INSTALLATION/ PROGRAMMING INSTRUCTIONS

SPARTAN 600 ALARM SYSTEM

MODEL SP-600

SCANTRONIC LISTING STATE OF CALIFORNIA STATE FIRE MARSHAL SERVICE SP600

UL LISTED

985 AND 1023

SCANTRONIC (USA) INC.

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FOR TECHNICAL ASSISTANCE CALL
1-800-631-2144
MONDAY THROUGH FRIDAY 8:00 a.m.-6:00 p.m.
EASTERN STANDARD TIME
TO EXPEDITE TROUBLESHOOTING HAVE YOUR PROGRAMMING WORKSHEET ON HAND.

SECTION I: INSTALLATION INSTRUCTIONS

1.0 SYSTEM DESCRIPTION

The Scantronic Model SP-600 "SPARTAN 600" is a multi-zone control panel/digital communicator alarm system that consists of one SP-600 panel and one model KP-600 Digital Control Station. The SP-600 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 SPARTAN 600 or Scantronic Model P-4000 EEPROM Programmer or a Scantronic AVENGER-IV, AV-VI, or AV-VIII system. 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 600 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 (USA) Inc. 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, 470 Atlantic Avenue, Boston, MA. 02201. 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 KP-600. Keypad may be either surface mounted or mounted on a single or double gang plastic gem box. DO NOT USE A METAL GEM BOX. The GEM Back box must be U.L. LISTED.

3. Connect a 12 Vdc Bell, WHEELOCK 46T-G10-12-R to terminals 5 and 6. Observe polarity. For U.L. fire installation, a Bell must be mounted indoors.

4. Unswitched 12 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 available auxiliary current is 300 mA (including any KP-600's even though they are not connected to terminal 7). To determine the total current requirement for an installation, add the current consumption for all items to be connected to the auxiliary output as well as the KP-600's current requirements. Each KP-600 requires 40 mA.***

   DO NOT EXCEED 300 MA TOTAL.

5. Connect the six (6) input zones to terminals 11-19 using the 2.2K End of Line resistors provided as shown in Figure 1.

   NOTE: ***Normally-closed loops are wired in series with the resistor. Normally open 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 KP-600 arming station to the SP-600. Red lead to terminal 8. Blue lead to terminal 9. Black lead to terminal 3. Yellow lead to terminal 10. WIRES CONNECTING KP-600 TO SP-600 MUST BE KEPT AWAY FROM A.C. AND TELCO WIRING TO MINIMIZE TRANSIENT PROBLEMS DUE TO LIGHTNING.

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 KP-600 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, a ow 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 SP-600 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 KP-600 using the Installer (Factory Programmed) Access code 1234. 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 premise telephone should be inoperative (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 premise 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 Test/Fire Reset push button switch (Scantronic P/N AC058) is not installed, program SP-600 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.

(Continued On Next Page)

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SYMPTOM	CHECK
Fault Analysis Condition (Yellow LED flashing) (Prealert pulsing)	This mode provides diagnostic troubleshooting for AC power failure, low battery, trouble, and failure to communicate. See "Fault Analysis" in SP-600 Owner's Manual.
Bells 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).

AUXILIARY POWER OUTPUT: 12-14 Volts D.C., 300 ma.

BELL POWER OUTPUT: 12-14 vdc, Maximum current available 230 mA for U.L. installations. In non-U.L. installations 1.0 A. (supplied from battery)

OPERATING TEMPERATURE: 35° - 120° F.

TRANSIENT AND LIGHTNING PROTECTION: Lightning and surge protection provided on all input, power, and telephone lines.

ZONE RESPONSE TIME: 300 mSec. During reporting cycle, response time increases to approximately 1 sec.

ZONE LOOP MAXIMUM RESISTANCE: Do not exceed 300 OHMS on any loop (not including EOL resistor).

DIMENSIONS: 8¼" H × 11" W × 3" D.

SHIPPING WEIGHT: 6 lbs.

FCC REGISTRATION NUMBER: AB798Z-67793-AL-E.

RINGER EQUIVALENCE: 0.1B

1.4 OPTIONAL ACCESSORIES

KP-600
Off-white housing and beige label keypad that displays 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. Instant/delay mode is determined by annunciating a long or short tone when the # key is pressed. Up to 4 KP-600's may be used.

BP-1
Combination trim/back plate that allows new low profile keypads to be installed in place of the older style KP-6 keypad.

BL/SP
Black label available for Spartan keypad.

TEST FIRE RESET SWITCH

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. To install switch module enlarge starter hole with a ¼" drill. 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.

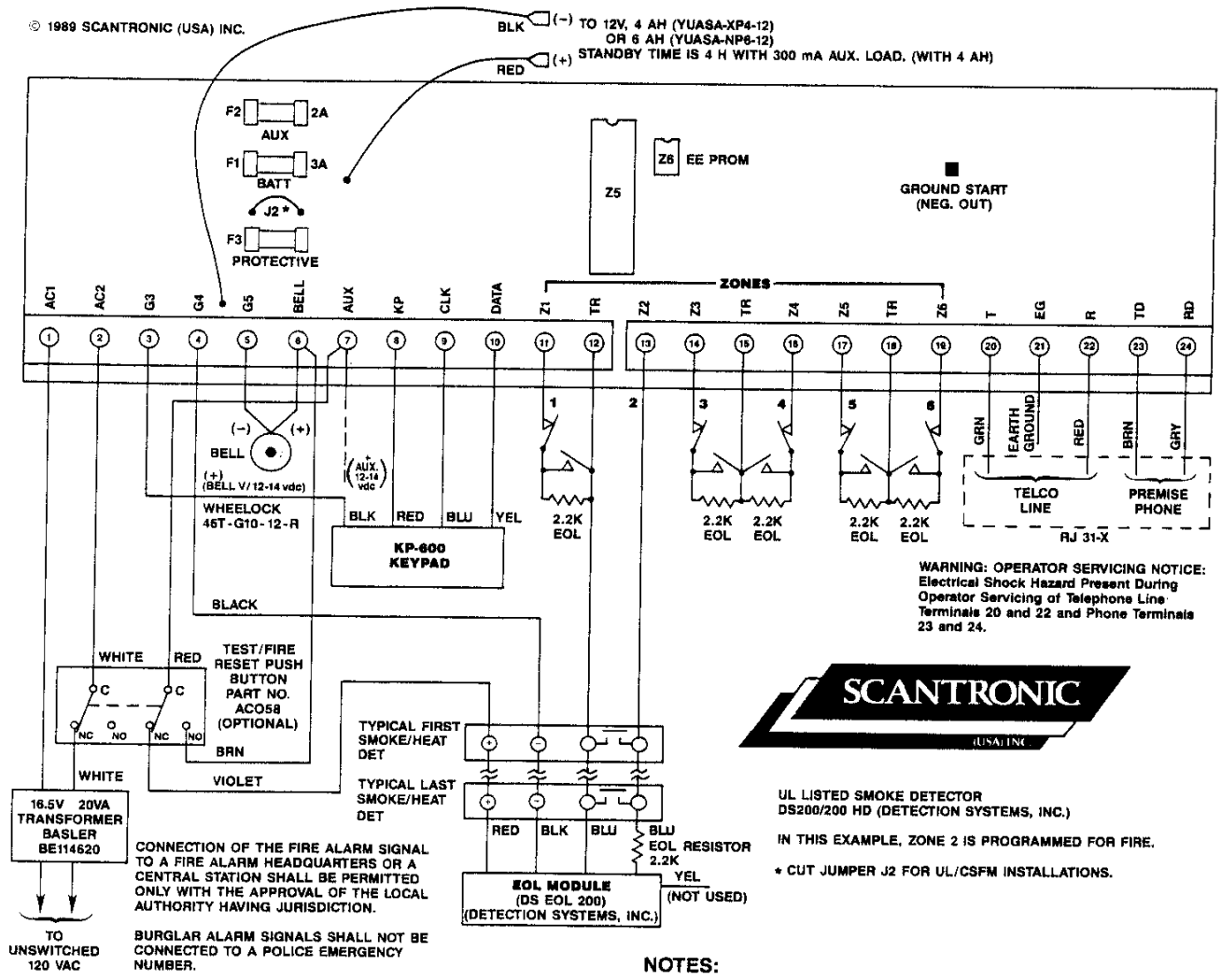
1.5 FCC COMPLIANCE

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.

NOTES

FIGURE 1
WIRING DIAGRAM
FOR MODEL SP-600
(TYPICAL INSTALLATION)
REV. A



CONNECTION OF THE FIRE ALARM SIGNAL TO A FIRE ALARM HEADQUARTERS OR A CENTRAL STATION SHALL BE PERMITTED ONLY WITH THE APPROVAL OF THE LOCAL AUTHORITY HAVING JURISDICTION.

BURGLAR ALARM SIGNALS SHALL NOT BE CONNECTED TO A POLICE EMERGENCY NUMBER.

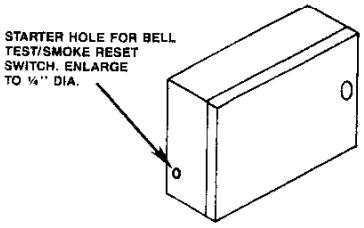
THE COMMUNICATOR OR THE RECEIVING END TO WHICH THIS EQUIPMENT TRANSMITS SIGNALS HAVE NOT BEEN EVALUATED BY UL.

NOTES:

1. SYSTEM SHOULD BE CHECKED PERIODICALLY. SEE OWNER'S MANUAL.
2. A NON-REPLACEABLE PIGTAIL FUSE IS INSTALLED TO COMPLY WITH U.L. POWER LIMITED RULES AND WILL ONLY BLOW IF INCORRECT REPLACEABLE FUSES ARE INSTALLED. RETURN FOR SERVICE IF BLOWN.
3. ALARM SOUNDING DEVICES MUST BE INSTALLED SO THAT THEY ARE CLEARLY HEARD IN ALL SLEEPING AREAS AND MUST OPERATE OVER A VOLTAGE SUPPLY RANGE OF 12-14 vdc.
4. ALL AUXILIARY DEVICES ARE TO BE U.L. LISTED AND MUST OPERATE OVER A VOLTAGE SUPPLY RANGE OF 12-14 vdc.

COMPLIES WITH PART 68, FCC RULES
FCC REGISTRATION NUMBER: AB798Z-67793-AL-E
RINGER EQUIVALENCE: 0.1B.

FIGURE 1A
TEST SWITCH INSTALLATION



SECTION II: PROGRAMMING INSTRUCTIONS
Using the KP-600 as a Programmer

GENERAL

2.0 INTRODUCTION
The EEPROM in the SP-600 may be programmed either by a separate programmer or by the KP-600, which comes with the system. These instructions describe how the KP-600 is used for this purpose. A free permanent overlay for the KP-600 is available from your distributor or Scantronic to simplify the use of the keypad, or use the temporary overlay printed on the KP-600 box.

2.1 PROGRAMMING MODE
The SP-600 can be programmed from the keypad by entering the following key sequence:

[A][A][A][A] [*MODE][8][*MODE][9][1][2][3][4][5]

INSTALLER ACCESS CODE — MODE SEQUENCE

The SP-600 is now in the "PROGRAM" mode. When programming is complete, return the SP-600 to the "PANEL" mode by pressing the [*MODE] and [#ENTR] keys 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 (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.

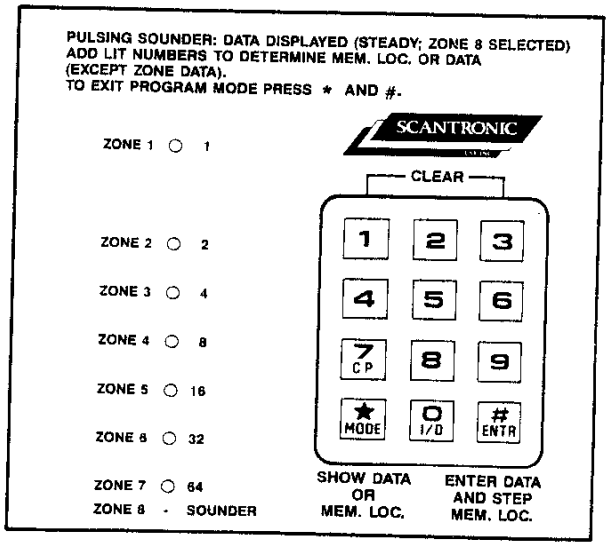


FIGURE 2

Binary values may be converted to decimal simply by adding the overlay values to the right of the lit LEDs, or use the handy Binary Table provided. See Figure 3.

The Spartan does not use memory locations above 128. But in a pinch, 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 free programming overlay may be obtained from your distributor or from Scantronic. A temporary overlay is provided and may be torn out of the KP-600 keypad carton.

The "MODE" key 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

SELECTION DATA displays specific data selected for special functions (burglary zones or fire zones, for example) or (Touch Tone dialing and Extended Format, for example).

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

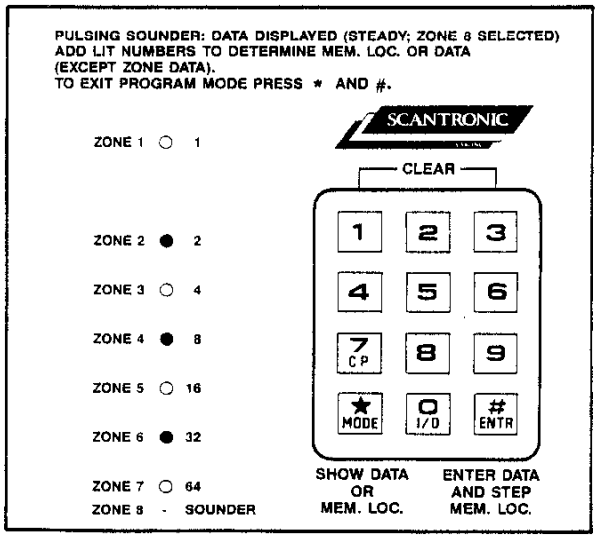


FIGURE 4

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 (Figure 5) shows that the first digit of the first number starts in memory location "1". To program the telephone number, display memory location "1". Next press the MODE key to switch the display to show data. Next, press key 3, press ENTR, press key 6, press ENTR, press key 4, press ENTR, 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 "1" and "3" keys must be pressed simultaneously. This will "clear" the next memory location by entering a blank, which must be done to inform the SP-600 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 ENTR again, a 6 will be displayed; press ENTR, a 4 will be displayed. Every time the ENTR key 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 keys 1 and 3 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 ENTR key. 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 ENTR key. This location is now programmed.

DECIMAL NUMBER ▶	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
ZONE LEDS ▼																																												
1	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○
2	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●
3	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○
4	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	●	●	●
5	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
6	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●
7	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

DECIMAL NUMBER ▶	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
ZONE LEDS ▼																																											
1	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●
2	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○
3	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●
4	●	●	●	●	●	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○	○	○	○	○	○
5	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●
6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
7	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

DECIMAL NUMBER ▶	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128
ZONE LEDS ▼																																											
1	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○
2	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●	○
3	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	●	●	●	●	○
4	○	○	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	○
5	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○
6	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○
7	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○

For all address values for 128 and above the LED display will flash.

SUMMARY

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 MODE key allows alternating between viewing a memory location or its contents (data).

2.11 ENTER KEY

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

2.12 NUMERIC KEYS

WHEN DISPLAY SHOWS MEMORY LOCATIONS. 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 Function data.

WHEN THE DISPLAY SHOWS DATA AND THE CLEAR FUNCTION IS REQUIRED. Pressing the clear key combination keys [1] & [3] simultaneously 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.

NOTES

SECTION III: PROGRAMMING

PROGRAMMING INSTRUCTIONS

Programming the EEPROM that is included with the system can be done with a Spartan 600 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.

MEMORY LOCATION	DEFINITIONS
1-41	**3.0 TELEPHONE NUMBERS** 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 41 digits. If the communicator function is not to be used, memory Location 1 must be cleared. In addition to telephone dialing digits, three special function numbers may be inserted into the first 41 memory locations. They are second dial tone, dialing pause, and 11 (Delete Call Waiting, Tone Dialing Only). **1) SECOND DIAL TONE** 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. **2) DIALING PAUSE** 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. **3) 11 - (DELETE CALL WAITING)** 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.
43-47	**3.1 ACCOUNT NUMBER DIGITS** A three, four or five digit account number may be programmed starting in Memory Location 43. If all five Memory Locations are not used then the remaining Memory Locations must be cleared.
53	**3.2 DIALING/REPORTING FORMAT CONTROL** 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.* (This method allows compatibility with Radionics receivers. 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).
54	**3.3 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).

MEMORY LOCATION	DEFINITIONS
57	**3.4 RESTORE SELECT ZONES** Zone numbers entered (1-6) 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	**3.5 RESTORE CODE** Enter desired restore code in this location.
59	**3.6 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	**3.7 TEST CANCEL CODE** Enter the desired test cancel code in this location.
61	**3.8 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	**3.9 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	**3.10 ZONE 1 THROUGH 6 REPORTING 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	**3.11 ZONE 7 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	**3.12 ZONE 8 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
72*	**3.13 ZONE 9 CODE (KEYPAD 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*	**3.14 ZONE 10 CODE (FIRE TROUBLE)** Enter a code if fire trouble reports are desired.
74*	**3.15 ZONE 11 CODE (KEYPAD 4-6)** Pressing keys 4-6 simultaneously will report the 24-hour emergency code programmed.
75*	**3.16 ZONE 12 CODE (KEYPAD 7-9)** Pressing keys 7-9 simultaneously will report the 24-hour emergency code programmed.
76*	**3.17 ZONE 13 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*	**3.18 ZONE 14 CODE (KEYPAD ★ – #)** Pressing keys ★ – # simultaneously will report the 24-hour emergency code programmed.
78	**3.19 ZONE 15 CODE (OPENING REPORT)** Enter reporting code to represent an opening (disarming) report. Opening report is sent when system is disarmed. **3.20 ZONE 16 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-600 Owner's Manual)
80	**3.21 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	**3.22 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.
★ *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.***

(Continued On Next Page)

MEMORY LOCATION	DEFINITIONS
★ NOTE:	*(Continued From Previous Page)*
	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 lcoation 190.***
83	**3.23 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.
84	**3.24 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	**3.25 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	**3.26 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	**3.27 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	**3.28 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	**3.29 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 4 minutes of alarm.
91-94	**3.30 INSTALLERS ACCESS CODE DIGIT LOCATIONS (USER 1)** 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

MEMORY LOCATION	DEFINITIONS

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

3.31 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.

96

3.32 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

3.33 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

3.34 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

3.35 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

3.36 USER 4 ACCESS CODE DIGIT LOCATIONS

See section 3.35.

111-114

3.37 USER 5 ACCESS CODE DIGIT LOCATIONS

See section 3.35.

3.38 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.

3.39 PROGRAMMING WORKSHEET

FIGURE 5

Acct. # _____

Name _____ Address _____

PROGRAMMING WORKSHEET

	MEMORY LOCATION	DESCRIPTION	DATA ENTERED (NEW)	FACTORY PROGRAMMED
DIALER FUNCTIONS	1-41	TELEPHONE NUMBER MEMORY LOCATIONS	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	
		TELEPHONE NUMBER DIGITS		
		TELEPHONE NUMBER MEMORY LOCATIONS	22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	
		TELEPHONE NUMBER DIGITS		
	43-47	ACCOUNT NUMBER MEMORY LOCATIONS	43 44 45 46 47	
		ACCOUNT NUMBER DIGITS		
			ENTER NUMBERS / SELECT ZONE(S): 1 2 3 4 5 6 7 8	
	53	1 = TOUCHTONE DIALING 4 = EUROPEAN MAKE/BREAK 6 = EXTENDED FORMAT		ROTARY
	54	NUMBER OF ATTEMPTS CL = CONTINUOUS		8
	57	RESTORE SELECT ZONES		
	58	RESTORE CODE		
	59	TEST CANCEL, SELECT ZONES		
	60	TEST CANCEL CODE		
	61	REPORTING DELAY, SELECT ZONES		
	62	REPORTING DELAY TIME (× 10 SEC)		
REPORTING CODES			DESCRIPTION	
	64	ZONE 1 CODE		1
	65	ZONE 2 CODE		2
	66	ZONE 3 CODE		3
	67	ZONE 4 CODE		4
	68	ZONE 5 CODE		5
	69	ZONE 6 CODE		6
	70	ZONE 7 CODE (LOW BATTERY)		
	71	ZONE 8 CODE (AC FAIL)		
	★ 72	ZONE 9 CODE KEYPAD (1 & 3) REPORT CODE		
	★ 73	ZONE 10 CODE FIRE TROUBLE REPORT CODE		9
	★ 74	ZONE 11 CODE KEYPAD (4 & 6) REPORT CODE		
	★ 75	ZONE 12 CODE KEYPAD (7 & 9) REPORT CODE		
	★ 76	ZONE 13 CODE DURESS REPORT CODE		
	★ 77	ZONE 14 CODE KEYPAD (★ & #) REPORT CODE		
	78	ZONE 15 CODE OPENING REPORT CODE		
	79	ZONE 16 CODE CLOSING REPORT CODE		
PANEL FUNCTIONS			SELECT ZONE(S): 1 2 3 4 5 6 7 8	
	80	FOLLOWER ZONE SELECT		
	81	AUDIBLE PANIC, SELECT ZONES (24 HR)		
	83	AUDIBLE FIRE, SELECT ZONES (24 HR)		1
	84	AUDIBLE BURGLARY, SELECT ZONES		23456
	85	DELAYED BURGLARY, SELECT ZONES		3
	86	EXIT DELAY (× 10 SEC)		3
	87	ENTRANCE DELAY (× 10 SEC)		3
	88	BELL SHUT OFF TIME (× 2 MIN)		3
	89	FIRE BELL TIME CL=AUTO 1=MANUAL (CALIF.)		AUTO
	91-94	USER 1 ACCESS CODE MEMORY LOCATIONS	91 92 93 94	
		USER 1 ACCESS CODE DIGITS		1234
	► 95	BYPASS ENABLE, SELECT ZONES		
	96	CHIME ENABLE, SELECT ZONES		
	98	KEYPAD AUDIBLE ALARM SELECT (FIRE OR BURG)		5
	99-102	USER 2 ACCESS CODE MEMORY LOCATIONS	99 100 101 102	
		USE 2 ACCESS CODE DIGITS		
	103-106	USER 3 ACCESS CODE MEMORY LOCATIONS	103 104 105 106	
		USER 3 ACCESS CODE DIGITS		
	107-110	USER 4 ACCESS CODE MEMORY LOCATIONS	107 108 109 110	
		USER 4 ACCESS CODE DIGITS		
	111-114	USER 5 ACCESS CODE MEMORY LOCATIONS	111 112 113 114	
		USER 5 ACCESS CODE DIGITS		

► DO NOT ALLOW FIRE ZONES TO BE BYPASSED. ★ SEE NOTE ON PAGE 15 & 16 OF THIS MANUAL.

NOTICE FOR CANADIAN INSTALLATIONS

NOTE: ***The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.***

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in same situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: ***Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician as appropriate.***

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device to prevent overloading. The termination on the loop may consist of any combination of devices subject only to the requirements that the total of the Load Numbers of all the devices does not exceed 100. The load number for this equipment is LN-30.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

NOTICE FOR U.L. & C.S.F.M. INSTALLATIONS

In order to comply with U.L./CSFM requirements, Jumper J2 must be cut on the P.C. Assembly. See Figure 1.

Limited Warranty

Seller warrants to the Purchaser that its products will be free from defects in material and workmanship for 24 months from date of manufacture. Seller's obligation under this Limited Warranty shall be limited, at Seller's option, to repairing or replacing the product, which upon examination is found to be defective in material or workmanship. The repair or replacement of any product under this Limited Warranty shall not extend the term of the warranty beyond the original term as set forth above.

All repairs qualifying under this Limited Warranty must be performed by Seller. In the event that any product is found to be defective during the warranty period, the Purchaser or installer or retail purchaser shall notify Seller of any claimed defect within 30 days after such defect is discovered. The Purchaser, installer, or retail purchaser shall obtain a return authorization number from Seller's customer service department and return the product, transportation prepaid, to Seller's Lakewood, New Jersey location. Under no circumstances will Seller be responsible for expenses or labor incurred in removing and reinstalling its products from the retail Purchaser's location.

This Limited Warranty shall not cover defective conditions caused, in whole or in part, in Seller's opinion, by negligence in use; misuse; abuse; flood, fire or acts of God; improper installation or application; improper maintenance or repair; alteration or repair by an unauthorized repair facility; or improper storage, transportation or handling.

This Limited Warranty is the sole and entire warranty pertaining to Seller's products and is in lieu of and excludes all other warranties of any nature whatsoever, whether express, implied or arising by operation of law, trade usage or course of dealing, including, but not limited to, warranties of merchantability, warranties of fitness for a particular purpose and any warranties relating to materials or components manufactured by any party other than Seller. Seller will not be liable for any direct, indirect, consequential, incidental or any damages other than repair or replacement of products that are found by Seller to be defective during the warranty period. In no event shall Seller's liability for any claim for any product, whether arising out of breach of contract, warranty or tort (including negligence, failure to warn, or strict liability) or otherwise, except the per unit product price for each of the products that gives rise to the claim.

The Purchaser expressly agrees that the remedies granted to it hereunder are its sole and exclusive remedies with respect to any claim other than arising under this contract and limited warranty.

490 OBERLIN AVE., SO., LAKEWOOD, NJ 08701

REV. A