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# ***VISTA SERIES***

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**4120EC  
INSTALLATION  
INSTRUCTIONS**



## **CONGRATULATIONS**

### **on your purchase of the VISTA 4120EC!**

The purpose of these Installation Instructions is to give you a brief overview of the VISTA 4120EC system, and provide instructions for installing a basic system.

As always, ADEMCO is there for YOU! Our SALES and TECHNICAL SUPPORT staff are eager to assist you in any way they can so don't hesitate to call, for any reason!

*East Coast Technical Support: 1-800-645-7492 (8 a.m.-6 p.m. E.S.T.)*

*West Coast Technical; Support: 1-800-458-9469 (8 a.m.-5 p.m. P.S.T.)*

**PLEASE,**

Before you call Technical Support, be sure you have:

- Checked all wiring connections.
- Determined that the power supply and/or backup battery are supplying proper voltages.
- Verified your programming information where applicable.
- Noted the proper model number of this product, and the version level (if known) along with any documentation that came with the product.
- Noted your Ademco customer number and/or company name.

Having this information handy will make it easier for us to serve you quickly and effectively.

Again, CONGRATULATIONS, and WELCOME ABOARD!

<p><b>FOR YOUR CONVENIENCE, two easily removable Programming Forms have been included at the center of this manual.</b></p>
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## GENERAL INFORMATION

The VISTA (No. 4120) is a microprocessor-based security control which provides up to 8 wired zones in the basic product. The security control is housed in a wall-mounted metal cabinet measuring 12-1/2" (318 mm) wide x 14-1/2" (368 mm) high x 3" (76 mm) deep, and can be used with a console equipped with a multifunction 12-key digital keypad and a numeric and fixed English status LCD display (4127). Optionally, a No. 4137 may be used or a No. 5330 Alpha Console may be used with the control to provide programmable English language zone descriptors and status indications.

Connections to the security control are made via a 25-terminal connector block which is used to interface to the wired loops, plug-in transformer, telephone line, remote consoles, external alarm sounder(s), etc.

The security control can be easily programmed from a 4127 remote console. Programmed options to establish specific alarm and reporting features are stored in electrically erasable, non-volatile EEROM memory. This means that the unit can be reprogrammed many times (unlike units equipped with PROMS) and that information which has been programmed will not be

lost in the event of a complete loss of power.

The system provides communication capability (central station reporting, etc.) over existing telephone lines.

This system includes an alarm output rated at 2.8 amps. Throughout the manual, wherever reference is made to Alarm Output Ratings, they assume a fully charged battery is connected unless otherwise stated (e.g. UL ratings).

### Zone Characteristics

**Zone 1:** Programmable Zone, may be used as EOLR supervised Fire Zone (supports three 2-wire Smoke Detectors), or may be used as a non-fire zone, 350-500 msec response.

**Zones 2-8:** Programmable Zones, N.O. or N.C. sensors, 350-500 msec response (Zones 2-7). Zone 8 can be selected as slow or fast response (10-15 msec)

## REMOTE PROGRAMMING AND CONTROL

The No. 4120 allows the installer to call it using switched network phone lines so that the control/communicator can be remotely programmed and/or commanded from an IBM compatible Personal Computer (PC). See Note 2 under Remote Capabilities in this section.

Accessing of the No. 4120 from a remote location is protected against compromise by someone attempting to defeat the system, using 4 levels of security protection:

- Security Code Handshake:** An 8-digit Central Station ID code must be matched between the No. 4120 and the Central Station.
- Hang-up and callback:** Calling the No. 4120 does not directly allow programming, as a successful handshake merely results in the No. 4120 breaking the phone line connection and then calling back the (internally stored) central station service phone number.
- Data Encryption:** Data passed between the central station and the No. 4120 is encrypted for security so that it is very difficult for a foreign device tapped into the phone line to take over communication and substitute system compromising information.

- Central Station Advisory Note:** Any condition that causes the system to initiate a call back to a telephone number from which it can be reprogrammed or com-manded (in fact, even for a local reprogramming of the EEROM) causes a unique report to be sent to the central station's alarm logging digital receiver.

**Note:** In situations where a service person is on-site and the system is installed inside a PABX, it is possible to initiate a download from the protected premises by keying [installer or master security code] + [#] + [1].

### Equipment Required

**At the premises:** 4120

**At the central station (or the installer's office/home):**

An IBM PC compatible computer, a Hayes brand Smartmodem 1200 (Level 1.2 or higher external or Level 1.1 or higher internal style), No. 4130PC Downloading Software Diskette, and appropriate interconnecting cables.

### Remote Capabilities (See Note 2)

#### Programming:

All programming functions accessible from the unit's keypad.

### Commanding:

There are two types of commands that can be issued to the system:

#### 1. Control Commands -

- To Arm the System in the Away Mode<sup>(1)</sup>
- To Disarm the System<sup>(1)</sup>
- To Bypass a Zone
- To Force the System to Accept a New Program Download
- To Shut Down Communication (dialer) Functions (non-payment of monitoring fees in an owned system)
- To Shut Down all Security System Functions (non-payment for a leased system)
- To Inhibit Local Keypad Programming (prevents take-over of your accounts)

#### 2. Status Commands -

- To Cause the System to Upload a Copy of its Resident Program to the central station.
- To Read System Status:
  - Arming Status
  - Ready Status and Current Faults
  - Presence of Alarms
  - Presence of Troubles
  - AC Power Status
  - Bypass Status and Current Bypasses

### \*Notes:

1. If the system is programmed for open/close reporting by user, User #7 will be reported.
2. After the 4120 and the PC have established valid communication, each console will become inactive. The 4120 will resume the normal security functions after it is commanded to hang up. See the 4130PC instructions for details.

The detailed operation of the functions described below is covered in the installation instructions for the 4130PC Download Software Diskette.

- To Read List of Faulted Zones
- To Read List of Bypassed Zones
- To Read List of Zones Currently in Alarm
- To Read List of Zones Currently in Trouble

### Remote Communication Specifications:

- Program Download Time - 1 minute for a complete program
- Typical Total Time Including Call Up/Call-Back 3-4 minutes

### Remote Command/Programming Advisory Notes:

- Alarm and Trouble Reporting are disabled during the time that the system and the central station are linked to each other for the described functions, following a valid exchange of codes.
- Keypad entries are ignored during the same time interval cited above.
- Should an alarm transpire during the remote program/control interval, the system would not respond to the alarm condition.
- A copy of the program downloaded may be produced from the IBM PC compatible computer, using the product's internal report generator, when an optional printer is connected.

## ZONE TYPES AVAILABLE FOR SELECTION

For each zone used, one of the following zone types must be selected:

1. **Entry/Exit Burglary.** Assigned to sensors on doors through which entry and exit will normally take place when the system is armed.
2. **Not Used**
3. **Perimeter Burglary.** Normally assigned to all sensors on exterior doors and windows requiring instant alarm.
4. **Interior, Follower.** Delayed alarm only if the Entry/Exit zone is faulted first; otherwise, produces an instant alarm. Assigned to zone covering an area such as a foyer or lobby through which one must pass upon entry to reach the keypad to disarm the system. Designed to provide instant intrusion alarm in the event an intruder hides on the premises prior to the system being armed or gains access to the premises through an unprotected area.
5. **Trouble by Day/Alarm by Night.** Can be assigned to a zone which contains a foil-protected door or window (such as in a store), or to a zone covering a "sensitive" area such as a stock room, drug supply room, etc., or other controlled access area where immediate notification of an entry is desired. During the disarmed state (day), the system will provide latched Console annunciation (and central station report, if desired) of openings or troubles (such as sensor malfunctions or foil breaks). During the armed state (night), violations will initiate an alarm.
6. **24-hour Silent Alarm.** This type generally assigned to a zone containing an Emergency button that is designed to initiate an alarm report to the Central Station, but which produces no local displays or alarm sound.
7. **24-hour Audible Alarm.** This type also assigned to a zone containing an Emergency button, but which will initiate an audible alarm in addition to an alarm report to the Central Station.
8. **24-hour Auxiliary Alarm (Console sounder only).** This type assigned to a zone containing a button for use in personal emergencies, or to a zone containing monitoring devices such as water sensors, temperature sensors, etc. Designed to initiate an alarm report to the Central Station and only provides Console warning sounds and alarm displays.
9. **Supervised Fire (alarm or short/trouble on open).** Fire zone may not be bypassed. *Only usable on Zone 1 when it is wired with an EOL resistor.*

## 4-DIGIT SECURITY CODES

### Installer Code:

The installer programs the Installer Code initially as part of the programming procedure (see "Programming the Security Control"). In this system, the installer is considered to be user #1. The installer code permits re-entry into the programming mode (unless \*98 has been previously used to exit the programming mode) and also allows access to the normal functions of the system. During initial programming, the installer also programs the Master security code into the system.

[ I I I I ] Installer Code (User #1),  
assigned during programming.

Installer exits programming mode with:

- \*99 (allows re-entry into programming mode with installer code)  
OR
- \*98 (does not allow re-entry to programming mode unless system is first powered down and then repowered). Installer code is disabled when this exit is used.

#### Master Security Code:

The Master security code can be used to assign up to six secondary codes (to users #3 - #8); it can also be used to remove all secondary codes from the system (individually). The person to whom the Master code is assigned is user #2. Secondary security codes are assigned by user #2 (with Master Code) as follows:

Master Code + CODE key + User #(3-8) + Secondary Code

The system will emit a single beep when each secondary code has been successfully entered.

**Note:** When a secondary code is inadvertently repeated for different users, or one user's code is another's duress code, the lower user number will take priority.

Individual secondary security codes can be deleted by user #2 (with Master Code) as follows:

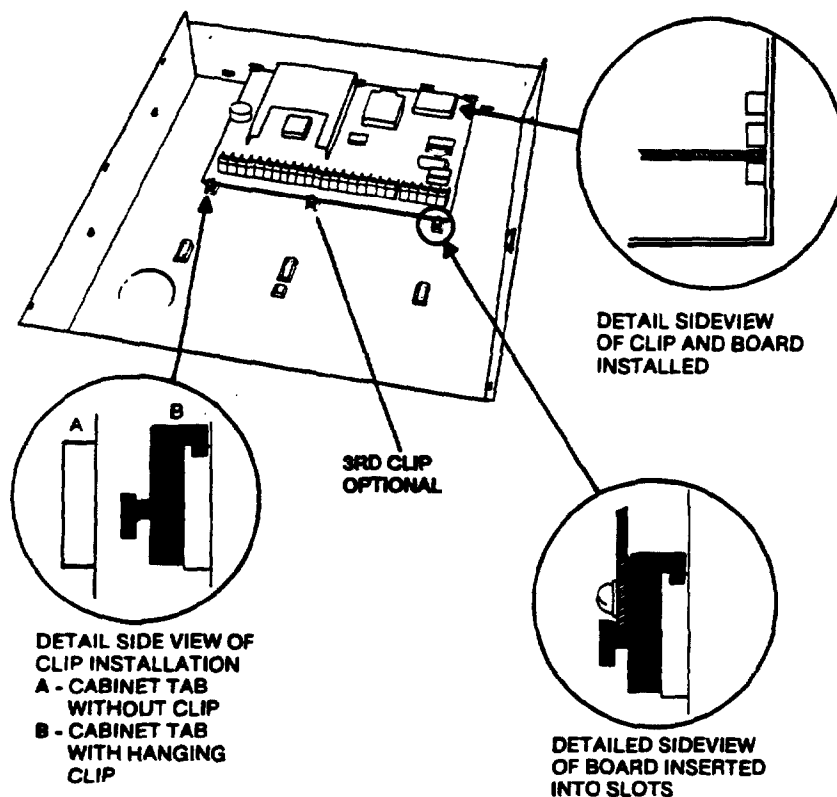
Master Code + CODE key + User #(3-8) + Master Code

**Note:** All security codes, master and secondary, permit access to the system for arming, disarming, etc.

#### LEVELS OF AUTHORITY FOR SECURITY CODES

User No.	Can assign or delete Secondary Code of User:
#1 (Installer)	None
#2	#3 through #8
#3-#8	None

### MOUNTING THE CIRCUIT BOARD



Before mounting the circuit board be certain that the appropriate metal knockouts have been removed. **DO NOT ATTEMPT TO REMOVE THE KNOCKOUTS AFTER THE CIRCUIT BOARD HAS BEEN INSTALLED.**

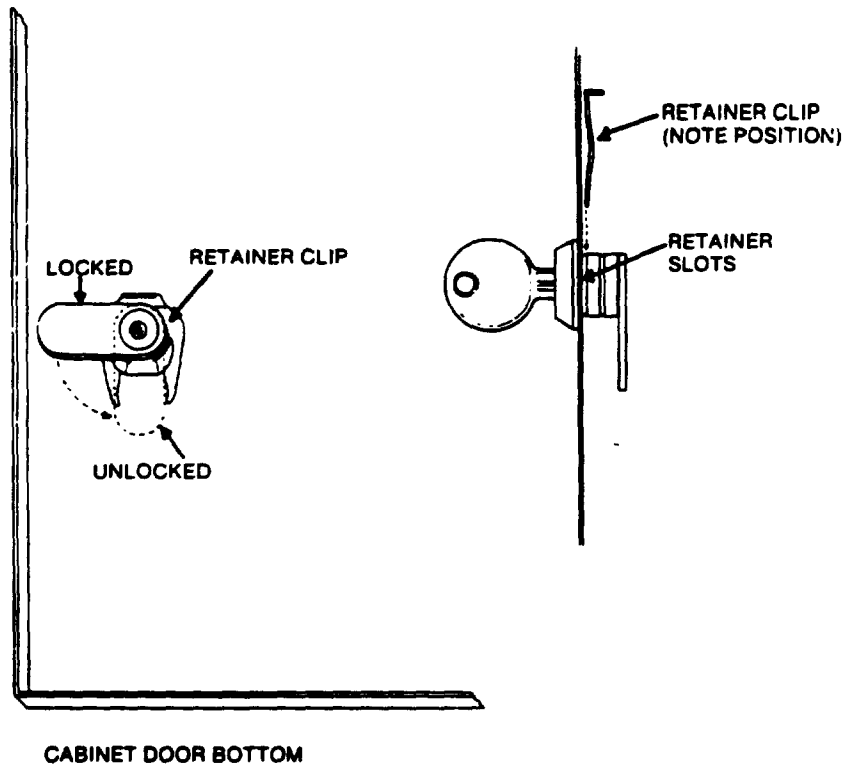
1. Hang the two mounting clips on the raised cabinet tabs (see step 1 detail A and B).

2. Insert the top of the circuit board into the slots at the top of the cabinet. Make certain that the board rests upon the correct row as indicated in step 2 detail.

3. Swing the base of the board into the mounting clips and secure the board to the cabinet with the accompanying screws (as illustrated in step 3 detail).

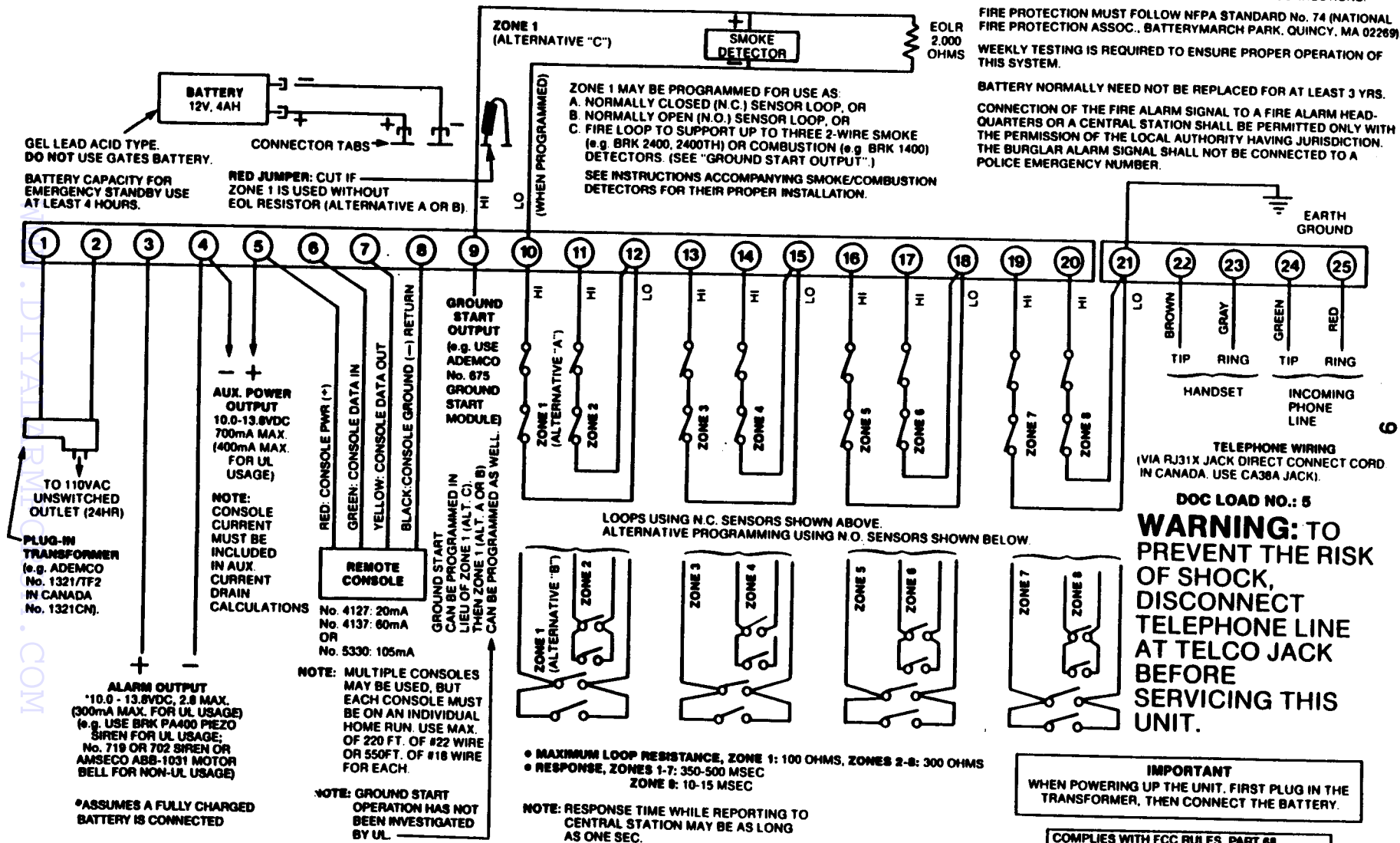
## MOUNTING THE LOCK

1. Remove the lock knockout on the control cabinet cover. Insert the key into the lock. Position the lock in the hole making certain that the latch will make contact with the latch bracket when the door is closed.
2. While holding the lock steady, insert the retainer clip into the retainer slots. Position clip as illustrated to facilitate easy removal.



## TERMINALS

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1: AC Input from No. 1321/TF2 plug-in transformer (16.5 VAC, 25VA). In Canadian installations, use No. 1321CN.</li> <li>2: AC Input from No. 1321/TF2 plug-in transformer (16.5 VAC, 25VA). In Canadian installations, use No. 1321CN.</li> <li>3: Alarm relay output (+), 12 VDC, 2.8A maximum.</li> <li>4: Alarm Output/Auxiliary Power (-) Return.</li> <li>5: Continuous Auxiliary/Remote Console Power (RED): +12VDC at 700 mA<sup>†</sup>.</li> <li>6: Console Data In (GREEN)<sup>†</sup>.</li> <li>7: Console Data Out (YELLOW)<sup>†</sup>.</li> <li>8: Remote Console Ground (-) (BLACK)<sup>†</sup>.</li> <li>9: Ground Start Output (to BLUE LEAD on No. 675 Ground Start Module), or High Side of Zone 1 when zone is used as an End-of-Line Resistor supervised burglary, panic or 2-wire smoke detector compatible fire zone. Terminal 12 would not be used for Zone 1 when this terminal is used for Zone 1.</li> <li>10: Zone 1 Return when Zone 1 is programmed (Field *41) as an EOLR supervised zone, a 2,000 Ohm EOLR should be wired between this terminal and the high side of the zone on Terminal 9. Zone 1* High Side when used with terminal 12 without EOLR.</li> <li>11: Zone 2*</li> <li>12: Zones 1 and 2 Return (not used for Zone 1 if EOLR is used)</li> <li>13: Zone 3*</li> <li>14: Zone 4*</li> <li>15: Zones 3 and 4 Return.</li> <li>16: Zone 5*</li> </ol> | <ol style="list-style-type: none"> <li>17: Zone 6*</li> <li>18: Zones 5 and 6 Return.</li> <li>19: Zone 7*</li> <li>20: Zone 8*</li> <li>21: Zones 7 and 8 Return and EARTH GROUND (a proper earth ground must be provided to protect the system from lightning and electrostatic discharge damage).</li> <li>22: Handset (RING).</li> <li>23: Handset (TIP).</li> <li>24: Incoming Phone Line (TIP).</li> <li>25: Incoming Phone Line (RING).</li> </ol> <p><sup>†</sup> Home run each console. Use no more than 220' of #22 wire or 550' of #18 wire.</p> <p>* Zone that is programmable for use either as a N.C. sensor loop or as a N.O. sensor loop (in Field *08). Zone response time during digital communication may be as long as one second.</p> <p><b>Warning:</b> To prevent the risk of shock, disconnect telephone line at Telco jack before servicing the unit.</p> <p><b>RED LEAD:</b> Battery (+) - When AC is present, 13.8 VDC is being developed to recharge a Starved Lead Acid or Gel battery and when AC is absent, 12 VDC current is drawn from the battery. Battery lead reversal damage protection is provided.</p> <p><b>BLACK LEAD:</b> Battery (-).</p> |
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# No. 4120EC SUMMARY CONNECTIONS



## WIRING CONNECTIONS

(See Summary of Connections Diagram)

**Important:** Do not connect the battery or plug in the AC transformer until all other wiring connections have been completed. When powering up the system, you must use the following sequence:

1. Plug in transformer.
2. Connect the battery.

### Grounding the System

In order for the protective devices in this product to be effective, Terminal 21 must be terminated in a good earth ground. The following are examples of good earth grounds available at most installations:

**Metal Cold Water Pipe:** Use a non-corrosive metal strap firmly secured to the pipe to which the ground lead is electrically connected and secured.

**AC Power Outlet Ground:** Available from 3 prong, 125VAC, power outlets only. To test the integrity of the ground terminal, use a three-wire circuit tester with neon lamp indicators, such as the UL-Listed Ideal Model 61-035, or equivalent, available at most electrical supply stores.

## PROGRAMMING THE SECURITY CONTROL

Installer options are stored in non-removable, electrically erasable, non-volatile EEROM memory. \*These options must be programmed for the particular installation to establish its specific alarm and reporting features. The security control may be programmed from a remote console.

When programming, the field number will be displayed on the LCD display; also, each entry is displayed as it is keyed in. After programming, values that have been entered in each field can be reviewed and, if necessary, modified.

\*Note: It is possible to program the system at any time - even at the installer's premises prior to the actual installation. Simply apply power temporarily to the control and then program the unit as desired.

When programming from the consoles note the following:

1. Enter the Programming mode by simultaneously depressing the [\*] and [#] keys without 30 seconds after power is applied to the Control, or subsequently by keying the code 4 + 1 + 2 + 0 followed by depression of CODE + 0 + 0 keys. Once an installer code is programmed, use it instead of the default code (4120) to gain access to the programming mode.
2. Two seconds after entry into the program mode, 00 will be displayed. Following the above display, the system is ready to accept entries for Address 00.
3. To program a data field, key [\*] plus Address (for example, \*01), then make the required entry. To simply review a data field, key [#] plus Address.
4. When a data field has been completely programmed, the console will "beep" three times and then automatically proceed to, and display, the next data field address to be programmed if that field is the next sequential address (if not, key [\*] plus the address of the next field to be programmed).
5. If the number of digits that you enter in the data field is less than the maximum permitted (for example, phone number), then the console will display the last data entered. To proceed, the next data field address to be programmed must then be entered (for example, \*05).
6. If an address is improperly entered, the console will display FC. If a program entry is improperly entered (for example, a larger number than that which is permitted), the console display will go blank. In either case, simply re-enter the number.

## MOUNTING THE No. 4127 CONSOLE(S)

1. Separate the console from its backplate by removal of the two screws on the top and bottom edges.
2. Use the backplate to mark the positions on the wall for the screw mounting holes and the cut-out for the interface wiring. Use wall anchors for the screws and make the cut-out in the wall no larger than indicated on the template. The backplate is designed to be directly mounted to either a single or double gang electrical box.
3. Pull the interface wiring in the wall through the cut-out.
4. Pass the interface wiring through the opening in the backplate and then mount backplate to the wall surface with screws.
5. Splice the interface wiring to the console wires. Insulated solderless wire splices (such as Ademco No. 311) may be used for splicing.
6. Attach the main body of the console to the wall-mounted backplate. The console is properly attached when it is screwed to the backplate by top and bottom screws.

ENTER  
PROGRAMMING  
MODE:

1. POWER UP, then depress [\*] and [#] simultaneously within 30 seconds of powering up.

OR

2. Initially, Key: 4 + 1 + 2 + 0 plus CODE key + 0 + 0.

OR

3. After Installer Code is pro-grammed, key: Installer Code + CODE key + 0 + 0.

Notes: Type 3 method of re-entry to the programming mode is inhibited if the programming mode is exited via use of \*98.

Type 1 method of entry can always be used, unless console program-ming has been locked out by the remote downloader.

EXIT PROGRAM-  
MING MODE: \*99

(always allows re-entry to program-ming mode via Type 3 entry method above), unless console programming has been locked out by the remote downloader).

\*98 (inhibits re-entry to programming mode via Type 3 entry method).

Note: When the programming mode is exited, a 1 minute set-up period must elapse before the system can properly function.

RESTORE  
FACTORY DFLT \*96

ADVANCE TO FIELD: [\*]+ADDRESS (e.g., 01, 10, 21 etc.)

PROGRAM FIELD: [\*]+ADDRESS, followed by data entries

ERASE FIELDS: [\*]+ADDRESS+[\*] (only applies to Addresses 31 thru 35).

READ FIELD: [#] + ADDRESS

### SPECIAL MESSAGES

OC = OPEN CIRCUIT (no communication between the Console and the Control).

FC = FIELD CODE ERROR (program entry mistake, re-enter the data).

NOTE: The following programming information contains the factory default settings within the brackets [ ].



- \*00 INSTALLER CODE**  
[4][1][2][0]  
COMMENTS: This 4-digit (0-9) code is reserved for company use. This is the only code that can be used to enter the Program mode from the console. It cannot be used to enter secondary codes. This code may not be used if programming mode is exited by a \*98.
- \*01 MASTER SECURITY CODE**  
[1][2][3][4]  
COMMENTS: Enter 4 digits, 0-9 (entry of all 4 is mandatory). Use of a "9" in the last position inhibits the Ambush feature.
- \*02 ASSIGN RESPONSE TYPE FOR ZONE 1-8**  
[0][9]  
[0][1]  
[0][3]  
[0][4]  
[0][5]  
[0][6]  
[0][7]  
[0][8]  
COMMENTS: Enter 2 digits, 00-09 in each field (use one of the response types below).  
00=Assign for unused zones.  
01=ENTRY/EXIT, Burglary  
02=Not Used  
03=PERIMETER, Burglary  
04=INTERIOR,FOLLOWER, Burglary  
05=TROUBLE BY DAY/ALARM BY NIGHT, Burglary  
06=24 HOUR SILENT  
07=24 HOUR AUDIBLE  
08=24 HOUR AUXILIARY  
09=FIRE
- \*05 ASSIGN RESPONSE TYPES FOR KEYPAD PANICS**  
1[0][0] Zeros to be entered  
2[0][7] 3&# Panic (displays 96)  
3[0][6] \*&# Panic (displays 99)  
COMMENTS: Enter response types (see address \*02 for types) in field locations 2 and 3 only (enter 00 in field 1).
- \*08 SENSOR TYPE USED FOR ZONES 1-8**  
1 2 3 4 5 6 7 8  
[1][1][1][1][1][1][1][1]  
COMMENTS: Enter a zero for each N.O. sensor zone or 1 for each N.C. sensor zone. The entry for zone 1 only applies to that zone when it is not used as an end-of-line resistor supervised zone.
- \*09 ENTRY DELAY**  
[0][2]  
COMMENTS: Defines the time period between a fault occurring in a zone to which Entry delay has

- been assigned and the time when the alarm will sound (UL Household Burglary usage permits a maximum of 45 seconds). Enter 00-15. Multiply by 15 seconds to determine time delay (0-225 seconds available).
- \*10 EXIT DELAY**  
[0][3]  
COMMENTS: Defines the time delay period after the system arming code is keyed when zone to which this delay has been assigned will arm (UL 1023 Household Burglary usage permits a maximum of 60 seconds). Is also the exit delay time allocated to the interior zones. Enter 00-15. Multiply by 15 seconds to determine time delay (0-225 seconds available).
- \*13 ALARM SOUNDER DURATION**  
[0][4]  
COMMENTS: Defines the length of time an external or the console's alarm sounder will sound for all audible alarms. Enter 01-15. Multiply by 2 minutes to determine sounder duration (UL 1023 Household burglary usage requires a minimum of 4 minutes).
- \*14 ZONE 8 RESPONSE TIME**  
[0]  
COMMENTS: Determine response time for zone 8. Enter 0 or 1  
0=slow (350-500 msec).  
1=fast (10-15 msec).
- \*21 DISABLE FIRE TIME-OUT**  
[0]  
COMMENTS: Disables the sounder time-out feature for any zone designated as a fire zone so that fire sounding continues until the system is reset. Enter 0 (time-out) or 1 (no time-out). 1 is required for usage in accordance with UL-985, Household Fire.
- \*25 DISABLE DURESS REPORTING IN ADEMCO EXPRESS FORMATS**  
[0]  
COMMENTS: Only applicable if Ademco Express Format is selected. Enter 1 to disable duress reporting or 0 to enable duress reporting.
- \*27 TEST REPORT INTERVAL**  
[2]  
COMMENTS: Determines time period between test reports. Enter 0 (no report), or 1 (12 hours), 2 (24 hours) or 3 (168 hours). Program for a maximum of 24 hours for UL installations. Must be used in conjunction with Data Field \*68 (location 5).
- \*29 QUICK ARM**  
[1]  
COMMENTS: Enables arming of the burglary system in any mode without use of a Security Code (just [#] key depression followed by the command AWAY, STAY, INSTANT or MAXI-

- MUM). When armed AWAY, reports closing as User #7. Enter 0 (disabled) or 1 (enabled).
- \*30 TOUCHTONE OR ROTARY DIAL**  
[0]  
COMMENTS: Permits selection of the type of dialing to be used. Enter 1 for TouchTone, 0 for Rotary  
Caution: Do not select a dialing method that is not legally permitted by the telephone company for the particular subscriber (if selecting "TouchTone", make sure the subscriber has requested and is paying for TouchTone service).  
Note: Whether or not TouchTone dialing for call placement is permitted, communication by the use of DTMF signalling (Ademco Express) will still take place.
- \*31 PABX ACCESS CODE**  
[ ][ ][ ][ ][ ]  
COMMENTS: If not required, enter nothing and proceed to next address; otherwise, enter prefix needed to obtain an outside Telco line. This field may be used alternatively to enter a prefix that can suppress the Telco's call waiting feature from interfering with outgoing transmissions. This prefix is only useful if the Telco option to be able to suppress call waiting has been obtained by your customer. The prefix to be used is 1170 if pulse dialing is being used or \*70 if TouchTone dialing is being used.  
Enter up to 4 digits. Each digit requires a 2-digit entry so as to allow entry of hexadecimal digits (B-F). Use the following chart to determine the entry for each digit. Only enter digits required. Do not fill unused spaces. Erase the field by entering \*31\*.
- | No. | ENTER | No.    | ENTER       |
|-----|-------|--------|-------------|
| 0   | 00    | 8      | 08          |
| 1   | 01    | 9      | 09          |
| 2   | 02    | A      | (DON'T USE) |
| 3   | 03    | B      | 11          |
| 4   | 04    | C      | 12          |
| 5   | 05    | D      | 13          |
| 6   | 06    | E or * | 14          |
| 7   | 07    | F or # | 15          |
- \*32 SUBSCRIBER ACCT. NO.**  
[1][5][1][5][1][5][1][5]  
COMMENTS: Enter 3 or 4 digits. Each digit requires a 2-digit entry so as to allow entry of hexadecimal digits (B-F). If a 3-digit number is to be used, only enter data in the first 6 locations, leaving the last two unfilled. Use the chart in address \*31 to determine the entry for each digit. Erase the field by entering \*32\*.

**\*33 PRIMARY PHONE No.**  
 (XXXXXXXXXX)  
 COMMENTS: Enter up to 12 digits, 0-9. Do not fill unused spaces. Erase the field by entering \*33\*.  
 Note: Back-up reporting (8 calls are made to the secondary phone number if no acknowledgment is received after 8 attempts to the primary number) is automatic only if there is a secondary phone number.

**\*34 SECONDARY PHONE No.**  
 (XXXXXXXXXX)  
 COMMENTS: Enter up to 12 digits, 0-9. Do not fill unused spaces. Erase the field by entering \*34\*.  
 Note: Per UL std. 1635, only 10 (total) reporting attempts can be made. Therefore, the secondary phone No. cannot be used in a UL 1635 installation.

**\*35 CENTRAL STATION DOWNLOAD PHONE No.**  
 (XXXXXXXXXX)  
 COMMENTS: Only applicable if downloading will be utilized. Enter up to 12 digits, 0-9. Do not fill unused spaces. Erase the field by entering \*35\*.

**\*36 CENTRAL STATION ID No.**  
 [1][5][1][5][1][5][1][5]  
 [1][5][1][5][1][5][1][5]  
 COMMENTS: Only applicable if downloading will be utilized. Enter all 8 hexadecimal digit (0-9, A-F)  
 00=0      04=4      08=8      12=C  
 01=1      05=5      09=9      13=D  
 02=2      06=6      10=A      14=E  
 03=3      07=7      11=B      15=F

**\*40 PROGRAM TAMPER CODE**  
 [0][0]  
 COMMENTS: See table for \*65.

**\*41 DISABLE USAGE OF END-OF-LINE RESISTOR SUPERVISION ON ZONE 1.**  
 [0]  
 COMMENTS: Enter 1 to change zone 1 to N.C. or N.O. loop that does not require an 1. Enter 0 to retain EOLR supervision of zone 1.

**\*44 RING DETECTION COUNT**  
 [0][0]  
 COMMENTS: Only applicable if central station initiated downloading will be used. Enter 00 to disable ring detection. Enter 01-14 for ring counts of 1-14. Determines after how many rings the system will answer the incoming call. Enter 15 to select mode that gets around telephone answering machines connected to the same phone lines. In the latter mode, the system, upon hearing one ring followed by nothing, will not answer but will ready itself to pick up the next incoming call received within the next 30 seconds

**\*44 RING DETECTION COUNT**  
 [0][0]  
 COMMENTS: Only applicable if central station initiated downloading will be used. Enter 00 to disable ring detection. Enter 01-14 for ring counts of 1-14. Determines after how many rings the system will answer the incoming call. Enter 15 to select mode that gets around telephone answering machines connected to the same phone lines. In the latter mode, the system, upon hearing one ring followed by nothing, will not answer but will ready itself to pick up the next incoming call received within the next 30 seconds on the first ring (the downloader calling again).

**\*46 PRIMARY TRANSMISSION FORMAT**  
 [0]  
 COMMENTS: Permits selection between Ademco Low Speed format, Radionics, or Ademco Express format. Enter 0 (Ademco Low Speed), 1 (Radionics), or 2 (Ademco Express)  
 Note: If Ademco Express reporting is selected, the reports desired must be selected in Addresses \*65 through \*68 (any non-zero code may be used).

**\*48 SECONDARY TRANSMISSION FORMAT**  
 [0]  
 COMMENTS: Same options as Address \*46. Enter 0 (Ademco Low Speed), 1 (Radionics), or 2 (Ademco Express).

**\*49 SINGLE MESSAGE XMISSION WITH CHECKSUM VERIFICATION**  
 [0]  
 COMMENTS: When selected, will send a verification digit with the message to validate the message at the receiver without having to send two message rounds. Enter 0 (NO) or 1 (YES).  
 Note: Selection applies to both primary and secondary phone numbers.

**\*54 4+2 FORMAT SELECTION**  
 [0]  
 COMMENTS: Enter 1, if 4+2 reporting is desired, enter 0 if 3+1/4+1 reporting is to be used.

The following reports (Address \*55-\*60) may be designated to report either in Standard or Expanded format. In all cases, the Standard message reports to the central station a subscriber ID number and a report (e.g., alarm [see Address \*55], trouble, restore, open/close) code. The Expanded message reports a subscriber ID number, the report code, followed by a second line where the report code is repeated three or four times and is trailed by the zone number (or user ID) related to that report. When 4+2 format is selected, no second line is transmitted. The zone number or User ID is sent as the last digit of the report.

Report	3+1/4+1 Standard	3+1/4+1 Expanded	4+2 Expanded
Alarm	SSS(S) A	SSS(S) A AAA(A) Z	SSSS AZ
Trouble	SSS(S) T	SSS(S) T TTT(T) Z	SSSS TZ
Bypass	SSS(S) B	SSS(S) B BBB(B) Z	SSSS BZ
AC Loss	SSS(S) E	SSS(S) E EEE(E) A <sub>C</sub>	SSSS EA <sub>C</sub>
Low Battery	SSS(S) L	SSS(S) L LLL(L) L <sub>B</sub>	SSSS LL <sub>B</sub>
Open	SSS(S) O	SSS(S) O OOO(O) U	SSSS OU
Close	SSS(S) C	SSS(S) C CCC(C) U	SSSS CU
Prog. Tamper	SSS(S) M	SSS(S) M	SSSS MØ
Cancel	SSS(S) X	SSS(S) X	SSSS XØ
Test	SSS(S) T <sub>ø</sub>	SSS(S) T <sub>ø</sub>	SSSS T <sub>ø</sub> Ø
Restore:			
Alarm	SSS(S) R	SSS(S) R RRR(R) Z	SSSS RZ
AC Loss	SSS(S) R	SSS(S) R RRR(R) A <sub>C</sub>	SSSS RA <sub>C</sub>
Low Battery	SSS(S) R	SSS(S) R RRR(R) L <sub>B</sub>	SSSS RL <sub>B</sub>
Trouble	SSS(S) R <sub>T</sub>	SSS(S) R <sub>T</sub> R <sub>T</sub> R <sub>T</sub> R <sub>T</sub> (R <sub>T</sub> ) Z	SSSS R <sub>T</sub> Z
Bypass	SSS(S) R <sub>B</sub>	SSS(S) R <sub>B</sub> R <sub>B</sub> R <sub>B</sub> R <sub>B</sub> (R <sub>B</sub> ) Z	SSSS R <sub>B</sub> Z

**Where:**

SSS or SSSS = Subscriber ID  
 A = Alarm Code  
 Ø = Zero  
 Z = Zone Number\*  
 T = Trouble Code  
 B = Bypass Code  
 E = AC Loss Code (1st Digit)  
 A<sub>C</sub> = AC Loss Code (2nd Digit)  
 X = Cancel Code  
 M = Program Tamper Code

L = Low Battery Code (1st digit)  
 L<sub>B</sub> = Low Battery Code (2nd digit)  
 O = Open Code  
 C = Close Code  
 U = User Number  
 T<sub>ø</sub> = Test Code  
 R = Restore Code (Alarm, AC Loss, Low Battery)  
 R<sub>T</sub> = Restore Code (Trouble)  
 R<sub>B</sub> = Restore Code (Bypass)

**\*Zone numbers for:**

Duress = 9  
 [3] & [#] Panic = A  
 [•] & [#] Panic = B

**\*55 ALARM REPORT**

[0]

COMMENTS: Enter 0 (Standard Report) or 1 (Expanded Report). When Expanded is selected, the zone number is transmitted in the last position of the 2nd transmission line (or of the 1st transmission line if 4+2 Format is used).

Note: Selection applies to both primary and secondary phone numbers.

**\*56 RESTORE REPORT**

[1]

COMMENTS: Enter 0 (Standard Report) or 1 (Expanded Report). When Expanded is selected, the zone number is transmitted in the last position of the 2nd transmission line (of the 1st transmission line if 4+2 Format is used) for zone alarms, bypasses, and troubles. For AC loss and low battery, the 2nd digit code selected (see \*67 and 68) appears in that location.

Note: Selection applies to both primary and secondary phone numbers.

**\*57 BYPASS REPORT**

[0]

COMMENTS: Enter 0 (Standard Report) or 1 (Expanded Report). Bypassing a zone results in a bypass report and in a restore report when all bypasses are removed. Fire zones cannot be bypassed. When Expanded is selected, the zone number is transmitted in the last position of the 2nd transmission line (or of the 1st transmission line if 4+2 Format is used).

Note: Selection applies to both primary and secondary phone numbers.

**\*58 TROUBLE REPORT**

[0]

COMMENTS: Enter 0 (Standard Report) or 1 (Expanded Report). When Expanded is selected, the zone number is transmitted in the last position of the 2nd transmission line (or of the 1st transmission line if 4+2 Format is used).

Note: Selection applies to both primary and secondary phone numbers.

**\*59 OPEN/CLOSE REPORT**

[1]

COMMENTS: Enter 0 (Standard Report) or 1 (Expanded Report). When Expanded is selected, user ID (1-8) is transmitted in the last position of the 2nd transmission line (or of the 1st transmission line if 4+2 Format is used).

Note: Selection applies to both primary and secondary phone #s.

**\*60 LOW BATTERY, AC LOSS AND TEST REPORT**

[0]

COMMENTS: Enter 0 (Standard Report) or 1 (Expanded Report). When Expanded is selected, and additional programmable (except for Test which has a 0) code is transmitted in the last position of the 2nd transmission line (of the 1st transmission line if 4+2 Format is used).

Note: Selection applies to both primary and secondary phone numbers.

**\*65 ALARM REPORTING CODES ASSIGNED**

[0][0] Zone 1

[0][0] Zone 2

[0][0] Zone 3

[0][0] Zone 4

[0][0] Zone 5

[0][0] Zone 6

[0][0] Zone 7

[0][0] Zone 8

COMMENTS: Enter all alarm reporting codes as double digits. Disable = 00 (no code reporting).

01=1 06=6 11=B

02=2 07=7 12=C

03=3 08=8 13=D

04=4 09=9 14=E

05=5 10=0 15=F

**\*66 ALARM REPORTING CODES ASSIGNED (CONT)**

[0][0] Duress

[0][0] [3]&amp;[#] Panic

[0][0] [-] &amp; [#] Panic

COMMENTS: Enter all alarm reporting codes as double digits (same as Addresses \*65). Disabled = 00 (no code reporting).

**\*67 NON-ALARM CODES**

[0][0] AC LOSS

[0][0] AC LOSS 2ND DIGIT\*

[0][0] TROUBLE

[0][0] TROUBLE RESTORE

[0][0] BYPASS

[0][0] BYPASS RESTORE

[0][0] RESTORE CODE FOR ALARM, AC LOSS, LOW BATTERY

COMMENTS: Enter all codes double digits (see Address \*65). Disabled = 00 (no report).

\*If you have entered a reporting code for AC Loss, enter code here. This is necessary regardless of the reporting format selected (e.g., Ademco Express 3+1, 4+1). This code is also transmitted with the restore code when expanded reporting is used, so it may be desirable to make it the same as the AC LOSS report code.

**\*68 NON-ALARM CODES**

[0][0] OPEN

[0][0] CLOSE

[0][0] LOW BATTERY

[0][0] LOW BATTERY 2nd DIGIT\*

[0][0] TEST

[0][0] CANCEL CODE\*\*

COMMENTS: Enter all codes as double digits (see Address \*65). Disable = 00 (no report).

\*If you have entered a reporting code for LOW BATTERY, enter a code here. This is necessary regardless of the reporting format selected (e.g., Ademco Express 3+1, 4+1). This code is also transmitted with the restore code when expanded reporting is used, so it may be desirable to make it the same as the LOW BATTERY code.

\*\* When 4+2 format is used, the 2nd digit of the event code is always "0".

Note: If system is shut down by using a security code while a burglary alarm is sounding, a cancel code will be sent (not sent for 24-hour zones).

# 4120EC PROGRAMMING FORM

## INSTALLER CODE

(ENTER 0-9)

## MASTER CODE

(ENTER 0-9)

## RESPONSE TYPE

(ENTER 00-10)

00 = unused zone

01 = E/E #1

02 = not used

03 = Perimeter

04 = Interior Followup

05 = Trouble by day!

Alarm by night

06 = 24 hr Silent

07 = 24 Hr Audible

08 = 24 hr Auxiliary

09 = Fire

## N.O. or N.C. SENSOR

LOOP (ZONES 1 - 8)

(1 = N.C., 0 = N.O.)

## ENTRY DELAY

X 15 sec (00 - 15)

## EXIT DELAY

X 15 sec (00 - 15)

## ALARM SOUNDER

TIME DURATION

X 2 min. (01 - 15)

## ZONE 8 RESPONSE TIME

0 = Slow, 1 = Fast

## NO FIRE TIME-OUT

1 = Yes, 0 = No

## DISABLE DURESS IN

ADEMCO EXPRESS FORMAT

1 = Yes, 0 = No

## TEST REPORT

INTERVAL

0 = no report; 1 = 12 hrs.; 2 = 24 hrs.;

3 = 168 hrs

## QUICK ARM

1 = Yes, 0 = No

## TOUCH-TONE DIAL

1 = Yes, 0 = ROTARY

## PABX CODE

00 - 09; B - F

## SUBSCRIBER #

00 - 09; B - F

## PRIMARY PHONE #

0-9

## SEC PHONE #

0-9

## CS DOWNLOAD#

0-9

## CS ID#

00 - 09; A - F

## PROGRAM TAMPER

00-09; B - F

## USE EOLR ON

ZONE 1

1 = NO EOLR, 0 = EOLR supervision

## RING DETECT COUNT

00 = no ring detect; 01 - 14 for ring counts of 1 - 14;  
15 when telephone answering machine is connected to  
the same phone line

## PRIM XMIT FORMAT

0 = ADEMCO LO; 1 = RADIONICS

2 = 4+2 EXPRESS

## SEC XMIT FORMAT

0 = ADEMCO LO; 1 = RADIONICS

2 = 4+2 EXPRESS

## CHECKSUM VERIFY

1 = Yes, 0 = No

## 4+2 ZONE

FORMAT SELECTION

1 = 4+2 format;

0 = 3+1/4+1

## ALARM REPORT

0 = Standard; 1 = Expanded

## RESTORE REPORT

0 = Standard; 1 = Expanded

## BYPASS REPORT

0 = Standard; 1 = Expanded

## TROUBLE REPORT

0 = Standard; 1 = Expanded

## OPEN/CLOSE REPORT

0 = Standard; 1 = Expanded

## LOW BAT; AC LOSS

& TEST REPORT

0 = Standard; 1 = Expanded

## ALARM CODES FOR

EACH ZONE

(Enter 01 - 15;  
00 = no code reporting)

## NON-ALARM CODES

(Enter 01 - 15;

00 = no code

reporting)

AC LOSS

AC LOSS 2nd DIGIT

TRBL

TRBL RESTR

BYPASS

BYPASS RESTR

RESTR CODE FOR

ALRM, AC, LO BAT

HEXADECIMAL TO NUMERIC 0-10 (REPORT CODES)

ENTRY CONVERSION

0 = 00 (SUBS ID, PABX OR CS ID)

1= 01 2= 02 3= 03 4= 04 5= 05 6= 06 7= 07

8= 08 9= 09 10= 11 12= 12 13= 13 14= 14 15= 15

## TESTING THE SYSTEM

After installation is completed, the Security System should be carefully tested.

1. With the System in the disarmed state, check that all zones are intact. If **NOT READY** is displayed, press the [\*] key to display the faulted zone(s). Restore faulted zone(s) if necessary, so that **READY** is displayed. Fault and restore every sensor individually to assure that it is being monitored by the system.
2. Enter the security code and press the **TEST** key. The external sounder (if used) should sound for 3 seconds and then turn off and a test report should be transmitted (if programmed) to the Central Station. If the backup battery is discharged or missing, the external sounder will not turn on and a **LOW BATTERY** report will be transmitted instead of a **TEST** report.

A message will be sent to the central station during the following test. Notify the central station that a test will be in progress.

3. Arm the system and fault one or more zones. Silence alarm sounder(s) each time by entering the code and pressing **OFF**. Check Entry/Exit delay zones.
4. Check the keypad-initiated alarms by pressing the Panic key pairs-[\*] and [#] and/or [3] and [#]. If the system has been programmed for audible emergency, the console will emit a loud, steady alarm sound, and **ALARM** and 99 will be displayed for [\*] and [#] (if [3] and [#] are pressed, 96 will be displayed). Silence the alarm by entering security code and pressing **OFF**.  
If the system has been programmed for silent emergency, there will be no audible alarms or displays, but a report will be sent to the central station.
5. Notify the central station that all tests are finished, and verify results with them.

**Note:** If the battery standby capacity is exceeded during an AC power failure, the 4120 will automatically shut itself off so that it can retain its armed state (**OFF**, **AWAY**, **STAY**, etc.). When AC power is restored, the 4120 will assume its armed status prior to the AC power interruption.

### TO THE INSTALLER

Regular maintenance and inspection (at least annually) by the installer and frequent testing by the user are vital to continuous satisfactory operation of any alarm system.

The installer should assume the responsibility of developing and offering a regular maintenance program to the user as well as acquainting the user with the proper operation and limitations of the alarm system and its component parts. Recommendations must be included for a specific program of frequent testing (at least weekly) to insure the system's proper operation at all times.

## SPECIFICATIONS

### 4120 SECURITY CONTROL

1. **Physical:** 12-1/1" (318 mm) W,  
14-12 (368 mm) H,  
3" (76 mm) D

2. **Electrical**

**VOLTAGE INPUT:** 16.5VAC (from plug-in 25VA transformer, Ademco No. 1321/TF2). In Canadian installations, No. 1321CN must be used.

**RECHARGEABLE BACK-UP BATTERY:** 12VDC, 4AH (Gel or starved lead-acid type)

**ALARM SOUNDER:** 10-13.8V, 2.8 Amp output (300 mA max. on alarm for a UL installation).

**OUTPUT:** Can drive 12V motor driven bells (100 mA each) - AMSECO MSB10G or ABB1031. Do not use solenoid operated bells.

Can drive one 702 or two 702 (series connected) self-contained 20-watt sirens. Do not connect two 702s in parallel.

**AUXILIARY POWER OUT-PUT:** 10.0-13.8V DC, 700 mA max. for non-UL installation, 400 mA max. for UL installations.

**STANDBY TIME:** 4 HRS. with Auxiliary load of 500mA\*  
\*Using 4 AH Battery

### 3. Communication:

#### FORMATS SUPPORTED:

**Ademco Express**, 10 characters/sec, DTMF (Touch-Tone) Data Tones, 1400/ 2300 Hz ACK, 1400 Hz KISSOFF.

**Ademco Low Speed**, 10 pulses/sec, 1900 Hz Data Tone, 1400 Hz ACK/ KISS-OFF.

**RADIONICS**, 20 pulses/ sec, 1800 Hz Data Tone, 2300 Hz ACK/KISSOFF reports 0-9, B-F).

Line Seize: Double Pole

Ringer Equivalence: 0.7B

FCC Registration No.: AC 398U-68192-AL-E.

### 4127 REMOTE CONSOLE

1. **Physical:** 5-5/8" (143mm) W  
4-11/16" (119mm) H  
7/8" (22 mm) D
2. **Electrical:**  
Voltage Input: 12V DC  
Current Drain: 20 mA
3. **Interface Wiring:**  
RED: 12V DC input (+) aux pwr  
GREEN: Data In  
YELLOW: Data Out  
BLACK: Ground

### 5330 REMOTE CONSOLE

1. **Physical:** 7-3/4" (143mm) W  
4-7/16" (119mm) H  
1 1/4" (32mm) D
2. **Electrical:**  
Voltage Input: 12V DC  
Current Drain: 105 mA
3. **Interface Wiring:**  
RED: 12V DC input (+) aux pwr  
GREEN: Data In  
YELLOW: Data Out  
BLACK: Ground

### 4137 REMOTE CONSOLE

1. **Physical:** 8-2/5" (213mm) W  
4-3/4" (12mm) H,  
1-1/10" (28mm) D
2. **Electrical:**  
Voltage Input: 12V DC  
Current Drain: 60 mA
3. **Interface Wiring:**  
RED: 12V DC input (+) aux pwr  
BLUE: Not Used  
GREEN: Data In  
YELLOW: Data Out  
BLACK: Ground



## ACCESSORIES

No. 1321/TF2*	16.5VAC, 25VA Plug-In Transformer.
No. 4100CB	Control Cabinet
No. 4127	Remote Console
No. 4137	Remote Console
No. 5330	Remote Alpha Console
BRK PA400B	Piezoelectric Alarm Sounder, 90dB output (mounts in single-gang box).
No. 702	Self-contained 20 watt Siren (indoor/outdoor)
No. 740	Extremely loud Piezoelectric Alarm Sounder, 122 dB output (indoor/outdoor).
No. 4120PR	50-sheet pad of Programming Forms.
No. 675**	Ground Start Module
BRK 1400	2-wire Ionization Products of Combustion Detector
BRK 2400	2-wire Photoelectric Smoke Detector
BRK 2400TH	2-wire Photoelectric Smoke Detector w/135°F (57°C) Heat Detector

\*\*Not UL Listed

- In Canadian installations, No. 1321CN must be used.

## CANADIAN DEPARTMENT OF COMMUNICATIONS (DOC) STATEMENT NOTICE

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

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

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

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

### Caution:

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

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

### AVIS

L'étiquette du ministère des Communications du Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme à certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Le ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. Dans certains cas, les fils intérieurs de l'entreprise utilisés pour un service individuel à ligne unique peuvent être prolongés au moyen d'un dispositif homologué de raccordement (cordon prolongateur téléphonique interne). L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêchent pas la dégradation du service par certaines situations. Actuellement, les entreprises de télécommunication ne permettent pas que l'on raccorde leur matériel aux jacks d'abonnés, sauf dans les cas précis prévus par les tarifs particuliers de ces entreprises.

Les réparations de matériel homologué doivent être effectuées par un centre d'entretien canadien autorisé désigné par le fournisseur. La compagnie de télécommunications peut demander à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

### Avertissement

L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

L'indice de charge (IC) assigné à chaque dispositif terminal pour éviter toute surcharge indique le pourcentage de la charge totale qui peut être raccordé à un circuit terminaison du circuit bouclé peut être constituée de n'importe quelle combinaison de dispositifs, pourvu que la somme des indices de charge de l'ensemble des dispositifs ne dépasse pas 100.

**WARNING**  
**THE LIMITATIONS OF THIS ALARM SYSTEM**

While this system is an advanced design security system, it does not offer guaranteed protection against burglary, fire or other emergency. Any alarm system, whether commercial or residential, is subject to compromise or failure to warn for a number of reasons. For example:

- Intruders may gain access through unprotected openings or have the technical sophistication to bypass an alarm sensor or disconnect an alarm warning device.
- Intrusion detectors (e.g., passive infrared detectors), smoke detectors, and many other sensing devices will not work without power. Battery operated devices will not work without batteries, with dead batteries, or if the batteries are not put in properly. Devices powered solely by AC will not work if their AC power supply is cut off for any reason, however briefly.
- Signals sent by wireless transmitters may be blocked or reflected by metal before they reach the alarm receiver. Even if the signal path has been recently checked during a weekly test, blockage can occur if a metal object is moved into the path.
- A user may not be able to reach a panic or emergency button quickly enough.
- While smoke detectors have played a key role in reducing residential fire deaths in the United States, they may not activate or provide early warning for a variety of reasons in as many as 35% of all fires, according to data published by the Federal Emergency Management Agency. Some of the reasons smoke detectors used in conjunction with this System may not work are as follows. Smoke detectors may have been improperly installed and positioned. Smoke detectors may not sense fires that start where smoke cannot reach the detectors, such as in chimneys, in walls, or roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level of a residence or building. A second floor detector, for example, may not sense a first floor or basement fire. Moreover, smoke detectors have sensing limitations. No smoke detector can sense every kind of fire every time. In general, detectors may not always warn about fires caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson. Depending on the nature of the fire and/or the location of the smoke detectors, the detector, even if it operates as anticipated, may not provide sufficient warning to allow all occupants to escape in time to prevent injury or death.
- Passive Infrared Motion Detectors can only detect intrusion within the designed ranges as diagrammed in their installation manual. Passive Infrared Detectors do not provide volumetric area protection. They do create multiple beams of protection, and intrusion can only be detected in unobstructed areas covered by those beams. They cannot detect motion or intrusion that takes place behind walls, ceilings, floors, closed doors, glass partitions, glass doors, or windows. Mechanical tampering, masking, painting or spraying of any material on the mirrors, windows or any part of the optical system can reduce their detection ability. Passive Infrared Detectors sense changes in temperature; however, as the ambient temperature of the protected area approaches the temperature range of 90° to 150°F, the detection performance can decrease.
- Alarm warning devices such as sirens, bells or horns may not alert people or wake up sleepers who are located on the other side of closed or partly open doors. If warning devices sound on a different level of the residence from the bedrooms, then they are less likely to awaken or alert people inside the bedrooms. Even persons who are awake may not hear the warning if the alarm is muffled by noise from a stereo, radio, air conditioner or other appliances, or by passing traffic. Finally, alarm warning devices, however loud, may not warn hearing-impaired people or waken deep sleepers.
- Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily out of service. Telephone lines are also subject to compromise by sophisticated intruders.
- Even if the system responds to the emergency as intended, however, occupants may have insufficient time to protect themselves from the emergency situation. In the case of a monitored alarm system, authorities may not respond appropriately.
- This equipment, like other electrical devices, is subject to component failure. Even though this equipment is designed to last as long as 10 years, the electronic components could fail at any time.

The most common cause of an alarm system not functioning when an intrusion or fire occurs is inadequate maintenance. This alarm system should be tested weekly to make sure all sensors are working properly.

Installing an alarm system may make one eligible for lower insurance rates, but an alarm system is not a substitute for insurance. Homeowners, property owners and renters should continue to act prudently in protecting themselves and continue to insure their lives and property.

We continue to develop new and improved protection devices. Users of alarm systems owe it to themselves and their loved ones to learn about these developments.

### FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT\*

This equipment has been tested to FCC requirements and has been found acceptable for use. The FCC requires the following statement for your information.

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

- If using an indoor antenna, have a quality outdoor antenna installed.
- Reorient the receiving antenna until interference is reduced or eliminated.
- Move the receiver away from the control/communicator. A ten-foot separation is recommended.
- Move the antenna leads away from any wire runs to the control/communicator. A ten-foot separation is recommended.
- Plug the control/communicator into a different outlet so that it and the receiver are on different branch 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 Federal Communications Commission helpful:

#### "Interference Handbook"

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402. Stock No. 004-000-00450-7.

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