: Row 1 is to sound fire and rows 2 and 3 are to sound burglary. Enter a "5", "2", and "3" in Location 98.
- 99-102**                **STEP 43 USER 2 ACCESS CODE DIGIT LOCATIONS**  
User 2 is also known as the "Primary User". The primary user can change only or delete secondary access codes, but cannot change the installer code or enter the programming sequence. All four digits must be entered, numbers 0-9 may be used.
- 103-106**              **STEP 44 USER 3 ACCESS CODE DIGIT LOCATIONS**  
These locations are reserved for secondary code applications. Access codes programmed into these locations cannot be used to change arming codes or alter the system format. All four digits must be entered, numbers 0-9 may be used.
- 107-110**              **STEP 45 USER 4 ACCESS CODE DIGIT LOCATIONS**  
See section 3.37.
- 111-114**              **STEP 46 USER 5 ACCESS CODE DIGIT LOCATIONS**  
See section 3.37.
- 117-120**              **STEP 47 PANEL PASSWORD**  
This security code is required to enable computer to system communications.
- 121-124**              **STEP 48 UPLOADING ACCOUNT NUMBER**  
This is the account number used by the computer to identify the customer.
- 125-132**              **STEP 49-56 ZONE 1 THROUGH 8 I.D. CODE**  
When using Silent Knight 4 + 2 or extended reporting formats, memory locations 125-132 are used to select code reported to identify zone information.
- 133**                    **STEP 57 EMERGENCY KEYPAD REPORT I.D. CODE**  
Allows programming code reported to identify zone information when using Silent Knight 4 + 2 or extended reporting formats.
- STEP 58 ARMED ZONE STATUS**  
Once ScanPro has read the SP650 programming from the panel this location will contain the Arm Status of each of the six zones. Disregard the zones 7 and 8 as these correspond to the Low Battery and AC loss respectively. If a remote arm or disarm is desired simply alter the zone status from YES to NO or vice versa and Write the data back to the panel. Once disconnected, the new status will be seen at the keypad.
- STEP 59 SYSTEM STATUS FLAGS**  
Again this status is read from the panel. There are only two bits of any concern and these are bit 5 & 6. 5 will be YES only if the system is in the INSTANT mode. The 6 will be YES only if there are armed Burglary zones Read from the panel.
- The 6 in this step must say YES if you are attempting to arm a panel remotely.**

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