Ademco vista16

Security System

INSTALLATION INSTRUCTIONS

®ADEMCO

THIS ISSUE HAS BEEN REFORMATTED FOR EASIER READING AND INSTALLATION.
IT ALSO CONTAINS INFORMATION ON SYSTEM ENHANCEMENTS NOW INCLUDED
(indicated by margin lines in the text).

N5478-1V1 7/93

CONGRATULATIONS!
On Your Purchase of the *Ademco via16*

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

CONTACTING TECHNICAL SUPPORT

PLEASE,

Before you call Technical Support, be sure you:

- **READ THE INSTRUCTIONS!**
- **Check all wiring connections.**
- **Determine that the power supply and/or backup battery are supplying proper voltages.**
- **Verify your programming information where applicable.**
- **Note the proper model number of this product, and the version level (if known) along with any documentation that came with the product.**
- **Note your ADEMCO customer number and/or company name.**

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

You may contact Technical Support via Toll Free Fax. Please include your return fax number. You will receive a reply within 24 hours. You may also contact Technical Support via modem to ATLIS-BBS, Tech Support's Electronic Bulletin Board System. Replies are posted within 24 hours.

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.)
Technical Support Fax Number: 1-800-447-5086
ATLIS-BBS Electronic Bulletin Board System: 1-516-496-3980
(1200 - 9600 Baud, 8 Data Bits, 1 Start/Stop Bit, No Parity)

The ***Ademco via16*** System
Can Support 2 EOLR Wired Zones
and
(when used with appropriate wireless receiver)
Up to 16 Wireless (RF) Zones

FOR YOUR CONVENIENCE,
two easily removable Programming Forms
have been included at the center of this manual.

This system is not California State Fire Marshall approved
and, as such, should not be used for fire protection in California
(or other areas requiring such acceptance).

TABLE OF CONTENTS

Section 1. GENERAL INFORMATION

Introduction

System	The ***Ademco via16*** is a microprocessor-based state-of-the-art security control intended for wireless applications.
Zones Supported	Supports up to 18 zones, in the following configuration: • 2 hard wired EOLR "basic" zones. • Up to 16 wireless (RF) zones in conjunction with its accompanying 4281H RF receiver. (If a 4281L or 4281M RF Receiver is used instead, only up to 4 or 8 wireless zones respectively can be supported.) Refer to the Zone Characteristics chart on the next page for detailed zone information. ***Note:*** The *single* 4281 type RF receiver that the ***Ademco via16*** accommodates, features Spatial Diversity (dual antennas), which virtually eliminates the possibility of "Nulls" and "Dead Spots" within the coverage area.
Programming	The system can be easily programmed from any of the remote consoles listed below. 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. In addition, the system can be uploaded, downloaded, or controlled via a computer and Hayes modem (see *REMOTE PROGRAMMING AND CONTROL* on page 24).
Remote Consoles	The system may use one or more 4127, 4137, 5330, or 6127 Consoles. The 4127, 4137, and 6127 have digital keypads and fixed English status LCDs. The 5330 provides programmable English language zone descriptors and status indications (select for Vector device, as described in the 5330's installation instructions). ***Note:*** 4137AD (Addressable) Consoles may be used, provided they are set to their non-addressable mode (device ID 31...all DIP switch positions UP). When wireless is in use, the system may also be armed and disarmed with a wireless keypad (No. 5727).
User Codes	Up to 3 secondary user codes can be assigned by the system's Master code.
Communication	The system provides communication capability (central station reporting, etc.) over existing telephone lines.

Alarm Output Advisory

This system includes an alarm output rated at 2 amps. **Throughout the manual, wherever reference is made to Alarm Output Ratings, they assume a fully charged battery is connected, unless the UL rating is stated.** The battery is periodically tested automatically (approximately every four hours), and if it cannot sustain a load, a low battery message is displayed and can be reported to the central station.

Multiple Consoles

(up to 4...see page 11) may be used, as long as their total current drain is within the alarm and auxiliary power output limitations described in the *SPECIFICATIONS AND ACCESSORIES* section.

Zone Characteristics

Zones 1-4	*not present*
Zones 5,6 For more information, see page 7.	**Wired Programmable Zones.** EOLR supervised, N.O. or N.C. sensors, 300-500 msec normal response.
Zones 7, 95, 96	**Console Panics** (Wired & Wireless). 24hr zones. Zone 7 is programmable for silent, audible, auxiliary, or fire. Zones 95 (Silent Panic) and 96 (Audible Panic) are fixed-function zones.
Zone 8	**Duress** (see User's Manual).
Zone 9	**Tamper.** Reports faults in the 4281 RF receiver and trouble-by-day/alarm-by-night zones. For all report formats (except Contact ID, which provides more explicit reporting) a trouble code is reported when the system is not armed, and Zone 9 report code is sent for an alarm.
Wireless Zones For more information, see page 8.	**Up to 16 wireless (RF) zones can be added** by using an Ademco 4281(5700 System) Type RF Receiver. Specifically: **Model** — **Number of Zones** 4281L — Up to 4 4281M — Up to 8 4281H ‡ — Up to 16 ‡ Provided with system Zone number assignments (which are also transmitter ID assignments for 5700 RF system transmitters) can be in the **10-63** range A variety of RF system transmitters can be used to make up the wireless zones. This includes window/door units, smoke detectors, PIRs, and panic keys. ***Note:*** *For brevity, subsequent references herein to the RF Receiver will be indicated by "4281" unless a specific model is named.*

Section 2. SYSTEM CONFIGURATIONS

ZONE RESPONSE TYPE DEFINITIONS

General Information

Each zone must be assigned to a zone type, which defines the way in which the system responds to faults in that zone. Zone types are defined below *("Type 2" is not used in this system).*

Type 0
Zone Disabled (or Undefined)

Program a zone with this zone type if the zone is not used.

Type 1
Entry/ExitBurglary

This zone type provides entry delay whenever the zone is faulted if the control is armed in the Away or Stay modes. When the panel is armed in the Instant or Maximum modes, no entry delay is provided. Exit delay begins whenever the control is armed, regardless of the arming mode selected. These delays are programmable. This zone type is usually assigned to sensors or contacts on doors through which primary entry and exit will take place.

Type 3
Perimeter Burglary

This zone type gives an instant alarm if the zone is faulted when the panel is armed in the Away, Stay, Instant or Maximum modes. This zone type is usually assigned to all sensors or contacts on exterior doors and windows.

Type 4
Interior, Follower

This zone type is active when the panel is armed in the Away or Maximum modes. Entry delay (using the programmed entry time) results if the panel is armed in the Away mode and the entry/exit zone is faulted first. Otherwise this zone type gives an instant alarm. *Exit* delay is present for *any* arming mode. This zone type is usually assigned to a zone covering an area such as a foyer, lobby, or hallway through which one must pass (upon entry, after faulting the entry/exit zone) to reach the console to disarm the system. Since this zone type is designed to provide an instant alarm if the entry/exit zone is not violated first, it will protect an area 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. **This zone type is bypassed automatically when the panel is armed Stay or Instant .**

Type 5
Trouble by Day/ Alarm by Night

This zone type will give an instant alarm if faulted when armed in the Away, Stay, Instant or Maximum (night) modes. During the disarmed state (day), the system will provide a latched trouble sounding from the console (and a central station report, if desired). Usually 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. This zone type can also be used on a sensor or contact in an area where immediate notification of an entry is desired.

Type 6
24-hour Silent Alarm

This zone type sends a report to the Central Station but provides no console display or sounding. This zone type is usually assigned to a zone containing an Emergency button.

Type 7
24-hour Audible Alarm

This zone type sends a report to the Central Station, and provides a rapid beeping sound at the console, and an audible external alarm. This zone type is usually assigned to a zone that has an Emergency button.

Type 8
24-hour Auxiliary Alarm

This zone type sends a report to Central Station and provides a rapid beeping sound at the console. **(No bell output is provided).** Usually assigned to a zone containing a button for use in personal emergencies, or to a zone containing monitoring devices such as water or temperature sensors, etc.

Type 9
Supervised Fire

This zone type provides a fire alarm on short circuit and a trouble condition on open circuit. The bell output will pulse when this zone type is faulted. This zone type is always active and cannot be bypassed. **This zone type can be assigned to control panel wired zone 5, or certain wireless zones.**

Type 10
Interior w/Delay

This zone type gives *entry* delay (using the programmed entry time), if tripped when the panel is armed in the Away mode, regardless of whether or not an entry/exit delay zone was tripped first. This zone type is also active during Maximum mode, but *no* entry delay is provided (an alarm occurs immediately if the zone is tripped). *Exit* delay is present for *any* arming mode. **This zone type is bypassed automatically when the panel is armed Stay or Instant .**

By using a 4281 receiver and the appropriate 5700 series transmitters, all of the above zone types are available for the wireless portion of the system.

HARD-WIRED ZONES

Basic Control's Zones

The ***Ademco via16*** supports 2 hard-wired zones, which are connected as zones 5 & 6. These zones must be EOLR supervised, and can use N.O. and/or N.C. sensors.

Zone Response Type	Any zone response can be assigned to devices on these zones except Supervised Fire (09), which can be assigned *only* to zone 5 (see below).
Response Time	300–500 msec.
Max. Zone Resistance	300 ohms, excluding EOLR
EOLR Supervised	• Supports both open circuit and closed circuit devices. • Connect open circuit devices in parallel across the loop. The 1,000 ohm EOLR must be connected across the loop wires **at the last device.** ***Important***: If the EOLR is not at the end of the loop, the zone is not properly supervised. The system may not respond to an open circuit within the zone. • Connect closed circuit devices in series with the loop.
EOLR Fire Zone 5	• Only zone 5 can be used for fire. • Supports as many 4-wire smoke detectors as can be powered. • The zones must be configured for EOLR supervision. • The detectors must be wired in parallel, with the EOLR at the last detector for full supervision. • To supervise power, a supervisory module (e.g., System Sensor A7771601 EOL Relay Module) is required.

WIRELESS EXPANSION — 5700 RF SYSTEM —

General

In addition to its basic 2 wired zones, the control, in conjunction with its 4281H RF Receiver, can provide up to 16 wireless zones [alternatively, with a 4281L: up to 4 zones, or with a 4281M: up to 8). A wireless keypad (5727) also can be used with the system.

The receiver can be mounted within the control's cabinet (see page 10) or installed remotely, in its own housing.

The 4281 recognizes alarms, status messages and keypad control messages from 5700 Series Wireless Transmitters operating at 345Mhz (315Mhz for Canadian version). These messages are processed and relayed to the control panel via a 4 wire connection to the control's remote console terminals. The 4281's RED, BLACK, YELLOW, and GREEN wires are connected in parallel with console wiring.

The 4281 can receive signals from wireless transmitters (listed below) within a nominal range (installed) of 200 feet.

The 4281's DIP switch must be set for a device address of "0", as described in the 4281's instructions (all switches to the RIGHT..."off").

Supervision

Each transmitter (except 5701 and 5727) is supervised by a check-in signal that is sent to the receiver at 70-90 minute intervals. If at least one check-in is not received from each *supervised* transmitter within a 12 hour period, the "missing" transmitter number(s) and "CHECK" will be displayed on the console.

Each transmitter (including 5701) is also supervised for low battery conditions and will transmit a low battery signal to the 4281, with the battery having at least 30 days of life remaining. If the 5727 transmits and has a low battery, it also will be indicated (as Zone 00 on a fixed English console).

Note: After a low or dead battery is replaced, activate the transmitter and then enter the security code + OFF to clear the system's memory of the "Low Battery" signal.

The 4281 itself is supervised. *If communication with the receiver is interrupted, or valid RF signals from at least one supervised wireless transmitter are not received within 12 hours, a tamper report (Zone 9) will be generated.*

House Identification

The 4281 responds only to transmitters set to the same House ID (01-31, see the DIP switch tables on page 32) as programmed in the control (see field *24). This prevents interference from transmitters in other nearby systems. To make sure that a House ID is chosen that is not in use nearby, conduct the House ID Sniffer Mode test described under *TESTING THE SYSTEM.*

Transmitter Identification

Each transmitter's assigned zone number is DIP switch programmable in the unit as its transmitter ID (except wireless keypads, which are fixed at ID 00). Whenever a transmission takes place, whether for an alarm, fault, check-in, or low battery, the ID number is sent along with the message to the 4281 which, in turn, relays this information to the control, which displays the condition and zone number on the console.

WIRELESS TRANSMITTERS for the 4281 are described on page 31.
DIP SWITCH SETTING TABLES are shown on page 32.

Transmitters set for IDs of 48-55 (FIRE) have high signal priority and will transmit once every 12 seconds while the zone is faulted.

Transmitter IDs of 62 and 63 are unsupervised to allow removal of the 5701 off-premises. Signal priority is higher than burglary.

Transmitters set for IDs of 56-63 will transmit once every 3 seconds while faulted.

Transmitters set for IDs of 32-47 will have a 3 minute lock-out between transmissions to conserve battery life (normally PIR units).

Note: To conserve battery life, transmitters protecting *frequently used* doors and windows should be set for IDs in the 32-47 range.

5700 RF System Installation Advisories

1. If the 4281 Receiver is to be mounted remotely (not in the control's cabinet), place it in a high, centrally located area for best reception.
2. Do not locate receiver or transmitters on or near metal objects. This will decrease range and/or block transmissions.
3. Before mounting transmitters permanently, conduct Go/No Go Tests to verify adequate signal strength (see *TESTING THE SYSTEM*) and reorient or relocate transmitters if necessary.

Section 3. MOUNTING THE CONTROL, LOCK, & PC BOARD

Mounting the Cabinet

The ***Ademco via16*** is supplied with a 12-1/2" (318mm) wide x 14-1/2" (368mm) high x 3" (76mm) deep cabinet suitable for use in residential installations.

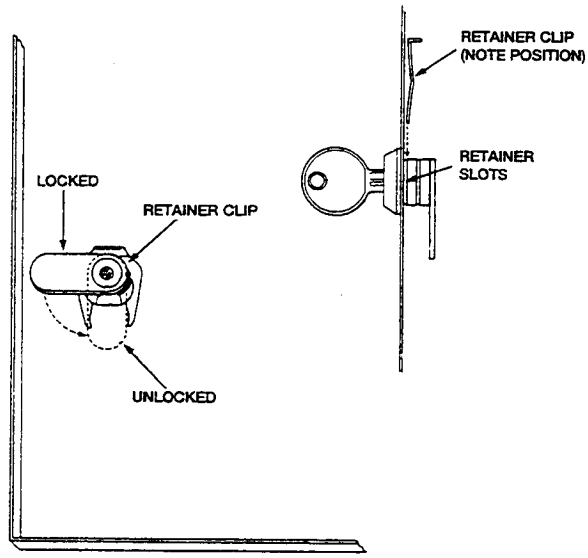
Mount the control cabinet to a sturdy wall using fasteners or anchors (not supplied) in a clean, dry area which is not readily accessible to the general public. 4 mounting holes are provided at the back of the cabinet.

Installing the Lock (if Used)

The cabinet can be closed and secured *without* a lock by using 2 screws in the cover's edge.

Use an Ademco No. N6277 Cam Lock and No. N6277-1 Push-On Clip (Retainer Clip).

1. Remove the cabinet cover. *It is easily removable for servicing and is easily reinstalled.*
2. Remove the lock knockout from 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.
3. While holding the lock steady, insert the retainer clip into the retainer slots. Position clip as illustrated to facilitate easy removal.



Installing the Control's Circuit Board Alone

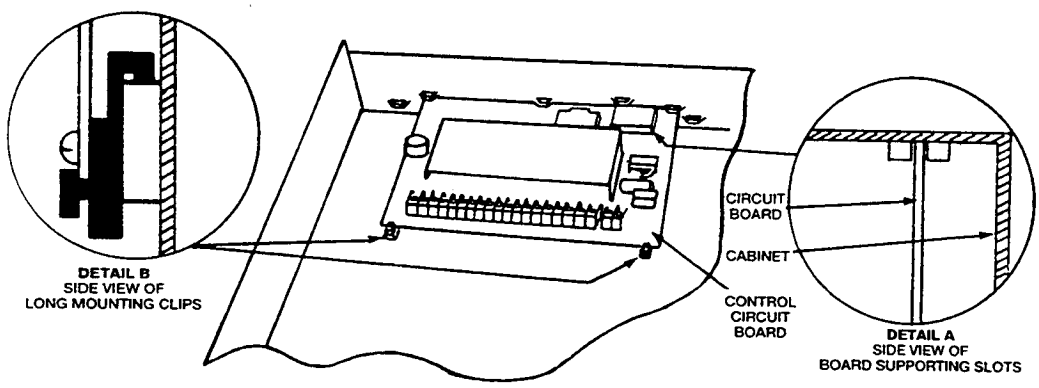
IMPORTANT!

Before installing the cabinet's contents, be sure to remove the appropriate metal cabinet knockouts.

DO NOT ATTEMPT TO REMOVE THE KNOCKOUTS AFTER THE CIRCUIT BOARD HAS BEEN INSTALLED.

Control's Circuit Board

1. Hang two *long* mounting clips (provided) on the raised cabinet tabs (see Detail B below).
2. Insert the top of the circuit board into the slots at the top of the cabinet. Make sure that the board rests on the correct row (see Detail A).
3. Swing the base of the board into the mounting clips and secure the board to the cabinet with the accompanying screws (see Detail B).



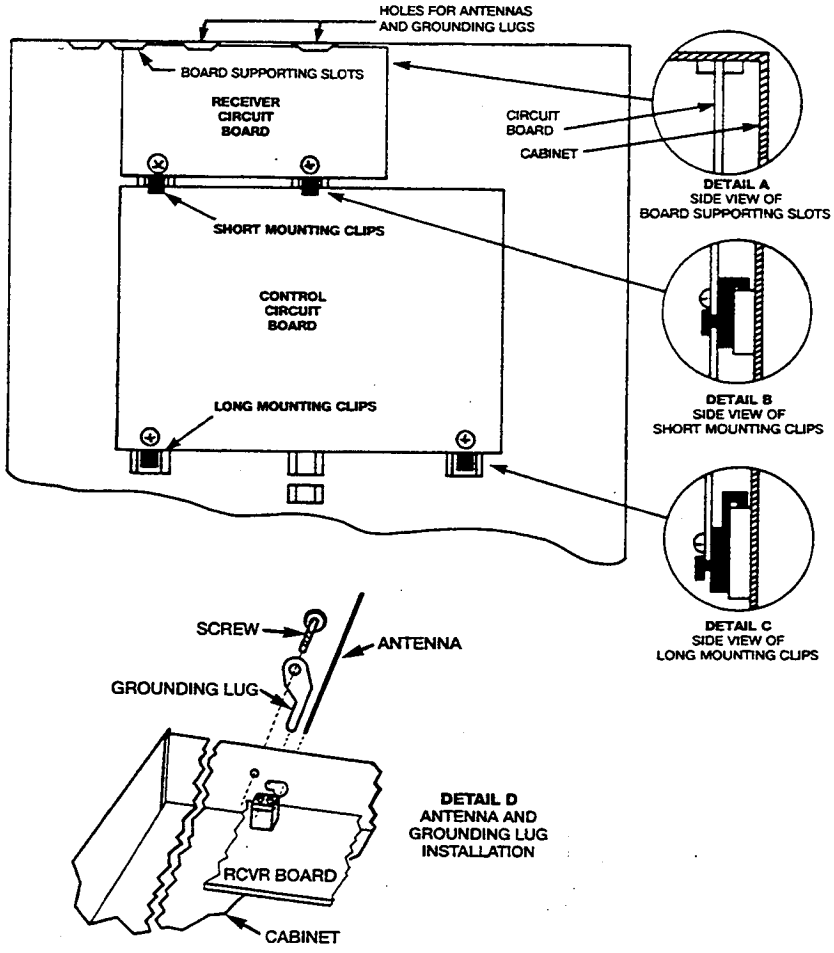
Installing Control and RF Receiver Circuit Boards Together, in the Same Cabinet

IMPORTANT!

Before installing the cabinet's contents, be sure to remove the appropriate metal cabinet knockouts.

DO NOT ATTEMPT TO REMOVE THE KNOCKOUTS AFTER THE CIRCUIT BOARDS HAVE BEEN INSTALLED.

1. Hang two *short* (black) mounting clips (provided with receiver) on the raised cabinet tabs, as shown in Detail B below.
2. Insert the top of the receiver board (removed from its own case as described in *its* instructions) into the slots at the top of the cabinet (see Detail A). Make sure that the board rests on the correct row of tabs.
3. Swing the base of the board into the mounting clips and secure it to the cabinet with the accompanying screws (see Detail B).
4. Insert the top of the control's board into the slot in the clips and position two *long* (red) clips at the lower edge of the board (see Detail C).
5. Swing this board into place and secure it with two additional screws.
6. Insert grounding lugs (supplied with the receiver) through the top of the cabinet into the *left-hand* terminals of the antenna blocks (at the upper edge of the receiver board) and secure them to the cabinet top with the screws provided, as shown in Detail D.
7. Insert the receiver's antennas through the top of the cabinet, into the blocks' *right-hand* terminals, and tighten the screws.



Section 4. WIRING & POWERING THE SYSTEM

(See Summary of Connections Diagram on Page 33)

IMPORTANT: Do not connect the battery, or plug in the AC transformer, until all other wiring connections have been completed.

Grounding the System

Terminal 21 is the earth ground connection point. In order for the protective devices in this product to be effective, the designated terminal 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 lead is electrically connected and secured.

AC power outlet ground: Available from 3-prong, 120 VAC power outlets only. To test the integrity of the ground terminal, use a 3-wire circuit tester with neon lamp indicators, such as the UL Listed Ideal Model 61-035, or equivalent, available at most electrical supply stores.

Terminals and Connections

1 & 2: AC Input (16.5VAC, 25VA) from No. 1321/TF2 plug-in transformer (in U.S.A.).

Note: For Canadian installations, a No. 1321CN transformer must be used.

3: Alarm relay output(+), 12VDC, 2.0A maximum *(600mA max Alarm plus Aux Power for UL usage).*

4: Ground (–) Return for Alarm Output Auxiliary Power and Wired Fire. Via BLACK lead for Console(s)† and 4281

5: +12VDC Output (at 500mA max.) for Auxiliary Power and Wired Fire. Via RED lead for Console(s)† and 4281.

6: Data In from Console(s)† and 4281, via their GREEN lead.

7: Data Out to Console(s)† and 4281, via their YELLOW lead.

8–13: *not used*

14: Zone 5. (When Zones 5 and/or 6 are used, a 1,000 Ohm EOLR should be wired between the farthest sensor connected to the zone terminal and the low side of the zone.)

15: Zones 5 and 6 Return.

16: Zone 6 (see zone 5)

17: Handset (TIP).

18: Handset (RING).

19: Incoming Phone Line (TIP).

20: Incoming Phone Line (RING).

21: EARTH GROUND (a proper earth ground must be provided to protect the system from lightning and electrostatic discharge damage).

Warning: *To prevent the risk of electrical shock, disconnect the telephone line at the Telco jack before servicing the unit.*

RED LEAD: Battery (+). When AC is present, 13.8VDC is being developed to recharge a gel lead acid battery and when AC is absent, 12VDC current is drawn from the battery. Battery lead reversal will blow the battery fuse.

BLACK LEAD: Battery (-).

† Up to 4 consoles may be used (check total auxiliary current, per *SPECIFICATIONS*). Each 5330 Console used *must* be on an individual home run. No more than 220' of #22 wire or 550' of #18 wire should be used for each run.

Addressable consoles (e.g., 4137AD) may be used, if they are set to their non-addressable mode (device ID 31...all DIP switch positions UP).

Power-up Procedure

1. Make sure that the total current to be drawn from the Alarm Output terminals (3 & 4) and Auxiliary Power Output terminals (4 & 5) does not exceed the values indicated in the *SPECIFICATIONS* section and on the *SUMMARY OF CONNECTIONS* diagram.
2. Wire the transformer to the panel (before connecting the battery) as shown on the *SUMMARY OF CONNECTIONS* diagram. **Do not plug in at this time.**
3. Connect all loops, devices, consoles, etc. to the panel.
4. Plug the transformer into a 24 hour, uninterrupted AC outlet. After some initial displays (see page 17) and approximately one minute, the green POWER or READY LED on the console(s) should be lit and the consoles should display "READY" (Fixed Word consoles) or "DISARMED READY TO ARM" (Alpha consoles).
5. Connect the battery as shown in the SUMMARY OF CONNECTIONS diagram.

Section 5. SYSTEM OPERATION

SECURITY CODES

Master Code

The installer programs the 4-digit Master Code initially as part of the programming procedure (see *PROGRAMMING THE SYSTEM*). The factory default Master code is "4110".

The Master code can permit re-entry into the programming mode and also, in normal operation mode, is used to enter the user codes, which also allow access to the normal functions of the system.

See the *PROGRAMMING* section for information on exiting the programming mode via fields *98 or *99.

User Codes

In normal operation mode, the Master security code can be used to assign up to three secondary security codes. It can also be used to remove secondary codes from the system (individually).

To assign (or change) a Secondary security code, enter:

Master Code + [CODE key] + User # (2 or 3 or 4) + desired Secondary Code

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

To delete a Secondary security code, enter:

Master Code + [CODE key] + User # (2 or 3 or 4)

Notes:

- All Master and Secondary security codes permit access to the system for arming, disarming, etc.
- If a secondary code is inadvertently repeated for different users, or one user's code is another's duress code (4th digit increased by 1), the lower user number will take priority.
- Opening and closing reports are sent for the Master code as No. 1. User codes are sent as Nos. 2, 3, and 4 respectively.

KEYPAD FUNCTIONS

General Information

Note that if QUICK ARM is enabled (field *21), the [#] key can be pressed instead of entering the security code, for any of the arming procedures (Away, Stay, Instant, Maximum, etc.).The security code is *always* required, however, when disarming the system.

The keypad allows the user to arm and disarm the system, and perform other system functions, such as bypassing zones, and displaying zone descriptors. Zone and system conditions (alarm, trouble, bypass) are displayed in the Display Window.

When an alarm occurs, console sounding and external sounding will occur, and the zone(s) in alarm will be displayed on the console. Pressing any key will silence the console sounder for 10 seconds. Disarming the system will silence both console and external sounders. When the system is disarmed, any zones that were in an alarm condition during the armed period will be displayed (memory of alarm). To clear this display, simply repeat the disarm sequence (enter the security code and press the OFF key) *twice*.

The consoles also feature chime annunciation, and 3 panic keys or key pairs. One is programmable for silent, audible, fire or personal emergency alarms. Two are fixed-function (one for silent and one for audible).

The central station can be notified of an alarm condition, if that service is connected.

Arming Functions

The following is a brief list of system commands. For detailed information concerning system functions, refer to the User's Manual.

Disarmed, Not Ready — Before arming, the system must be in the READY condition (all zones must be intact). If the "NOT READY" message appears, press the READY [*] key to display faulted zones.

Arming Away — Enter code + AWAY [2].

Arming Stay — Enter code + STAY [3].

Arming Instant — Enter code + INSTANT [7].

Arming Maximum — Enter code + MAXIMUM [4].

Disarming — Enter code + OFF [1].

Bypassing Zones — Enter code + BYPASS [6] + zone number(s).

Forced (Quick) Bypass — *(If enabled)* To automatically bypass all faulted zones, use "Quick Bypass" method:
Enter code + BYPASS (then stop).

Chime Mode — Enter code + CHIME [9].
To turn chime mode off, enter code + CHIME again.

SUMMARY OF ARMING MODES

Mode	Features for Each Arming Mode			
	Exit Delay	Entry Delay	Perimeter Armed	Interior Armed
AWAY	Yes	Yes	Yes	Yes
STAY	Yes	Yes	Yes	No
INSTANT	Yes	No	Yes	No
MAXIMUM	Yes	No	Yes	Yes

Panic Keys

There are three panic key pairs and (on some consoles) lettered keys that, if programmed, can be used to manually initiate alarms and send a report to the central station.

The key(s) for zone 7 can be programmed for 24 Hour Silent, Audible, Personal or Fire Emergency response.

The key(s) for zones 95 and 96 have fixed-functions:
95 = Silent Panic, 96 = Audible Panic.

The panic function is activated when both keys of the appropriate key pair are pressed at the same time, or the appropriate lettered key is pressed for at least 2 seconds.

The panic functions are identified by the system as follows:

KEYS	Displayed as Zone	Function
[1] & [✳], or [A]	95	Silent Panic
[✳] & [#], or [B]	07	Programmable
[3] & [#], or [C]	96	Audible Panic

- Keys [A], [B], [C] are not on all consoles.
- Key [D], if present, is not active here.

Note: If [1] & [✳], or [A] is pressed after [3] & [#], or [C], the initial display of zone 96 will be deleted from the console display, but the reports will go in properly (causing a silent alarm after an audible is not a likely scenario).

IMPORTANT: For the Panic functions to be of practical value, the system must be connected to a central station.

TROUBLE CONDITIONS

General Information

The word "CHECK" on the Console's display, accompanied by a rapid "beeping" at the Console, indicates that there is a trouble condition in the system. The audible warning sound can be silenced by pressing any key. Instruct users to call for service immediately upon seeing any of the following messages.

"Check" and "Battery" Displays

- **A display of "CHECK" and one or more zone numbers** indicates that a problem exists with the displayed zone(s) and requires attention.

  When the problem has been corrected, the display can be cleared by entering the OFF sequence (code plus OFF key) twice.
- **If there are wireless sensors in the system,** the CHECK condition may also be caused by some change in the environment that prevents the receiver from hearing a particular sensor.
- **A display of "BAT" with no zone number** indicates that the system's main standby battery is weak.
- **A display of "BAT" with a zone number and a once per minute "beeping" at the console** indicates that a low battery condition exists in the wireless sensor displayed (zone "00" indicates a wireless keypad). If the battery is not replaced within 30 days, a CHECK display may occur.

Power Failure

- **If there is no console display at all, and the POWER indicator (if present) is not lit,** operating power for the system has stopped and the system is inoperative.
- **If the message "AC LOSS" or "NO AC" is displayed, and the POWER indicator (if present) is off,** the console is operating on battery power only.

Other Displays (Fixed Word Consoles)

dI This may appear occasionally for a few seconds during normal system operation, but if this remains displayed for more than 1 minute, the system is disabled.

CC The system is in communication with the central station for change of function or status verification.

FC A communication failure has occurred.

OC The console is not receiving signals from the control panel and sees an open circuit.

Section 6. PROGRAMMING THE SYSTEM

General Information

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.

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.

THE SECURITY CONTROL MAY BE PROGRAMMED VIA A 4127, 4137 or 6127 (FIXED ENGLISH) CONSOLE OR A 5330 (ALPHA) CONSOLE.

Note: A 4137AD (Addressable, FIXED ENGLISH) Console may be used, provided it is set to its non-addressable mode (device ID 31...all DIP switch positions UP).

The initial sequence of entries should follow the order on the programming sheet.

When programming, the field number will be displayed on the console's 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.

When programming from the console, note the following:

1. Enter the Programming mode by simultaneously depressing the **[*]** and **[#]** keys **within 50 seconds after power is applied to the Control,** or subsequently by keying the code **4 + 1 + 1 + 0** followed by depression of **CODE + 0** keys. If a different Master code is subsequently programmed, use it instead of 4110 to gain access to the Programming mode. *If the Programming mode was exited previously using a *98, it will prevent entry into the Programming mode by the use of the Master Code + CODE + 0.*
2. Immediately following entry into the program mode, field *20 will be displayed. (If a 5330 console is used, 00 will be displayed. Enter *20 to access the programming start point.) Following the above display, the system is ready to accept entries for field *20.
3. To program a data field, key **[*]** plus **Field No.** (for example, *21), then make the required entry.
4. To simply review a data field, key **[#]** plus **Field No.** No changes will be accepted in this mode.
5. When a data field has been completely programmed, the console will normally "beep" three times and then automatically proceed to, and display, the next data field number to be programmed (if not, key **[*]** plus the **Field No.** of the next field to be programmed).
6. 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 number to be programmed must then be entered (for example, ***42**).
7. If a field is improperly entered, the console will display **EE**. Simply re-enter [*] or [#] plus the field number.

Summary of Programming Commands

FUNCTION	PROCEDURE
ENTER PROGRAMMING MODE	1. POWER UP, then depress **[✳] and [#]** both at once, within 50sec of powering up. **OR** 2. Initially, key: **4 + 1 + 1 + 0** plus **CODE key + 0.** **OR** 3. If different Master Code is programmed, key : **MASTER CODE + CODE KEY + 0.** (if *98 was used to exit previously, method 1 above must be used to enter the program mode again)
EXIT PROGRAMMING MODE	***99** allows re-entry to programming mode via type 2 or 3 entry method above. ***98** inhibits re-entry to programming mode via type 2 or 3 entry method.
ADVANCE TO FIELD	[✳] + **Field No.** (e.g., 21, 38, 55, etc.)
PROGRAM FIELD	[✳] + **Field No.**, followed by data entries.
ERASE FIELDS	[✳] + **Field No.** + [✳] (only applies to fields 40 thru 43 and 94).
READ FIELD	**[#] + Field No.**

Special Messages

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

EE = ERROR (program entry mistake). Re-enter the field number or data).

After powering up, **AC, dl** (disabled) and **NOT READY** will be displayed after approximately 4 seconds. This will revert to **READY** in appx. 1 minute, which allows PIRS, etc. to stabilize. To bypass this delay, press: [#] + [0].

If **E4** or **E8** appears, more zones than the expansion units can handle have been programmed. Correct the program and then completely de-power and re-power the control to clear this indication and remove the disable indication.

E4 = **ERROR (using 4281L):** If a 4281L is used instead of the 4281H and if anything is programmed in fields *80 to *91, the console will display **E4** and the control will be disabled, since the 4281L does not use those fields. Only 00/00 should appear in *80 to *91.

E8 = **ERROR (using 4281M):** If a 4281M is used instead of the 4281H and if anything is programmed in fields *84 to *91, the console will display **E8** and the control will be disabled, since the 4281M does not use those fields. Only 00/00 should appear in *84 to *91.

PROGRAMMING DATA FIELDS

THE CENTERFOLD PROGRAMMING FORM CAN BE USED TO RECORD THE DATA FOR THIS INSTALLATION

SYSTEM ARMING (*20–*28)

***20 MASTER CODE**
Enter 4 digits, 0–9 (entry of all 4 is mandatory).
Use of a "9" in the last position inhibits the Ambush feature.

***21 QUICK ARM ENABLE**
If enabled, [#] key can be used instead of security code when arming the system.
Enter 0 for disabled or 1 for enabled.

***23 FORCED BYPASS FUNCTION**
All zones that are bypassed by this function will be displayed after the bypass is initiated.
0 = No forced bypass.
1 = Allows automatic bypass of all open zones.

***24 RF RECEIVER HOUSE ID CODE**
MUST enter for 5700 system's 4281 type receiver.
Enter 01-31 House ID.

***28 CONFIRMATION OF ARMING DING**
Enter 0 for no or 1 for yes.
If selected, ding is external sounder only and will occur at time of kissoff of closing report. If closing report is not programmed, ding will occur at end of exit time.

ZONE RESPONSE PROGRAMMING (*29–*38)

***29 FIRE SOUNDER TIMEOUT DISABLE**
Enter 0 to enable the sounder timeout for fire or 1 to disable it.

***30 ALARM BELL TIMEOUT**
External sounder will shut off after time allotted. Enter 1 digit.
0 = No timeout 2 = 8 minutes
1 = 4 minutes 3 = 12 minutes

ZONE TYPES FOR PROGRAMMING FIELDS *35-37
0 = Zone Disabled (or Undefined)
1 = ENTRY/EXIT, Burglary
2 = *not used*
3 = PERIMETER, Burglary
4 = INTERIOR/FOLLOWER, Burglary
5 = TROUBLE BY DAY/ALARM BY NIGHT, Burglary
6 = 24 Hr (Silent)
7 = 24 Hr (Audible)
8 = 24 Hr (Auxiliary)
9 = FIRE (Fields *35 and *37 only)
10 = INTERIOR w/DELAY, Burglary (To program, enter # + 10)

***35 ZONE 5 RESPONSE TYPE**
Enter 1 digit from Zone Type Table above.

***36 ZONE 6 RESPONSE TYPE**
Enter 1 digit from Zone Type Table above.

***37 ZONE 7 RESPONSE TYPE (Console Panic, Key B or ✳&#)**
Enter 1 digit from Zone Type Table above.
Only zone types 0, 6, 7, 8, 9 are applicable

***38 ENTRY DELAY**
System will wait the time allotted before sounding alarm upon entering. (EXIT delay = Entry delay plus 15 seconds)
0 = 0 seconds 2 = 30 seconds
1 = 20 seconds 3 = 45 seconds

DIALER PROGRAMMING (*40–*49)

***40 PABX ACCESS CODE**

Enter 4 digits, 0–9, for each PABX digit needed to access an outside line. To skip this field, enter *. If * is entered, no PABX number will be dialed and nothing will appear in this field. End field by entering *41 if not filled. To clear entries from field, press *40*.

***41 PRIMARY PHONE No.**

Enter up to 12 digits, 0-9. Do not fill unused spaces. End field by entering *42 if not filled. To clear entries from field, press *41*.

Note: Back-up reporting (8 calls are made to the secondary phone number if no kiss-off is received after 8 attempts to the primary number) is automatic only if there is a secondary phone number.

***42 SECONDARY PHONE No.**

See field *41 entry info. and Note. End field by entering *43 if not filled. To clear entries from field, press *42*.

***43 SUBSCRIBER ACCOUNT. No.**

Enter digits 0–9; #+11=B; #+12=C; #+13=D; #+14=E; or #+15=F. Enter * as the fourth digit if a 3 digit acct no. (for 3+1 dialer reporting format) is used. Enter 0 as the first digit of a 4-digit acct no. for nos. 0000–0999. End field by pressing * (and press next field) if only 3 digits are used. To clear entries from field, press *43*.

***44 REPORT FORMAT**

Determine which format is to be used to report to the central station. Enter 1 digit.

0 = 3+1; 4+1 ADEMCO L/S Standard
1 = 3+1; 4+1 Radionics Standard
2 = 4+2 ADEMCO Lo Speed Standard
3 = 4+2 Radionics Standard
6 = 4+2 ADEMCO Express
7 = ADEMCO Contact ID Reporting
8 = 3+1; 4+1 ADEMCO Lo Speed Expanded
9 = 3+1; 4+1 Radionics Expanded

(Enter * as the 4th digit of *43, if 3+1 dialer reporting is to be used.)

For explanation of these formats, see page 23.

Note: The maximum number of communicator reports during one armed period is 10.

***45 PHONE SYSTEM SELECT**

Enter 1 digit.

If Central Station Rcvr *is not* on WATS line:
0 = Pulse Dial 1 = Tone Dial

If Central Station Rcvr *is* on WATS line:
2 = Pulse Dial 3 = Tone Dial

***46 SESCOA/RADIONICS SELECT**

0 = Radionics (0-9, B-F reporting)
1 = SESCOA (0-9 only reporting)
Select 0 for all other formats.

***47 15 SECOND DIALER DELAY (BURGLARY)**

Allows time for subscriber to avoid a false alarm transmission.

Enter 0 for no or 1 for yes

***48 24 HOUR TEST MESSAGE**

Enter 0 for no or 1 for yes.

If yes is selected, the Test Report Code entered in field *64 will be sent approximately 12 hours after local programming or uploading/downloading the program, and every 24 hours thereafter.

The report timing will not be offset appreciably by connection to the downloader unless uploading or downloading is done. Checking status, arming, etc. will affect the timing *only* to the extent of the connection time to the communicator.

***49 SPLIT/DUAL REPORTING**

Enter 0 to disable (Backup report only) or enter digit selected from the following table:

	To Primary Phone No.	To Secondary Phone No.
1 =	Alarms, Restore, Cancel	Others
2 =	All except Open/Close, Test	Open/Close, Test
3 =	Alarms, Restore, Cancel	All
4 =	All except Open/Close, Test	All
5 =	All	All

ALARM REPORT CODES (*50–*59)

***50 1ST DIGIT OF ZONE 95, ZONE 96 ALARM REPORT CODE (Console Panics: 95 = Key A or 1&✳, 96 = Key C or 3&#)**

Enter the *first* digit of Zone 95's alarm report code in the left-hand box and 96's in the right-hand box. Select 1-9, 0, B, C, D, E, or F. Enter "#+10" for 0, "#+11" for B, "#+12" for C, "#+13" for D, "#+14" for E, "#+15" for F.

The *second* digit of each alarm report code (for 4 + 2 or expanded format) will be the same as that for zone 7 (as programmed in field *57).

For any format, if a "0" (not "#+10") is programmed for the first digit, no report is generated.

TO PROGRAM REPORT CODES FOR ALARM, SYSTEM STATUS, RESTORE & TRANSMITTER IDs (*55–*91)

With a 3+1 or 4+1 Standard Format: Enter a code in the *first* box: 1-9, 0, B, C, D, E, or F. Enter "#+10" for 0, "#+11" for B, "#+12" for C, "#+13" for D, "#+14" for E, "#+15" for F.

A "0" (*not* "#+10") in the *first* box will disable a report.

A "0" (*not* "#+10") in the *second* box will result in automatic advance to the next field when programming.

With an Expanded or 4+2 Format: Enter codes in *both* boxes (1st and 2nd digits) for 1-9, 0, or B-F, as described above.

A "0" (*not* "#+10") in the *second* box will eliminate the expanded message for that report.

A "0" (*not* "#+10") in *both* boxes will disable the report.

With Ademco Contact ID Reporting: Enter any digit (other than "0") in the *first* box, to enable zone to report This is an "enabling" code only and is disregarded in the actual reporting to the central office. Entries in the *second* boxes will be ignored.

A "0" (*not* "#+10") in the *first* box will disable the report.

See examples on programming form.

***55 ZONE 5 ALARM REPORT CODE**
See box above.

***56 ZONE 6 ALARM REPORT CODE**
See box above.

***57 ZONE 7 ALARM REPORT CODE (Console Panic, Key B or ✳ & #)**
See box above, and field *50.

***58 ZONE 8 ALARM REPORT CODE (Duress)**
See box above.

***59 ZONE 9 ALARM REPORT CODE (Tamper)**
See box above.

SYSTEM STATUS REPORT CODES (*60–*68)

***60 TROUBLE REPORT CODE**
See box above.

***61 BYPASS REPORT CODE**
See box above.

***62 AC LOSS REPORT CODE**
See box above.

***63 LOW BAT REPORT CODE**
See box above *55.

***64 TEST REPORT CODE**
See box above *55.

***65 OPEN REPORT CODE**
See box above *55.
2nd digit = User #, if expanded or 4+2 reporting is selected.

***66 CLOSE REPORT CODE**
See box above*55.
2nd digit = User #, if expanded or 4+2 reporting is selected.
Report also sent for Arming STAY, if contact ID format is used.

***67 RF XMTR. LOW BATTERY REPORT CODE**
See box above *55.

***68 CANCEL REPORT CODE**
See box above *55.

RESTORE REPORT CODES (*69–*75)

***69 GROUP RESTORES FOR TROUBLE, RF LOW BATTERY, BYPASS**
Enter 0 for no (report for each restore)
or 1 for yes (report after all zones restored).
Note: "1" not applicable to Contact ID reporting.

***70 ALARM RESTORE REPORT CODE, 1ST DIGIT**
2nd digit is automatically sent as the 2nd digit of the zone alarm report code programmed in fields *51–*59 and *76–*91, if expanded or 4+2 reporting is selected.

***71 TROUBLE RESTORE REPORT CODE**
See box above *55. Trouble restore is reported only if all troubles in the system are restored, if yes has been selected for *69.

***72 BYPASS RESTORE REPORT CODE**
See box above *55.

***73 AC RESTORE REPORT CODE**
See box above *55.

***74 LOW BATTERY RESTORE REPORT CODE**
See box above *55.

***75 RF TRANSMITTER. LOW BATTERY RESTORE CODE**
See box above *55.

RF TRANSMITTER IDs & REPORT CODES (*76–*92)

When Using	These Fields are Programmable
4281L	*76-*79 plus *92
4281M	*76-*83 plus *92
4281H	*76-*92

RF XMTR ID	ZONE TYPE	RF XMTR ID	ZONE TYPE
10-13	ENTRY/EXIT, Burg.	48-55	FIRE
14-29	PERIMETER, Burg.	56-61	TROUBLE BY DAY/ ALARM BY NITE, Burg.
30-43	INT/FOLLOWER, Burg.		
44, 45	INT w/DELAY, Burg.	62	24 hr. (audible)
46, 47	PERIMETER, Burg.	63	Programmed by field *92

For *76 -*91 (where applicable), enter an appropriate two digit transmitter ID selected from the table above and a report code in accordance with the box above *55.

***Note*: *76–*92 can be used with 4281H provided with system.**

***76 1st RF TRANSMITTER ID/REPORT CODE**

***77 2nd RF TRANSMITTER ID/REPORT CODE**

***78 3rd RF TRANSMITTER ID/REPORT CODE**

***79 4th RF TRANSMITTER ID/REPORT CODE**

***Note*: If a 4281L is used, *80–*91 do not apply.**

***80 5th RF TRANSMITTER ID/REPORT CODE**

***81 6th RF TRANSMITTER ID/REPORT CODE**

***82 7th RF TRANSMITTER ID/REPORT CODE**

***83 8th RF TRANSMITTER ID/REPORT CODE**

***Note**: If a 4281M is used, *84–*91 do not apply.*

***84** **9th RF TRANSMITTER ID/REPORT CODE**

***85** **10th RF TRANSMITTER ID/REPORT CODE**

***86** **11th RF TRANSMITTER ID/REPORT CODE**

***87** **12th RF TRANSMITTER ID/REPORT CODE**

***88** **13th RF TRANSMITTER ID/REPORT CODE**

***89** **14th RF TRANSMITTER ID/REPORT CODE**

***90** **15th RF TRANSMITTER ID/REPORT CODE**

***91** **16th RF TRANSMITTER ID/REPORT CODE**

***92** **ZONE RESPONSE OF XMTR ID 63 (if used)**
Only zone types 0, 6, 7, 8, 9 are applicable (see table above *35).
Enter single digit.

DOWNLOAD INFORMATION (*94, *95)

***94** **DOWNLOAD PHONE NUMBER**
Enter up to 12 digits; 0-9. Do not fill unused spaces.
End field by entering *. To clear entries from field, press *94*.

***95** **RING DETECTION COUNT FOR DOWNLOADING**
Enter number of rings before control picks up phone line (or 0 or 15).

0 = disable station initiated download
1-14 = # of rings
15 = answering machine defeat

***96** **INITIALIZE DOWNLOAD ID AND SUBSCRIBER ACCT. No. FOR DOWNLOADING**
(No data entry required, loads defaults)

***97** **ZEROES ALL PROGRAM FIELDS**
(No data entry required)

Press *98 or *99 if exiting programming, or next Field No. if continuing.

TO EXIT PROGRAMMING MODE (*98 or *99)

***98** **EXITS PROGRAMMING MODE**
and *prevents* re-entry by :
Master Code + CODE + 0

***99** **EXITS PROGRAMMING MODE**
and *allows* re-entry by:
Master Code + CODE + 0
or by:
Power-up + "*" + "#".

Section 7. SYSTEM COMMUNICATION

Report Code Formats

The Report Codes for Alarm, System Status, Restore, and RF XMTR IDs shown in fields *50-*91 in the previous section can be designated in field *44 to report to the central station in any of the following formats:

The 3+1 and 4+1 Standard formats comprise a 3 (or 4) digit subscriber number and a single digit report code (e.g. Alarm, Trouble, Restore, Open, Close).

The 3+1 and 4+1 Expanded formats comprise a 3 (or 4) digit subscriber number, and a single digit report code, followed by a second line where the report code is repeated 3 (or 4) times and followed by another number (normally the zone number) or user ID related to that report.

The 4+2 formats comprise either a 4 digit subscriber number and two digit report code, or a 4 digit subscriber number and single digit report code, immediately followed by the zone number (normally) or user ID.

The Ademco Contact ID Reporting format (see next page) comprises a 4 digit subscriber number, 1 digit event qualifier ("new" or "restore"), 3 digit event code, 2 digit "00", and 3 digit zone, contact ID, user, or system status number .

Report	3+1/4+1 Standard	3+1/4+1 Expanded	4+2
Alarm	SSS(S) A	SSS(S) A AAA(A) Z	SSSS AZ
Trouble	SSS(S) T	SSS(S) T TTT(T) t	SSSS Tt
Bypass	SSS(S) B	SSS(S) B BBB(B) b	SSSS Bb
AC Loss	SSS(S) E	SSS(S) E EEE(E) A_C	SSSS EA_C
Low Batt	SSS(S) L	SSS(S) L LLL(L) L_B	SSSS LL_B
Open	SSS(S) O	SSS(S) O OOO(O) U	SSSS OU
Close	SSS(S) C	SSS(S) C CCC(C) U	SSSS CU
Test	SSS(S) G	SSS(S) G GGG(G)g	SSSS Gg
Restore Alarm	SSS(S) R	SSS(S) R RRR(R) Z	SSSS RZ
AC Restore	SSS(S) R_A	SSS(S) R_A $R_AR_AR_A(R_A)A_C$	SSSSR_A A_C
LoBat Res.	SSS(S) R_L	SSS(S) R_L $R_LR_LR_L(R_L)L_B$	SSSS R_LL_B
Trouble Res.	SSS(S) R_T	SSS(S) R_T $R_TR_TR_T$ (R_T)t	SSSS R_Tt
Bypass Res.	SSS(S) R_B	SSS(S) R_B $R_BR_BR_B$ (R_B)b	SSSS R_Bb

Where:

SSS or SSSS = Subscriber ID
A = Alarm Code-1st digit
Z = Typically Zone Number*-2nd digit
Tt = Trouble Code (1st & 2nd digits)
Bb = Bypass Code (1st & 2nd digits)
EA_C = AC Loss Code (1st & 2nd digits)
LL_B = Low Battery Code(1st & 2nd digits)
O = Open Code-1st Digit
C = Close Code-1st Digit
U = User Number (1st & 2nd digits)
Gg = Test Code (1st & 2nd digits)
R = Restore Code (Alarm)1st & 2nd digits
R_Tt = Restore Code (Trbl)1st & 2nd digits
R_Bb = Restore Code (Byps)1st & 2nd digits
R_AA_C = Restore Code (AC)1st & 2nd digits
R_LL_B = Restore Code (Bat)1st & 2nd digits

*Zone numbers for: [*] & [#] = 7 [1] & [*] = 95
Duress = 8 [3] & [#] = 96
Tamper = 9

Ademco Contact ID Reporting takes the following format:

CCCC Q EEE GG ZZZ

where: CCCC = Customer (subscriber) ID
Q = Event qualifier, where:
E = new event, and R = restore
EEE = Event code (3 hexadecimal digits)
Note: For a complete list of event codes, refer to the central office receiver manual.
GG = Always 00.
ZZZ = Zone/contact ID number reporting the alarm, or user number for open/close reports. System status messages (AC Loss, Walk Test, etc.) contain zeroes in the ZZZ location.

Section 8. REMOTE PROGRAMMING AND CONTROL (DOWNLOADING)

General Information

The ***Ademco via16*** can be remotely programmed from an IBM compatible Personal Computer (PC), a Hayes Modem, and Ademco's V-LINK® Software (as specified below).

Programming the control from a remote location is protected against compromise by someone attempting to defeat the system, using multi-levels of security protection:

1. **Security Code Handshake:** An 8-digit download ID code must be matched between the control and the downloader.
2. **Site Initiated Remote Programming:** The installer or subscriber initiates the callback from the subscriber premises (by pressing MASTER CODE + # + 1) while disarmed. All parameters can then be downloaded via the phone lines using a personal computer.
3. **Station Initiated Remote Programming:** The operator calls the site from your office to initiate the download call. The control hangs up and then calls back the PC via the preprogrammed telephone number. The unit can then be uploaded, downloaded, or controlled from your office.
4. **Data Encryption:** Data passed between the PC and the control 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.

Equipment Required

At the premises:

- ***Ademco via16*** and console.

At the installer's office/home:

- An IBM PC compatible computer.
- *Either* a Hayes brand Smartmodem 1200 [Level 1.2 or higher external or Level 1.1 or higher (with 4 position DIP switch) internal style],
  or a Hayes brand Optima 24 Plus FAX96 Modem.
- A No. 4130PC Downloading Software Diskette (Rev. 2.2, or higher).
- Appropriate interconnecting cables.

Programming

The downloading system can perform many functions when in communication with the control unit. Besides uploading and downloading, the status of the system can be observed and various commands can be initiated, as follows:

- Arm the System in the Away Mode; Disarm the System.
- Bypass a Zone.
- Force the System to Accept a New Program Download.
- Shut Down Communication (dialer) Functions (non-payment of monitoring fees in an owned system).
- Shut Down all Security System Functions (non-payment for a leased system).
- Inhibit Local Keypad Programming (prevents account takeover).
- Command the System to Upload a Copy of its Resident Program to the office.
- Read: Arming Status, AC Power Status, Lists of Faulted Zones, Bypassed Zones, Zones Currently in Alarm, Zones Currently in Trouble, and RF Sensors with Low Battery Conditions.

Notes: After the control and the PC have established valid communication, each console on the system will become inactive and will display "CC" or "MODEM COMM.". The control, however, will still be scanning its zones and looking for alarms. If an alarm does occur, after communication is broken off, alarms are sounded and the proper dialer reports are sent to the central station. The consoles will become active after the download communication is terminated. The detailed operation of the download functions is covered in the installation instructions for the 4130PC Downloading Software Diskette.

Remote Programming Advisory Notes

- Alarm and trouble reporting may be delayed during the time that the system and the Downloader are linked to each other following a valid exchange of codes, but the proper message will get through to the Central Station after the link is broken.
- Keypad entries are ignored during the time interval stated above.
- 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 (consult your PC manual for proper printer and connections).
- Program Upload or Download Time: 45 seconds.
- The Firmware Revision Level now reported to the downloader is .02.

Section 9. TESTING THE SYSTEM

Procedure

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 outside sounder (if used) will sound for 1 second and then turn off each time a zone is faulted. A test report should be transmitted (if programmed) to the Central Station immediately. If the backup battery is discharged or missing, the sounder may not turn on and a LOW BATTERY report will be transmitted instead of a TEST report. The console will beep once per minute as a reminder that the system is in the Test Mode. To turn off the test mode enter the **security code** and press the **OFF** key.

Alarm messages will be sent to the central station during the following tests 3 and 4. Notify them *in advance* that tests will be in progress.

3. Arm the system and fault one or more zones. After 15 seconds (if optional dialer delay is selected), silence alarm sounder(s) by entering the **code** and pressing **OFF**. Check Entry/Exit delay zones.
4. Check the keypad-initiated alarms that are in the system by pressing the Panic key(s) for:

   Zone 7: [* & #] or [B], Zone 95: [1 & *] or [A], or Zone 96: [3 & #] or [C]

   For audible emergency (zone 96, or, if so-programmed, zone 7), the console will emit a steady alarm sound, and **ALARM and zone number** will be displayed. Silence the alarm by entering the **security code** and pressing **OFF.**

   For silent emergency (zone 95, or, if so-programmed, zone 7), there will be no audible alarms or displays, but a report will be sent to the central station. Reset the zone by entering the **security code** and pressing **OFF.**
5. Notify the central station when all tests are finished, and verify results with them.
6. To test the wireless part of the system and the RF Receiver, 3 additional test modes are available:
   a. **HOUSE ID SNIFFER MODE :** By pressing **Master code + # + 2,** a house code "sniffer" mode is enabled. The console will display the house code of any RF transmission it receives. In this way, you can check that you are not using the same house code as any nearby system (suggested test period: approx. 2 hrs). This mode can be exited by keying the **Master code + OFF.**
   b. **TRANSMITTER SNIFFER MODE:** Pressing **Master code + # + 3** initiates a procedure to check that all transmitters have been properly programmed. The console will display all zone numbers of wireless units programmed into the system. As the system receives a signal from each of the transmitters, the zone number of that transmitter will disappear from the display. The transmitter codes may be checked upon installation, or in an installed system. All the wireless addresses should disappear after about 1-1/2 hours. This mode can be exited by keying **Master code + OFF.**
   c. **GO/NO GO TEST MODE:** By pressing **Master code + # + 4,** a mode similar to the user test mode (code + TEST) is entered, but the wireless receiver gain is reduced. Checking in this mode assists in determining good mounting locations for the transmitters when the system is being installed and verifies that the RF transmission has sufficient signal amplitude margin for the installed system. Exit the mode by entering **Master code + OFF.**

Note: If the battery standby capacity is exceeded during an AC power failure, the control will automatically shut itself off.

TROUBLESHOOTING GUIDE

SYSTEM		
SYMPTOM	**POSSIBLE CAUSE**	**REMEDY**
1. Transmitted signal not received at 4281.	1a. Transmitter or 4281 not properly powered.	1a Check or change transmitter's battery. Check ***Ademco via16's*** AC power.
	1b. Transmitter and 4281 not set to same house code.	1b. Check code switches inside transmitter. Must match with RF House Code programmed in ***Ademco via16***.
	1c. Transmitter located too for from 4281.	1c. Move transmitter or 4281.
	1d. Metal shielding between transmitter and 4281.	1d. Check for large metal obstructions, then relocate transmitter if necessary.
	1e. Transmitter malfunctioning.	1e Verify by activating 4281 with another, similar transmitter. If O.K.now, return defective transmitter.
	1f. 4281 malfunctioning.	1f. Verify by making sure other transmitters cannot activate 4281. If defective, replace and return original 4281.
	1g. Transmitter number (zone) not programmed.	1g. Verify programming.
2. Transmitter zone number appears during Transmitter Sniffer mode, but does not clear.	2a. Transmitter battery not installed.	2a. Install proper battery.
	2b. 5700 System transmitter's DIP switch not set properly (house ID and transmitter ID).	2b. Check and set the DIP switch.
3. Low Battery message on console.	3a. "Bat" alone.	3a. System battery is low or missing.
	3b. "Bat" + "00".	3b. Remote RF keypad battery is low.
	3c. "Bat" + "nn".	3c. Transmitter for zone nn has a low battery.
4. Periodic beep(s) from console.	4a. System is in TEST mode.	4a. Enter "Code" + OFF to exit TEST mode.
	4b. A transmitter low battery has occurred and is displayed.	4b. Enter "Code" + OFF and replace the battery.
	4c. A supervision CHECK has occurred.	4c. Check the transmitter indicated. Restore communication to the receiver to cancel the condition.
5. Nuisance or phantom alarm.	5a. Sensors not properly installed, wired, or monitored.	5a. Check installation to see if in accordance with established procedure.
	5b. Nearby neighbor has 5700 system (4281) with same house code.	5b. Check with central monitoring station for neighbors with systems. Range can be 300 feet. Change house code if necessary.
	5c. Universal transmitter (5715) programmed wrong.	5c. Check programming switches on transmitter.
6. Intrusion alarm for no apparent reason.	6a. Protected door or window opened while system armed.	6a. Check with all occupants of protected home.
	6b. Improper user operation of exit/entry delays.	6b. Check setting of entry delay . Exit delay is 15 seconds longer than the entry delay time. Remind user of same.
	6c. Magnets located too far from switches, and/or doors and windows not properly aligned.	6c. Check all openings for proper switch and magnet orientation.
	6d. Magnetic contacts improperly connected or wire broken.	6d. Check wiring connections. Be sure wires are properly stripped and tightly fastened to screw terminals.
	6e. Entry door programmed as "instant".	6e. Check and revise program. Reprogram transmitter number.
	6f. Loose fitting door or window being rattled by wind or vibrations.	6f. Mount magnet closer to contact.
7. Repeated low battery signal.	7a. Transmitter located where temperature drops below 32° F.	7a. Change location. Use magnetic contacts to protect opening.
	7b. Poor quality or unspecified battery in transmitter.	7b. Check battery. Use only 9V Duracell MN1604 or equivalent for 5700 System.
	7c. Transmitter malfunctioning.	7c. Replace faulty transmitter.

(continued)

TROUBLESHOOTING GUIDE (continued)

CONTROL		
SYMPTOM	**POSSIBLE CAUSE**	**REMEDY**
1. "AC POWER" light off.	1a. Interrupted AC power supply.	1a. Check transformer connection and power line circuit breaker.
2. Digital communicator message not being received.	2a. ***Ademco via16*** in TEST mode.	2a. Remove from TEST mode.
	2b. Telephone connection not secure.	2b. Check all connections.
	2c. Digital communicator malfunctioning.	2c. Check with a different ***Ademco via16.***
	2d. Telephone number in program needs prefix or access code.	2d. Program prefix or access code into ***Ademco via16.***
	2e. Telephone call to central monitoring station requires operator assistance.	2e. ***Ademco via16*** system cannot work in this situation.
3. Does not arm properly.	3a. Ready light not on.	3a. Try Bypass arming.
4. *Ademco via16* doesn't respond to keystrokes on console.	4a. "CC" displayed.	4a. System is in communication with downloader at central station. Wait until download session is finished.
	4b. "dl" displayed.	4b. System has just been powered and is in its one minute initialization. To bypass this time, press '#' + '0'.
	4c. "E4" or "E8" displayed.	4c. More zones have been programmed than the zone expansion modules can handle. Delete some zones or use a higher capability RF receiver.

SMOKE DETECTOR		
SYMPTOM	**POSSIBLE CAUSE**	**REMEDY**
1. Detector alarms, no apparent reason.	1a. Dust, dirt in sensing chamber.	1a. Clean unit's sensing chamber with vacuum cleaner per unit's instructions.
	1b. Improper location.	1b. See unit's instructions for locations to avoid. Relocate as necessary.
	1c. Unit malfunctioning.	1c. Replace detector.
2. Detector's siren sounds.	2a. Unit not receiving required power.	2a. Check for proper installation of battery. Try new battery.
	2b. Unit malfunctioning.	2b. Replace detector.

Section 10. SPECIFICATIONS AND ACCESSORIES

SPECIFICATIONS

Ademco via16
SECURITY CONTROL

1. **Physical:** 12-1/2" W x 14-1/2" H x 3" D (318mm x 368mm x 76mm)

2. **Electrical:**

VOLTAGE INPUT: 16.5VAC from plug-in 25VA transformer, Ademco No. 1321/TF2 (in U.S.A.)

Note: For Canadian installations, a No. 1321CN transformer must be used.

RECHARGEABLE BACK-UP BATTERY: 12VDC, 4AH (Gel type), Charging Voltage: 13.8VDC.

ALARM SOUNDER: 12V, 2.0Amp output can drive 12V BELLS or can drive one or two 702 (**series** connected) self-contained 20-watt sirens. Do **not** connect two 702s in parallel.

AUXILIARY POWER OUTPUT: 12VDC, 500mA max. Interrupts for smoke detector reset.

Note: *For UL installations, Alarm Sounder plus Auxiliary Power currents should not exceed 600mA total.*

STANDBY TIME: 5 HRS with Auxiliary load of 500mA (using 4AH battery).To determine total standby battery load, add 90mA to total Aux. power output and remote console currents.

FUSES: Battery (3A) No. 90-12
Sounder (2A) No. 90-2

3. **Communication:**

FORMATS SUPPORTED:

Ademco Express,
10 characters/sec, DTMF (TouchTone) Data Tones, 1400/2300Hz ACK, 1400Hz KISSOFF.

Ademco Contact ID Reporting,
10 characters/sec., DTMF (TouchTone) Data Tones, 1400/2300Hz ACK, 1400Hz KISSOFF.

Ademco Low Speed, 10 pulses/sec, 1900Hz Data Tone, 1400Hz ACK/KISSOFF.

Radionics/SESCOA, 20 pulses/sec,1800HzData Tone, 2300Hz ACK/KISSOFF.

Can report 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" W x 4-11/16" H x 7/8" D (143mm x 119mm x 22mm)

2. **Electrical:** Voltage Input: 12VDC
Current Drain: 20mA

3. **Interface Wiring:**

RED:	12VDC input (+) aux pwr
GREEN:	Data Out to Control
YELLOW:	Data In from Control
BLACK:	Ground

4137
REMOTE CONSOLE

1. **Physical:** 8-2/5" W x 4-3/4" H x 1-1/10" D (213mm x 121mm x 28mm)

2. **Electrical:** Voltage Input: 12VDC
Current Drain: 60mA

3. Interface Wiring:

RED: 12VDC input (+) aux pwr
BLUE: 18VDC input from optional No 1350 or 1360 Power Pack (not usable for UL installations)
GREEN: Data Out to Control
YELLOW: Data In from Control
BLACK: Ground and (–) connection from optional No. 1350 or 1360 Power Pack

5330 REMOTE ALPHA CONSOLE
(Select Vector Device)

1. Physical: 7-3/4" W x 4-7/16" H x 1-1/4" D (197mm x 113mm x 32mm)

2. Electrical: Voltage Input: 12VDC
Current Drain: 105mA

3. Interface Wiring:

RED: 12VDC input (+) aux pwr
GREEN: Data Out to Control
YELLOW: Data In from Control
BLACK: Ground

4281L, 4281M, 4281H RF RECEIVERS (5700 System)

1. Physical: 7-3/8" (188mm)W
4-3/8" (112mm) H
10-7/8" (277mm) H ←with antenna
1-7/16" (37mm) D

2. Electrical: Voltage Input: 12VDC (from control's remote console connection points)
Current Drain: 35mA

3. Interface Wiring:

RED: 12VDC input (+) aux pwr
GREEN: Data Out to Control
YELLOW: Data In from Control
BLACK: Ground

4. Range: 200ft (60m) nominal indoors from wireless transmitters (the actual range to be determined with system in TEST mode).

5. Zones: With the ***Ademco via16***:
4281L: accepts up to 4 transmitters
4281M: accepts up to 8 transmitters
4281H: accepts up to 16 transmitters

ACCESSORIES (COMPATIBLE DEVICES)

Accessories

No. 1321/TF2 16.5VAC, 25VA Plug-In Transformer (in U.S.A.)
No. 1321CN 16.5VAC, 25VA Plug-in Transformer (in Canada)
No. 702 Self-contained 20 watt Siren (indoor or outdoor).
No. 740 Extremely loud Piezoelectric Alarm Sounder, 122dB output (indoor or outdoor).
No. 5716BR Brown Cases and Mounting Brackets (3) for 5716, 5716WM.
No. 5799 Pkg. of 8 Magnets for 5716

System Sensor:

PA400B Piezoelectric Alarm Sounder, 90dB output (mounts in single-gang box).
1412 4-wire Ionization Products of Combustion Detector
2412 4-wire Photoelectric Smoke Detector
2412TH 4-wire Photoelectric Smoke Detector w/135°F (57°C) Heat Detector

5700 RF System Wireless Transmitters for 4281

5701 Panic Transmitter

Programmable for either silent or audible 24 hour alarm (can be DIP switch programmed for zones 62 or 63.

5706 & 5707 Wireless Photoelectric Smoke Detectors

One piece smoke detectors with built-in transmitter (DIP switch programmable for zones 48-55). Built-in UL Listed 85 dB piezoelectric alarm sounder and audible low battery warning.

5711 Slimline Door/Window Transmitter

Can be used with any closed circuit sensor.

5711WM Slimline Door/Window Transmitter w/Reed Switch

Magnet included for built-in reed switch. Can also be used with any closed circuit sensor.

5715WH (White) or 5715BR (Brown) Universal Transmitter

DIP switch selectable for fast response, open or closed sensor usage, and has a tamper protected cover. Use in applications where open circuit heat detectors are needed or where fast response devices are employed.

5716 Small Door/Window Transmitter
5716WM Small Door/Window Xmtr w/Magnet

Can be used with any open or closed circuit sensor (DIP switch selectable). Features a built-in reed switch.

5742 Audio Discriminator/Transmitter

For use in unoccupied areas to detect the sound of shattering glass when a window is broken. Built-in 5716 type transmitter.

5743 Dual Technology Glass Break Detector/Transmitter

Detects the sound *and* shock vibrations of breaking glass and requires the presence of *both* to initiate an alarm condition transmission. Built-in 5716 type transmitter.

5775 PIR Detector/Transmitter

Dual element passive infrared detector/transmitter with built-in selectable pulse count. DIP switch programmable for zones 32-47. *Note*: There is a 3 minute lockout between transmissions to conserve battery life.

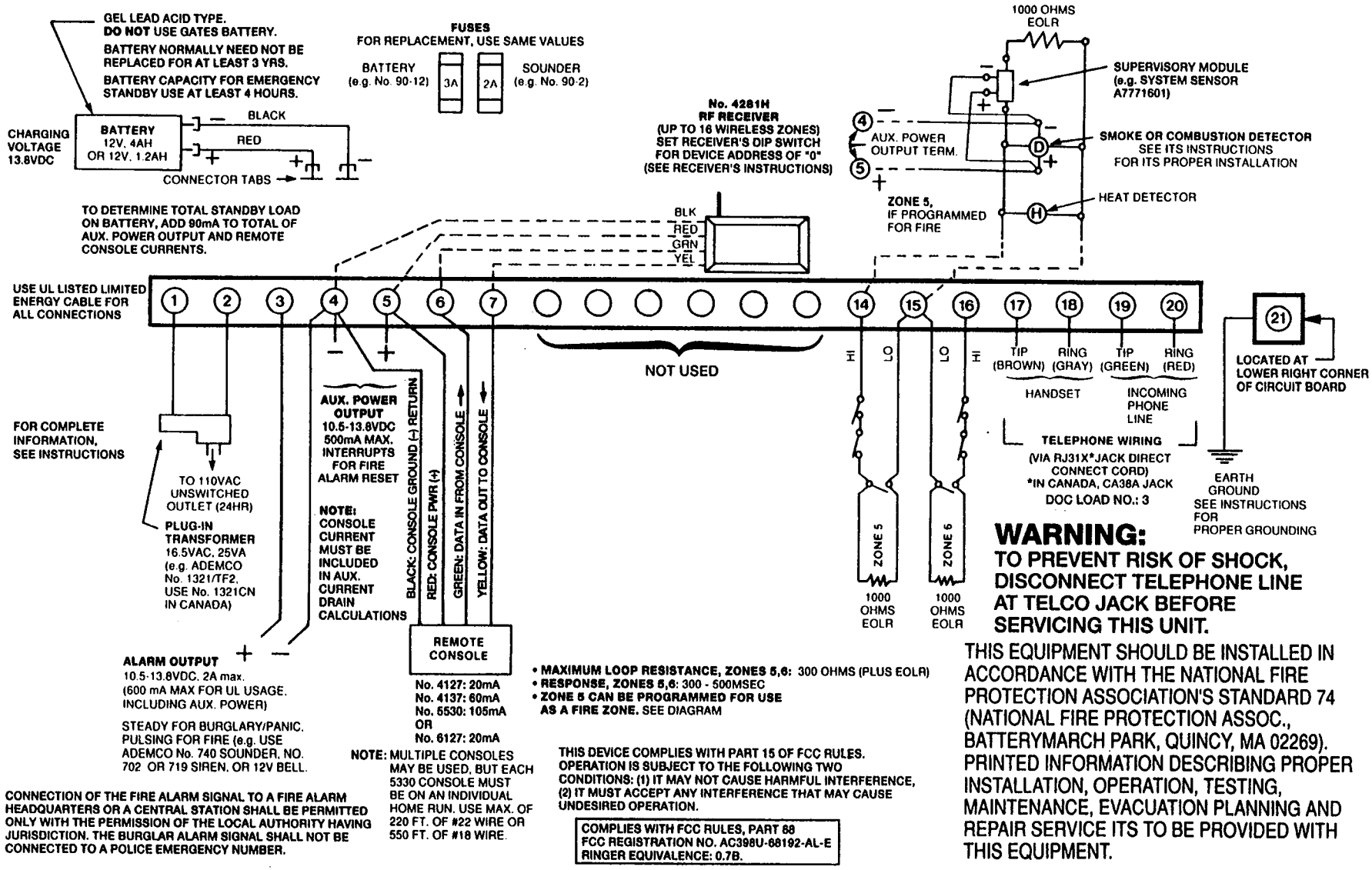
5727 Wireless Keypad

Can be used to turn the burglary protection on and off, and features the same built-in panic functions as wired consoles for either silent or audible 24 hour alarm. An LED indication lights each time a key is pressed, to verify transmission.The keypad is identified (as zone "00" on fixed English consoles) when it transmits with a low battery .

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.



Ademco via16
SUMMARY OF CONNECTIONS