INSTALLATION MANUAL

This device complies with Parts 15 and 68 of the FCC rules. Verified to comply with limits for a Class "B" computing device pursuant to Subpart "B" of FCC rule Part 15. See instructions if interference to radio reception is suspected.

FCC Reg. No.: F53CAN-610131-AL-R
REN = 0.0B    Plug Type: RJ31X
MADE IN CANADA
NOTES FOR U.L. INSTALLATIONS

This equipment is U.L.I. listed in accordance with U.L.I. standard #1023 (Household Burglar Alarm System Units) and U.L.I. standard (Household Fire Warning Units)

This equipment has the capability of being programmed for operational features that are not allowed for U.L.I. recognized installations. To stay within the standard for household applications, the installer should stay within the following guidelines when configuring the system.

1. ALL components of the system should be U.L.I. listed for the intended application. Note elsewhere in this manual, recommendations for a smoke detector and battery for use with this equipment.

2. If this equipment is configured for "Fire", the installer should refer to NFPA standard #74 for details on locating smoke detectors. When the "Fire" feature is enabled, there must be at least one U.L.I. listed Indoor Fire Alarm Warning Signaling Appliance installed on the premises.

3. This equipment is listed for "Local" applications only and should NOT be programmed for "Silent Alarm". (section [11] zone definitions)

4. Maximum allowed Entry delay = 45 seconds
   Minimum allowed Exit delay = 60 seconds
   Minimum allowed Bell cutoff time = 4 minutes

5. The User Bypass must be enabled such that a User Code is required to Bypass zones. (section [14] light 1 ON)

6. The installer should caution the user to NOT give system information to casual users such as babysitters or home service people. e.g. Codes, Bypass methods, etc. Only the "One-Time" use code should be given to the casual user.

7. The installer should advise the user and note in the user manual:
   a) The service organization name & telephone number.
   b) The programmed Exit time.
   c) The programmed Entry time.

8. The master code should be changed from the factory default setting and the new master code recorded in the User manual.

9. This equipment is listed for Local applications only and thus the connection to a Central Receiving Station via the Digital Communicator has not been evaluated by U.L.I. and the following should be noted.
   *Connection of the Fire Alarm signal to a Fire Alarm Headquarters or a Central Receiving Station shall be permitted only with the approval of the local Authority Having Jurisdiction*
   "The Burglar Alarm signal shall not be connected to a police emergency number"
   "The receiving unit to which this equipment transmits signals has not been evaluated by UL."

10. Remote Programming shall be disabled.
TABLE OF CONTENTS - EN1550

1. SPECIFICATIONS .................................................................................................................. 3
2. FEATURES .............................................................................................................................. 3
3. INSTALLATION ...................................................................................................................... 4
   MOUNTING THE PANEL ........................................................................................................ 4
   MOUNTING THE KEYPAD ....................................................................................................... 4
   WIRING: .................................................................................................................................. 5
   AUXILIARY POWER CONNECTION ............................................................................... 4
   BELL/SIREN CONNECTION .............................................................................................. 4
   PGM TERMINAL CONNECTION ....................................................................................... 4
   KEYPAD WIRING ................................................................................................................ 5
   FIRE ZONE WIRING ............................................................................................................ 5
   BURGLARY ZONE WIRING ................................................................................................. 5
   GUIDELINES FOR SMOKE DETECTOR LOCATION ..................................................... 6
   TELEPHONE LINE WIRING ............................................................................................... 7
   AC POWER WIRING ........................................................................................................... 7
   BATTERY CONNECTION ..................................................................................................... 7

4. KEYPAD FUNCTIONS ........................................................................................................... 7
   INTRODUCTION .................................................................................................................... 7
   MASTER CODE .................................................................................................................... 7
   2ND MASTER CODE (*MASTER KEY* CODE) ................................................................. 7
   INSTALLER'S PROGRAMMING CODE ............................................................................ 7
   ARMING THE PANEL .......................................................................................................... 7
   AUTO-BYPASS - HOME/AWAY ARMING ......................................................................... 8
   ENTRY DELAY "OFF" ARMING ......................................................................................... 8
   DISARMING THE PANEL .................................................................................................... 8
   ZONE BYPASSING: ............................................................................................................ 8
      TO BYPASS ZONES ....................................................................................................... 8
      TO RECALL BYPASSED ZONES .................................................................................. 8
      BYPASS DISABLE ....................................................................................................... 8
   TROUBLE DISPLAY ............................................................................................................. 8
      [*][2] .......................................................................................................................... 8
   ALARM MEMORY DISPLAY ............................................................................................ 9
      [*][3] .......................................................................................................................... 9
   DOWNLOADING CALLUP COMMAND ........................................................................... 9
      [*][4] .......................................................................................................................... 9
   USER PROGRAMMING COMMAND: ................................................................................ 9
      [*][5][MASTER CODE] ............................................................................................... 9
      PROGRAMMING SECURITY CODES ......................................................................... 9
      CHANGING OR ADDING A SECURITY CODE ............................................................ 9
      ERASING A SECURITY CODE .................................................................................. 9
   USER FUNCTION COMMAND: ......................................................................................... 9
      [*][6][MASTER CODE] ............................................................................................... 9
      SETTING THE CLOCK .................................................................................................. 9
      QUICK-ARM ON/OFF ................................................................................................. 9
      DOOR CHIME ON/OFF ............................................................................................... 10
      INSTALLER'S TEST ON/OFF ...................................................................................... 10
      BELL TEST ................................................................................................................ 10
   UTILITY OUTPUT COMMAND ......................................................................................... 10
      [*][7] or [*][7][USER CODE] .................................................................................... 10
   INSTALLER'S PROGRAMMING COMMAND ................................................................... 10
      [*][8][INSTALLERS CODE] ......................................................................................... 10
   ENTRY DELAY "OFF" ARMING ....................................................................................... 10
      [*][9][USER CODE] .................................................................................................. 10
   ARMING FOR THE NIGHT ............................................................................................... 10
      [*][1][WHEN ARMED] .............................................................................................. 10
   QUICK-ARM COMMAND ............................................................................................... 10
      [*][0] ........................................................................................................................ 10
TABLE OF CONTENTS (cont'd)

5. PROGRAMMING GUIDE

INTRODUCTION ........................................................................................................... 10
TO PROGRAM THE EN1550 .................................................................................. 10
PROGRAM DATA REVIEW ....................................................................................... 11
BINARY DATA DISPLAY ......................................................................................... 11
ZONE LIGHT DISPLAY ............................................................................................ 11
HEX DATA PROGRAMMING .................................................................................. 11

6. PROGRAMMING SECTIONS - DESCRIPTIONS

[01] 1ST PHONE NUMBER ...................................................................................... 11
[02] 1ST ACCOUNT CODE ....................................................................................... 11
[03] 2ND PHONE NUMBER .................................................................................... 12
[04] 2ND ACCOUNT CODE ..................................................................................... 12
[05] ZONE ALARM REPORTING CODES ................................................................. 12
[06] ZONE RESTORAL REPORTING CODES ......................................................... 12
[07] CLOSING (ARMING) REPORTING CODES & AFTER ALARM REPORTING CODE ............................................................................. 12
[08] OPENING (DISARMING) REPORTING CODES & AFTER ALARM REPORTING CODE ............................................................................. 12
[09] PRIORITY ALARMS & RESTORALS................................................................. 13
[10] MAINTENANCE ALARMS & RESTORALS ..................................................... 13
[12] 1ST SYSTEM OPTION CODE ......................................................................... 14
[13] 2ND SYSTEM OPTION CODE ......................................................................... 14
[14] 3RD SYSTEM OPTION CODE ......................................................................... 14
[15] COMMUNICATION VARIABLES .................................................................... 14

(SWINGER SHUTDOWN & TRANSMISSION DELAY)

[16] ZONE BYPASS MASK ..................................................................................... 14
[17] SYSTEM TIMES ............................................................................................. 14
[18] AUXILIARY DELAY LOOP ENTRY/EXIT TIMES ........................................... 15
[19] SYSTEM CLOCK TIMES ............................................................................... 15
[20] NEW INSTALLER'S CODE .............................................................................. 15
[21] NEW MASTER CODE ..................................................................................... 15
[22] 2ND MASTER CODE (*MASTER KEY CODE) ............................................... 15
[23] COMMUNICATION FORMATS ......................................................................... 15
[24] PROGRAMMABLE OUTPUT OPTIONS (PGM TERMINAL) ................................ 16
[25] COMMUNICATOR CALL DIRECTIONS ......................................................... 16
[26] DOWNLOADING TELEPHONE NUMBER .................................................... 16
[27] DOWNLOADING ACCESS CODE ................................................................... 16
[28] PANEL IDENTIFICATION CODE .................................................................. 16
[29] NUMBER OF RINGS BEFORE ANSWERING ................................................ 16
[30] RESET TO FACTORY DEFAULT (SOFTWARE & HARDWARE RESET) ........ 16
[31] 4TH SYSTEM OPTION CODE ......................................................................... 17
[32] 5TH SYSTEM OPTION CODE ......................................................................... 17
[33] ANSWERING MACHINE DOUBLE CALL TIMER ........................................ 17
[34] INSTALLERS LOCKOUT ENABLE ................................................................... 17
[35] INSTALLERS LOCKOUT DISABLE .................................................................. 17

7. PROGRAMMING WORKSHEET SECTION ................................................................ 18

8. INSTALLATION DRAWING .................................................................................. 25

9. LIMITED WARRANTY ........................................................................................ 26

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FEATURES

KEYPAD PROGRAMMABLE
The EN1550 is complete with a default program so that it is operational with a minimum of programming. The control panel is completely programmable from the keypad.

EEPROM MEMORY
The panel uses EEPROM memory which will retain all program information even if AC and Battery power is removed from the panel. The EEPROM memory can be reprogrammed thousands of times.

STATIC/LIGHTNING PROTECTION
The EN1550 has been carefully designed and tested to provide reliable in-use protection against static and lightning induced transients. Special "Zap-Trac" circuit board design catches high voltage transients right at the wiring terminals and transient protection devices are placed in all critical areas to further reduce damaging voltages.

SUPERVISION
- LOW OR DISCONNECTED BATTERY
- LOSS OF AC POWER
- FUSE OPEN
- UNSUCCESSFUL COMMUNICATION ATTEMPT
- FIRE ALARM CIRCUIT OPEN
- LOSS OF TIME ON SYSTEM CLOCK
- PROGRAMMABLE TEST TRANSMISSION
- MICROPROCESSOR "WATCHDOG" CIRCUIT

OPERATION
- DOWNLOAD/UPLOAD CAPABILITY
- PROGRAMMABLE AUTO DOWNLOADING
- SWINGER SHUTDOWN
- TRANSMISSION DELAY
- SIX USER CODES
- "MASTER KEY" CODE
- ALL ZONES PROGRAMMABLE AS FIRE ZONES
- PROGRAMMABLE TEST TRANSMISSION
- ZONE BYPASS FROM THE KEYPAD
- SIX ZONES
- BELL/SIREN ZONE
- PROGRAMMABLE OUTPUT
- THREE DEDICATED KEYS
  FIRE/EMERGENCY/PANIC
- BACKLIT
  AESTHETICALLY
  PLEASING KEYPAD

SPECIFICATIONS

EN1550 CONTROL PANEL
- SIX FULLY PROGRAMMABLE ZONES
  (EOL RESISTOR SUPERVISED OPTION)
  ALL ZONES PROGRAMMABLE AS FIRE ZONES
  MAX. ZONE LOOP RESISTANCE 100 OHMS
- BELL / SIREN OUTPUT - 1 AMP
  STEADY FOR BURGLARY
  PULSING FOR FIRE
- PROGRAMMABLE OUTPUT - 300 mA
  9 PROGRAMMABLE OPTIONS
- AUXILIARY POWER OUTPUT - 475 mA
- EN1550RK KEYPAD - 3 MAXIMUM
- BATTERY - 12 VDC, 1.2 AH MIN.
  GELLED ELECTROLYTE TYPE
- TRANSFORMER - 16 VAC, 40 VA
- PANEL DIMENSIONS
  10" HIGH x 8" WIDE x 3" DEEP
  SURFACE MOUNT
- PANEL COLOR - LIGHT BEIGE

EN1550RK KEYPAD
- THREE KEYPAD ACTIVATED ZONES
  FIRE / AUXILIARY / PANIC
- BACKLIT KEYS
- 5 SYSTEM LIGHTS
  READY / ARMED / MEMORY
  BYPASS / TROUBLE
- 6 ZONE LIGHTS
- KEYPAD DIMENSIONS
  4.5" HIGH x 5.5" WIDE x 1" DEEP
  SURFACE MOUNT
- KEYPAD COLOR - WHITE
INSTALLATION

MOUNTING THE PANEL - Select a dry location close to an unswitched AC source and close to the telephone line connection.

Remove the printed circuit board, the mounting hardware and the keypad from the cardboard retainer inside the panel. Before attaching the cabinet to the wall, press the four white nylon printed circuit board mounting studs into the box from the back.

Once the cabinet is mounted to the wall, pull all the cables into the box and prepare them for connection. Use a meter to test the wiring for opens, shorts and grounds. Press the circuit board onto the mounting studs.

MOUNTING THE KEYPAD - Keypads should be located close to the designated "Entry-Exit" door(s) and mounted at a height convenient for all users.

♦ WIRING ♦

Complete all wiring to the control panel before applying AC power or connecting the battery.

AUXILIARY POWER CONNECTION - The Auxiliary Power Supply can be used to power keypads, motion detectors, smoke detectors and other devices that require 12 VDC. See the Fire Zone Wiring section for the Power connection of 4-wire smoke detectors.

The Total load for the Auxiliary Power Output must be calculated for all devices connected across the Aux. +/- terminals and for devices connected between the AUX. + and the PGM terminals. Allow 35 mA for each EN1550RK keypad connected to the panel.

<table>
<thead>
<tr>
<th>CURRENT (mA)</th>
<th>AWG 14</th>
<th>AWG 16</th>
<th>AWG 18</th>
<th>AWG 19</th>
<th>AWG 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2375</td>
<td>1500</td>
<td>940</td>
<td>750</td>
<td>370</td>
</tr>
<tr>
<td>200</td>
<td>1190</td>
<td>750</td>
<td>470</td>
<td>370</td>
<td>185</td>
</tr>
<tr>
<td>300</td>
<td>790</td>
<td>500</td>
<td>310</td>
<td>250</td>
<td>120</td>
</tr>
<tr>
<td>400</td>
<td>595</td>
<td>375</td>
<td>235</td>
<td>185</td>
<td>90</td>
</tr>
<tr>
<td>500</td>
<td>475</td>
<td>300</td>
<td>190</td>
<td>150</td>
<td>75</td>
</tr>
<tr>
<td>600</td>
<td>400</td>
<td>250</td>
<td>155</td>
<td>125</td>
<td>60</td>
</tr>
<tr>
<td>700</td>
<td>340</td>
<td>210</td>
<td>135</td>
<td>105</td>
<td>50</td>
</tr>
<tr>
<td>800</td>
<td>300</td>
<td>190</td>
<td>115</td>
<td>90</td>
<td>45</td>
</tr>
<tr>
<td>900</td>
<td>265</td>
<td>170</td>
<td>100</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>1000</td>
<td>240</td>
<td>150</td>
<td>90</td>
<td>75</td>
<td>35</td>
</tr>
</tbody>
</table>

Wire run distances are in feet from the control panel to the last device on the loop. Calculations are based on 12 VDC at the panel with a maximum 10% voltage drop at the last device. Observe polarity when connecting Siren Drivers, Sirens and Polarized Bells.

PGM TERMINAL CONNECTION - The PGM terminal is a switched negative output which can be controlled by various programming options. (See Programming Guide section [24]). Devices controlled by the PGM output must be connected between the PGM terminal, which is (-), and the Aux. (+) terminal.
KEYPAD WIRING - Up to three Keypads may be connected in parallel. Do not connect multiple Keypads on the same keypad wire run.

For Standby Loading purposes, use a current draw of 35 mA per Keypad. This represents the panel in the Disarmed state with two zones open.

The wiring table gives the wire run length from the control panel to the Keypad for various gauges of wire. Wire run lengths are based on the maximum current drawn by the Keypad. (All lights ON)

If two wires of the same gauge are paralleled, the run length can be doubled. e.g. If 8 #22 AWG wires are used, 2-Red, 2-Blk, 2-Gn & 2-Yel, the run length would go from 420 to 840'.


FIRE ZONE WIRING - Any one of the 6 zones may be programmed as a Fire Loop. See Programming Guide section [11].

Smoke Detectors should be the latching type and have a NO Alarm initiating contacts. Power wiring from the Aux.+/PGM terminals should be supervised using an RM-1 relay after the last Smoke Detector. The RM-1 NO contacts (closed with power applied) should be wired in series with the Alarm Initiating Loop End-of-Line Resistor so that should power to the detector(s) fail, a Fire loop “Trouble” will be initiated.

<table>
<thead>
<tr>
<th>WIRE GAUGE</th>
<th>MAX. RUN LENGTH KEYPAD TO PANEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 AWG</td>
<td>260'</td>
</tr>
<tr>
<td>22 AWG</td>
<td>420'</td>
</tr>
<tr>
<td>20 AWG</td>
<td>660'</td>
</tr>
<tr>
<td>19 AWG</td>
<td>850'</td>
</tr>
<tr>
<td>18 AWG</td>
<td>1050'</td>
</tr>
</tbody>
</table>

SMOKE LOOP POWER WIRING CHART

<table>
<thead>
<tr>
<th>CURRENT (mA)</th>
<th>AWG 14</th>
<th>AWG 16</th>
<th>AWG 18</th>
<th>AWG 19</th>
<th>AWG 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>4750</td>
<td>3900</td>
<td>1880</td>
<td>1500</td>
<td>750</td>
</tr>
<tr>
<td>100</td>
<td>2375</td>
<td>1500</td>
<td>940</td>
<td>750</td>
<td>370</td>
</tr>
<tr>
<td>200</td>
<td>1190</td>
<td>750</td>
<td>470</td>
<td>370</td>
<td>185</td>
</tr>
<tr>
<td>300</td>
<td>790</td>
<td>500</td>
<td>310</td>
<td>250</td>
<td>120</td>
</tr>
<tr>
<td>400</td>
<td>595</td>
<td>375</td>
<td>235</td>
<td>185</td>
<td>90</td>
</tr>
</tbody>
</table>

Wire run distances are in feet from the Aux.+/PGM terminals to the End-of-Line Power Supervisory Relay. Calculations are based on 12 VDC at the Aux.+/PGM terminals and a maximum 10% voltage drop at the RM-1 Relay.

ALARM INITIATING LOOP WIRING CHART

<table>
<thead>
<tr>
<th>WIRE GAUGE</th>
<th>AWG 14</th>
<th>AWG 16</th>
<th>AWG 18</th>
<th>AWG 19</th>
<th>AWG 22</th>
<th>AWG 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTANCE TO END-OF-LINE RESISTOR</td>
<td>19,800</td>
<td>12,450</td>
<td>7,800</td>
<td>6,200</td>
<td>3,000</td>
<td>1,900</td>
</tr>
</tbody>
</table>

This chart is based on a max loop resistance of 100 ohms.
GUIDELINES FOR SMOKE DETECTOR LOCATION

Experience has shown that all hostile fires in family living units generate smoke to a greater or lesser extent. Experiments using typical fires in family living units indicate that detectable quantities of smoke precede detectable levels of heat in most cases. For these reasons, NFPA standard 74 requires smoke detectors to be installed outside of each sleeping area and on each additional story of the family living unit.

The following information is for general guidance only and it is recommended that NFPA standard 74 be consulted and that the smoke detector manufacturer's literature be used for detail installation instructions.

It is recommended that additional smoke detectors beyond those required be installed for increased protection. The added areas include: Basement, Bedrooms, Dining rooms, Furnace room, Utility room and Hallways not protected by the required detectors.

![Diagram of a house floor plan]

Fig. 1 - A smoke detector should be located between the sleeping area and the rest of the family living unit.

Fig. 2 - In family living units with more that one sleeping area, a smoke detector should be located to protect each sleeping area.

![Diagram of smoke detector mounting]

Fig. 3 - A smoke detector should be located on each story of the living unit.

Fig. 4 - Smoke Detector mounting: "Dead" Air Space. The smoke from a fire generally rises to the ceiling, spreads out across the ceiling surface and begins to bank down from the ceiling. The corner where the ceiling and wall meet is an air space into which the smoke may have difficulty penetrating. In most fires, this "dead" air space measures about 4 in. (0.1 m) along the ceiling from the corner and about 4 in. (0.1 m) down the wall as shown in Figure 4. Detectors should not be placed in the "dead" air space.
TELEPHONE LINE WIRING

NOTICE: Ensure that plugs and jacks meet the dimension, tolerance and metallic plating requirements of 47 C.F.R. Part 68, Subpart F.

WARNING: FCC restricts using this equipment on certain types of telephone lines. Read FCC Compliance Statement at the end of this manual. Also, do not use this equipment on a telephone line equipped with "call holding" feature because the tone generated may interfere with the communicator operations.

AC POWER WIRING - Complete all wiring to the control panel before connecting AC power or the Battery. DO NOT plug the transformer into an outlet that is controlled by a switch.

Transformer must be UL listed and have a restraining means. E.G. Basler Electric BE 116240CAA-0002

BATTERY CONNECTION - If the Battery is reverse connected, the 5A fuse will blow. The battery charging voltage is factory set at 13.8 volts and normally needs no adjustment. If the Battery charging voltage is out of adjustment, remove the battery and connect a 1000 ohm, 1/2 W resistor across the battery leads and adjust the trimpot near the heatsink until the voltage across the resistor is 13.8 volts. DO NOT adjust the trimpot with the Battery connected as it may give an incorrect reading of the end-of-charge voltage if the battery is not fully charged.

BATTERY CHARGE CURRENT IS 360 MA MAX

FUSE 5 AMP

BATTERY VOLTAGE ADJUST SET AT 13.8 VOLTS

KEYPAD FUNCTIONS

INTRODUCTION
The EN1550RK remote keypad provides complete information and control of the EN1550 control panel. The panel can be fully programmed from the keypad. The 6 zone lights provide alarm and status indication for the alarm circuits. Each zone can be programmed to be a Burglary zone or a Fire zone. The 5 function lights guide the user in operating the system and the built-in sounder lets the user hear correct key entries and other alert signals. The 12 digit keypad is used for code entry and other programming functions. The single button [F]ire, [A]uxiliary and [P]anic keys provide the user with simple operation for emergency signaling. All keypad entries are made by pressing one key at a time.

MASTER CODE
A default Master Security Code *1234* is factory programmed into the EN1550. The Master Security Code is used to Arm and Disarm the panel, to program up to 5 additional Security Codes using the [*],[5] command, and to enter other user functions using the [*],[6] command. The panel default program allows the User to change the Master Code. The panel can be programmed, by the installer, so the User cannot change the Master Code. See 2nd System Option Code light 2.

2ND MASTER CODE
A second Master Security Code *xxxx* can be programmed into the EN1550. This code can be changed by the installer only, and is useful where there are multiple panels in a complex. The 2nd Master Code can be used as a "Master Key". The default 2nd Master code is blank.

INSTALLER'S PROGRAMMING CODE
A default Installer's Programming Code *1550* is programmed into the EN1550. Using this code and the [*],[8] command, the installer can gain access to the system to enter panel or communicator program information. This code can be changed by the installer.

ARMING
Before Arming the panel, close all protected doors and windows and step movement in areas covered by motion detectors. If the Trouble light is on, check for the type of trouble (*,[2] command) and correct the fault condition. If the Bypass light is on, insure that the zones bypassed are bypassed intentionally (*,[1] command)

If the READY light is not on, one or more zones is open. The system can only be Armed when the READY light is ON.

To ARM, enter a 4 digit Security Code. As each digit is entered, the keypad sounder will beep. When the correct Security Code has been entered the ARMED light will come ON and the keypad buzzer will beep 6 times.

If the Security Code was entered incorrectly, the keypad buzzer will then sound one long tone. Press the [#] key and enter the Security Code again.

When the correct Security Code has been entered and the Armed light is on, exit through the designated Entry/Exit door before the Exit Delay time expires. At the end of the allowed Exit time, all lights on the keypad will go out except the Armed light. The Bypass light will be on, if a zone is Bypassed and if "Show Bypass Status while Armed" is programmed in section [31], zone light 4 ON.

See Installer's Programming section, [*],[8] command for instructions on changing the Exit Delay time.
AUTO-BYPASS/HOME-AWAY ARMING

If a correct Security Code is entered, and you do not exit the premises, the system will, at the end of the Exit delay time, Arm with interior zones automatically Bypassed if those interior zones have been programmed as "Home-Away" zones. The Bypass light will come on. (see programming section [11], Zone Definitions for programming zones as "Home-Away")

This is a convenience feature for the user who wishes to remain at home with the system armed. The user does not have to manually Bypass the interior zones.

To reactivate the interior zones that have been automatically Bypassed, press [*],[1]. The Bypass light will go out. This command is a quick method of fully Arming the system before going to bed and is useful for the user who has a keypad outside the areas protected by the interior zones.

ARMING WITHOUT ENTRY DELAY

To eliminate the Entry Delay, Arm the system using [*],[9],[ANY VALID USER CODE]. An exit may be made as in normal Arming. The system will arm as described above in "Auto-Bypass/Home Away" arming whether an exit is made or not. The Armed light will flash to indicate that the system is armed without the entry delay.

DISARMING

Enter the premises through the designated Entry-Exit door. The keypad buzzer will be on as a reminder to Disarm the system. Go to the keypad and enter a valid Security Code. If an error is made entering the code, press the [#] key and enter the code again. The armed light will go out and the buzzer will stop. The correct security code must be entered before the Entry time expires or the panel will go into alarm. To change the Entry time see Installer's Programming section [17], page 14.

Upon Disarming and if an alarm occurred while the panel was Armed, the Memory light and the Zone light(s) of the zone(s) that caused the alarm will come on Flashing for two minutes. Pressing the [#] key will stop the Flashing, extinguish the zone light and return the panel to the Ready mode. The Memory light will stay on steady to indicate that an alarm did occur during the last Armed period. To view the zone(s) that caused the alarm, see Alarm Memory Display [*],[3], page 9.

ZONE BYPASSING - [*],[1]

A Bypassed zone will not cause an alarm. Use zone Bypassing when access is needed to part of a protected area or if damage to contacts or wiring cannot be repaired immediately. The panel can be Armed with one or more zones Bypassed even if the zone(s) are open. The Ready light will be on and the Bypass light will be on if a zone is Bypassed. A Fire zone CANNOT be Bypassed.

If the Bypass light is on when Arming, use the [*],[1] command to display the bypassed zones and insure that any zone Bypassed is intentionally Bypassed.

Zone Bypasses are automatically canceled when the panel is Disarmed.

To Bypass zones :
Enter [*],[1] - The Bypass light will start flashing

Enter [zone number to be bypassed], the zone light will come on to indicate that the zone is Bypassed. To remove a Bypass, enter the zone number and the zone light will go out. Continue entering the zone numbers for the zones you wish Bypassed. PRESS [#] TO RETURN TO READY.

To Recall Bypassed zones: Enter [*],[1],[9],[#]

This command will recall the last zone or group of zones that were Bypassed. If the same group of zones are Bypassed regularly, the Bypass recall feature can be used instead of bypassing zones individually.

Bypass Disable:
The EN1550 can be programmed by the installer to prevent certain zones from being Bypassed by the user. Lights for these zones will not come on in response to the Bypass command. See the "Zone Bypass Mask" instruction in the installer programming section [16], page 14.

TROUBLE DISPLAY - [*],[2]
The EN1550 continuously monitors a number of trouble conditions. If one of these conditions occur, the keypad Trouble light will come on and the buzzer will sound two short beeps every 10 seconds. To silence the buzzer, press the [#] key. The buzzer will stop but the Trouble light will remain on until the Trouble condition is cleared. See the Programming Guide section [10], page 13, Maintenance Alarms & Restorals for a list of those zones that can be transmitted to the monitoring station.

To view the Trouble condition, Press [*] then [2]. The zone light indicates the type of trouble.

Zone Light
[1] LOW BATTERY... If the Battery voltage is low, disconnected or the battery fuse is blown, a Trouble will be displayed and can be reported.
[2] LOSS OF AC POWER - On loss of AC power, the Trouble light will come on immediately but the keypad buzzer will not sound. The keypad buzzer will sound if AC power remains off and the battery reaches a low voltage. The delay before transmitting AC Fail can be programmed from 1 to 99 minutes. See Programming Section [17], page 14.
[3] FUSE FAILURE - BELL/SIREN OR AUX. OUTPUT
A trouble is displayed if the Bell/Siren fuse is open. If the Aux. output fuse fails, it will not be displayed but will be transmitted if programmed to do so.
[4] UNSUCCESSFUL COMMUNICATION ATTEMPT - If the Digital Communicator is unsuccessful at communicating with the monitoring station after 8 attempts to each phone number that is tried, a Trouble is generated. See section [25] Communication Variables. If a later attempt at communication is successful, the Trouble is cleared. The trouble can also be cleared by pressing the [#] key to Exit the trouble view mode.
[5] FIRE ALARM CIRCUIT TROUBLE - An open circuit on the zone programmed as a Fire loop will initiate a Trouble. See Zone Definitions section [11], page 13, for Fire loop zone assignment.
[6] LOSS OF TIME ON SYSTEM CLOCK - When the EN1550 is powered up or reset, the internal time of day clock needs to be reset to the correct time. This Trouble is cleared after entering the Trouble view mode then pressing [#] to exit. The Trouble will also be cleared on any attempt to set the time of day. See [*],[6], page 9, User Function Command for setting the clock. PRESS [#] TO RETURN TO READY NOTE: A trouble will not be generated if both the Test Transmission and Auto-Arm times are not programmed with valid times.

NOTE: If [9] is pressed while in the Trouble Display Mode, the most recent trouble will be displayed on the zone lights. This Trouble Memory is most useful as a diagnostic tool when installing and servicing the EN1550.
ALARMS MEMORY DISPLAY - [*],[3]
Alarms caused during the previous Armed period are stored in memory. To view these alarms, Press the [*] then [3] keys. The Memory light will flash and the alarm(s) will be displayed on the flashing zone light(s).

In addition to the last alarm memory there are two history levels. After entering the memory mode, pressing any key, [0-9], will display the two other levels of alarm history. Each time a key is pressed, the keypad will beep 1, 2 or 3 times to indicate which level of history is being viewed.

When the panel is Armed, and if there is an alarm in the 1st level, the 1st level is cleared and the contents moved to the 2nd level. The 2nd level contents are moved to the 3rd level and the 3rd level contents are discarded. The memory light will only be ON if there was an alarm during the previous Armed period. PRESS [#] TO RETURN TO READY

DOWNLOADING CALLUP COMMAND - [*],[4]
The [*],[4] command is used to initiate a call to the downloading computer so that the panel can be accessed by the computer. This command must be enabled in section [14], 3rd system option code, zone light 2. Sections [26], [27] and [28] must be programmed with the downloading computer's telephone number, the downloading access code and the panel identification code. Note: The [*],[4] command can be programmed to require a User Code if section [14] light 4 is turned on. e.g. [*],[4][User Code]

USER PROGRAMMING COMMAND - [*],[5]
The [*],[5] Programming Command, allows the user to program Security Codes 2 through 6. The 1st Security Code is the Master Code and the installer may choose to not allow the user to program this code. See section [13] light 2 on page 14. The factory default for the Master Security Code is 1234.

Programming Security Codes:
Press [*],[5],[Master Security Code] to enter the Security Code programming mode. As soon as this command is entered, the *Memory, Bypass & Trouble* lights will begin to flash. The default Master Security Code is [1234]. The zone lights are used to indicate the program status of the 6 Security codes.

Zone Light.........Security Code Status
OFF....................That Code is not programmed
ON STEADY.........That Code is programmed
FLASHING...........That Code is being programmed

Upon entering this programming mode, the 1st zone light will be on steady to indicate that the Master Security Code is programmed with the Factory Default Code. The Master Code may be changed here or in section [21] on page 15, if the installer chooses to disable user changing of the Master Code.

Changing or Adding a Code:
Enter [*],[5],[Master Security Code]
Press the key of the Code you wish to ADD or CHANGE, e.g. If you press [2] then zone light 2 will Flash to indicate that you are programming CODE #2.
Enter the new 4 digit code. DO NOT press the [#] or [*] keys. After the 4 digits are entered, the keypad sounder will beep 3 times and the zone light will come on steady. If you are changing an existing code, the new code will simply replace the old one.

If you wish to program another code, press the key number for the code to be programmed and enter the 4 digit code. PRESS THE [#] KEY TO RETURN TO READY

Erasing a Code:
Enter [*],[5],[Master Security Code]
Press the key of the code you wish to erase. The zone light for that code number will flash. Enter [****].

NOTE: THE MASTER SECURITY CODE CANNOT BE ERASED
PRESS THE [#] KEY TO RETURN TO READY

If the Master code is forgotten and the panel is left Disarmed, program a new Master Code using the [*],[8],[Installer's Code],[21] command or use the 2nd Master Code to reprogram the Master code.

EEPROM RESET - If the Master Code is forgotten and the panel was left Armed, see Programming Section [30], page 15, for Software and Hardware methods of resetting the panel to the Factory Default condition. Reset is not necessary if the 2nd Master Code is programmed. (see above)

USER FUNCTIONS COMMAND [*],[6]
This function is used to set the System Clock time as well as toggle a number of system functions. As soon as the command is entered, the Memory, Bypass & Trouble lights will start to flash.

Enter [*],[6],[Master Code],[Number from list below]
[1] System 24 Hr. Clock (Enter HH:MM)
[2] For future use
[3] For future use
[5] For future use
[6] Door Chime Enable/Disable
[7] For future use
[8] Bell Test Function
[9] For future use
[0] Installer's test (turn off after use)
   (This function turns off automatically on Arming.)

NOTE: The System Clock is a 24 Hr. clock and times must be entered as two digit numbers.

            e.g. HH - 01,02........10,11......23,24
            MM - 01,02........35,36......58,59

8:05 AM would be entered as 0805
1:30 PM would be entered as 1330

Items 0, 4 & 6 turn ON and OFF various features. When the item key is pressed and the feature is being turned ON, the keypad sounder will beep 3 times. If the feature is being turned OFF the sounder will give one long beep.


SETTING THE CLOCK - [*],[6],[MASTER CODE],[1]
Setting the system 24 Hr. clock tells the system the correct time of day. If the system is without power (AC and Battery), it cannot continue to keep time. When the panel is first powered up or has been without both AC and Battery power, the System Clock must be reset. If the time needs to be reset, a Trouble #6 will be indicated on the Keypad. (See [*],[2] System Trouble Display) Trouble # 6 will not be generated if the Transmission test time and Auto-Arm time are not programmed with a valid time. (9999 in these positions disables these features - section [19], page 15)

QUICK-ARM - ON/OFF [*],[6],[MASTER CODE],[4]
Pressing [4] while in the User Function Command mode will Enable (3 beeps) or Disable (one long beep) the Quick-Arm feature. With this feature enabled, the panel can be Armed by simply entering [*],[0]. The Closing Code transmitted for Quick-Arm is the same as the code programmed for the Master Code.
DOOR CHIME - ON/OFF [*], [6], [MASTER CODE], [6]
Pressing [6] while in the User Function Command mode will Enable (3 beeps) or Disable (one long beep) the Chime feature. With this feature enabled, the keypad sounver will beep 5 times each time any zone defined as a delay or instant circuit, opens or closes. The Door Chime feature does not operate on other zone definitions. Zone Bypass may be used to eliminate beeping on zones where it is not wanted. The Door Chime feature functions only while the panel is in the Disarmed mode.

INSTALLER'S TEST - ON/OFF [*], [6], [MASTER CODE], [0]
Pressing the [0] key while in the User Function Command mode will Enable/Disable the Installer's Test function. This feature facilitates final testing of the system and when Enabled, the Bell/Siren will operate for 2 seconds each time a zone is put into Alarm. Each zone should be tripped individually to avoid confusion about which zone originates the alarm. To exit the Installer's Test mode, Arm then Disarm the panel.

NOTE: The communicator will transmit all alarms and restorals. Disable the communicator if this is not desired. (section [12] light 1)

BELL TEST - [*], [6], [MASTER CODE], [8]
Pressing [8] while in the User Function Command mode will sound the Bell/Siren, the keypad sounver and turn on all the keypad lights for 2 seconds.

UTILITY OUTPUT COMMAND - [*], [7] OR - [*], [7], [USER CODE]
The Programmable Output (PGM terminal) can be programmed for activation by a keypad command. This output can be used to operate other devices such as door openers, special lighting, door strikes or to reset smoke detectors. (see Programming section [24], page 16, item 2, 3, or 4 for functions that are controlled by the [*], [7] keypad command) Depending on the option chosen, the [*], [7] command may or may not require a subsequent User Code.

When the correct command is entered, the keypad sounder and the PGM output will operate for 5 seconds.

INSTALLER'S PROGRAMMING COMMAND - [*], [8], [INSTALLER'S CODE]
The EN1550 is completely programmed from the keypad by using commands in the [*], [8] section. These commands are described in detail in the programming section of this manual. The default Installer's Code is [1550]

ARMING WITHOUT ENTRY DELAY - [*], [9], [USER CODE]
Entering [*], [9] before the Arming Code Arms the panel without the Entry Delay on Delay zones & interior "Home-Aways" are automatically bypassed.

When armed using the [*], [9] command, the Armed light will flash to remind the user that the system is Armed without the Entry Delay. This command allows the user to remain at home and have an instant Alarm on the Entry doors.

ARMING FOR THE NIGHT - [*], [1] COMMAND
Upon retiring for the night, the user may reactivate the interior "Home-Away" zones that have been Bypassed using the [*], [9] command by entering the [*], [1] command. When this command is entered, the armed light will continue to Flash to remind the user of the Instant door and the Bypass light will go out. The [*], [1] command will not remove the bypass from zones that have been Manually Bypassed.

QUICK-ARM COMMAND - [*], [0]
Entering [*], [0] is accepted as a valid Arming Code if the Quick-Arm feature is Enabled. This command is often used when individuals are required to Arm the system but not Disarm the system. This could be used with home visitors in the case of a residential alarm system or for junior employees and maintenance staff in the case of commercial systems. See instructions in the [*], [6] User Functions Command section, page 6 for Enabling and Disabling the Quick-Arm feature.

KEYPAD ZONES - [F] - [A] - [P]
There are three zones which can be activated with single key entries on the keypad. For the [F], [A] and [P] key to be functional for transmission they must be enabled by the installer by entering the Alarm and Restoral Codes in Programming section [09]

[F]ire Key
Pressing the [F] key and holding it for 1 second will initiate a local Pulsing Alarm and, if programmed, will transmit the alarm to the monitoring station. The keypad buzzer will sound a series of short beeps once the panel has accepted the alarm.

[A]uxiliary Key
Pressing the [A] key and holding it for 1 second will, if programmed, transmit an auxiliary alarm to the monitoring station. There is no local alarm and no keypad beeps will come on when this key function is activated. The keypad buzzer will sound a series of short beeps once the panel has accepted the alarm and another series of beeps will sound upon successful completion of transmission to the monitoring station.

[P]anic Key
Pressing the [P] key and holding it for 1 second will, if programmed, send a transmission to the monitoring station. The alarm signal can be programmed to be Audible or Silent. See Programming section [12], 1st System Option Code, Light 6. If programmed as Audible, the local Bell/Siren will sound steady.

Keypad audible annunciation for the [P] key is programmable, section [14] light 5, for feedback (3 beeps) or silent (no buzzer feedback). If programmed for Audible, the buzzer will sound once the key input is accepted.

PROGRAMMING GUIDE

INTRODUCTION
The EN1550 is fully programmable from the Keypad and uses an EEPROM memory which can be reprogrammed thousands of times. The EEPROM memory will not lose the program data even on total loss of power. The essential information which defines the operation of the control panel and communicator is stored in a section of the EEPROM memory which is accessible using the Installer's programming code or via Downloading. If the Installers' code is forgotten, the EEPROM may be reset to the Factory Default code. See section [30], Reset to Factory Default (page 16).

TO PROGRAM THE EN1550
With the panel in the Disarmed mode, Enter [*], [8], [1550]. The panel can only be programmed while it is in the Disarmed mode. The Default Installer's Code is [1550]. The Installer's Code can be changed. See section [20] New Installer's Code.

Once the Installer's Command is entered the Armed light will come on steady, the "Memory, Bypass & Trouble" lights will flash and the panel is ready to be programmed. NOTE: If no key entry is made for 2 minutes, the panel will return to the Ready mode and the complete Installer's command will have to be entered before programming can be resumed.

With the Armed light on Steady, enter two digits for the section you wish to program. The sections for the 1550 panel go from [01] to [33] and each section can be programmed independently. Section [00] is reserved for Binary programming
which is normally done on instruction from factory technical personnel.

Once the 2 digits for the section you wish to program are entered, the Armed light will go out, the Ready light will go on steady and the keypad sounder will beep 3 times. The Keypad is now ready to accept data for the selected section.

Most sections contain groups of two digit entries and the keypad buzzer will beep twice after each 2 digit group is entered.

When the section is first entered, the first 4 zone lights will indicate, in a Binary format, the value of the first digit in that section. (see Binary display description below) If you wish to change that digit simply enter the new digit. If you wish to keep that digit unchanged you can enter the same number or skip that digit by pressing the 'F' key. Once the first digit has been entered or skipped, the 4 zone lights will display the value of the second digit. After each digit is entered or skipped, the zone lights show the value of the next digit in the Binary format.

When the required data for the section being programmed is completely entered, the keypad sounder will beep several times and the Armed light will come back on to indicate that the expected data has been entered.

At this point, you will still be in the program mode and need only enter the section number for the next section you wish to program.

It is not necessary to program all 2 digit pairs in any given section. A section can be entered and selectively programmed by going only to the digit(s) you wish to change and then pressing [#] to return to the programming section where you can then enter another section for programming. For 2 digit pairs, both digits must be programmed before pressing the [#] key. Only the data entered before pressing the [#] key will be changed in the EEPROM.

PROGRAM DATA REVIEW - Enter the section you wish to review by entering the 2 digit section number. The first four zone LED's will represent the value (Binary format) of the first digit in that section. Each press of the 'F' key will advance the display to the next digit. At the end of the section, the keypad buzzer will beep several times and return you to the program mode where another section can be selected for review or programming. NOTE : Only sections [01] through [11], [20] through [24] and [26],[27],[28] can be reviewed using the above method. Sections [15],[17],[18],[19],[25],[29] & [33] cannot be reviewed.

BINARY DATA DISPLAY

Zone lights 1 through 4 are used to display the value, in Binary format, of the data as shown in the table below.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<td>Zone 1</td>
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</tr>
</tbody>
</table>

- = LIGHT ON  ☐ = LIGHT OFF

* SEE HEX DATA ENTRY INSTRUCTIONS BELOW

ZONE LIGHT DISPLAY

SECTIONS [12],[13],[14],[16],[31],[32]

These sections use the zone lights to indicate which functions are active and which number key to press to turn them on and off. When the section is entered, zone lights 1 to 6 will display which functions are currently on. Pressing the key number corresponding to the zone light number will alternately turn the function on and off and the zone light will follow. All functions can be turned OFF at once by pressing [0]. When the correct selections have been made, press [#] to save the selections in memory and return to the program mode where another section can be selected.

HEX DATA PROGRAMMING

Certain programming entries may require the entry of data in HEX format. HEX numbering uses the digits 0 through 9 and the letters A through F.

The letters A through F are represented by the number keys 1 through 6. To enter data in HEX format, first press the [*] key. The Ready light will Flash. Enter the HEX value then press the [*] key again to return to the normal entry mode. The Ready light will stop flashing.

To Enter 'A' - Enter [*1*]
To Enter 'B' - Enter [*2*]
To Enter 'C' - Enter [*3*]
To Enter 'D' - Enter [*4*]
To Enter 'E' - Enter [*5*]
To Enter 'F' - Enter [*6*]

Enter **BEFORE and AFTER each digit. The last digit in each section does not require the final asterisk to be entered.

The following pages give a complete description of each programming section and the final section is a Programming worksheet where you can record all entries for future reference.

PROGRAMMING SECTIONS - DESCRIPTIONS

[01] 1ST PHONE NUMBER (Communicator)

This is the first telephone number that the Communicator will dial. See section [25] - Communicator Call Direction, page 15. After entering section [01], enter the telephone number the same way you would dial it on a touch-tone telephone. Press [#] after the last digit to complete the telephone number programming.

A second dial tone search, as required in a PBX system, can be added by programming a HEX 'D' between the digits in the phone number where it is required. To enter HEX 'D', press [*] then [4] then [*].

Instead of a dial tone search, a pause of 4, seconds can be inserted between digits in the telephone number.

Enter [*2*] to dial a "*" (HEX 'B')
Enter [*3*] for a 4 second pause (HEX 'C')

The total number of digits, including dial tone searches and pauses must not exceed 16. Remember, press [#] to complete entry of the telephone number.

Enter two digits to program another section.

[02] 1ST ACCOUNT CODE (Communicator)

The 1st Account Code is always transmitted to the 1st telephone number to identify the customer. Enter a 4 digit number. If the HEX digits A to F are required, remember to enter **BEFORE and **AFTER the digit entry.

Where a zero digit is required in the account code, enter HEX 'A' ('*1*') to transmit 10 pulses which will be interpreted as a zero by the monitoring station receiver.

If a three digit code is required, as in 3/1 formats, enter [0] as the LAST digit. The [0] represents a null digit...no pulses transmitted.
[03] 2ND PHONE NUMBER (Communicator)
This is the second telephone number to which the communicator will dial. See [01] for programming instructions.

[04] 2ND ACCOUNT CODE (Communicator)
The second account code is always transmitted to the 2nd telephone number. See [02] for programming instructions.

REPORTING CODES [05] TO [10]
These sections are used to program the communicator reporting codes. A reporting code is transmitted along with the account code with each transmission. If the reporting codes are not programmed, no transmission will be sent when an event takes place. (i.e. Alarm, Restoral, Opening/Closing, Trouble, etc.) To prevent a transmission from being sent for any event in the following sections, leave it unprogrammed or enter [00] as the reporting code.

Section [05] and [06] each have 6 reporting codes. Sections [07],[08], and [10] each have 7 reporting codes while section [09] has 8 reporting codes. Once a section is entered the system expects a series of two digit numbers to be entered. The keypad beeps twice and the Armed light flashes after each two digit entry. After the last two digit number is entered, programming of the current section is complete. The keypad gives a series of beeps, the Ready light goes OFF and the Armed light goes ON. The keypad is then ready to accept the next 2 digit section number for programming.

When changing reporting codes in a section, you can scroll to the code you wish to change by pressing the 'F' key. Only codes actually changed will be altered in the EEPROM. Press [#] to exit from the programming sequence.

[05] ZONE ALARM REPORTING CODES
Once section [05] is entered, the panel expects 6 two digit numbers for the Alarm Reporting Codes for zones 1 to 6. These codes are used by the communicator when there has been an Alarm on zones 1 to 6.

Listed below are several programming examples and the resulting transmission using different formats for the reporting codes. Obtaining different formats requires entering data in the Account Code section, [02] or [04], the Reporting Code sections, [05] to [10] and the Communicator Format section [23].

3/1 FORMAT - EXTENDED REPORTING
REQUIRES:
• 3 digit Account Code in section [02] or [04]
  i.e. enter 1230 for account code 123
• Format Code [0],[1],[2],[3],[4] depending on receiver type in section [23]
• Single line digit Alarm Reporting Code section [05]
  i.e. enter [30] for single digit code 3 (0=no pulses)
• TRANSMISSION SENT : 123 3

4/2 FORMAT - NON-EXTENDED REPORTING
REQUIRES:
• 4 digit Account Code in sections [02] or [04]
  i.e. enter [1234] for Account Code 1234
• Format Code [0],[1],[2],[3],[4] depending on receiver type in section [23]
• Two digit Alarm Reporting Code in section [05]
  i.e. enter [31] for two digit code 31
• TRANSMISSION SENT : 1234 31

If a transmission is not wanted for a particular reporting code, then enter '00' or 'FF' to disable that reporting code.

[06] ZONE RESTORAL REPORTING CODES
These reporting codes are used by the communicator to transmit zone restorals for zones 1 through 6. Use instructions in section [05] above as a guide for programming.

[07] CLOSING (ARMING) REPORTING CODES
PARTIAL CLOSING REPORTING CODE
Reporting codes 1 to 6 are used to identify Closings for Access Codes 1 to 6. If Partial closing is identified in section [14] then Alarm codes for manually Bypassed zones will be transmitted when the system is closed with one or more zones Bypassed.

When transmitting in 4/2, 3/1 or any other of the extended formats, see section [05] above. The 6 closing codes are programmed as follows:
[C1],[C2],[C3],[C4],[C5],[C6] - Where the first digit HEX 'C' represents a closing signal and the second digit represents the User Access Code which was used to Arm the system. (HEX 'C' could be any other number depending on what is used at the monitoring station)

The Closing Code transmission takes place after the Exit Delay time. Therefore, if the system is Armed and Disarmed before the expiry of the Exit Time, no closing transmission will take place.

The Partial Closing Code, if used, is transmitted in tandem with the regular Closing Code to identify the closing as a Partial Closing.

When the system has been Armed using the Quick-Arm, command, ["], or using the Auto-Arm feature, User Code # 1 will be transmitted.

[08] OPENING (DISARMING) REPORTING CODES
AFTER ALARM REPORTING CODE
The first 6 Reporting Codes correspond to the 6 User access Codes. When the system is Disarmed, using one of the Access Codes, the corresponding Reporting Code in this section is transmitted.

See section [07] above for examples of Reporting Code programming.

If the After Alarm Code is programmed, that code will be transmitted to the monitoring station on Opening if an Alarm occurred during the previous Armed period. This feature is useful for installations where Openings and Closings are not reported normally but it is desired to have a report to the monitoring station on Opening if an Alarm did occur during the previous Armed period. This feature allows the monitoring station to know when the user is on the premises and available to receive a report about Alarms that occurred while the system was closed.
[09] PRIORITY ALARMS & RESTORALS
These Reporting codes are used by the communicator to transmit the following list of Troubles/Alarms and Restorals. See section [05] as a guide to programming.
- Fire loop Trouble
- Keypad [P]anic Alarm
- Keypad [F]ire Alarm
- Keypad [A]larmy Alarm
- Fire loop Trouble Restore
- Keypad [P]anic Restore
- Keypad [F]ire Restore
- Keypad [A]larmy Restore
Transmission for operation of the 'F', 'A' and 'P' keys will only take place if the appropriate sections in [09] are programmed with a Reporting Code.

[10] MAINTENANCE ALARMS & RESTORALS
These Reporting Codes are used by the communicator to transmit the following list of Alarms and Restorals. See section [05] as a guide to programming.
- Low Battery Alarm
- AC Failure Alarm
- Fuse Failure Alarm
- Low Battery Restore
- AC Failure Restore
- Fuse Failure Restore
- Automatic Test Code (Test code is not transmitted if periodic Downloading is selected.....section [14] light 3, page 14). For Automatic Test Code Reporting, the time between reports (in days) must be entered in section [17] and the time of day for the report must be entered in section [19], page 15.

As in the Reporting Codes sections, once this section is entered, 6 two digit numbers are required. Each two digit number entered defines how a zone will operate.

DIGIT # 1
The first digit determines whether the zone will cause a Silent Alarm or an Audible Alarm and whether the zone response will be Fast or Slow. Loop response time can be programmed in section [17] and can be set from 10 msec. to 990 msec. The Factory Default loop response time is 500 msec. If set at Fast, the loop response time is 10 msec and, if set at Slow, the loop response time is 500 msec or whatever time is set in section [17].
- [0] = SLOW & AUDIBLE
- [1] = SLOW & SILENT
- [2] = FAST & AUDIBLE
- [3] = FAST & SILENT

DIGIT #2
Digit # 2 determines the Zone Type, [0] through [8] as described below.
- [0] = STANDARD DELAY LOOP - This loop has an Entry and Exit Delay and is normally used for Entry/Exit doors. The Exit Delay starts as soon as the panel is Armed. The loop may be Opened and Closed during the Delay Time without causing an Alarm. After the Exit Delay Time has expired, opening the loop will start the Entry Delay Timer. During the Entry Delay Time, the keypad buzzer will sound steadily to advise the user that the system should be Disarmed. If the panel is Disarmed before the Entry Time expires, no Alarm will be generated.

The Default times for this type of loop are a 30 second Entry Delay and a 45 second Exit Delay. The Entry and Exit Delays may be independently programmed in section [17] for periods from 1 second to 99 seconds. All loops programmed as type [0] will have the Entry and Exit delays as programmed in section [17] or the default times if section [17] is not programmed.
- [1] = INSTANT LOOP - The instant loop is normally used for door and window contacts and has the standard Exit delay but is instant when opened after the Exit Delay expires. The Exit Delay will be the default time of 45 seconds or the time as established in programming section [17].
- [2] = INTERIOR LOOP - This loop is normally used with interior motion detectors and has the standard Exit Delay time. The loop also has the standard Entry Delay time provided that a Delay loop has been tripped first. If the premises are entered without coming through a "delay" entrance, and a type [2] loop is tripped, an immediate Alarm will be generated.
- [3] = INTERIOR HOME/AWAY LOOP - This loop operates the same as the type [2] loop with the following exception. If the system is armed and the delay loop is NOT tripped during the Exit Delay time, the type [3] loop will be BYPASSED. Instead of the interior portion of an interior Home-Away loop, a Home-Away loop can have a delay equal to the standard entry delay when section 32, light 3 is on. This will affect all Home-Away zones when they are not bypassed by *1, *9 arming, or by arming and not leaving the premises. If Home-Away zones are automatically bypassed or *9 arming bypassed and the user then goes *1, the Home-Aways will then have a delay.
- [4] = 24 HR. BELL LOOP - This type of loop is active at all times and will create an Alarm if the panel is Armed or Disarmed. This loop will always activate the Bell/Siren output.
- [5] = 24 HR BELL/BUZZER - Operates as the Type [4] except the Bell/Siren output is activated only when the panel is Armed and only the keypad buzzer is activated while the panel is Disarmed.
- [6] = 24 HR BUZZER - Operates as the Type [4] except only the Buzzer will be activated in the Armed or Disarmed mode.
- [7] = AUX. DELAY LOOP - This loop operates the same as the Type [0] loop except the Entry/Exit times can be independently set in section [18]. This loop type is useful when a loop with an Entry and/or Exit time is required that is different from the Standard times as established for Type [0] zones in section [17]. If section 32, light 5 is on it will enable the system to be armed even if the Aux delay loop is open(READY LIGHT ON). Also, the system can be armed with the Aux delay loop closed and then it can be opened before the Aux exit delay had expired. In both cases the Aux delay loop will not become active until both the Aux exit delay has expired and the loop is closed.
- [8] = FIRE LOOP - Although a common fire signal is reported, any number of the 6 zones may be programmed as a Fire loop. A Fire loop is a Supervised (N.O. alarm initiating contacts), end-of-line resistor circuit designed to accept Latching four-wire smoke detectors. See the Fire circuit installation drawing.

On Alarm, Fire loop shorted, the Bell/Siren will pulse to indicate that a Fire loop has been activated. Transmission by the Digital Communicator is delayed 30 seconds. If the alarm is acknowledged before the 30 second delay has expired, pressing the [#] key will silence the alarm and abort the transmission. If the Alarm is NOT acknowledged within the 30 second period, transmission will proceed and cannot be aborted. If the Alarm has been silenced and ALL smoke detectors are not restored to normal, the Alarm will resound after 90 seconds and 30 seconds after that, the communicator will transmit. If the Alarm resounds, it may again be silenced using the [#] key and the communicator transmission will be
aborted if the Alarm is silenced within the 30 second transmission delay period.

To restore the Smoke Detectors to normal, clear all products of combustion from the detectors and perform a reset by pressing the [*] then [7] keys. See section [24] for programming the PGM terminal for smoke detector reset. Pressing [*], [7] will remove power from the smoke detectors for 5 seconds and if the detectors are clear of smoke, they will return to normal. If the detectors still have smoke in them, the Alarm will resound and the sequence described above will repeat.

For an Open on any loop programmed for Fire, the Trouble light will come on and the keypad sounder will beep every 10 seconds. The keypad trouble buzzer will sound and the trouble light will come on regardless of whether the panel is Armed or Disarmed. The communicator will transmit the Trouble condition if programmed in section [09]. The audible Trouble may be silenced by pressing the [#] key. The trouble light will only go out when ALL Fire loop troubles are cleared. To determine the type of Trouble, press [*],[2].

DIGIT #2 SUMMARY:

| 0 | Standard Delay Loop |
| 1 | Instant Loop |
| 2 | Interior Loop |
| 3 | Interior...Home/Away Loop |
| 4 | 24 Hr.....Bell Loop |
| 5 | 24 Hr.....Bell/Buzzer Loop |
| 6 | 24 Hr.....Buzzer Loop |
| 7 | Aux. Delay Loop |
| 8 | Fire Loop |

[12] 1ST SYSTEM OPTION CODE

The 1st System Option Code is set using the zone lights as shown in the table below. Once section [12] is entered, the 6 zone lights will indicate the status of each option. Press a number key corresponding to the zone light number to turn the option ON or OFF. Pressing key [0] will turn all the zone lights OFF and the options will be set as shown against "Light Off".

Zone Light

| 1 | ON = Communicator Disabled |
| 2 | *OFF = Communicator Enabled |
| 3 | *ON = Transmission per 24 Hr. Period |
| 4 | OFF = Transmission per Armed Period |
| 5 | *ON = Alarm Display While Armed |
| 6 | OFF = No Alarm Display While Armed |
| 7 | *ON = DTMF Dialing** |
| 8 | *OFF = Pulse Dialing |
| 9 | *ON = N.C Loops (Except Fire Loops) |
| 10 | OFF = End-of-Line Resistor Loops |
| 11 | *ON = Keypad [P]anic Audible |
| 12 | OFF = Keypad [P]anic Silent |

* Factory Default Settings
** DTMF dialing will default to PULSE dialing after 2 unsuccessful DTMF dialing attempts.

[13] 2ND SYSTEM OPTION CODE

Use the same method of programming as section [12]

| 1 | *ON = Call 1st Phone number Only |
| 2 | OFF = Call 1st Phone Number with Backup to 2nd Phone Number |
| 3 | *ON = Master Not User Changeable |
| 4 | OFF = Master Code User Changeable |
| 5 | *ON = Bell Squawk Enabled** |
| 6 | *OFF = Bell Squawk Disabled |
| 7 | *ON = PC16OUT Module Enabled |

[14] 3RD SYSTEM OPTION CODE

Use the same programming method as section [12]

| 1 | ON = User Code Required for Bypass |
| 2 | *OFF = User Code Not Required for Bypass |
| 3 | *ON = Enable [*],[4] Downloading Call Feature |
| 4 | OFF = Disable [*],[4] Call Feature** |
| 5 | ON = Periodic Downloading** |
| 6 | *OFF = Periodic Test Transmission |
| 7 | *ON = [*],[4] Requires a User Code |
| 9 | *ON = [P]anic key Has Keypad Audible Feedback |
| 10 | *OFF = [P]anic key No Keypad Audible Feedback |
| 11 | ON = Partial Closings Identified**** |
| 12 | *OFF = Partial Closings Not Identified |

* Factory Default Settings
** The [*],[4] Command can be enabled so that using this command the User or on-site Installer can initiate a Call to the Downloading Computer.

*** The panel can be enabled to periodically call the Downloading Computer. The cycle time (in days) for the call is set in section [17] and the time of day for the call is set in section [19]. The automatic call to the Downloading Computer can be used to Update the panel program and/or to Upload status information from the panel.

**** If Partial Closings are enabled as identified, then alarm codes for the bypassed zones will be transmitted.

[15] COMMUNICATION VARIABLES

Once this section is entered, two 2 digit numbers are expected. Do not press the [#] key while entering data. The first two digit number defines the number of attempts (Alarm & Restoral pairs) per zone that the Communicator will make before it shuts down for that zone. (Swinger Shutdown) The number of attempts is for the period as defined in the 1st System Option Code Section, zone light # 2. The number of attempts may be programmed from '00' to '99' where '00' means the communicator will never shut down. The fire zone can not be shutdown, it always transmits. The second two digit number defines the delay before transmission. This Delay is for zones defined as Burglary zones only. 24 hr. loops or the Fire loop will not be delayed. The time may be programmed from '00' to '99' seconds where '00' means no delay.

[16] ZONE BYPASS MASK

Use the same method of programming as used in section [12]. If the zone light is ON, the zone can be Bypassed, if OFF, it cannot be Bypassed using the [*],[1] command. The Fire zone cannot be Bypassed.

[17] SYSTEM TIMES

There are 6 System Times which can be programmed in this section and each entry requires a two digit number. Do not press the [#] key during data entry.

[2] Exit Delay Time (01 to 99 seconds) - This entry determines the STANDARD Exit Delay Time. The Factory Default Exit Time is 60 seconds. For Zone Definitions see section [11], page 12.

[3] Bell Cut-Off Time (01 to 99 minutes) - This entry determines the time the Bell/Siren will sound before automatically turning off. The Factory Default Bell Cut-Off Time is 6 minutes.

[4] AC Fail Transmission Delay (01 to 99 minutes) - This entry determines the time before the communicator will transmit an AC failure report. The Factory Default is 15 minutes.

[5] "Slow" Loop Response Time (01 to 99) x 10 msec) - This entry determines the 'SLOW' loop response time and provides times from 10 msec to 990 msec. The Factory Default 'SLOW' loop response time is 750 msec. NOTE: The 'FAST' loop response time is fixed at 10 msec. See section [11] Zone Definitions, page 13.

[6] Test Transmission Cycle Time (01 to 99 Days) - This entry determines the frequency, in days, of the Test Transmission either via the Communicator or by calling the Downloading Computer. See section [14] 3rd System Option Code, Light # 3 above. The factory default value is 30 days.

[18] AUX DELAY LOOP TIMES

This section requires 2 three digit entries to establish the Auxiliary Entry and Exit Delay times. Do not press the [#] key during data entry. The Entry default time is 255 seconds and may be changed to any time from '000' seconds to '255' seconds. The Exit default time is 30 seconds and may be changed to any time from '000' seconds to '255' seconds.


[19] SYSTEM CLOCK TIMES

This section requires 2 four digit entries to set the Test Transmission Time of Day. Do not press the [#] key during data entry. Factory default for both times is '9999', that is, NO Test Transmission will take place even if that function is enabled. VALID times must be entered in this section before this feature will function.

The System Clock is in Military time. Two digits from '00' to '23' are entered for the hour of the day and two digits from '00' to '59' are entered for the minute of the hour.

Test Transmission or Periodic Downloading is selected in section [14] 3rd System Option Code, Light 3 and the cycle time in days, for the Test Transmission or Periodic Downloading is set in section [17] System Times. For a Test Transmission using the Communicator, an Automatic Test Code should be entered in section [10]. For Periodic Downloading or a Test Transmission using the communicator, a VALID Transmission Time must be entered in section [19].

NOTE: Upon power up, if the Test Transmission time has a valid time entered, then a loss of time trouble for the system clock will be initiated. Enter [•],[•] to view the trouble. Light 6 will be on. If the Test Transmission does not have a VALID time, then the setting of the System Clock does not matter.

[20] NEW INSTALLER'S CODE

[21] NEW MASTER CODE

[22] 2ND MASTER CODE

Once the section number has been entered [20],[21] or [22], enter a new 4 digit code. Only use digits 0 through 9 as code numbers. Do not press the [*] or [#] keys. If an error is made entering the code, complete entry of the 4 digits then enter the section number again to enter the correct code. Do not press [*] or [#] while entering the code.

[23] COMMUNICATION FORMATS

This section sets the type of format which will be sent to each of the two telephone numbers programmed in section [01] and [03]. For each telephone number, enter one digit from the list below. See HEX data programming section for digits 'A' through 'F'. The selection for each phone number is determined by the type of receiver being called. Enter the Format number for the 1st telephone number first. It is necessary to program both telephone format numbers even if the first phone number is the only one being used. Select from the following options.

[0] SILENT KNIGHT/ADEMCO SLOW, 10 BPS (1400 Hz HANDSHAKE), 3/1, 3/2, 4/1, AND 4/2 NON-EXTENDED FORMAT

[1] SESCOA, FRANKLIN, DCI, VERTEX, 20 BPS (2300 Hz HANDSHAKE), 3/1, 3/2, 4/1 AND 4/2 NON-EXTENDED FORMATS

[2] SILENT KNIGHT FAST, 20 BPS (1400 Hz HANDSHAKE), 3/1, 3/2, 4/1 AND 4/2 NON-EXTENDED FORMAT.

[3] RADIONICS (2300/1400 Hz. HANDSHAKE*), 3/1, 3/2, 4/1 AND 4/2 NON-EXTENDED FORMAT.

[4] RADIONICS (2300/1400 Hz. HANDSHAKE*), 3/1, 3/2, 4/1 AND 4/2 NON-EXTENDED WITH PARITY FORMAT.

[5] DO NOT USE

[6] DO NOT USE

[7] DO NOT USE

[8] SILENT KNIGHT, ADEMCOSLOW, 10BPS (1400 HANDSHAKE) 3/1 EXTENDED FORMAT

[9] SESCOA, FRANKLIN, DCI, VERTEX, 20 BPS (2300 HANDSHAKE), 3/1 EXTENDED FORMAT

[10] SILENT KNIGHT FAST, 20 BPS (1400 Hz HANDSHAKE), 3/1 EXTENDED FORMAT.

[11] RADIONICS (2300/1400 Hz. HANDSHAKE*), 3/1 EXTENDED FORMAT.

[12] RADIONICS (2300/1400 Hz. HANDSHAKE*), 3/1 EXTENDED WITH PARITY FORMAT.

[13] DO NOT USE

[14] DO NOT USE

[15] DO NOT USE

* SEE SECTION [13] FOR RADIONICS HANDSHAKE OPTION.

10 BPS AND 20 BPS FORMATS

10 BPS is the standard slow format used on Silent Knight/Adeanco receivers. DATA = 1900 Hz, KSOSFF = 1400 Hz and SPEED = 10 baud.

20 BPS is the standard fast format used on the DCI/Franklin/Sescoa and Vertex receivers. DATA = 1800 Hz, KSOSFF = 2300 Hz and SPEED = 20 baud.

RADIONICS FORMAT

For conventional Radionics 3/1 format, the communications mode should be set to either Radionics rounds [B] or radionics parity [C]. The extended version of the Radionics format is normally used. The following guidelines are provided to help in configuring the EN1550 for Radionics format.
1. The Customer Account Code must be only 3 digits with a zero making up the 4th digit. (i.e. Enter 1230 to program for an account code of 123)

2. The Zone Alarm Reporting Codes must all be single digit numerical codes with no extended 2nd round being sent. (i.e. Zone 1 = 10, Zone 2 = 20,.....Zone 6 = 60) The zero in the 2nd digit position tells the EN1550 not to send an extended round.

3. All other non-alarm reporting codes must be set up to send an extended 2nd round. The 1st digit of the reporting code is used to identify the event while the 2nd or extended digit is used to associate the event with a particular item. (i.e. A reporting code of E3 means restore zone 3. E for restore and 3 for zone 3)

4. The following is a list of 1st digit identifiers that should be used with the Radionics format:
   • RESTORALS "E"
     EXAMPLE "E3" = RESTORE ZONE 3
   • OPENINGS "B"
     EXAMPLE "B2" = OPENING BY USER 2
   • CLOSINGS "C"
     EXAMPLE "C4" = CLOSING BY USER 4
   • TROUBLES "F"
     EXAMPLE "F5" = TROUBLE FROM SOURCE 5
   • MISCELLANEOUS "O"
     EXAMPLE "O1" = PARTIAL CLOSING

[24] PROGRAMMABLE OUTPUT OPTIONS

( PGM TERMINAL )

The PGM output can be programmed in this section to operate in response to various panel operations. The output pulse connects the PGM terminal to the negative power rail.

[01] GROUND START PULSE - This option provides a 2 second output pulse before dialing begins to obtain the dial tone on Ground Start telephone equipment.

[02] UTILITY OUTPUT, NO ACCESS CODE - When activated by entering the [*],[7], the PGM output will go low for 5 seconds and the keypad buzzer will sound.

[03] UTILITY OUTPUT, ANY ACCESS CODE - The same as [02] above except the command is [*],[7],[Any Valid User Access Code]

[04] 5 SEC. RESET PULSE - When this option is selected, the PGM output is normally LOW. That is, it is just the reverse of all other options which are normally high and go low when activated. This option is normally used as the negative return power for 4-wire smoke detectors. (+ comes from the Aux. + terminal) To activate this output (reset smoke detectors) enter the [*],[7] command. The PGM terminal will go high (open circuit) and thus remove power from the devices connected. The keypad buzzer will sound for the 5 sec. period.

[05] COURTESY PULSE - This option provides an output which follows the Entry and Exit times. It can be used to turn on a courtesy light near the Exit for the duration of the Entry/Exit times.

[06] KEYPAD BUZZER FOLLOW MODE - The PGM output will go low as long as the keypad buzzer is ON for "24 Hr. buzzer zone", "Door Chime", "Entry Delay" & Auto-Arm alert".

[07] SYSTEM STATUS (ARMED/DISARMED) - The PGM output switches to and remains at ground as long as the panel is Armed. The output goes high (open) while the panel is Disarmed.

[08] STROBE OUTPUT (LATCHED ALARM OUTPUT) - The PGM switches to ground on an Alarm and remains low until the panel is Disarmed. It can be used to indicate that an Alarm has occurred prior to entering the premises.

[09] FAILURE TO COMMUNICATE - The PGM output switches to ground if the system fails to communicate after 8 attempts to each phone number that will be tried according to the communicator call direction options. The output remains low until a successful communication takes place or until Trouble #5 is cleared from the keypad. This option can be used to tie two systems together so that if one fails to communicate the other system will report the failure.

[25] COMMUNICATOR CALL DIRECTION This section requires four single digit entries using digits 0 to 3 only. This section defines how the communicator will call the telephone numbers programmed in sections [01] and [03].

ZONE ALARMS & RESTORALS
ACCESS CODES OPENINGS & CLOSINGS
PRIORITY ALARMS & RESTORALS
MAINTENANCE ALARMS & RESTORALS

Enter ONE digit for each of the above categories from the list below. Factory Default = 1 for all 4 code groups.

[0] Disables the function (no transmission for the group)

[1] Call 1st Phone Number and Backup to the 2nd Phone Number when section [13] light 1 is set to OFF and the panel has made 8 unsuccessful tries on phone #1.

[2] Call the 2nd Phone Number Only


If the [#] key is pressed during data entry you will be returned to the installers programming mode and data for this section will NOT be saved.

[26] DOWNLOADING TELEPHONE NUMBER

This telephone number is used by the panel to call the Downloading Computer when a request to call is made by entering [*],[4] or for an Auto-Download. See section [14] 3rd System Option Code, page 14 lights 2 & 3. See section [01], 1st Phone Number, page 11 for instructions on programming the Downloading telephone number.

[27] DOWNLOADING ACCESS CODE

This 4 digit code allows the panel to confirm that it is communicating with a valid Downloading Computer. Enter 4 digits using the numbers 0 through 9 only. The Factory Default code is [1515].

[28] PANEL IDENTIFICATION CODE

This 4 digit code allows the Downloading Computer to confirm the identity of the control panel. Enter 4 digits using the numbers 0 through 9 only. The Factory Default code is [1501].

[29] NUMBER OF RINGS BEFORE ANSWERING

Section [29] is used to set the number of rings before the panel will pickup and answer the call. See section [31] below for information on the panel when used with an answering machine on the same line.

[30] RESET TO FACTORY DEFAULT (software)

Entering [30] will perform a Software Reset to the Factory Default values. Once this command is entered, the keypad buzzer will beep several times. The trouble LED will be on during the reset sequence.
**NOTE:** HARDWARE RESET
If the Installer's code is forgotten, and a software reset cannot then be performed, the panel can be reset to the Factory Default values with the following method.
1. Remove all power, AC & Battery, from the panel.
2. Short the pads on the panel labeled EEPROM. RESET
3. While maintaining the short, power up the panel and wait for at least 10 seconds before removing the short.
4. Upon removal of the short the keypad buzzer will beep and the panel will be reset to the Factory Default values.

**[31] 4TH SYSTEM OPTION CODE**
Use the same programming method as section [12]

Zone Light
1. *ON = Enable to answer a call from a Downloading Computer
   OFF = Disable (cannot answer downloading call)
2. ON = Enable callback to Downloading computer
   *OFF = Disable callback
3. *ON = Enable answering machine over-ride
   OFF = Disable answering machine over-ride
4. *On = Show Bypass status while Armed or Disarmed
   OFF = Show Bypass status while Disarmed only
5. ON = Set for AC=50 Hz.
   *OFF = Set for AC=60 Hz.
6. *ON = Restore on bell time out (if zone is restored)
   OFF = Restore as follower (when zone restores)

**DOWNLOADING & ANSWERING MACHINE**
If zone light [3] is on and the panel is called for 1 or 2 rings only and then called back within a variable time from 1 to 249 seconds (this time is set in section 33), the panel will then answer the second call on the first ring.
If zone light [3] is OFF, it is assumed that there is no answering machine connected to the telephone line and the panel will capture the line after the set number of rings.
If zone light [3] is OFF and an answering machine is connected and is set to answer before the panel, the panel will be unable to receive a call from the Downloading computer. If the panel is set to answer before the answering machine, the answering machine will be unable to receive incoming calls.

**[32] 5TH SYSTEM OPTION CODE**
Use the same programming method as section [12]

Zone Light
1. *ON = Enable automatic drop down**
   OFF = Disable automatic drop down
2. ON = For future use
   *OFF = For future use
3. *ON = Home-Away zones will have an entry delay
   upon being tripped
   OFF = Home-Away zones act as interior when tripped
4. ON = For future use
   *OFF = For future use
5. *ON = Aux delay loops can be force armed
   OFF = Aux delay loops cannot be force armed
6. *ON = All zones except fire will be shunted for 60 seconds upon power up
   OFF = All zones are active upon power up

**AUTOMATIC COMMUNICATION DROP DOWN**
This feature is only used with the 480BPS communication formats (section [23] 3, 4, B & C). When enabled, if an unsuccessful attempt is made to the monitoring station, the system will automatically drop down to an equivalent 20BPS mode for the remaining attempts.

**[33] ANSWERING MACHINE DOUBLE CALL TIMER**
This timer sets the amount of time that can be taken between calls when using the answering machine Over-Ride. See section [31] light 3.

**[90] INSTALLERS LOCKOUT ENABLE**
This feature is enabled by entering [90] while in the Installers programming mode. A factory default (hardware or software) will not reset the installers code or the download access code once this feature is enabled. A panel that has this lockout feature enabled will give a distinctive audible indication upon power up. This indication is the phone line relay clicking ten times. Make sure that your new installers code has been entered correctly before enabling this feature because there is no way of re-entering the programming mode without the new installers code. Even a factory default will not change the installers code back to default.

**[91] INSTALLERS LOCKOUT DISABLE**
Entering [91] when in the installers programming mode will disable the installers lockout feature.

**NOTICE:** Panels returned to DSC with the installers lockout feature enabled and no other apparent problems will be subject to an additional service charge.
PROGRAMMING WORK SHEET

[01] 1ST PHONE NUMBER

Enter [0] for the digit 0 in the phone number
Enter [*4*] (HEX D) for additional dial tone detection between phone number digits as in local PBX systems
Enter [#] to end the phone number entry

[02] 1ST CUSTOMER ACCOUNT CODE

Enter [*1*] (HEX A) for digit 0 in the account code
For a 3 digit code, Enter 0 for the 4th digit

[03] 2ND PHONE NUMBER

[04] 2ND CUSTOMER ACCOUNT CODE

[05] ZONE ALARM REPORTING CODES

<table>
<thead>
<tr>
<th>ZONE 1 ALARM</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZONE 2 ALARM</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>ZONE 3 ALARM</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>ZONE 4 ALARM</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>ZONE 5 ALARM</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>ZONE 6 ALARM</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

NOTE: FOR SINGLE DIGIT REPORTING CODES
ENTER [0] AS THE 2ND DIGIT
ENTER [*1*] (HEX A) TO TRANSMIT A 0
(A ZERO IS 10 PULSES)

[06] ZONE RESTORAL REPORTING CODES

<table>
<thead>
<tr>
<th>ZONE 1 RESTORE</th>
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<tbody>
<tr>
<td>ZONE 2 RESTORE</td>
</tr>
<tr>
<td>ZONE 3 RESTORE</td>
</tr>
<tr>
<td>ZONE 4 RESTORE</td>
</tr>
<tr>
<td>ZONE 5 RESTORE</td>
</tr>
<tr>
<td>ZONE 6 RESTORE</td>
</tr>
</tbody>
</table>

NOTE: FOR SINGLE DIGIT REPORTING CODES
ENTER [0] AS THE 2ND DIGIT
ENTER [*1*] (HEX A) TO TRANSMIT A 0
(A ZERO IS 10 PULSES)
### [07] Closing (Arming) Reporting Codes
#### Partial Closing Reporting Code

<table>
<thead>
<tr>
<th>Access Code 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Code 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Code 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Code 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Code 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Code 6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### [08] Opening (Disarming) Reporting Codes
#### After Alarm Reporting Code

<table>
<thead>
<tr>
<th>Access Code 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Access Code 3</td>
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<td></td>
</tr>
<tr>
<td>Access Code 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Code 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Code 6</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

**NOTE:** The "After Alarm" code is sent on disarming if an alarm occurred during the previous armed period.

### [09] Priority Alarms & Restorals

<table>
<thead>
<tr>
<th>Fire Loop Trouble Restore</th>
<th>F</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keypad [P]anic Alarm</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Keypad [F]ire Alarm</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Keypad [A]uxiliary Alarm</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>

**NOTE:** Actuation of the F, A or P keys will immediately transmit both an alarm and restoral code. There is no delay on the restoral code transmission.

### [10] Maintenance Alarms & Restorals

<table>
<thead>
<tr>
<th>Low Battery Alarm</th>
<th>F</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Fail Alarm</td>
<td>F</td>
<td>A</td>
</tr>
<tr>
<td>Fuse Failure Alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Battery Restore</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC Fail Restore</td>
<td>E</td>
<td>A</td>
</tr>
</tbody>
</table>

**NOTE:** For automatic test code reporting time between reports (in days) must be entered in section [17] and time of day for the report must be entered in section [19].
### [11] Zone Definitions

<table>
<thead>
<tr>
<th>Zone</th>
<th>1st Digit</th>
<th>2nd Digit</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 1</td>
<td>0 = Slow, Audible</td>
<td>0 = Standard Delay</td>
<td>0</td>
</tr>
<tr>
<td>Zone 2</td>
<td>1 = Slow, Silent</td>
<td>1 = Instant</td>
<td>0</td>
</tr>
<tr>
<td>Zone 3</td>
<td>2 = Fast, Audible</td>
<td>2 = Interior</td>
<td>0</td>
</tr>
<tr>
<td>Zone 4</td>
<td>3 = Fast, Silent</td>
<td>3 = Interior...Home/Away</td>
<td>0</td>
</tr>
<tr>
<td>Zone 5</td>
<td></td>
<td>4 = 24 HR...Bell</td>
<td>0</td>
</tr>
<tr>
<td>Zone 6</td>
<td></td>
<td>5 = 24 HR...Bell/Buzzer</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 = 24 HR...Buzzer</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 = Aux. Delay (Uses Aux. Entry/Exit Times)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 = Fire</td>
<td>8</td>
</tr>
</tbody>
</table>

*Note: Any ONE zone may be set as a FIRE zone.

**Note:** When defining zones, assign delay zones first to zones 1, 2, 3... then assign the other types to the remaining zones in any order desired.

### [12] 1st System Option Code

<table>
<thead>
<tr>
<th>Zone Light 1</th>
<th>Zone Light On</th>
<th>Zone Light Off</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Communicator Disabled</td>
<td>Communicator Enabled</td>
<td>Off</td>
</tr>
<tr>
<td></td>
<td>TX Limit To 24 Hr. Period</td>
<td>TX Limit To Armed Period</td>
<td>On</td>
</tr>
<tr>
<td></td>
<td>Alarm Display While Armed</td>
<td>No Alarm Display / Armed</td>
<td>On</td>
</tr>
<tr>
<td></td>
<td>DTMF Dialing</td>
<td>Pulse Dialing</td>
<td>Off</td>
</tr>
<tr>
<td></td>
<td>N.C. Loops (Except Fire)</td>
<td>EOL Resistor Loops</td>
<td>On</td>
</tr>
</tbody>
</table>

### [13] 2nd System Option Code

<table>
<thead>
<tr>
<th>Zone Light 1</th>
<th>Zone Light On</th>
<th>Zone Light Off</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Call 1st Phone Only</td>
<td>Backup to 2nd Phone (2)</td>
<td>On</td>
</tr>
<tr>
<td></td>
<td>Master Code Not Changeable</td>
<td>Master Code Changeable</td>
<td>On</td>
</tr>
<tr>
<td></td>
<td>Bell Squawk Enabled (1)</td>
<td>Bell Squawk Disabled</td>
<td>Off</td>
</tr>
<tr>
<td></td>
<td>PC16 Out Enabled</td>
<td>PC16 Out Disabled</td>
<td>Off</td>
</tr>
<tr>
<td></td>
<td>For Future Use</td>
<td>For Future Use</td>
<td>Off</td>
</tr>
<tr>
<td></td>
<td>1400 Hz. Radiocins</td>
<td>2300 Hz. Radiocins</td>
<td>On</td>
</tr>
</tbody>
</table>

(1) With Bell Squawk enabled, the Bell/Siren will sound one short burst on Arming and two short bursts on Disarming.

(2) Do not program "OFF" unless 2nd phone number is programmed.

### [14] 3rd System Option Code

<table>
<thead>
<tr>
<th>Zone Light 1</th>
<th>Zone Light On</th>
<th>Zone Light Off</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>User Code Req'd For Shunt</td>
<td>User Code Not Required</td>
<td>Off</td>
</tr>
<tr>
<td></td>
<td>Periodic Downloading</td>
<td>Periodic Test Transmit</td>
<td>Off</td>
</tr>
<tr>
<td></td>
<td>[*],[4],[Master Code Req'd]</td>
<td>[*],[4],[No Code Req'd]</td>
<td>On</td>
</tr>
<tr>
<td></td>
<td>Partial Closing Identified</td>
<td>Not Identified</td>
<td>Off</td>
</tr>
</tbody>
</table>
## Communication Variables

Maximum transmissions per burglary zone: 15

Enter digits from 01 to 99 for number of transmissions per zone during the period as defined in Section 12, 1st system option code, zone light 2.

"00" = Unlimited transmissions per burglary zone

(Fire zone always transmits)

Delay before transmission (burglary zones only): 00

Enter digits from 00 to 99 - delay in seconds

"00" = No delay (Fire zone & 24 hr. zones always transmit without delay)

Transmission delay as programmed here is for burglary zones only.

## Zone Bypass Mask

<table>
<thead>
<tr>
<th>Zone Light 1</th>
<th>Zone Light 2</th>
<th>Zone Light 3</th>
<th>Zone Light 4</th>
<th>Zone Light 5</th>
<th>Zone Light 6</th>
</tr>
</thead>
</table>

Note: If the zone light is "ON" the zone can be bypassed using the [*] command

If a zone is defined as a fire zone, it cannot be bypassed.

## System Times

<table>
<thead>
<tr>
<th>Entry delay time (seconds)</th>
<th>Exit delay time (seconds)</th>
<th>Bell cut-off time (minutes)</th>
<th>AC fail transmission delay (minutes)</th>
<th>Slow loop response time (x 10 msec)</th>
<th>Test transmission cycle time (days) or auto-download cycle time</th>
</tr>
</thead>
</table>

Note: Valid entries are 01 to 99

Do not enter 00

## Aux Delay Loop Times

<table>
<thead>
<tr>
<th>Entry time (seconds)</th>
<th>Exit time (seconds)</th>
</tr>
</thead>
</table>

Note: Valid entries are 001 to 255

## System Clock Times

<table>
<thead>
<tr>
<th>Automatic arming (time of day)</th>
<th>Test transmission (time of day) or auto-download</th>
</tr>
</thead>
</table>

Enter 4 digits - 00 to 23 hours
00 to 59 minutes

Note: If not used leave at factory default

"9999" = Not programmed
[20] NEW INSTALLER'S CODE
[21] NEW MASTER CODE
[22] 2ND MASTER CODE
CAN BE ERASED BY
ENTERING [*1111]

1ST TELEPHONE NUMBER [ ]
2ND TELEPHONE NUMBER [ ]

IT IS NECESSARY TO PROGRAM THE FORMAT
FOR BOTH PHONE NUMBERS EVEN IF THE
SECOND NUMBER IS NOT USED.

ENTER ONE HEX DIGIT FROM [0] TO [F] FOR EACH PHONE NUMBER FROM THE FOLLOWING LIST:
[0] SILENT KNIGHT/ADEMCO SLOW, 10 BPS (1400 Hz. HANDSHAKE) 3/1, 3/2 AND 4/1, 4/2
NON-EXTENDED FORMAT
[1] SESCOA, FRANKLIN, DTI, VERTEX, 20 BPS (2300 Hz. HANDSHAKE) 3/1, 3/2 AND 4/1, 4/2
NON-EXTENDED FORMAT
[2] SILENT KNIGHT FAST, 20 BPS (1400 Hz. HANDSHAKE) 3/1, 3/2 AND 4/1, 4/2
NON-EXTENDED FORMAT
[3] RADIONICS (2300/1400 Hz. HANDSHAKE*) 3/1, 4/2 NON-EXTENDED FORMAT
[4] RADIONICS (2300/1400 Hz HANDSHAKE*) 3/1, 4/2 NON-EXTENDED WITH PARITY FORMAT
[8] SILENT KNIGHT/ADEMCO SLOW, 10 BPS (1400 Hz HANDSHAKE) 3/1 EXTENDED FORMAT
[9] SESCOA, FRANKLIN, DCI, VERTEX, 20 BPS (2300 Hz HANDSHAKE) 3/1 EXTENDED FORMAT
[A] SILENT KNIGHT FAST, 20 BPS (1400 Hz HANDSHAKE) 3/1 EXTENDED FORMAT
[B] RADIONICS (2300/1400 Hz HANDSHAKE*) 3/1 EXTENDED FORMAT
[C] RADIONICS (2300/1400 Hz HANDSHAKE*) 3/1 EXTENDED WITH PARITY FORMAT
[D] FOR FUTURE USE [E] FOR FUTURE USE [F] FOR FUTURE USE
* SEE SECTION [13] FOR RADIONICS HANDSHAKE OPTION

[24] PROGRAMMABLE OUTPUT OPTIONS (PGM TERMINAL)

PROGRAMMABLE OUTPUT

ENTER TWO DIGITS FROM 01 TO 09 ONLY

[0 1] GROUND START PULSE - 2 SEC.
[0 2] UTILITY OUTPUT NO ACCESS CODE - 5 SEC. [*], [7]
[0 3] UTILITY OUTPUT ANY ACCESS CODE - 5 SEC. [*], [7]
[0 4] 5 SEC. RESET PULSE - [ ], [7]
[0 5] COURTESY PULSE (FOLLOWS ENTRY/EXIT TIMES)

[0 6] BUZZER FOLLOWS THE [0 6] KEYPAD BUZZER FOLLOW MODE
ENTRY DELAY, DOOR CHIME,
AUTO-ARM ALERT PERIOD
AND 24 HR. BUZZER LOOP

[0 7] SYSTEM STATUS (ARM/DISARM) OUTPUT

[0 8] STROBE OUTPUT (LATCHED ALARM OUTPUT)

[0 9] FAILURE TO COMMUNICATE OUTPUT - FOLLOWS TROUBLE #4
[25] COMMUNICATOR CALL DIRECTION OPTIONS

ZONE ALARMS AND RESTORALS [ ]
ACCESS CODES OPENINGS AND CLOSINGS [ ]
PRIORITY ALARMS AND RESTORALS [ ]
MAINTENANCE ALARMS AND RESTORALS [ ]

THIS SECTION MUST BE PROGRAMMED IN TOTAL
DO NOT PRESS [*] TO EXIT UNTIL ALL ENTRIES ARE COMPLETED

ENTER [0] NO TRANSMISSION FOR THIS GROUP
[1] CALL 1ST PHONE NUMBER AND BACK UP TO 2ND PHONE NUMBER *
[2] CALL 2ND PHONE NUMBER ONLY
[3] ALWAYS CALL BOTH PHONE NUMBERS
* SECTION [13] LIGHT 1 "OFF" AND 2ND PHONE PHONE * MUST BE PROGRAMMED.

[26] DOWNLOADING TELEPHONE NUMBER

THIS TELEPHONE NUMBER IS USED BY THE PANEL TO CALL THE DOWNLOADING COMPUTER EITHER BY THE PERIODIC AUTO-DOWNLOAD OR BY ENTRY OF THE [*],[4] COMMAND.

CALLBACK TELEPHONE NUMBER

Enter [0] for the digit 'O' in the phone number
Enter [*4*] (HEX D) for additional dial tone detection between phone number digits as in local PBX systems
Enter [4] to end the phone number entry

[27] DOWNLOADING ACCESS CODE

THIS CODE ALLOWS THE PANEL TO CONFIRM THAT A VALID DOWNLOADING COMPUTER IS REQUESTING ACCESS TO THE PANEL.

DOWNLOADING ACCESS CODE

FACTORY DEFAULT

[28] PANEL IDENTIFICATION CODE

THIS CODE CONFIRMS THE PANEL IDENTITY TO THE DOWNLOADING COMPUTER

PANEL IDENTIFICATION CODE

FACTORY DEFAULT

[29] NUMBER OF RINGS BEFORE ANSWERING

ENTER A NUMBER FROM 01 TO 12 TO SET THE NUMBER OF RINGS BEFORE THE PANEL WILL ANSWER

NUMBER OF RINGS

FACTORY DEFAULT

[30] RESET TO FACTORY DEFAULT
### 31. 4th System Option Code

<table>
<thead>
<tr>
<th>Zone Light</th>
<th>Default</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zone Light On</td>
<td>Zone Light Off</td>
</tr>
<tr>
<td>2</td>
<td>Enable Download Answer</td>
<td>Disable Answer</td>
</tr>
<tr>
<td>3</td>
<td>Enable Download Callback</td>
<td>Disable Callback</td>
</tr>
<tr>
<td>4</td>
<td>Answer Machine Over-Ride</td>
<td>Disable Over-Ride</td>
</tr>
<tr>
<td>5</td>
<td>Show Bypass Status/Armed (1)</td>
<td>Show Bypass Status/Disarmed</td>
</tr>
<tr>
<td>6</td>
<td>AC IN = 50 Hz</td>
<td>AC IN = 60 Hz</td>
</tr>
<tr>
<td></td>
<td>Restore On Bell Time Out</td>
<td>Restore As Follower</td>
</tr>
</tbody>
</table>

(1) If Zone Light 4 is 'on', bypass status will always be shown. If Zone Light 4 is 'off', bypass status is shown only when the panel is disarmed.

### 32. 5th System Option Code

<table>
<thead>
<tr>
<th>Zone Light</th>
<th>Default</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zone Light On</td>
<td>Zone Light Off</td>
</tr>
<tr>
<td>2</td>
<td>Enable Auto Drop Down</td>
<td>Disable Auto Drop Down</td>
</tr>
<tr>
<td>3</td>
<td>Not Used</td>
<td>Not Used</td>
</tr>
<tr>
<td>4</td>
<td>Home-Away With Delay</td>
<td>Home Away As Interior</td>
</tr>
<tr>
<td>5</td>
<td>Not Used</td>
<td>Not Used</td>
</tr>
<tr>
<td>6</td>
<td>Force Arm On Aux Delay</td>
<td>Aux Delay Normal</td>
</tr>
<tr>
<td></td>
<td>60 Second Shunt On Power Up</td>
<td>Zones Active On Power Up</td>
</tr>
</tbody>
</table>

### 33. Answering Machine Double Call Timer

<table>
<thead>
<tr>
<th>Zone Light</th>
<th>Default</th>
<th>Factory Default</th>
</tr>
</thead>
</table>

Note: Valid entries are 001 to 249

### 90. Installers Lockout Enable

### 91. Installers Lockout Disable

Note: See instructions and notice on page 17.
Battery Charge Current is 360 mA Max

Battery capacity for emergency standby is at least 4 hours if the total load (BELL + AUX O/P) is 800mA or less. Recommended battery is Yuasa NP4-12.

Do not connect transformer to a receptacle controlled by a switch. The transformer must be UL listed and have a restraining means.

E.g. Basler Electric
BE 116240 CAA-0002

For fire alarm applications, it is mandatory to use one UL listed indoor signalling appliance with a min. 85CB rating and current rating of 1 Amp or less.

(WHSELOCK model 34T-12-R rated 85GCB(A) min. for outdoor applications).

Temperature Range : 0°C-47°C (32°F-120°F)
Maximum Humidity : 85% R.H.

This equipment is UL listed for limited energy installations per NEC article 760.

Recognized limited energy cable should be used. Observe NEC wiring requirements and local codes as defined by the authority having jurisdiction.

Do not replace fuses with higher values than noted in this drawing.

Security detection devices that require power from control panel must be UL listed for the intended application and operate over the voltage range of 10.0 to 14.0 VDC.

The DSC DI-50 is a recommended UL listed motion detector.
FCC COMPLIANCE STATEMENT
This equipment generates and uses radio frequency energy and if not installed and used properly, 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 class "B" device in accordance with the specifications in Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in any residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to television or radio 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:
- Re-orient the receiving antenna.
- Relocate the alarm control with respect to the receiver.
- Move the alarm control away from the receiver.
- Connect the alarm control into a different outlet so that alarm control and receiver are on different circuits.
If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the FCC helpful:

IMPORTANT INFORMATION
Notification to Telephone Company
Upon request, the customer shall notify the telephone company of the particular line which the connection will be made, and provide the ringer equivalence of the protective circuit.
Ringer Equivalence Number: 0.0B

Malfunction of the Equipment
In the event that the EN1550 should fail to operate properly, the customer shall disconnect the equipment from the telephone line to determine if it is the customer’s equipment which is not working properly, or if the problem is with the telephone company network. If the problem is with the EN1550, the customer shall discontinue use until it is repaired.

Telephone Connection Requirements
Except for the telephone company provided jacks, all connections to the telephone network shall be made through standard plugs and telephone company provided jacks, or equivalent, in such a manner as to allow for easy, immediate disconnection of the terminal equipment. Standard jacks shall be so arranged that, if the plug connected there is withdrawn, no interference to the operation of the equipment at the customer’s premises which remains connected to the telephone network shall occur by reason of such withdrawal.
NOTICE: Ensure that plugs and jacks meet the dimension, tolerance and metallic plating requirements of 47 C.F.R. Part 68, Subpart F.

Incidence of Harm
Should terminal equipment or protective circuitry cause harm to the telephone network, the telephone company shall, where practicable, notify the customer that temporary disconnection of service may be required; however, where prior notice is not practicable, the telephone company may temporarily discontinue service if such action is deemed reasonable in the circumstances. In the case of such temporary discontinuance, the telephone company shall promptly notify the customer and will be given the opportunity to correct the situation. The customer also has the right to bring a complaint to the FCC if he feels the disconnection is not warranted.

Change in Telephone Company Equipment or Facilities
The Telephone Company may make changes in its communications facilities, equipment, operations or procedures, where such actions is reasonably required and proper in its business. Should any such changes render the customer’s terminal equipment incompatible with the telephone company facilities, the customer shall be given adequate notice to the effect of the modifications to maintain uninterrupted service.

General
This equipment should not be used on coin telephone lines. Connection to party line service is subject to state tariffs.

Ringer Equivalence Number (REN)
The REN is useful to determine the quantity of devices that you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN’s of all devices connected to one line should not exceed five (5). To be certain of the number of devices that you may connect to your line, you may want to contact your local telephone company.

EQUIPMENT MAINTENANCE FACILITY
Digital Security Controls Ltd.
160 Washburn St.
Lockport, NY 14094

LIMITED WARRANTY
Digital Security Controls Ltd. warrants that for a period of twelve months from the date of purchase, the product shall be free of defects in materials and workmanship under normal use and that in fulfillment of any breach of such warranty, Digital Security Controls Ltd. shall, at its option, repair or replace the defective equipment upon return of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Digital Security Controls Ltd., such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

The foregoing warranty shall apply only to the original buyer, and is and shall be in lieu of any and all warranties, whether expressed or implied and of all other obligations on the part of Digital Security Controls Ltd. This warranty contains the entire warranty, Digital Security Controls Ltd. neither assumes, nor authorizes any other person purporting to act on its behalf to modify or change this warranty, nor to assume for it any other warranty or liability concerning this product.

In no event shall Digital Security Controls Ltd. be liable for any direct, indirect or consequential damages, loss of anticipated profits, loss of time or any other losses incurred by the buyer in connection with the purchase, installation or operation or failure of this product.

WARNING: Digital Security Controls Ltd. recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.