ADEMCO **INSTALLATION INSTRUCTIONS**

No. 4153 POINT PROTECTION CONTROL/COMMUNICATOR

THIS ISSUE HAS BEEN SUBSTANTIALLY REVISED

I. TABLE OF CONTENTS:

II. INTRODUCTION:

The ADEMCO No. 4153 POINT PROTECTION CONTROL COMMUNICATOR is a microprocessor based security control and the heart of the VECTOR 3000 security system. The characteristic point protection design affords an extremely reliable system which is easy to install and convenient to use. The many programmable options permit the installer to tailor the No. 4153 to the design requirements of a particular installation.

The No. 4153 can monitor and annunciate up to 37 protection points and indicate PANIC alarms, polling loop short circuits and open circuits. The **ARMING AUTHORITY LEVEL** feature allows the system to be controlled by up to eight separate user assigned ID codes of varying authority. The control may also be used to trigger an alternative communication means - Long Range Radio, Derived Channel S.T.U., etc....

The No. 4153 also has several options which further extend system capabilities. When used with the factory standard **No. 4153RD RING DETECTOR**, the control may be (when programmed) controlled and programmed from a remote location using a No. 699 PROGRAMMER or an IBM PC. The **No. 4152LM LINE MODULE** is another option that enables the No. 4153 to be installed with a CLASS A polling loop configuration at the cost of giving up remote control/programming. The **No. 4197 LINE EXTENDER MODULE** doubles the length of the polling loop and is used to solve installation problems where polling loop communication is weak.

The No. 4153 CONTROL COMMUNICATOR communication format is program selectable. The installer may select from a **3+1 or 4+1 zone type reporting format** (3 or 4 digit account number and a 1 digit event code) or from a **4+2 format** (4 digit account number and a 2 digit event code). The 4+2 format may be programmed to report either by sensor or by zone type.

NOTE: The No. 4153 is part of the VECTOR 3000 Digital Point Annunciation Alarm Control System described in the System's User's Manual.

III. PRINCIPLE OF OPERATION:

The No. 4153 C-COM is connected to as many as 37 protection points through RPMs which are connected by a single pair of wires. The control constantly polls and receives a response from each RPM regarding its status. Each contact/motion detector RPM can monitor two separate points of protection, identify them uniquely and report on their status. The control will then take the appropriate action, if any, by displaying or sounding messages at the console, by sounding external sounders or by sending messages to the central station by phone line or, when equipped to do so, by other means (for example; long range radio, derived channel, etc.). Each of the 37 protection points can be assigned to a reporting zone (up to 7 can be used) used by a built-in communicator. Alternatively, each protection point can transmit its own unique reporting code via the built-in communicator.

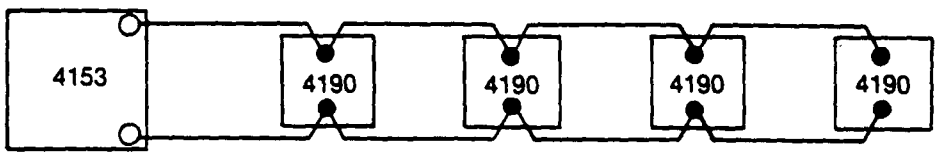


DIAGRAM 1. POLLING LOOP

IV. REMOTE PROGRAMMING AND CONTROL:

The No. 4153 allows the installer to call it using switched network phone lines so that the control/communicator can be remotely programmed and/or commanded from a No. 699 Intelligent Programmer or an IBM compatible Personal Computer (PC). It is also possible to initiate remote access when the system is **disarmed (and no reports are being communicated)** by key entry at a console in the protected premises ([master code] + # +1), useful when the system is connected to a telephone line **inside** a PABX that uses operators. See Note 4 under **Remote Capabilities** in this section.

Accessing of the No. 4153 from a remote location is protected against compromise, by someone attempting to defeat the system, using 3 levels of security protection:

1. **Security Code Handshake:** An 8 digit Central Station ID code must be matched between the No. 4153 and the Central Station.

2. **Hang-up and call back:** Calling the No. 4153 does not directly allow programming as a successful handshake merely results in the No. 4153 breaking the phone line connection and then calling back the (internally stored) central station service phone number*.

*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.

3. **Data Encryption:** Data passed between the central station and the No. 4153 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

The No. 4153 must be used with the (factory installed) No. 4153RD Ring Detector if remote programming and/or control is desired. The No. 4152LM, providing Class 'A' polling loop operation **cannot** be used when the 4153RD is used.

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

- A No. 699MD Intelligent Programmer that incorporates an internal modem and a No. 695-53 Program Cartridge.

OR

- An IBM PC compatible computer, a Hayes Brand Model 1200 Modem, No. 4153PC Downloading Software Diskette, and appropriate interconnecting cables.

- **Remote Capabilities** (See Note 2)

Programming

All programming functions accessible from the unit's keypad or via local No. 699 direct programming.

Commanding

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

- Control Commands -

  - To Arm the System in the Away Mode*(1)
  - To Disarm the System
  - To Bypass a Sensor or Sensors
  - To Force the System to Accept a New Program Download
  - To Disable Operation because of Lease Non-Payment (a display of dE will be left on the console)
  - To Lockout Local Console or 699IP Programming, Preventing System Takeover By Another Alarm Company

- 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
    Presence of Alarms (past or present)
    Presence of Troubles (past or present)
    AC Power Status

*NOTES:

1. If the system is programmed for open/close reporting by user, User #1 will be reported.

2. After the 4153 and the 699 or PC have established valid communication, each console displays an 'OC' and emits a trouble sound. This indicates that the 4153 is not polling the consoles or the RPMs. The 4153 will resume the normal security functions after it is commanded to hang up. See the 4153PC or 695-53 instructions for details.

The detailed operation of the functions described below is covered in the Installation Instructions for the No. 695-53 Program Cartridge and for the 4153PC Download Software Diskette.

- To Read List of Faulted Sensors
- To Read List of Bypassed Sensors
- To Read 10 Day Alarm History Log
- To Read 10 Day Trouble History Log
- To Read List of Sensors Currently in Alarm
- To Read List of Sensors Currently in Trouble

. **Remote Communication Specifications**

. Transmission Rate - 75 baud, half duplex
. Program Download Time - 2 minutes for a complete program
. Typical Total Time Including Call Up/Call-Back - 5-7 minutes.

. **Remote Command/Programming Advisories**

. 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. The console emits a trouble tone during this interval.

. Should an alarm transpire during the remote program/control interval, the system would not respond to the alarm condition until the remote mode was ended. The Nos. 4190WH, 4192, 4194WH, 4196, and 4208 all store their fault conditions until they are read by the No. 4153. As such, alarm conditions from these RPMs would not be missed, only delayed.

. A copy of the program downloaded may be produced from either the No. 699 Intelligent Programmer or the IBM PC compatible computer, using those products' internal report generators, when an optional printer is connected.

V. POINT PROTECTION EQUIPMENT:

The No. 4153 C-COM is a special control designed to operate with a point protection polling loop. It should not be used to operate other kinds of alarm circuits, such as separate conventional wired zones. The No. 4153 can presently be used with the following equipment:

No. 4157 SECURITY CONSOLE

The No. 4157 CONSOLE provides all system status indications and permits all system control functions. The console is used to program the system, to arm and disarm the burglary system, to assign and remove programmed selections, activate PANIC alarms, to provide protection point identification and to provide visible and audible system indications. Up to 4 consoles can be supported (as many as 6 if supplemental 12 volt power is supplied to operate these additional consoles).

No. 4190WH DUAL POINT REMOTE POINT MODULE (RPM)

This device permits the interface of any dry contact sensor (for example: magnetic contacts, foil, vibration sensors, motion detectors, smoke detectors, etc.) and provides the identification and status of the protection points to the No. 4153 C-COM. Each RPM supports two sensor loops (referred to as a left loop and a right loop). The left loop can support N.O. and N.C. contacts and the right loop supports N.C. contacts. A trouble or a fault detected by the RPM will be indicated at the console along with the location of the alarm. When smoke detectors, motion detectors or other devices requiring power are used that are not "matched components" from the Vector series, 2 additional wires must be run to power these devices.

No. 4208 8 POINT REMOTE POINT MODULE (RPM)

The No. 4208 performs similarly to the No. 4190 except that it interfaces 8 end-of-line resistor supervised protective loops to the control. Communication path and power requirements are provided by the polling loop. When smoke detectors, motion detectors, or other devices not of the Vector family are used, then separate power lines must be used.

No. 4192 SERIES OF SMOKE DETECTOR/REMOTE POINT MODULES

These smoke detectors (4192CP - ionization, 4192SD - photoelectric, 4192SDT-photoelectric with thermostat) report to the control all faults and identify the alarm location at the console. If other smoke detectors (4-wire type) are used in conjunction with the left loop of the 4190WH RPM, 2 additional wires must be run to power these detectors and a switch must be provided to interrupt the power to these detectors to reset them. The Vector series detectors are totally accommodated by the polling loop for their power and resetting and they draw less than 1 mA each from the loop.

Nos. 4139WH, 4194WH, 4191WH REED CONTACT REMOTE POINT MODULES

These surface mount (4139WH and 4194WH) and recessed mount (4191WH) Magnetic Reed Contacts, each with a built-in RPM, allow windows and doors to be monitored without the need to separately mount and wire an RPM.

Nos. 4196 QUAD and 4275 DUAL SENSOR PIR/REMOTE POINT MODULES

These "matched" Passive Infrared detectors respond to rapid changes of infrared energy associated with an intrusion into the protected area and reports the event to the control. The RPM built into the "matched" Vector 4196 Quad PIR also permits nearby closed circuit contacts to be interfaced to the unit, enhancing the economy of the RPM. The PIRs have a nominal coverage of 35' x 35' and can be extended to 45' x 45' coverage by mounting adjustment. The 4196 utilizes two dual detectors to achieve verified PIR operation. By mirror changeout, the PIRs can be adapted for long range (corridor) application, 70' x 16' (4196) or 80' x 10' (4275). These PIRs are directly powered by the polling

loop and no separate power wiring is required. If other motion detectors are used, separate power wiring is required. Up to 5 4196 PIRs can be selected to utilize pulse count to further enhance their false alarm immunity (each 4275 has a built-in pulse count option). Additional 4196 PIR's can be utilized without pulse count. Do **not** use pulse count feature with PIRs configured for long range coverage. Do **not** use software pulse counting for 4275s internally set for pulse count.

No. 4152LMB CLASS "A" POLLING LOOP ADAPTER

This add-on circuit board is used to provide additional security by enabling the polling loop to be connected Class 'A' where it can be polled even though the loop may be broken. This adapter may also be wired as a separate open ended loop to effectively double the length of the polling loops that can be supported (See SECTION "WIRING THE POLLING LOOP"). Use of this adapter does **not** increase the number of sensors that the system can uniquely identify. This adapter **cannot** be used if central station initiated remote command or programming is to be used with this product.

No. 4197 LOOP EXTENDER MODULE

This device is a signal repeater that doubles the maximum polling loop length from the point of loop cut-in. It may also be used to enhance polling loops with marginal or poor signaling performance at certain extended RPMs, by providing signal boosting for the marginal devices. It can be powered from the control or locally from AC power via a No. 729 plug-in power supply (provide local rechargeable battery in the latter instance).

No. 4198 POLLING LOOP TESTER

This diagnostic device tests the polling loop for potential failure due to excessive length or inappropriate gauge. When inserted between the control panel and the polling loop it places a load on-line and tests those loops which might extend too far from the panel.

VI. OPERATION:

A point protection security system uses a computer based control panel connected to a single multiplex communication circuit called a polling loop. The polling loop consists of a run of paired wire (twisted is preferred, but is not mandatory) with multiple RPMs (e.g. Nos. 4190WH, 4192, 4194WH, 4196, 4208) connected in parallel to each other. Sensor devices are connected to the RPMs by a contact loop. Each contact loop forms a protection point. Vector 3000 supports up to 37 such protection points on the polling loop and monitors the condition of this polling loop for opens and shorts.

As the control receives individual sensor status, it checks the installer defined assignments stored in the EEPROM (Electrically Erasable PROM that retains its memory in the absence of power) to determine what action has to be taken. The control then responds accordingly with an appropriate alarm display, audible console annunciation, external sounder and/or dialer communication.

Each protection point is assigned a zone type by the installer for alarm response and for central station reporting (when point reporting is not used). When the control receives a reply from an RPM, the microprocessor determines the zone type of the protection point and responds in a predefined manner. The following information describes the zone types and their associated responses.

ZONE TYPE 1 ENTRY/EXIT

ARMED STATE: In response to a burglary sensor fault from a point that has been designated "entry/exit", alarms are activated at the end of the timeout of the entry/exit timer. Separate entry and exit delay times are installer selected from 0 seconds to 150 seconds (in 10 second increments). Upon entry, a slowly beeping console warning signal is initiated. If [Code + OFF] is not keyed before the end of the timing cycle, an alarm is then initiated and the point in alarm is identified on the console. Either one alarm or multiple alarms per protection point (per armed period) is installer selectable as a systemwide selection. This zone type is capable of reporting dialer RESTORE messages. (See address *85 in Programming Section).

DISARMED STATE: A faulted sensor designated as "entry/exit" will result in the READY LED being extinguished. Depressing the READY key will cause the display of all faulted contacts. No dialer communication is initiated.

ZONE TYPE 2 PERIMETER

ARMED STATE: A faulted sensor that has been designated PERIMETER causes an instantaneous audible alarm, a latched display of the sensor ID number on the console, and a dialer report (installer defined). Either one alarm or multiple alarms per protection point (per armed period) is installer selectable as a systemwide selection. Dialer **RESTORE** messages can be reported. (See address *85 in Programming Section).

DISARMED STATE: A faulted sensor results in the READY LED being extinguished. Depressing the READY key causes the display of the ID number of all faulted sensors. No dialer communication is initiated.

ZONE TYPE 3 INTERIOR/FOLLOWER DELAY

ARMED STATE: All sensors assigned to the interior zone have exit delay. These sensors have entry delay when a zone type 1 (Entry/Exit) fault precedes this fault. Otherwise, any zone type 3 fault produces an immediate audible alarm, a latched display and a dialer report (installer defined). Either one alarm or multiple alarms per protection point (per armed period) is installer selectable as a systemwide selection. Dialer **RESTORE** messages can be reported for alarms. Interior sensors may all be directly bypassed by use of the STAY arming feature. (See address *85 in Programming Section).

DISARMED STATE: A faulted sensor results in the READY LED being extinguished. Depressing the **READY** key causes the display of the ID numbers of all faulted sensors. No dialer communication is initiated.

ZONE TYPE 4 TROUBLE BY DAY/ALARM BY NIGHT

ARMED STATE: A faulted sensor that has been designated as DAY/NIGHT causes an instantaneous audible alarm, a latched display of the ID number of the sensor, and a dialer report (installer defined). Either one alarm or multiple alarms per protection point (per armed period) is installer selectable as a systemwide selection. Dialer **RESTORE** messages can be reported for alarms. (See address *85 in Programming Section).

DISARMED STATE: A faulted sensor will result in a **TROUBLE** condition. The console will beep rapidly and display the ID number of all faulted sensors. The console **TROUBLE** LED will glow. The first trouble can initiate a dialer TROUBLE report. Subsequent TROUBLES, prior to a TROUBLE RESTORE, will not initiate

additional dialer reports. When all TROUBLES have been removed, a system **TROUBLE RESTORE** message can be reported.

Pressing any key silences the beeping. A subsequent entry [Code + OFF] clears the display.

ZONE TYPES 5 AND 6 24 HOUR ZONES

Operational response is individually selectable for zones 5 and 6 from the below listed 24 hour modes:

SILENT: A faulted sensor initiates a dialer report (installer defined) with no local display and no sounders activated. Upon disarming, there will not be a memory indication of the faulted sensor. Faults in the disarmed state will result in the **READY** LED being extinguished. Dialer reports are limited by the sounder duration programmed selection. Only one dialer report will be issued per sounder duration defined period. When using the **4+2 format**, alarm and restore reports are sent as they occur. (See address *85 in Programming Section).

AUDIBLE: A faulted sensor initiates an audible alarm, a latched display of the ID number of the sensor and a dialer report (installer defined). Either one alarm or multiple alarms per protection point (until system is next disarmed/armed) is installer selectable as a systemwide selection. Dialer **RESTORE** messages can be reported.

AUXILIARY: Faulted contacts initiate a steady sounding at the console, a latched display of the ID number of the sensor and a dialer report (installer defined). Either one alarm or multiple alarms per protection point (until system is next disarmed/armed) is installer selectable as a systemwide selection. Dialer **RESTORE** messages can be reported. (See address *85 in Programming Section).

ZONE TYPE 7 FIRE ZONE

Alarms (shorted thermostats or pull stations or activated smoke detectors) initiate a pulsed sounder alarm for a time duration defined by the installer. Concurrent fire alarms, burglary alarms and troubles are alternately displayed, but the sounder will always give priority to fire alarms. (Fire alarms are displayed when field 17 is enabled).

Fire zone protection points may not be bypassed. An open fire zone circuit (TROUBLE) **WILL NOT** prevent the arming of the burglary system. A shorted sensor (ALARM) **WILL** prevent system arming.

Either one alarm or multiple alarms per protection point (until system is next disarmed/armed) is installer selectable as system-wide selection. Contacts which have been subsequently faulted will be displayed at the console. (See address *85 in Programming Section).

ZONE TYPE 8 DURESS (AMBUSH)

This is a zone only in the sense that it reports a message to the Central Station. To activate the DURESS feature, enter the first three numbers of the **SECURITY CODE** and increase the fourth digit by 1. (**IMPORTANT!** If the last SECURITY CODE digit is 9, or if no report code is assigned, the duress feature is disabled.)

The DURESS feature does not initiate any audible or visual signals, but reports a silent alarm. It does **not** cause a dialer RESTORE message to be transmitted.

RPM TAMPER AND SUPERVISION

TAMPER: Refers to the removal of a 4190WH RPM cover. TAMPER detection will always result in a trouble signal (if program enabled) if it occurs when the system is not armed and will display the ID number of the left loop of the affected RPM. If the system is armed and a tamper detection occurs when the left loop is utilized for burglary protection (zones 1-4), a burglary alarm will result. If the left loop is used for fire, panic or auxiliary, a tamper detection will result in a trouble signal. The implication of the latter is that a tamper fault during the armed mode will only result in a trouble if the left loop is used for non-burglary response even though the right loop is used for burglary detection. Removal of a cover of a fire programmed (left loop) 4190WH will always result in a Trouble signal, whether tamper is program enabled or not.

SUPERVISION: Refers to non-responding RPMs when there are no breaks in the polling loop. However, RPMs situated between multiple breaks in a Class 'A' polling loop or RPMs beyond a single break in an open ended polling loop will appear as supervision faults. SUPERVISION FAULT will always result in a trouble signal if it occurs when the system is not armed and will display the ID number of the left loop. If the system is armed and a supervision fault occurs when the left loop is utilized for burglary protection (zones 1-4), a burglary alarm will result. If the left loop is used for fire, panic, or auxiliary, a supervision fault will result in a trouble signal even though the right loop is used for burglary detection and the system is armed.

VII. INSTALLATION:

Installing a point protection system involves wiring the polling and sensor loops, preparing and mounting the RPMs; and programming, mounting and wiring the control. It is important that the installer completely read this section before attempting any of the installation procedures.

NOTE: The following installation procedures involve the No. 4190WH RPM only. Please refer to the instructions included with the No. 4208 for information regarding those products. Both products will perform a similar function to that of the No. 4190 and may be more appropriate for portions or all of your installation.

WIRING THE POLLING AND CONTACT LOOPS

Wiring the polling and contact loops first is the most efficient way to install a point protection system. By following this method, the installer not only establishes all circuits but also creates a programming plan. For this reason the installer should keep a record of what zone is to be assigned to each protection point and how that protection point is to perform.

The following should be considered when wiring the two types of loops:

POLLING LOOP (twisted pair preferred)

GAUGE	MAXIMUM WIRE LENGTH PER RUN*
22 (0.64 mm.O.D.)	650'(200m.)
20 (0.81 mm.O.D.)	950'(290m.)
18 (1.0 mm.O.D.)	1500'(460m.)
16 (1.3 mm.O.D.)	2400'(730m.)

*If multiple wire runs are extended from the control, maximum total length of wire that can be connected to the polling loop is 4000 feet (1200m.), independent of how heavy a wire gauge is used.
When a 4152LMB Polling Loop Adapter is used to create a separate open ended loop, an additional 4000 feet (1200m) of polling loop wire can be run.
While the polling loop is being wired, don't forget to run a pair from the auxiliary power output and ground if you are **not** using PIRs or smoke detectors of the 4190 series.

CONTACT LOOPS

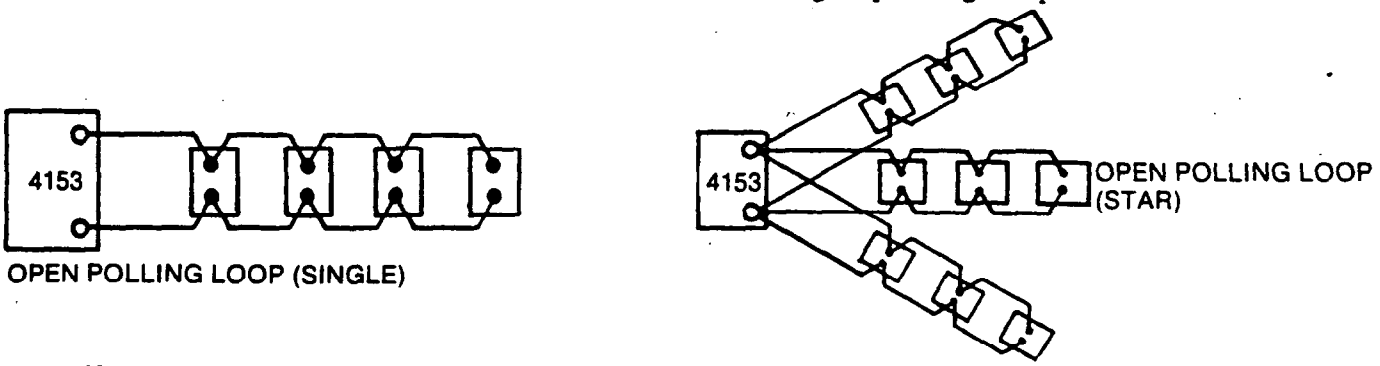
LEFT LOOP

High Current = 22 gauge (0.64mm.O.D.) 1200 feet (370m.). **Refer to Diagram 3, under heading "INSTRUCTIONS FOR LEFT LOOP OPERATION", for additional information.**

Low Current = 22 gauge @ 200' [60m.] (fast response:10 ms), 1200' [370m.] (slow response:400ms).

RIGHT LOOP = 22 gauge @1200' [370m.] (max.) LOW CURRENT; **use reed contacts only.** 300 ms response

Diagram 2 describes several methods of installing a polling loop:



The following wiring configurations are used with the addition of the 4152LM.

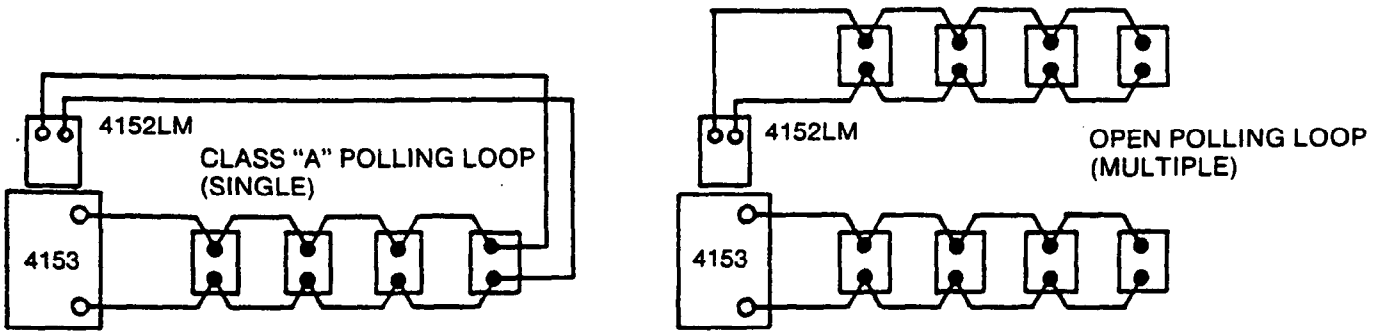


DIAGRAM 2. WIRING THE POLLING LOOP

No. 4190WH RPM PREPARATION

Preparing the RPM for installation involves: (1) configuring the RPM for operation and (2) properly assigning an identification number to each RPM.

CONFIGURING THE RPM

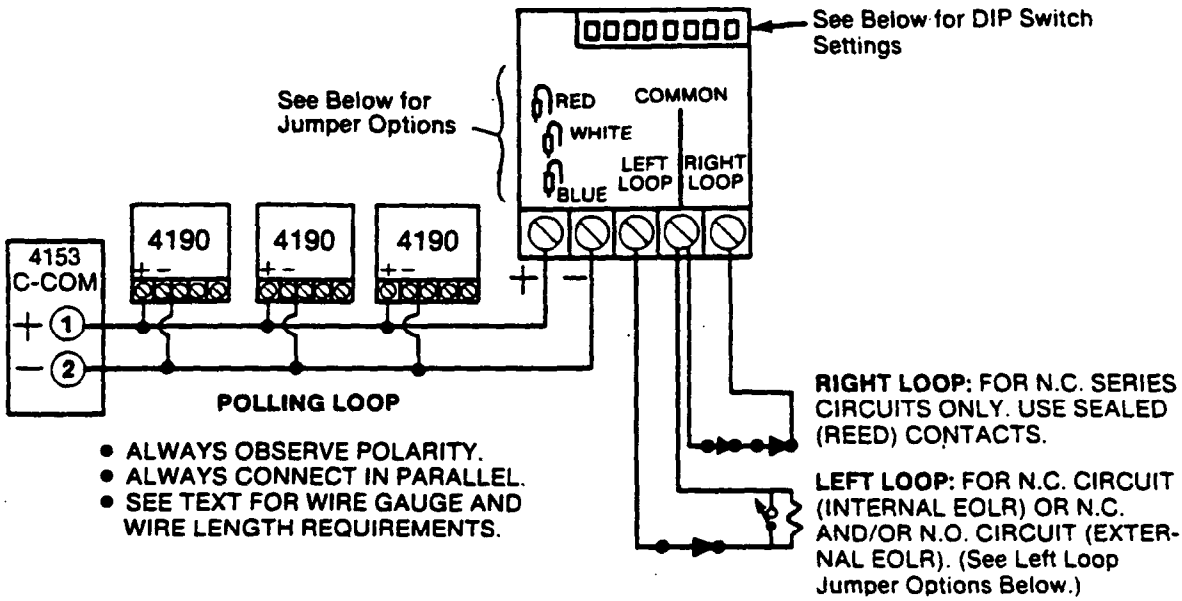
Each 4190WH RPM can accommodate up to two sensor loops: a left loop and a right loop. The left loop may be configured to monitor N.O. and/or N.C. contacts. The right loop monitors N.C. contacts only. **The left loop must always be used in order to have proper polling loop operation.** The use of the right loop is optional. **The following suggestions are helpful when configuring the left loop:**

- When cutting an option jumper, be certain that **BOTH SIDES** of the jumper are cut to avoid accidental contact.

- Use the high current mode only when using mechanical contacts (e.g. No. 39 or other non-reed contacts). Leave the WHITE jumper intact when using the high current mode. Cut the WHITE jumper when using the low current mode for reed contacts.

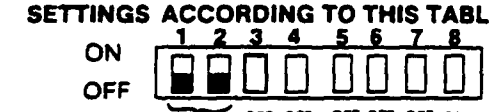
- **The current consumption of the entire polling loop cannot exceed 60 mA.** Complete the worksheet in this section by describing each protection point and entering the current drain alongside each device.

- Although any number of sensors may be assigned to sensor loop, avoid assigning too many contacts to any sensor loop (left or right) as this makes it difficult for the end user or your service personnel to identify a specific sensor that has been faulted.



INSTRUCTIONS FOR SETTING ID#

CONVERT ID NUMBER TO DIP SWITCH SETTINGS ACCORDING TO THIS TABLE



LEAVE THESE IN OFF POSITION. (RED EXPOSED AT OFF)

OFF	OFF	OFF	OFF	OFF	OFF	ON	=	1
OFF	OFF	OFF	OFF	OFF	ON	OFF	=	2
OFF	OFF	OFF	OFF	OFF	ON	ON	=	3
OFF	OFF	OFF	OFF	ON	OFF	OFF	=	4
OFF	OFF	OFF	OFF	ON	OFF	ON	=	5
OFF	OFF	OFF	OFF	ON	ON	OFF	=	6
OFF	OFF	OFF	OFF	ON	ON	ON	=	7
OFF	OFF	OFF	ON	OFF	OFF	OFF	=	8
OFF	OFF	OFF	ON	OFF	OFF	ON	=	9
OFF	OFF	OFF	ON	OFF	ON	OFF	=	10
OFF	OFF	OFF	ON	OFF	ON	ON	=	11
OFF	OFF	OFF	ON	ON	OFF	OFF	=	12
OFF	OFF	OFF	ON	ON	OFF	ON	=	13
OFF	OFF	OFF	ON	ON	ON	OFF	=	14
OFF	OFF	OFF	ON	ON	ON	ON	=	15
OFF	ON	OFF	OFF	OFF	OFF	OFF	=	16
OFF	ON	OFF	OFF	OFF	OFF	ON	=	17
OFF	ON	OFF	OFF	OFF	ON	OFF	=	18
OFF	ON	OFF	OFF	OFF	ON	ON	=	19
OFF	ON	OFF	OFF	ON	OFF	OFF	=	20
OFF	ON	OFF	OFF	ON	OFF	ON	=	21
OFF	ON	OFF	OFF	ON	ON	OFF	=	22
OFF	ON	OFF	OFF	ON	ON	ON	=	23
OFF	ON	OFF	ON	OFF	OFF	OFF	=	24
OFF	ON	OFF	ON	OFF	OFF	ON	=	25
OFF	ON	OFF	ON	OFF	ON	OFF	=	26
OFF	ON	OFF	ON	OFF	ON	ON	=	27
OFF	ON	OFF	ON	ON	OFF	OFF	=	28
OFF	ON	OFF	ON	ON	OFF	ON	=	29
OFF	ON	OFF	ON	ON	ON	OFF	=	30
OFF	ON	OFF	ON	ON	ON	ON	=	31
ON	OFF	OFF	OFF	OFF	OFF	OFF	=	32
ON	OFF	OFF	OFF	OFF	OFF	ON	=	33
ON	OFF	OFF	OFF	OFF	ON	OFF	=	34
ON	OFF	OFF	OFF	ON	OFF	ON	=	35
ON	OFF	OFF	ON	OFF	OFF	OFF	=	36
ON	OFF	OFF	ON	OFF	ON	OFF	=	37

YOU ONLY NEED TO SET THE LEFT LOOP #

WHEN BOTH LOOPS ARE USED, THE TRANSPONDER WILL AUTOMATICALLY ADD (+1) TO SET THE RIGHT LOOP #.

IF ONLY ONE LOOP IS USED, USE THE LEFT LOOP, SET THE ID #, AND USE THE NEXT CONSECUTIVE # FOR THE NEXT TRANSPONDER.

INSTRUCTIONS FOR LEFT LOOP OPTIONS

1. RED JUMPER SETS LOOP RESPONSE TIME
   CUT = 10 MSEC
   UNCUT = 400 MSEC
2. WHITE JUMPER SETS CURRENT ON LOOP
   CUT = 0.1mA FOR REED CONTACTS
   UNCUT = 1 mA FOR MECHANICAL SWITCHES
3. BLUE JUMPER - CUT ONLY WHEN AN EOLR IS NOT USED (WHITE JUMPER MUST ALSO BE CUT)

NOTE: IF YOU USE HIGH CURRENT FOR MECHANICAL SWITCHES YOU MUST USE AN EOLR (DO NOT CUT BLUE OR WHITE JUMPERS)

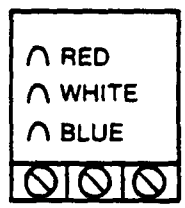


Diagram 3. 4190WH RPM SUMMARY OF CONNECTIONS

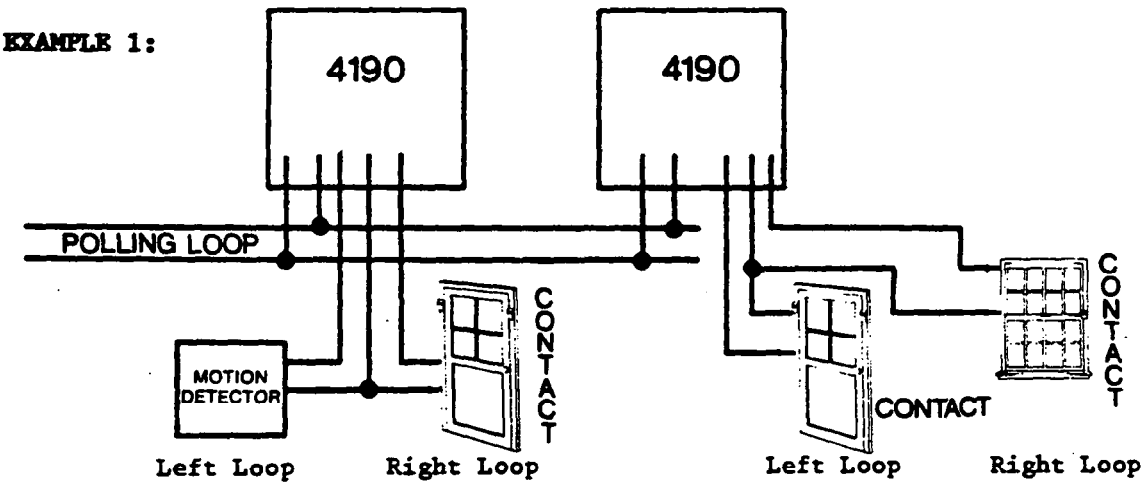
- **If using a fast acting sensor,** such as a glass break or a vibration (ADEMCO No. 11) sensor, **cut the RED jumper** to configure the RPM for 10 MSEC response.

- As delivered, the left loop is configured to be used with both parallel N.O. and series N.C. sensors (loop is supervised against opens and shorts) and an external End-of-Line Resistor (either 4700 ohms [small, YELLOW-VIOLET-RED 1/4 watt size] for high current [mechanical switch] operation or 30,000 ohms [large, ORANGE-BLACK-ORANGE 1/2 watt size] for low current [reed] operation) must be connected across the loop at the **last** (furthest) sensor. (The white jumper must be cut to use the 30,000 Ohm EOLR.) If this level of supervision is not desired **and if only N.C. contacts will be used, the requirement for using the external End-of-Line Resistor can be eliminated by cutting the BLUE jumper. When this is done only low current operation of the sensor loop is possible** (i.e. only reed contacts may be used).

SELECTING AN RPM ID NUMBER

When setting the RPM ID#, only the ID# for the left loop should be set at the DIP Switch. If the right loop is used, the control will automatically add (+1) one to the left loop ID# for right loop identification. If the right loop is not being used, the next RPM can be set to the next sequential number.

EXAMPLE 1:



- Set this RPM's DIP switch to ID #1.
- Left loop (MOTION DETECTOR) will be Point #1.
- Right loop (DOOR) will automatically set to be Point #2 when the control is programmed for this configuration.

- Set this RPM's DIP switch to ID #3.
- Left loop (DOOR) will be Point #3.
- Right loop (WINDOW) will be automatically be set to be Point #4 when the control is programmed for this configuration.

CAUTIONS: 1. **NEVER set two RPMs' DIP switches to the same ID #.**
2. **NEVER assign two loops to the same ID # when programming the control.**

EXAMPLE 2:

If only the left loop is used, RPM DIP switches can be set sequentially as the control will be programmed to know that the right loop is not being used.

- Set this RPM's DIP switch to ID #1.
- Since right loop is unused, no ID # will be assigned by the control.

- Set this RPM's DIP switch to ID to #2.

HINTS:

- Right loop cannot be used without first using Left loop.
- Smoke Detector RPMs do **not** support a Right loop.
- Assign ID numbers with future expansion in mind. If many ID's are not being used, skip an ID number whenever the Right loop of a 4190WH or 4196 is **NOT** used. Right loop sensors can then be added later if an installation is being expanded, without having to reprogram the DIP switches on any of the RPMs and just by reprogramming of the control.
- 4208 sensor loops, 4139WHs, 4191WHs, 4194WHs and 4275s are all to be assigned Left Loop response.

	TRANSPONDER LOCATION	PROTECTION POINT DESCRIPTION		ID # ASSIGNMENT		ALARM RESPONSE/ REPORTING ZONE ASSIGNMENT**	
		LEFT LOOP	RIGHT LOOP	LEFT* LOOP	RIGHT LOOP	LEFT LOOP	RIGHT LOOP
EXAMPLE	ENTRANCE AREA	PIR	FRT DOOR CONTACT	1	2	3	1
EXAMPLE	DINING RM BEHIND VERT. BLINDS	WINDOW CONTACT	WINDOW CONTACT	3	4	2	2
EXAMPLE	KITCHEN DOOR RADIATOR WELL	BCK DOOR CONTACT	WINDOW CONTACT	5	6	1	2
EXAMPLE	NOT USED			7		0	
EXAMPLE	INSIDE BASEMENT DOOR (CEILING)	SMOKE DET.		8		7	
EXAMPLE	HALLWAY REAR CORNER	PIR		9		3	

Do not use sensor 7 of field *01 if ring detection is enabled.

FOR EXAMPLE ONLY. ACTUAL ENTRIES SHOULD BE MADE ON THE ACCOMPANYING WORKSHEET.

***LEFT LOOP ID # IS TRANSPONDER DIP SWITCH SETTING**

**ZONE ASSIGNMENTS
1: E/E BURGLARY
2: PERIMETER BURGLARY
3: INTERIOR BURGLARY
4: DAY/NIGHT BURGLARY
5: 24 HR AUDIBLE, SILENT OR AUX
6: 24 HR AUDIBLE, SILENT OR AUX
7: FIRE
8: DURESS

DIAGRAM 4. PROTECTION POINT WORKSHEET

INSTALLING THE No. 4153 C-COM

Installing the No. 4153 C-COM involves wiring all connections and programming the control/communicator.

WIRING THE No. 4153

The following information describes the terminal connections of the control.

TERMINALS	DESCRIPTION
1(+), 2(-)	Connections for the polling loop. Be certain to use no more than the indicated maximum length of wire. All RPMs are connected in parallel to each other. No more than 37 identifiable **sensor** loops may be connected to this polling loop, whether single, double, or octuple sensor loop RPMs are used.
3, 4	AC input connections from the No. 1349 TRANSFORMER. Connect the transformer to a 24 hour unswitched 110V, 60Hz outlet.
5(-), 6(+)	Auxiliary power output: 12V @ 750 mA max. power (includes the current available from terminal #14 to power consoles).
7(-), 8(+)	Alarm sounder wet output: 12V @ 1.5 A. For UL installation, see **Note Regarding UL Installations.**

WARNING!

Use only one 8 ohm speaker with a VECTOR system equipped with a No. 733 SIREN DRIVER. Multiple speakers may be used only when they are wired in series. **Under no circumstances should multiple 8 ohm speakers be wired in parallel as the 4153 power supply is not capable of supplying the 3 (or more) amps required to power such a load.** Although the No. 733 is capable of powering such a configuration, the supporting control product cannot provide the required power. This configuration, therefore, could cause a product malfunction.

9, 10, 11, 12	Telephone line connections. Use a No. 620 Direct Connect cord. #9 = Handset (Tip, BROWN) #10 = Incoming Line (Tip, GREEN) #11 = Incoming Line (Ring, RED) #12 = Handset (Ring, GRAY)
13	"DIALER ACTIVE" output (optional usage to light a remote LED) goes low when active.
14, 15, 16, 17	Console connections. When using multiple consoles, each console should be connected to these control terminals, **NOT DAISY CHAINED (HOME RUN TO EACH CONSOLE).**

#14 = Power (RED) #15 = Data OUT (YELLOW)
#16 = Data IN (GREEN) #17 = Ground (BLACK)

Note Regarding UL Installations:

1. Sounding devices must be listed per UL 464 and have a marked rating of 85 decibels or more.
2. UL 609 Installations: Sounding device must be listed "Burglary Alarm Sounding Device For Use In Listed Housing" and the bell must be listed Grade A.
3. Maximum bell output power is 12V, at 1.5A.

Refer to the following wire length (max.)/gauge (min.) information when mounting the console away from the control panel.

DISTANCE	GAUGE
Up to 220' (70m.)	22 (0.64mm.O.D.)
350' (110m.)	20 (0.81mm.O.D.)
550' (170m.)	18 (1.02mmm.O.D.)

18 — Ground Start Output to No. 675 Ground Start Module

19 — Not Used.

20 — EARTH GROUND connection **This connection is essential for protection against electrical transients.**

699 INTERFACE PLUG — Direct connection to the No. 699 PROGRAMMER for control/communicator programming.

VOLTAGE TRIGGER INTERFACE — This male socket used is in conjunction with a connector (supplied) used for direct connection to other UL listed output media (for example, No. 7620 Long Range Radio Transmitter, No. 698 Derived Channel Subscriber Terminal Unit, etc...). The following list describes all the flying leads and their function. Voltage levels are activated at 4.5V and are low at 1/2 volt.

YELLOW wire - for OPENING/CLOSING. Low voltage equals disarmed and HI voltage equals armed.
RED Wire - High* voltage equals burglary Zones 1, 2, 3, 4 activated.
GREEN Wire - High* voltage equals Fire Zone 7 activated.
WHITE Wire - High* voltage equals Emergency Zone 5 or Zone 8 (Duress) activated. Deactivated by CODE + OFF sequence.
BLACK Wire - Ground

*Note: Signal polarity can be reversed (i.e. Low = Activated) under program control for supervised voltage triggers.

TB2 1(+), 2(-) — **WIRING THE 4153RD RING DETECTOR** (Only if remote command or programming via telco lines is to be used)

Connect TB-2 Terminal 1 to TB-1 Terminal 10.
Connect TB-2 Terminal 2 to TB-1 Terminal 11.

WIRING THE OPTIONAL 4152LMB LOOP MODULE

1(+), 2(-) Connections to the polling loop. This polling loop may be another wiring run or it may be used as a return for the main loop (providing a Class "A" loop that is immune to a single open circuit). **NOTE: Adding the Loop Module does not increase the number of contact loops supported by the system beyond 37.**

NOTE: Either of the above cited modules can be used in a particular installation, not both.

INSTALLING AND WIRING KEYPADS

1. **Select a location for the keypad** that is convenient for entering commands and for receiving the various visual and audible system signals.

2. **Run wiring between the keypad and the control/communicator.** Use a 4-wire run (see the Summary of Connections diagram). Additional keypads may be connected in parallel, with all keypads connected at the control panel. **DO NOT DAISY CHAIN KEYPADS!** See the section "Wiring the 4153" for further information.

3. **Mount the 4157 keypad as follows: Remove the 2 screws, whose heads are behind the information compartment door** on the front of the keypad, to allow removal of the back cover of the keypad.

   In surface mount installations on a plaster/sheetrock wall.

   Use the template provided to locate the 3 screw mounting holes (2 keyslot) and the wiring access hole. Drill the necessary holes, route the wiring in the wall through the access hole and mount the back of the keypad. Splice the wire run to the keypad's wires and push the interface wiring back into the wall. Replace the front cover/keypad assembly and screw it in place with the two screws previously removed.

   In surface mount installations over a preinstalled standard electrical box (No. 4157BP backplate required)

   Route the wiring from the electrical box through the access hole in a No. 4157BP backplate and screw mount the backplate to 2 screw holes in the electrical box. Route the wiring through the access hole in the back cover of the keypad and hang this cover from its 2 keyslot holes on plastic posts protruding from the No. 4157BP backplate. Screw the back cover to the No. 4157BP using one screw. Splice the wire run to the keypad's wires and push the interface wiring back into the electrical box. Replace the front cover/keypad assembly and screw it in place with the two screws previously removed.

4. For information regarding flush mounting the keypad, see the instructions accompanying the keypad.

FOR UL 609 GRADE A INSTALLATIONS:
SEE II SUPPLEMENT FOR 4153ML.

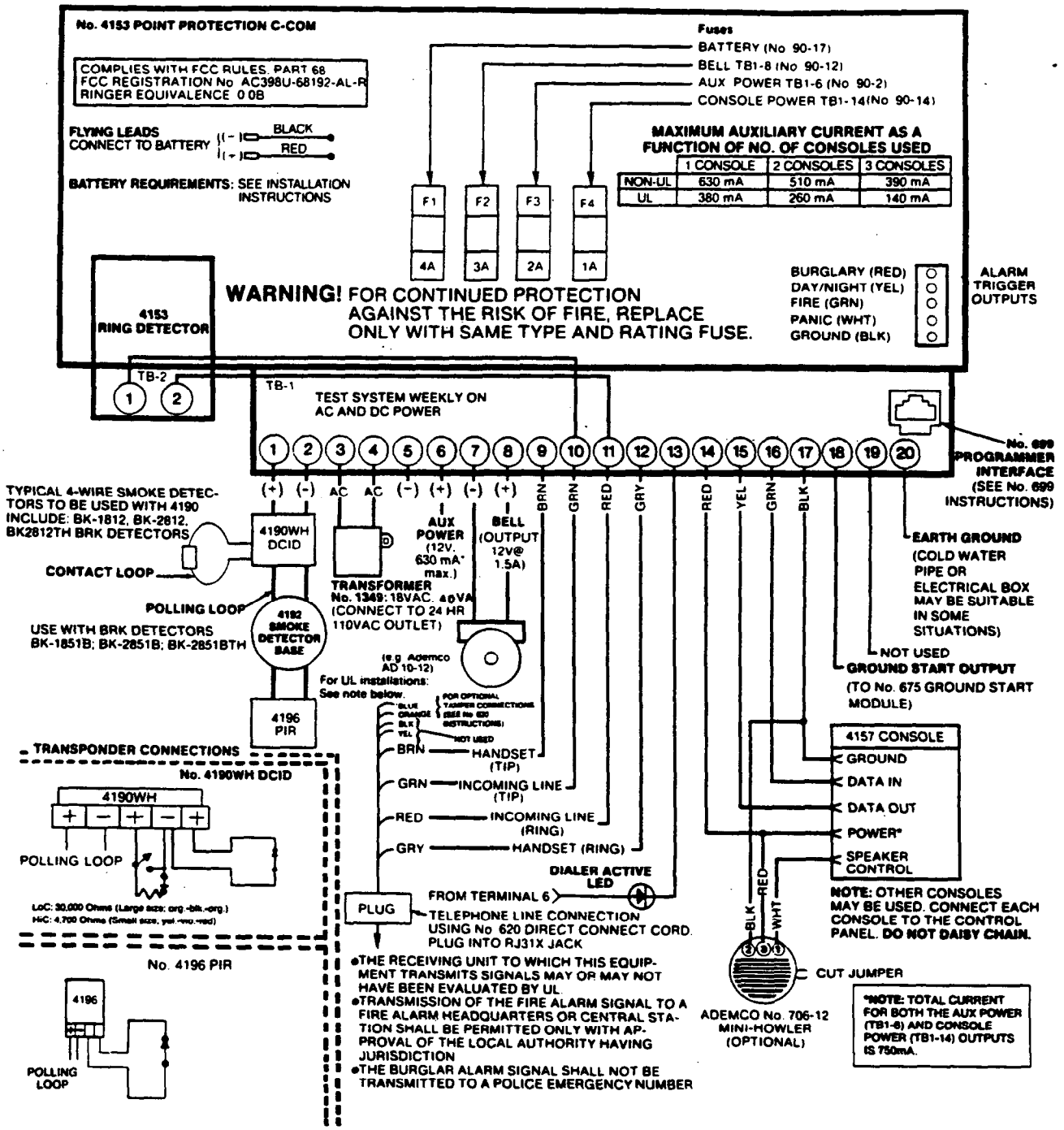


DIAGRAM 5. No. 4153 SUMMARY OF CONNECTIONS

Note regarding UL installations:

1. Sounding devices must be listed per UL 464 **and** have a **marked** rating of 85 Decibels or more.
2. UL 609 installations: Sounding device must be listed "Burglar Alarm Sounding Device For Use In Listed Housing" and the bell housing must be listed Grade A.
3. Maximum bell output power is 12V, at 1.5A.

INSTALLING VECTOR SYSTEMS NEAR AN INTERCOM SYSTEM

The polling loop and sensor loops connected to transponders (RPM's) can cause audio interference when installed too close to the wiring running between the master station and remote stations of an intercom system. To avoid this problem, the following precautions must be taken:

- A minimum distance of **three inches** must be maintained between the polling/sensor loop wires of the VECTOR security system and those of the intercom.

- Where it is not practical to maintain a three inch distance between the two systems, it is necessary to install shielded wiring for either the VECTOR polling and/or sensor loops or for the intercom system wiring (depending which was installed first). Whenever shielded wires are used, the shields must be earth grounded at the control or, in the case of the intercom, at the master unit.

If both the VECTOR and the intercom system are being installed at the same time, it may be easier to use shielded cable in the intercom system (See Diagram 6):

1. Shield the audio wiring running between the master station and remote stations which is in close proximity to VECTOR system wiring.
2. All shields must be grounded at the master intercom unit.
3. Observe all precautions established by the manufacturer.
4. Ground the master intercom unit to earth ground. A cold water pipe or electrical box may often be suitable.

When using shielded cable with the VECTOR system (See Diagram 7):

1. When multiple wire runs are made from the polling connection on the control, the combined length of all runs is reduced from 4,000 feet to 2,000 feet independent of wire gauge. The maximum length of any single run ermains unchanged.
2. When using a 4152LMB LOOP MODULE all of the aforementioned wire length restrictions must be observed.
3. When using a 4197 LINE EXTENDER MODULE all of the aforementioned wire length restrictions must be observed.
4. All sensor loop wiring in close proximity to intercom system wiring must utilize shielded cable. These cable lengths must comply with the restrictions presented in the installation instructions. There is no upper limit wire length reduction as there was with the polling loop cable.

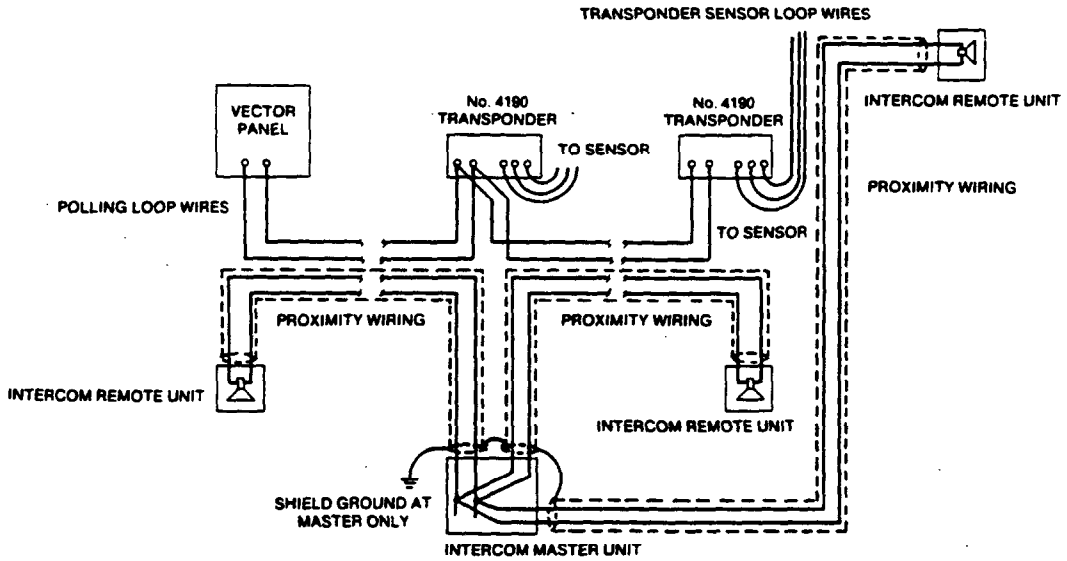


DIAGRAM 6: **RECOMMENDED INSTALLATION AND GROUNDING TECHNIQUES FOR SHIELDED WIRING IN AN INTERCOM SYSTEM**

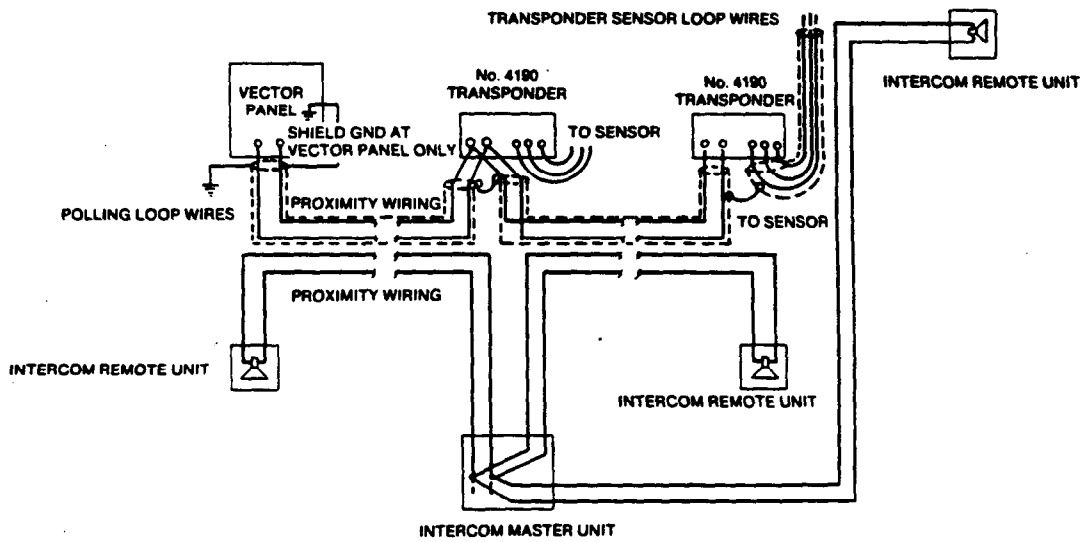


DIAGRAM 7: **RECOMMENDED INSTALLATION AND GROUNDING TECHNIQUES FOR SHIELDED WIRE IN A VECTOR SYSTEM**

PROGRAMMING THE No. 4153

How the 4153 C-COM performs is determined by the installer's programming. Programming may be done from a CONSOLE keypad, from the No. 699 PROGRAMMER (The No. 699 is simpler to use because of its large alphanumeric English language display that prompts installer responses to questions), or remotely from the central station. Information regarding the programmer, whether used locally or remotely, is included with the No. 695-53 Programming Cartridge or the 4153PC.) All information required for programming via a console keypad is included on the worksheet which follows.

When programming from the console, consider the following:

- The system is factory programmed to a set of preset values, which can be altered by the installer to suit the specific needs of a particular installation or installation company. The preset values are detailed in the Factory Programming Table.

- Enter the keypad programming mode by simultaneously depressing * # on the keypad **WITHIN 30 SECONDS AFTER POWER IS APPLIED TO THE CONTROL** or subsequently by keying the code 4 + 1 + 5 + 3 followed by CODE key + 0 key depression. Once a master code is programmed, use it instead of 4153 (as 4153 is then no longer present) to gain access to the programming mode.

- When a data field has been completely programmed from the keypad, the console will beep three times and then automatically proceed to and display the next data field address to be programmed.

- 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 be entered (for example *05).

- If an address is improperly entered, the console will display "FC". If a program entry is improperly entered (for example a larger number than what is permitted), the console display will go **blank**. In either case, simply re-enter the number.

- Enter each address separately when you are first beginning to use the product to insure that the control is properly programmed. All entries may be changed as often as required.

- The following describes 3 methods of using the programming mode:

PROGRAMMING

ENTER PROGRAMMING MODE =

1. POWER UP (AC or DC) + Depress * and # simultaneously within 30 seconds.

OR

2. **INITIALLY:** 4 + 1 + 5 + 3 + [CODE] Key + 0.

OR

3. **AFTER MASTER CODE IS PROGRAMMED:** [Master Code] + [CODE] Key + 0.

NOTES: . Types 2 and 3 methods of entry to the programming mode can be subsequently inhibited if the programming mode is exited via use of *98 instead of *99.

	. Type 1 method of entry can always be used.
EXIT PROGRAMMING MODE =	*99 (allows reentry to programming mode via Type 2 and 3 entry methods shown above). *98 (inhibits reentry to programming mode via Type 2 and 3 entry method). **NOTE: When the programming mode is exited, a one minute set-up period must be allowed before the system can properly function.**
ADVANCE TO FIELD =	* + ADDRESS (e.g. 01, 10, 21, etc.)
PROGRAM FIELD =	* + ADDRESS followed by data entries
ERASE FIELDS =	* + ADDRESS + *
READ FIELD =	# + ADDRESS
RESTORE FACTORY PROGRAM SETTINGS =	*90 (See Factory Programming Table).

SPECIAL MESSAGES

OC = OPEN CIRCUIT (no communication to console)
FC = FIELD CODE ERROR during programming and Failure to Communicate to the Central Station during system operation.

AFTER POWERING UP, THE READY LED LIGHTS AFTER 7 SECONDS. ENTER THE PROGRAMMING MODE BY SIMULTANEOUSLY DEPRESSING *# WITHIN 30 SECONDS. THE SYSTEM IS FACTORY PROGRAMMED WITH PRESET VALUES (SEE TABLE) THAT CAN BE ALTERED VIA THE PROGRAMMING INSTRUCTIONS THAT FOLLOW THE TABLE.

FACTORY PROGRAMMING TABLE

Factory predefined values serve two purposes:

- INSTALLER FAMILIARIZATION upon initial acquisition of the system.
- PROGRAMMING EFFORT REDUCTION if the installer accepts many of the preset values shown in the Table.

Installer familiarization usage permits a new customer for this product to quickly and easily set up a system for bench test so that familiarity can be achieved with the product and with some of the new aspects of operating a multiplexed polling loop system. An installer can set up four dual point RPMs spanning a variety of all possible alarm responses available from the system.

The preset values are defined below:

ADDRESS	FUNCTION	FACTORY PROGRAMMED VALUE
00	MASTER SECURITY CODE	4153
01	SENSOR ZONE (ALARM RESPONSE) ASSIGNMENT	1=ENTRY/EXIT (BURGLARY) [1] 2=PERIMETER (BURGLARY) [2] 3=INTERIOR (BURGLARY) [3] 4=TROUBLE BY DAY/ALARM BY NIGHT (BURGLARY) [4] 5=24 HR SILENT PANIC [5] 6=24 HR. AUXILIARY [6] 7=NOT USED 8=FIRE [7] 9-10=NOT USED [0]
02	SENSOR ZONE (ALARM RESPONSE) ASSIGNMENT	11-20=NOT USED [0]

03	SENSOR ZONE (ALARM RESPONSE) ASSIGNMENT	21-30=NOT USED [0]
04	SENSOR ZONE (ALARM RESPONSE) ASSIGNMENT	31-37=NOT USED [0] 97 [POLLING LOOP SHORT]= TROUBLE BY DAY/ALARM BY NIGHT (BURG) [4] 98 [POLLING LOOP OPEN] = NOT USED [0] 99 [CONSOLE * # PANIC] = PANIC [5]
05	SENSOR RIGHT LOOP ASSIGNMENT	1=LEFT [0] 2=RIGHT [1] 3=LEFT [0] 4=RIGHT [1] 5=LEFT [0] 6=RIGHT [1] 7=NOT USED [0] 8=LEFT [0] 9-10=NOT USED [0]
06	SENSOR LEFT LOOP/RIGHT LOOP ASSIGNMENT	11-20=All NOT USED [0s]
07	SENSOR LEFT LOOP/RIGHT LOOP ASSIGNMENT	21-30=All NOT USED [0s]
08	SENSOR LEFT LOOP/RIGHT LOOP ASSIGNMENT	31-37,97,98,99= All NOT USED [0s]
09	ENTRY DELAY	30 SECONDS [03]
10	EXIT DELAY	40 SECONDS [04]
11	SOUNDER DURATION	4 MINUTES [02]
12	SENSORS ASSIGNED PULSE COUNT	ALL NOT USED [00s]
13	CONFIRMATION OF ARMING "DING" ENABLE	NO [0]
14	AC LOSS SOUNDING	NO [0]
15	LATCHED CONSOLE SOUNDER	SOUND UNTIL TIME OUT [0]
16	NO FIRE TIME OUT	TIMEOUT [0]
	NOTE:	Timeout is not allowed for any listed UL985 installation.
17	FIRE INDICATION	YES [1]
18	BYPASS INDICATION	NOT DISPLAYED [0]
19	MULTIPLE ALARMS PER SENSOR	YES [1]
20	DISABLE TAMPER	YES [1]
21	TEST REPORT ENABLE	NO [0]
22	TEST REPORT INTERVAL	24 HR. [1]
23	ZONE 5 RESPONSE	SILENT [1]
24	ZONE 6 RESPONSE	AUXILIARY [0]
25	POWER-UP IN PREVIOUS STATE	YES [1]
26	QUICK ARM	YES [1]
27	LOOP MODULE ENABLE	4152LM NOT USED [0]
28	NOT USED	[00]
29	PABX ACCESS CODE	NONE = [0]
30	SUBSCRIBER ACC'T NO.	FFFF = [15-15-15-15]
31	PRIMARY PHONE NO.	NONE = [0]
32	SECONDARY PHONE NO.	NONE = [0]
33	TOUCHTONE DIALING USED	NO [0]
34	DIALTONE WAIT/PAUSE	5 SECONDS [0]
35	DIALTONE DETECTION DISABLE	ENABLED [0]
36	RING DETECTION USED	NO [0]
37	PRIMARY ACKNOWLEDGE WAIT	30 SECONDS [0]
38	PRIMARY TRANSMISSION FORMAT	ADEMCO LOW SPEED [0]

39	SECONDARY ACKNOWLEDGE WAIT	30 SECONDS [0]	
40	SECONDARY TRANSMISSION FORMAT	ADEMCO LOW SPEED [0]	
41	4+2 SENSOR REPORTING DIALER FORMAT	NO [0]	
42	ALARM REPORT	STANDARD [0]	
43	TROUBLE REPORT	STANDARD [0]	
44	BYPASS REPORT	STANDARD [0]	
45	RESTORE REPORT	EXPANDED [1]	
46	LOW BATTERY REPORT	STANDARD [0]	
47	OPEN/CLOSE REPORT	EXPANDED [1]	
48	NON-ALARM ROUTING	PRIMARY PHONE NO. [0]	
49	BACK-UP REPORTING	NO [0]	
50	ZONE ALARM REPORT CODES	ZONE 1 (E/E BURG) = 3 [03] ZONE 2 (PERIM. BURG.) = 3 [03] ZONE 3 (INTERIOR BURG.) = 3 [03] ZONE 4 (DAY/NITE BURG.) = 3 [03] ZONE 5 (PANIC) = 2 [02] ZONE 6 (24 HR AUX.) = 7 [07] ZONE 7 (FIRE) = 1 [01] ZONE 8 (DURESS) = 2 [02]	
51	OTHER MESSAGE REPORTS	TROUBLE = F [15] TROUBLE DUMMY = F [15] BYPASS = D [13] BYPASS DUMMY = F [15] LOW BATTERY = 8 [08] LOW BATTERY DUMMY = 0 [00] RESTORE = E [14] CLOSE = C [12] OPEN = B [11] TEST = 9 [09]	
52	16 SEC. DIALER DELAY	NO [0]	
53	ZONE 1 RESTORE REPORT ENABLE	DISABLED [0]	
54	ZONE 2 RESTORE REPORT ENABLE	DISABLED [0]	
55	ZONE 3 RESTORE REPORT ENABLE	DISABLED [0]	
56	ZONE 4 RESTORE REPORT ENABLE	DISABLED [0]	
57	ZONE 5 RESTORE REPORT ENABLE	DISABLED [0]	
58	ZONE 6 RESTORE REPORT ENABLE	DISABLED [0]	
59	ZONE 7 RESTORE REPORT ENABLE	DISABLED [0]	
60	4 + 2 ZONE REPORTING DIALER FORMAT	NO [0]	
61	ALARM CODES FOR SENSORS 1-8 (1ST DIGIT)	NOT USED	Fields 61 thru 81 are not used as the default value of Field 41 disables reporting by sensor.
62	ID CODES FOR SENSORS 1-8 (2ND DIGIT)	NOT USED	
63	TROUBLE CODE FOR SENSORS 1-8 BYPASS CODE FOR SENSORS 1-8 RESTORE CODE FOR SENSORS 1-8 (ALL 1ST DIGITS)	NOT USED	
64	ALARM CODE FOR SENSORS 9-16 TROUBLE CODE FOR SENSORS 9-16 BYPASS CODE FOR SENSORS 9-16 RESTORE CODE FOR SENSORS 9-16 (ALL 1ST DIGITS)	NOT USED	

65	ID CODES FOR SENSORS 9-16 (2ND DIGIT)	NOT USED
66	ALARM CODE FOR SENSORS 17-24 TROUBLE " " " " BYPASS " " " " RESTORE " " " " (ALL 1ST DIGITS)	NOT USED
67	ID CODES FOR SENSORS 17-24 (2ND DIGIT)	NOT USED
68	ALARM CODE FOR SENSORS 25-32 TROUBLE " " " " BYPASS " " " " RESTORE " " " " (ALL 1ST DIGITS)	NOT USED
69	ID CODES FOR SENSORS 25-32 (2ND DIGIT)	NOT USED
70	ALARM CODE FOR SENSORS 33-37, 97, 98, 99 TROUBLE CODE FOR SENSORS 33-37, 97, 98, 99 BYPASS CODE FOR SENSORS 33-37, 97, 98, 99 RESTORE CODE FOR SENSORS 33-37, 97, 98, 99 (ALL 1ST DIGITS)	NOT USED
71	ID CODES FOR SENSORS 33-37, 97, 98, 99 (2ND DIGIT)	NOT USED
72	OPENING REPORT (1ST DIGIT)	NOT USED
73	OPENING REPORT 2ND DIGIT FOR USER 1 (Each higher numbered user has this digit increased by 1)	NOT USED
74	CLOSING REPORT (1ST DIGIT)	NOT USED
75	CLOSING REPORT 2ND DIGIT FOR USER 1	NOT USED
76	LOW BATTERY REPORT (1ST DIGIT)	NOT USED
77	LOW BATTERY REPORT (2ND DIGIT)	NOT USED
78	TEST REPORT (1ST DIGIT)	NOT USED
79	TEST REPORT (2ND DIGIT)	NOT USED
80	LOW BATTERY RESTORE (1ST DIGIT)	NOT USED
81	LOW BATTERY RESTORE (2ND DIGIT)	NOT USED
82	CALLBACK PHONE NO.	NONE [00]
83	CALLBACK ID # - 15 15 15 15 15 15 15 15	NOT VIEWABLE
84	UL REQ'D SIREN SOUNDING AFTER 4 HR. AC LOSS	NO [0]
85	SWINGER SUPPRESSION	NO [0]
86	GROUND START TELCO LINE TEST	NO [0]
87	DURESS CODE	NO [0]
88	NOT USED	DO NOT PROGRAM
89	SUPERVISED ALARM TRIGGER OUTPUTS	NO [0]
90	FACTORY DEFAULTS	PRESSING *90 RESETS ALL SELECTIONS TO THE ORIGINAL FACTORY SETTINGS
91	NOT USED	DO NOT PROGRAM
92	NOT USED	DO NOT PROGRAM

93	NOT USED	DO NOT PROGRAM
94	NOT USED	DO NOT PROGRAM
95	CONDITIONAL OPENING REPORT	NO [0]
96	4+1/4+2 EXPRESS FORMAT FOR ZONE OR SENSOR REPORTING	NO [0]

SPECIFIC ADDRESS PROGRAMMING INSTRUCTIONS

FUNCTION — ADDRESS

MASTER SECURITY CODE *00

COMMENTS:
- ENTER 4 DIGITS 0-9 (entry of all 4 is mandatory)
- USING A "9" IN THE LAST POSITION INHIBITS THE AMBUSH FEATURE.
- FACTORY PROGRAM = 4153

ASSIGN ZONE (ALARM RESPONSE) TO SENSORS

	1	2	3	4	5	6	7	8	9	10	
*01											SENSORS 1-10

	11	12	13	14	15	16	17	18	19	20	
*02											SENSORS 11-20

	21	22	23	24	25	26	27	28	29	30	
*03											SENSORS 21-30

	31	32	33	34	35	36	37	97	98	99	
*04											SENSORS 31-37 and 97,98,99

COMMENTS:
- ALL BOXES MUST BE FILLED WITH 0-7. ENTER "0" IN BOXES REFERRING TO SENSORS NOT USED.
- ENTER "0" FOR SENSOR #7 IF REMOTE PROGRAMMING/CONTROL (DOWNLOADING) IS USED. THIS SENSOR CAN'T BE USED WHEN THE RING DETECTOR IS ENABLED (FIELD *36).
- THE FIRST 37 BOXES REPRESENT PROTECTION POINTS. ASSIGN ZONE TYPES TO EACH POINT.
- FACTORY PROGRAM:

  1 = Z1, 2 = Z2, 3 = Z3, 4 = Z4, 5 = Z5, 6 = Z6, 7 = NOT USED, 8 = Z7, 9-37 = NOT USED, 97 = Z4, 98 = NOT USED, 99 = Z5

- ASSIGN ZONES FROM THE FOLLOWING TABLE:

  0 = ASSIGN FOR UNUSED POINTS
  1 = ENTRY/EXIT (BURG)
  2 = PERIMETER (BURG)
  3 = INTERIOR W/DELAY (BURG)
  4 = TROUBLE BY DAY/ALARM BY NIGHT (BURG)
  5 = 24 HR (SILENT, AUDIBLE or AUXILIARY)*
  6 = 24 HR (SILENT, AUDIBLE, or AUXILIARY)*
  7 = FIRE

*NOTE: See Address Numbers 23 and 24 for selection of the kind of 24 hour zone response desired for Types 5 and 6.

- "SENSORS" 97 AND 98 ARE ALLOCATED (AND RESPOND ACCORDING TO THE ZONES ASSIGNED) TO POLLING LOOP OPEN (98) AND POLLING LOOP SHORT 97. **HINT:** USE EITHER ZONE 4 OR ONE OF THE 24 HOUR ZONES AS A RESPONSE FOR THESE CONDITIONS.

- ASSIGN ZONE 98 **ONLY** WHEN A 4152LMB IS USED **AND** THE POLLING LOOP IS WIRED AS A CLASS A LOOP. (See Diagram 3). OTHERWISE, ZONE 98 WILL ALWAYS DISPLAY AS FAULTED. (SEE ADDRESS *27)

- SENSOR "99" IS THE CONSOLE PANIC AND SHOULD BE ASSIGNED TO A 24-HOUR ZONE. THE PANIC FEATURE IS ACTIVATED BY SIMULTANEOUSLY DEPRESSING THE *# KEYS. ASSIGN A 6 OR A 5.

- CAUTION: IF ALL LOCATIONS ARE ASSIGNED AS ZEROES, THE SYSTEM IS INOPERATIVE AND THE CONSOLE WILL DISPLAY "OC" WHEN THE PROGRAMMING MODE IS EXITED.

DESIGNATE RIGHT LOOP USAGE

	1	2	3	4	5	6	7	8	9	10	
*05											SENSORS 1-10
	11	12	13	14	15	16	17	18	19	20	
*06											SENSORS 11-20
	21	22	23	24	25	26	27	28	29	30	
*07											SENSORS 21-30
	31	32	33	34	35	36	37	97	98	99	
*08											SENSORS 31-37 and 97,98,99

- CAUTION: When any sensor is **not** assigned an alarm response in Addresses 01-04 (response set to 0), make sure that the Right Loop designation for that sensor is also set to zero (Addresses 05-08). Failure to do so can cause unpredictable operation, including false alarms.

COMMENTS:

- ALL BOXES MUST BE FILLED WITH 0 OR 1 (1 if that sensor number is a right loop, 0 otherwise).
- When using a No. 4208, all 8 LOOPS associated with the 4208 MUST BE DESIGNATED AS "ZERO".
- WHEN USING A No. 4139WH, 4191WH, 4194WH RPM, 4192 SERIES SMOKE DETECTOR, OR A 4275 PIR, IT MUST BE DESIGNATED AS A LEFT LOOP (0).
- LABEL ALL SENSORS AS THEY APPEAR ON THE POLLING LOOP. EXAMPLE: IF THE FIRST RPM USES BOTH LOOPS, THEN THE FIRST TWO BOXES SHOULD BE LABELED 0 AND 1. IN EACH CASE A LEFT LOOP MUST

BE USED; A RIGHT LOOP CANNOT BE USED ALONE (IT CAN ONLY BE USED IN CONJUNCTION WITH A LEFT LOOP).

FACTORY PROGRAM
2, 4, 6 = RIGHT (1)
1,3,5,7,8-37, 97,98,99 = SET TO ZERO (0)

ENTRY DELAY *09

COMMENTS:

- DEFINES THE TIME PERIOD BETWEEN A ZONE 1 FAULT AND THE TIME WHEN THE ALARM IS SOUNDED.
- ENTER 00-15. MULTIPLY BY 10 SECONDS TO DETERMINE TIME DELAY.
- IN A LISTED UL 1023 HOUSEHOLD BURGLARY INSTALLATION, A MAXIMUM OF 40 SECONDS MAY BE USED FOR AN ENTRY DELAY.
- IN A LISTED UL609 COMMERCIAL BURGLARY INSTALLATION A MAXIMUM OF 60 SECONDS MAY BE USED.
- FACTORY PROGRAM = 30 SECS.

EXIT DELAY *10

COMMENTS:

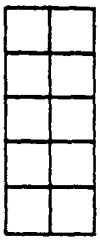
- DEFINES THE TIME PERIOD AFTER THE SYSTEM ARMING CODE IS KEYED WHEN SENSORS ASSIGNED TO ZONES 1 AND 3 ARE ARMED.
- ENTER 00-15. MULTIPLY BY 10 SECONDS TO DETERMINE TIME DELAY.
- IN A LISTED UL 1023 HOUSEHOLD BURGLARY INSTALLATION, A MAXIMUM OF 60 SECONDS MAY BE USED FOR EXIT DELAY.
- IN A LISTED UL609 COMMERCIAL BURGLARY INSTALLATION A MAXIMUM OF 60 SECONDS MAY BE USED.
- FACTORY PROGRAM = 40 SECS.

SOUNDER DURATION *11

COMMENTS:

- IN A UL609 GRADE 'A' INSTALLATION A MINIMUM OF 16 MIN. MUST BE USED FOR SOUNDER DURATION.
- DEFINES THE LENGTH OF TIME A LOCAL EXTERNAL OR INTERNAL ALARM SOUNDER WILL SOUND ON ALL ZONES.
- PROGRAM DATA FIELD *16 TO ASSURE NO TIME OUT FOR FIRE ZONE ALARMS.
- ENTER 00-15. MULTIPLY BY 2 MINUTES TO DETERMINE SOUNDER DURATION.
- IN A LISTED UL1023/985 HOUSEHOLD BURGLARY/FIRE INSTALLATION, A MINIMUM OF 4 MINUTES SHOULD BE USED FOR THE ALARM SOUNDER DURATION.
- FACTORY PROGRAM = 4 MINS.

SENSORS ASSIGNED TO THE PULSE COUNT CAPABILITY *12



- UP TO FIVE SENSORS (E.G. 4196 PIRS) IN THE ADDRESS RANGE OF 01-15 CAN BE ASSIGNED TO RECEIVE FALSE ALARM PROTECTION SIGNAL PROCESSING VIA PULSE COUNT LOGIC.
- IF LESS THAN FIVE SENSORS UTILIZE PULSE COUNT, THE UNUSED LOCATIONS MUST BE FILLED WITH 00.
- THE PULSE COUNT LOGIC SHOULD **NOT** BE ENABLED FOR 4275s OR FOR SENSORS PROVIDING CORRIDOR/HALLWAY COVERAGE (USING LONG RANGE OPTICS) OR FOR WIDE AREA COVERAGE SENSORS COVERING A DOORWAY WITH ONLY 1 OR 2 BEAMS.
- PULSE COUNT HAS NOT BEEN TESTED FOR USE IN A UL609 COMMERCIAL INSTALLATION.
- FACTORY PROGRAM = ALL 00S STORED - NO PULSE COUNT.
- ALL SENSORS ASSIGNED MUST BE CONFIGURED AS LEFT LOOP SENSORS.

CONFIRMATION OF ARMING "DING" ENABLE *13

COMMENTS:

- MANDATORY SELECTION FOR UL609 GRADE 'A' INSTALLATIONS
- PROVIDES A 1/2 SECOND SOUNDING FROM THE EXTERNAL SOUNDER AT END OF EXIT TIME-OUT OR AT KISSOFF FROM A CLOSING REPORT.
- ENTER 0 (NO) OR 1 (YES)
- MANDATORY FOR UL609 GRADE A AND UL1635 INSTALLATIONS.
- FACTORY PROGRAM = NO

AC LOSS SOUNDING *14

COMMENTS:

- DETERMINES IF CONSOLE SOUNDING WILL OCCUR WHEN AC POWER IS LOST.
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM = DISABLED.

LATCHED CONSOLE SOUNDING FOR BURGLARY *15

COMMENTS:

- ENABLES THE CONSOLE SOUNDER TO SOUND STEADILY FOR A BURGLARY ALARM UNTIL THE SYSTEM IS DISARMED.
- ENTER 0 (SOUND TIMES OUT) OR 1 (LATCHED STEADY SOUND)
- FACTORY PROGRAM = SOUND TIMES OUT

NO FIRE TIME OUT *16

COMMENTS:

- DISABLES THE SOUNDER TIMEOUT FEATURE FOR ANY PROTECTION POINT DESIGNATED AS A FIRE ZONE SO THAT FIRE SOUNDING CONTINUES UNTIL THE

SYSTEM IS RESET.

- ENTER 0 (TIMEOUT) OR 1 (NO TIMEOUT).
- A SELECTION OF 1 IS MANDATORY FOR A LISTED UL985 FIRE INSTALLATION.
- FACTORY PROGRAM = TIMEOUT.

FIRE INDICATION *17
(using numeric display)

☐

COMMENTS:

- ENABLES A DISPLAY OF "FI" WHENEVER FIRE SENSORS ARE CAUSING AN ALARM. WHEN THE ALARM IS SILENCED OR TIMES OUT, THE "FI" DISPLAY IS REPLACED BY DISPLAY OF THE SENSOR NUMBERS.
- ENTER 0 (NO "FI" DISPLAY, ONLY SENSOR NUMBERS) OR 1 ("FI" DISPLAY ENABLED).
- FACTORY PROGRAM = DISPLAY ENABLED.

BYPASS INDICATION *18
(using numeric display)

☐

COMMENTS:

- ENABLES A DISPLAY OF "bb" WHENEVER ANY SENSOR IS BYPASSED.
- ENTER 0 (NO DISPLAY) OR 1 (DISPLAY ENABLED).
- MANDATORY FOR UL609 INSTALLATIONS.
- FACTORY PROGRAM = DISPLAY DISABLED.

MULTIPLE ALARMS *19

☐

COMMENTS:

- ENABLES THE SYSTEM TO PERMIT MULTIPLE ALARMS FROM A PROTECTION POINT DURING ONE ARMED PERIOD (AS OPPOSED TO ONLY ONE ALARM)
- ENTER 0 (ONLY ONE ALARM FROM A SENSOR PER ARMED PERIOD) OR 1 (MULTIPLE ALARMS FROM EACH SENSOR BUT NOT MORE FREQUENTLY THAN ALLOWED BY ALARM TIME-OUT).
- FACTORY PROGRAM = MULTIPLE

DISABLE TAMPER *20

☐

COMMENTS:

- WHEN SELECTED, ALL BURGLARY RPM TAMPER MESSAGES ARE IGNORED BY THE CONTROL.
- ENTER 0 (TAMPER ENABLED) OR 1 (TAMPER IGNORED).
- NIGHT TAMPER FAULTS WILL BE TREATED WITH THE ALARM RESPONSE OF THE ZONE ASSIGNED TO THE LEFT LOOP. FOR EXAMPLE, IF THE LEFT LOOP IS A BURGLARY ZONE, THEN THE TAMPER FAULT WILL CAUSE A BURGLARY ALARM.

. FACTORY PROGRAM = TAMPER IGNORED.

TEST REPORT ENABLE *21

COMMENTS:
. SYSTEM PRODUCES A TEST MESSAGE TO THE CENTRAL STATION.
. FIRST TEST MESSAGE SENT 12 HOURS AFTER EXITING THE PROGRAMMING MODE AND THEN EITHER EVERY 24 (OR 12) HOURS THEREAFTER.
. MANDATORY SELECTION FOR UL1635 INSTALLATIONS
. MUST BE PROGRAMMED IN CONJUNCTION WITH DATA FIELD #22 IF ENABLED.
. ENTER 0 (NO REPORT) OR 1 (REPORT ENABLED).
. MANDATORY FOR UL609 INSTALLATIONS.
. FACTORY PROGRAM = NO REPORT

TEST REPORT INTERVAL *22

COMMENTS:
. DETERMINES TIME PERIOD BETWEEN TEST REPORTS.
. ENTER 0 (12 HRS) OR 1 (24 HRS).
. MUST BE PROGRAMMED IN CONJUNCTION WITH DATA FIELD *21.
. EVEN IF TEST REPORTING IS NOT USED, THE TIME SETTING ESTABLISHES HOW OFTEN THE BATTERY IS TESTED UNDER LOAD WITH AC AUTOMATICALLY DISCONNECTED.
. FACTORY PROGRAM = 24 HRS. (NOT RELEVANT WHEN *21 = 0).

ZONE 5 ALARM RESPONSE *23

COMMENTS:
. DETERMINES THE TYPE OF 24 HOUR PROTECTION PROVIDED BY SENSORS ASSIGNED TO THIS ZONE.
. ENTER 0 (24 HR AUXILIARY), 1 (24 HR SILENT), OR 2 (24 HR AUDIBLE)
. FACTORY PROGRAM = SILENT

ZONE 6 ALARM RESPONSE *24

COMMENTS:
. DETERMINES THE TYPE OF 24 HOUR PROTECTION PROVIDED BY SENSORS ASSIGNED TO THIS ZONE.
. ENTER 0 (24 HR AUXILIARY), 1 (24 HR SILENT), OR 2 (24 HR AUDIBLE)
. FACTORY PROGRAM = AUXILIARY

POWER-UP IN PREVIOUS STATE *25

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COMMENTS:
- IF SELECTED, ON POWER-UP, SYSTEM WILL ASSUME SYSTEM STATUS PRIOR TO POWER DOWN. IF NOT SELECTED, IT WILL POWER UP DISARMED.
- ENTER 0 (NO) OR 1 (YES)
- WHEN THE SYSTEM POWERS UP ARMED, AN ALARM WILL BE CAUSED 1 MINUTE AFTER ARMING IF CONTACTS ARE FAULTED.
- FACTORY PROGRAM = YES
- THIS FEATURE WORKS PROPERLY ONLY WHEN BATTERY IS CONNECTED.

QUICK ARM *26

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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 4 (MAXIMUM)]
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM = ENABLED.

LOOP MODULE ENABLE *27

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COMMENTS:
- THIS SELECTION PREPARES THE SYSTEM FOR USE OF THE 4152LMB LOOP MODULE.
- ENTER 0 (4152LMB NOT USED) OR 1 (4152LMB USED).
- FACTORY PROGRAM = NOT USED
- IF 4153RD RING DETECTOR IS USED, ENTER 0.

NOT USED *28

☐☐

COMMENTS:
- ENTER 00.

PABX ACCESS CODE *29

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COMMENTS:
- IF NOT REQUIRED, ENTER NOTHING AND PROCEED TO NEXT ADDRESS.
- ENTER UP TO 3 DIGITS, 0-9. ONLY ENTER DIGITS REQUIRED. DO NOT FILL UNUSED SPACES.
- FACTORY PROGRAM = NONE (DISPLAYS SINGLE ZERO WHEN VIEWED)

SUBSCRIBER ACCT. No. *30

COMMENTS:
- ENTER 3 OR 4 DIGITS. ONLY ENTER DIGITS REQUIRED. EACH DIGIT REQUIRES A 2 DIGIT ENTRY SO AS TO ALLOW ENTRY OF HEXADECIMAL DIGITS (A-F).
- FACTORY PROGRAM = ALL "F"s.
- IF 3 DIGIT ENTRY, ENTER THE ADDRESS OF THE NEXT FIELD (e.g. *31) AFTER THE THIRD DIGIT IS ENTERED.
- IF 4+1 FORMAT IS USED, A LEADING ZERO MUST BE USED FOR ACCOUNT NUMBERS BELOW 1000.
- USE THE FOLLOWING CHART TO DETERMINE THE ENTRY FOR EACH DIGIT:

NUMBER	ENTER	NUMBER	ENTER
0	00	8	08
1	01	9	09
2	02	A	(DO NOT USE)
3	03	B	11
4	04	C	12
5	05	D	13
6	06	E	14
7	07	F	15

- FOR USE OF 4+2 REPORTING FORMAT, SEE ADDRESS NUMBERS 41 AND 60.

PRIMARY PHONE No. *31

COMMENTS:
- ENTER UP TO 11 DIGITS, 0-9. DO NOT FILL UNUSED SPACES.
- ERASE THE FIELD BY ENTERING *31*
- FACTORY PROGRAM = NONE (DISPLAYS SINGLE ZERO WHEN VIEWED).

SECONDARY PHONE No. *32

COMMENTS:
- ENTER UP TO 11 DIGITS, 0-9. DO NOT FILL UNUSED SPACES.
- ERASE THE FIELD BY ENTERING *32*
- FACTORY PROGRAM = NONE (DISPLAYS SINGLE ZERO WHEN VIEWED).

TOUCH TONE DIALING *33

COMMENTS:
- 0 = TOUCH TONE NOT USED
- 1 = TOUCHTONE DIALING ENABLED
- FACTORY PROGRAM = NOT USED [0]

CAUTION: SOME TELEPHONE LINES THAT **WERE** ACCEPTING PULSE (ROTARY) DIALING AND TOUCH TONE DIALING **ARE BEING OR WILL BE** RESTRICTED TO PULSE DIALING IF THE SUBSCRIBER IS NOT PAYING FOR TOUCH TONE SERVICE. COMMUNICATORS THAT ARE SET TO USE TOUCH TONE DIALING MAY CEASE TO BE ABLE TO

PLACE THEIR CALLS IF THEY HAPPEN TO BE ON ONE OF THESE LINES. **DO NOT SELECT A DIALING METHOD THAT IS NOT LEGALLY PERMITTED BY THE TELEPHONE COMPANY FOR THE SUBSCRIBER.**

NOTE: WHETHER OR NOT TOUCH TONE DIALING FOR CALL PLACEMENT IS PERMITTED, COMMUNICATION BY THE USE OF TOUCH TONE (DTMF) SIGNALLING USING THE ADEMCO EXPRESS FORMAT CAN BE PERFORMED ONCE THE CONNECTION IS MADE.

DIAL PAUSE *34 ☐

COMMENTS:
- ENTER DIGITS 0-2. FACTORY PROGRAM = 5 SECONDS.
- THIS FEATURE DETERMINES THE WAIT TIME FOR DIAL TONE DETECTION BEFORE DIALING WILL COMMENCE IF DETECTION DOESN'T TAKE PLACE.
- MAKE SELECTION FROM THE FOLLOWING VALUES:

  0 = 5 SECONDS 2 = 30 SECONDS
  1 = 11 SECONDS

DIAL TONE DETECTION *35 ☐

COMMENTS:
- DETERMINES WHETHER TRUE DIAL TONE DETECTION IS USED OR WHETHER JUST DELAY BEFORE DIALING (SAME DELAY AS PROGRAMMED IN FIELD *34) IS USED. THE LATTER MAY BE NECESSARY IN HIGH NOISE ENVIRONMENT TELCO NETWORKS WHERE NOISE CAN BE CONFUSED WITH DIAL TONE AND PREMATURE DIALING RESULTS.
- ENTER 0 (DIAL TONE DETECTION) OR 1 (DELAY FOR DIAL TONE).
- FACTORY PROGRAM = DIAL TONE DETECTION.

RING DETECTOR *36 ☐☐

COMMENTS:
- 00 = NO RING DETECTOR
- XX = THE NUMBER OF RINGS BEFORE PICK UP. ENTER 00-15.
- SEE ADDRESSES *82 AND *83
- 4153RD MUST BE INSTALLED IF ENABLED
- IF RING DETECTOR IS ENABLED, DO NOT USE SENSOR 7 IN ADDRESS *01.
- FACTORY PROGRAM = NO RING DETECTOR [00]

PRIMARY ACK WAIT *37

COMMENTS:
- ENTER 0 (30 SECONDS) OR 1 (60 SECONDS).
- FACTORY PROGRAM = 30 SECONDS
- CENTRAL STATION RECEIVER "ACKNOWLEDGE" WAIT TIME FOR PRIMARY PHONE NUMBER

PRIMARY TRANSMISSION FORMAT *38

COMMENTS:
- ENTER 0 (ADEMCO) OR 1 (SESCOA/RADIONICS)
- FACTORY PROGRAM = ADEMCO
- FOR PRIMARY PHONE NUMBER
- WHEN 4 + 2 FORMAT IS SELECTED (see Address Number 41, 60), THE SELECTION IN THIS FIELD DETERMINES THE PULSE TRANSMISSION RATE (10 pulses/sec for Ademco and 20 pulses/sec for SESCOA/RADIONICS) AND THE ACKNOWLEDGE/KISS OFF FREQUENCY (1400 Hz for Ademco and 2300 Hz for SESCOA/RADIONICS).

SECONDARY ACK WAIT *39

COMMENTS:
- ENTER 0 (30 SECONDS) OR A 1 (60 SECONDS).
- FACTORY PROGRAM = 30 SECONDS
- FOR SECONDARY PHONE NUMBER

SECONDARY TRANSMISSION FORMAT *40

COMMENTS:
- ENTER 0 (ADEMCO) OR A 1 (SESCOA/RADIONICS)
- FACTORY PROGRAM = ADEMCO
- FOR SECONDARY PHONE NUMBER
- WHEN 4 + 2 FORMAT IS SELECTED (SEE ADDRESS NUMBER 41,60), THE SELECTION IN THIS FIELD DETERMINES THE PULSE TRANSMISSION RATE (10 PULSES/SEC FOR ADEMCO AND 20 PULSES/SEC FOR SESCOA/RADIONICS) AND THE ACKNOWLEDGE/KISS OFF FREQUENCY (1400 HZ FOR ADEMCO AND 2300 Hz for SESCOA/RADIONICS).

4 + 2 TRANSMISSION FORMAT BY SENSOR *41

COMMENTS:
- ENABLES COMMUNICATION TO BOTH THE PRIMARY AND SECONDARY PHONE NUMBER (IF USED) USING A 4 + 2 TRANSMISSION FORMAT BY SENSOR.

This sensor format selection can also be used to create a zone reporting format that offers certain advantages over the standard 4+2 zone transmission format. These advantages are:

1. **True Restore** - The 4+2 sensor reporting format has true restore capability in that a restore report will be transmitted as soon as the sensor restores, independent of when the alarm sounder times out.

2. **True Zone Reporting** - The 4+2 sensor reporting format allows the installer to assign each sensor to a particular alarm report. Therefore, if it was desirable to have one group of sensors (ex: sensors 9-14) be treated as a particular perimeter grouping and another group of sensors (ex: sensors 15-21) be treated as another perimeter grouping, each of the sensors in one group could be assigned to the same alarm report code and each of the sensors in the other group could be assigned a common but different alarm report code. As such, installers can create their own "zone" reporting scheme.

- THE PRIMARY AND SECONDARY FORMAT SELECTIONS IN ADDRESS *38 AND *40 (IF SECONDARY IS USED) ARE REQUIRED TO SELECT THE APPROPRIATE DATA TRANSMISSION PULSE RATE AND ACKNOWLEDGE/KISS-OFF FREQUENCY.
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM = DISABLED.
- IF PROGRAMMED FOR 0 CONTINUE ON TO PROGRAM ALL FIELDS UNTIL FIELD *60.

THE DURESS REPORT USES THE SAME REPORT CODE AS THE KEYPAD PANIC (SENSOR #99) WHEN THE POINT ID 4+2 REPORT FORMAT IS USED.

IF FIELD 41 (4+2 TRANSMISSION FORMAT BY SENSOR) IS ENABLED, (SET TO ONE), FIELDS 42 THROUGH 47 ALWAYS YIELD EXPANDED FORMAT,

REGARDLESS OF THEIR SETTING.

IMPORTANT: IF PROGRAMMED FOR "1" SKIP TO QUESTION 61 AND PROGRAM FIELDS 61 THRU 81. OTHERWISE CONTINUE.

THE REPORTS IN FIELDS *42 THROUGH *47 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 *42], 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 (when 3+1 or 4+1 formats are used) AND IS TRAILED BY THE ZONE TYPE (OR USER ID) RELATED TO THAT REPORT.

Expanded TROUBLE and RESTORE reporting with channel numbers (i.e. TROUBLE DUMMY for TROUBLE and ALARM code for RESTORE) higher than 9 should **not** be used if 3+1 or 4+1 reporting formats are used and ADEMCO's No. 685 Digital Receiver is the message monitoring receiver at the central station. The 4+2 format should be used if numbers higher than 9 must be used. Failure to heed this advisory will result in the message being erroneously converted by the No. 685 into a meaningless message.

Report	3+1/4+1 Standard	3+1/4+1 Expanded	4+2 Standard	4+2 Expanded
Alarm	SSS(S) A	SSS(S) A AAA(A) Z	SSSS AØ	SSSS AZ
Trouble	SSS(S) T	SSS(S) T TTT(T) Td	SSSS TØ	SSSS TTd
Bypass	SSS(S) B	SSS(S) B BBB(B) Bd	SSSS BØ	SSSS BBd
Low Battery	SSS(S) L	SSS(S) L LLL(L) Ld	SSSS LØ	SSSS LLd
Open	SSS(S) O	SSS(S) O OOO(O) U	SSSS OØ	SSSS OU
Close	SSS(S) C	SSS(S) C CCC(C) U	SSSS CØ	SSSS CU
Test	SSS(S) Te	SSS(S) Te	SSSS TeØ	SSSS TeØ
Restore:				
Alarm	SSS(S) R	SSS(S) R RRR(R) A	SSSS RØ	SSSS RA
Trouble	SSS(S) R	SSS(S) R RRR(R) Td	SSSS RØ	SSSS RTd
Bypass	SSS(S) R	SSS(S) R RRR(R) Bd	SSSS RØ	SSSS RBd
Low Battery	SSS(S) R	SSS(S) R RRR(R) Ld	SSSS RØ	SSSS RLd

where: SSS or SSSS = Subscriber ID
A = Alarm Code
Ø = Zero
Z = Zone Type
T = Trouble Code
Td = Trouble Dummy Code
B = Bypass Code
Bd = Bypass Dummy Code

where: L = Low Battery Code
Ld = Low Battery Dummy Code
O = Open Code
C = Close Code
U = User Number
Te = Test Code
R = Restore Code

ALARM REPORT *42

COMMENTS:
- ENTER 0 (STANDARD REPORT) OR 1 (EXPANDED REPORT)
- FACTORY PROGRAM = STANDARD
- WHEN EXPANDED, THE ZONE TYPE IS TRANSMITTED IN THE LAST POSITION.
- DOES NOT APPLY TO 4+2 SENSOR FORMAT (EXPRESS OR NORMAL)

TROUBLE REPORT *43

COMMENTS:
- ENTER 0 (STANDARD) OR 1 (EXPANDED)
- FACTORY PROGRAM = STANDARD
- WHEN EXPANDED, A DUMMY CODE IS TRANSMITTED IN THE 4TH POSITION OF THE 2ND TRANSMISSION LINE (OF THE FIRST TRANSMISSION LINE IF 4+2 FORMAT IS USED) (ZONE ID IS NOT TRANSMITTED)
- DOES NOT APPLY TO 4+2 SENSOR FORMAT (EXPRESS OR NORMAL)

BYPASS REPORT *44

COMMENTS:
- ENTER 0 (STANDARD) OR 1 (EXPANDED)
- FACTORY PROGRAM = STANDARD
- BYPASSING A CONTACT RESULTS IN A RESTORE REPORT WHEN ALL BYPASSES ARE REMOVED.
- FIRE SENSORS CAN NOT BE BYPASSED.
- WHEN EXPANDED, A DUMMY CODE IS TRANSMITTED IN THE 4TH POSITION OF THE 2ND TRANSMISSION LINE (OF THE FIRST TRANSMISSION LINE IF 4+2 FORMAT IS USED) (ZONE ID IS NOT TRANSMITTED).
- DOES NOT APPLY TO 4+2 SENSOR FORMAT (EXPRESS OR NORMAL)

RESTORE REPORT *45

COMMENTS:
- ENTER 0 (STANDARD) OR 1 (EXPANDED)
- FACTORY PROGRAM = EXPANDED
- WHEN A POINT OF PROTECTION ALARM, BYPASS OR TROUBLE REPORT IS TRANSMITTED, A RESTORE REPORT FOR ANY OF THOSE CONDITIONS IS NOT ISSUED UNLESS **ALL** LIKE CONDITIONS WITHIN A ZONE ARE RESTORED.
- WHEN EXPANDED, THE ALARM CODE IS TRANSMITTED IN THE LAST POSITION OF THE 2ND TRANSMISSION LINE (OF THE 1ST TRANSMISSION LINE IF 4 + 2 FORMAT IS USED).

. DOES NOT APPLY TO 4+2 SENSOR FORMAT (EXPRESS OR NORMAL)
. RESTORE REPORTS FOR EACH ZONE TYPE ALARM ARE INDIVIDUALLY SELECTABLE (SEE ADDRESS NUMBERS 53 THROUGH 59).

LOW BATTERY REPORT *46 ☐

COMMENTS:
. ENTER 0 (STANDARD) OR 1 (EXPANDED)
. WHEN EXPANDED, A DUMMY CODE IS TRANSMITTED IN THE 4TH POSITION OF THE 2ND TRANSMISSION LINE (OF THE FIRST TRANSMISSION LINE IF 4+2 FORMAT IS USED).
. FACTORY PROGRAM = STANDARD (0)
. DOES NOT APPLY TO 4+2 SENSOR FORMAT (EXPRESS OR NORMAL)

OPEN/CLOSE REPORT *47 ☐

COMMENTS:
. ENTER 0 (STANDARD) OR 1 (EXPANDED)
. FACTORY PROGRAM = EXPANDED
. WHEN EXPANDED, 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)
. DOES NOT APPLY TO 4+2 SENSOR FORMAT (EXPRESS OR NORMAL)

NON-ALARM ROUTING *48 ☐

COMMENTS:
. ENTER 0 (PRIMARY PHONE NO.) OR 1 (SECONDARY PHONE NO.)
. FACTORY PROGRAM = PRIMARY PHONE NO.
. THIS DOES NOT APPLY TO 4+2 FORMAT SENSOR ID REPORTING. ALL REPORTS ARE ROUTED TO THE PRIMARY TELEPHONE NUMBER.

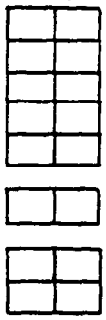
BACKUP REPORTING *49 ☐

COMMENTS:
. ENTER 0 (PRIMARY PHONE NO. REPORT ONLY) OR 1 (REPORT ALL PRIMARY PHONE NUMBER REPORTS TO SECONDARY NO. IF PRIMARY NO. CAN'T BE REACHED).
. FACTORY PROGRAM = PRIMARY NO. ONLY
. THIS DOES NOT APPLY TO 4+2 FORMAT SENSOR ID REPORTING. WHEN THIS FORMAT IS USED, BACKUP REPORTING IS STANDARD. AFTER MAKING 8 UNSUCCESSFUL ATTEMPTS TO CONTACT THE PRIMARY NUMBER, VECTOR WILL MAKE 8 ATTEMPTS TO CONTACT THE SECONDARY NUMBER.

IMPORTANT!

IF NO SECONDARY NUMBER IS USED, MAKE CERTAIN THE PRIMARY TELEPHONE NUMBER IS ENTERED BOTH IN FIELDS 31 AND 32.

ZONES 1-8 ALARM REPORT CODE *50



ZONE 1 (E/E BURG)
ZONE 2 (PER. BURG)
ZONE 3 (INT. BURG)
ZONE 4 (D/N BURG.)
ZONE 5 (24 HR AUD, SIL, OR AUX)
ZONE 6 (24 HR AUD, SIL, OR AUX)
ZONE 7 (FIRE)
ZONE 8 (DURESS)

COMMENTS:

. ENTER ALL CODES AS DOUBLE DIGITS (e.g. 01=1, 02=2, ... 10=A, 11=B, 12=C, 13=D, 14=E, 15=F)
DISABLED=00 (NO REPORT)

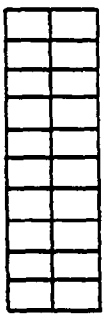
FACTORY PROGRAM:
Z1=3, Z2=3, Z3=3, Z4=3, Z5=2, Z6=7, Z7=1, Z8=2

NOTES:

IF THE COMMUNICATOR WITHIN THE 4153 IS NOT GOING TO BE USED, PROGRAM ALL CODES IN ADDRESSES 50 AND 51 AS 00. THIS PREVENTS UNWANTED TELEPHONE LINE SEIZURES.

. WHEN 4 + 2 BY ZONE FORMAT IS USED, THE CODES ASSIGNED IN ADDRESS 50 REPRESENT THE LEADING OR FIRST DIGIT OF THE 2 DIGIT EVENT CODE. THE 2ND DIGIT OF THE EVENT CODE IS THE NUMBER OF THE ZONE.

OTHER MESSAGE REPORTS *51



TROUBLE
TROUBLE DUMMY
BYPASS
BYPASS DUMMY
LOW BATTERY
LOW BATTERY DUMMY
RESTORE
CLOSE
OPEN
TEST

COMMENTS:

. ENTER ALL CODES AS DOUBLE DIGITS (see above)
. DISABLED = 00 (NO REPORT)
. TO DISABLE RESTORE REPORTS, PROGRAM ALL CODES IN ADDRESSES 53-59 AS 0.

FACTORY PROGRAM: SEE TABLE EARLIER IN THE SECTION.

NOTE: WHEN 4 + 2 ZONE FORMAT IS USED, THE TROUBLE, BYPASS, AND LOW BATTERY CODES ARE USED AS THE LEADING OR FIRST DIGIT OF THE 2 DIGIT EVENT CODE. THE TROUBLE DUMMY, BYPASS DUMMY, AND LOW BATTERY DUMMY CODES ARE USED AS THE 2ND DIGIT. FOR NON-ALARM RESTORES, THE RESTORE CODE IS THE FIRST DIGIT AND THE DUMMY CODE IS THE 2ND DIGIT. FOR ALARM RESTORE, THE RESTORE CODE IS THE FIRST DIGIT AND THE ALARM CODE IS THE SECOND DIGIT. FOR OPEN/CLOSE, THE OPEN OR CLOSE CODE IS THE FIRST DIGIT AND THE USER ID IS THE 2ND DIGIT.

16 SECOND DIALER DELAY *52 ☐

COMMENTS:
- ENABLES A 16 SECOND DIALER DELAY FOR FIRE/BURGLARY ALARM REPORTS SO THAT USER CREATED FALSE ALARMS CAN BE SHUT OFF BEFORE THE CENTRAL STATION IS NEEDLESSLY ALERTED.
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM = DENABLED.
- THIS DOES NOT APPLY TO 4+2 FORMAT SENSOR ID REPORTING. ALL REPORTS ARE INSTANT.

ZONE 1 RESTORE REPORT *53 ☐

COMMENTS:
- ENABLES RESTORE REPORTING FOR AN ENTRY/EXIT ZONE BURGLARY ALARM.
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM = DISABLED.

ZONE 2 RESTORE REPORT *54 ☐

COMMENTS:
- ENABLES RESTORE REPORTING FOR A PERIMETER ZONE BURGLARY ALARM.
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM - DISABLED.

ZONE 3 RESTORE REPORT *55 ☐

COMMENTS:
- ENABLES RESTORE REPORTING FOR AN INTERIOR ZONE BURGLARY ALARM.
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM = DISABLED.

ZONE 4 RESTORE REPORT *56 ☐

COMMENTS:
- ENABLES RESTORE REPORTING FOR A DAY/NIGHT ZONE BURGLARY ALARM.
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM = DISABLED.

ZONE 5 RESTORE REPORT *57 ☐

COMMENTS:
- ENABLES RESTORE REPORTING FOR THE 24 HOUR ALARM RESPONSE SELECTED FOR THIS ZONE.
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM = DISABLED.

ZONE 6 RESTORE REPORT *58 ☐

COMMENTS:
- ENABLES RESTORE REPORTING FOR THE 24 HOUR ALARM RESPONSE SELECTED FOR THIS ZONE.
- ENTER 0 (DISABLED) OR 1 (ENABLED)
- FACTORY PROGRAM = DISABLED.

ZONE 7 RESTORE REPORT *59 ☐

COMMENTS:
- ENABLES RESTORE REPORTING FOR A FIRE ZONE ALARM.
- ENTER 0 (DISABLED) OR 1 (ENABLED)
- FACTORY PROGRAM = DISABLED.

4+2 REPORTING BY ZONE *60 ☐

COMMENTS:
- REPORTS SUBSCRIBER ID, EVENT CODE, AND ZONE.
- ENABLES COMMUNICATION TO BOTH THE PRIMARY AND SECONDARY PHONE NUMBER (IF USED) USING A 4 + 2 TRANSMISSION FORMAT.
- THE PRIMARY AND SECONDARY FORMAT SELECTIONS IN ADDRESS *38 AND *40 (IF SECONDARY IS USED) OR *96 (EXPRESS DTMF) ARE REQUIRED TO SELECT THE APPROPRIATE DATA TRANSMISSION PULSE RATE AND ACKNOWLEDGE/KISSOFF FREQUENCY.
- ENTER 0 (DISABLED) OR 1 (ENABLED).
- FACTORY PROGRAM = DISABLED.
- THE 1ST DIGIT OF THE EVENT CODE IS THE CODE ENTERED IN ADDRESS *50 AND *51 AND THE 2ND DIGIT IS THE ZONE TYPE, USER ID, OR DUMMY EXPANSION CODE (WHICHEVER IS APPLICABLE TO THE INDIVIDUAL REPORT).

- USAGE OF THE 4 + 2 ZONE FORMAT PERMITS THE USAGE OF SELECTIVE EXPANDED REPORTING. (See *42, *43, *44, *45, *46, *47 and *50 for addresses that can be appropriately set for expanded reporting).

IMPORTANT!
NOW PLEASE JUMP TO FIELD *82, AS THE NEXT TWENTY ONE DATA FIELDS (*61-*81) ARE PROVIDED TO STORE THE REPORTING CODES WHEN SENSOR REPORTING IN THE 4+2 FORMAT IS USED.

INTRODUCTION TO FIELDS 61-81

In order to make it easier for an installer to understand point reporting, an explanation and some illustrative examples are given first.

Bearing in mind that a 2 digit reporting code is utilized, let us first discuss how sensors 9-37,97,98,99 can be coded, as the programming is easier to follow. Once that is completed, we will discuss sensors 1-8. The recurring theme of the following information is that the leading digit represents the type of event being reported and the second digit identifies the sensor within that type.

NOTES:
1. Two digit entries are required because hexadecimal entries are allowed (0-9, B-F) = (00-15) for fields 61-81.
2. Users of the Ademco CAPS Automation System are cautioned **not** to assign 78 or 8C for any report as these codes are reserved.

EXAMPLE #1

In the sensor group 9-16, for example, the installer may program (Field *64) as follows:

- All alarm reports may have a first digit of 1 (If it is desired to have the alarm code denote the kind of sensor being monitored, all sensors of a similar type [ex: entry/exit] should be grouped together within a group of eight).

- All trouble reports may have a first digit of 2 (Bear in mind that trouble reporting would not just be for sensor loop trouble, as in a fire zone or a day/night zone, but would also be used to report a polling loop trouble, such as for a non-responding RPM).

- All bypass reports may have a first digit of 3 (Note that in the sensor reporting format, a common bypass report for all sensors is not possible. If bypass reporting is desired, it must be **by sensor**).

- All restore reports may have a first digit of 9 (Note that a **common** restore report is used for alarms, troubles, and bypasses).

In Field *65, the second digit of the 2 digit event code is stored, a different code for each sensor in the group (ex: 1-8 for the eight sensors). Sensors grouped in (17-24), (25-32), (33-37, 97, 98, 99) are programmed similarly.

The sensors in the 1-8 group are similarly programmed. The only difference in this group is that the alarm code leading digit is **not** common for all sensors in the group; a separate code is available for each alarm code in the group.

EXAMPLE #2

An example of code assignments that maximize the reporting for the most number of sensors reporting to an Ademco CAPS Automation System is given below:

SENSOR	ALARM	TROUBLE	BYPASS	RESTORE
1	11	41	71	Ø1
2	12	42	72	Ø2
3	13	43	73	Ø3
4	14	44	74	Ø4
5	15	45	75	Ø5
6	16	46	76	Ø6
7*(1)	17	47	77	Ø7
8	19	49	79	Ø9
9	21	51	91	D1
10	22	52	92	D2
11	23	53	93	D3
12	24	54	94	D4
13	25	55	95	D5
14	26	56	96	D6
15	27	57	97	D7
16	28	58	98	D9
17	31	61	81	E1
18	32	62	82	E2
19	33	63	83	E3
20	34	64	84	E4
21	35	65	85	E5
22	36	66	86	E6
23	37	67	87	E7
24	38	68	88	E8
25	1Ø	4Ø	7Ø	ØØ
26	1B	4B	7B	ØB
27	1C	4C	7C	ØC
28	1D	4D	7D	ØD
*(4) 29	1E	4E	7E	ØE
*(4) 30	1E	4E	7E	ØE
*(4) 31	1F	4F	7F	ØF
*(4) 32	1F	4F	7F	ØF
33	29	59	99	D9
34	2Ø	5Ø	9Ø	DØ
35	2B	5B	9B	DB
36	2C	5C	9C	DC
37	2D	5D	9D	DD
*(5) 97	2E	5E	9E	DE
*(5) 98	2E	5E	9E	DE
99	2F	5F	9F	DF

*NOTES: 1. Only used if downloading is **not** used.
2. English language on 685 should not be used for most of these reports.

3. Note that B and C are not used for leading digits in the aboye table or in the table on the next page. It is suggested that these digits be reserved for use in reporting "openings" and "closings" so that the appropriate display and print out can be obtained at the central station receiver and an automation system can be given the appropriate information.
4. Within the 77 code locations allocated for the sensor report format, it is **not** possible for Ademco CAPS Automation System Users to uniquely report alarm, trouble, bypass, and restore for all 40 points plus handle open, close, test, low battery, and low battery restore. As such, several sensors must share reports. In the example shown, the pairs including 31 and 32, 36 and 37, 97 and 98 each share a common report.
5. The fact that the 97 and 98 share a common report is irrelevant in installations where downloading is used (4153RD is installed) as a loop open 98 condition cannot be detected without a 4152LM connected for use with a Class 'A' polling loop. That module cannot be used when downloading is desired.

EXAMPLE #3

Other possible groupings of codes could have alarms in consecutive hexadecimal groups. For example:

Fire Alarms - 1Ø-17
Panic Alarms - 18, 19, 1B-1F
Burglary Alarms - 2Ø-29, 2B-2F, 3Ø-37

Troubles and Bypasses could be treated similarly in consecutive hexadecimal groups. Restores cannot be so treated if we desire to reserve B and C for openings and closing just to get English language printout of open/close on the 685's printer.

The latter arrangement will make it easier for non-automated central station personnel to interpret the information. An example of such an arrangement is given below. This example is equally relevant for users of the Ademco/MAS Automation System.

SENSOR	ALARM	TROUBLE	BYPASS	RESTORE	
1	1Ø	4Ø	N/A	DØ	
2	11	41	N/A	D1	
3	12	42	N/A	D2	
4	13	43	N/A	D3	FIRE
5	14	44	N/A	D4	
6	15	45	N/A	D5	
7*(1)	16*(1)	46*(1)	N/A	D6*(1)	
8	17	47	N/A	D7	
9	18	48	98	D8	
10	19	49	99	D9	
11	1B	4B	9B	DB	PANIC
12	1C	4C	9C	DC	
13	1D	4D	9D	DD	
14	1E	4E	9E	DE	
*(2) 15	1F	4F	9F	DF	
*(2) 16	1F	4F	9F	DF	
17	2Ø	5Ø	ØØ	EØ	
18	21	51	Ø1	E1	
19	22	52	Ø2	E2	
20	23	53	Ø3	E3	
21	24	54	Ø4	E4	
22	25	55	Ø5	E5	
23	26	56	Ø6	E6	
24	27	57	Ø7	E7	
25	28	58	Ø8	E8	
26	29	59	Ø9	E9	
27	2B	5B	ØB	EB	
28	2C	5C	ØC	EC	BURGLARY
29	2D	5D	ØD	ED	
30	2E	5E	ØE	EE	
*(2) 31	2F	5F	ØF	EF	
*(2) 32	2F	5F	ØF	EF	
33	3Ø	6Ø	8Ø	FØ	
34	31	61	81	71	
35	32	62	82	72	
36	33	63	83	73	
37	34	64	84	74	
97	35	65	85	75	
98	36	66	86	76	
99	37	67	87	77	

*NOTES:
1. Only used if downloading is not used.
2. Either two sensors shouldn't be used (16 and 32) or they must have their reporting duplicated (such as with sensors 15 and 31 respectively).

ALARM CODES (1st Digit) (SENSORS 1-8) *61

1	
2	
3	
4	
5	
6	
7	
8	

. The first digit of the 2 digit event code used for each of sensors 1-8 alarm reports.
. Sensor 7 is only used if downloading is **not** used.
. See Introduction to this field and subsequent fields above.

SENSOR ID CODES
(2nd digit)
(SENSORS 1-8)

*62

1 ☐☐
2 ☐☐
3 ☐☐
4 ☐☐
5 ☐☐
6 ☐☐
7 ☐☐
8 ☐☐

. The second digit of the 2 digit event code used for each of sensors 1-8 alarm, trouble, bypass, and restore reports.
. Sensor 7 is only used if downloading is **not** used.

TROUBLE CODE
BYPASS CODE
RESTORE CODE
(1st digit)
(SENSORS 1-8)

*63

TR ☐☐
BY ☐☐
RE ☐☐

. The first digits of the 2 digit event codes used to report trouble, bypass, and restore for sensors 1-8.

ALARM CODE
TROUBLE CODE
BYPASS CODE
RESTORE CODE
(1st digit)
(Sensors 9-16)

*64

AL ☐☐
TR ☐☐
BY ☐☐
RE ☐☐

. The first digits of the 2 digit event codes used to report alarm, trouble, bypass and restore for sensors 9-16.

SENSOR ID CODES
(2nd digit)
(Sensors 9-16)

*65

9 ☐☐
10 ☐☐
11 ☐☐
12 ☐☐
13 ☐☐
14 ☐☐
15 ☐☐
16 ☐☐

. The second digit of the 2 digit event codes used for each of sensors 9-16 alarm, trouble, bypass, and restore reports

ALARM CODE
TROUBLE CODE
BYPASS
RESTORE
(1st digit)
(Sensors 17-24)

*66

AL ☐☐
TR ☐☐
BY ☐☐
RE ☐☐

. The first digits of the 2 digit event codes used to report alarm, trouble, bypass, card restore for sensors 9-16.

SENSOR ID CODE
(2nd digit)
(Sensors 17-24)

*67

17 ☐☐
18 ☐☐
19 ☐☐
20 ☐☐
21 ☐☐
22 ☐☐
23 ☐☐
24 ☐☐

. The second digit of the 2 digit event code used for each of sensors 17-24 alarm, trouble, bypass, and restore reports.

ALARM CODE
TROUBLE CODE
BYPASS CODE
RESTORE CODE
(1st digit)
(Sensors 25-32)

*68

AL ☐☐
TR ☐☐
BY ☐☐
RE ☐☐

. The first digits of the 2 digit event codes used to report alarm, trouble, bypass and restore for sensors 25-32

SENSOR ID CODES *69
(2nd digit)
(Sensors 25-32)

25 26 27 28 29 30 31 32 [ ][ ]

. The second digit of the 2 digit event code used for each of sensors 25-32 alarm, trouble, bypass, and restore reports.

ALARM CODE *70
TROUBLE CODE
BYPASS CODE
RESTORE CODE
(1st digit)
(Sensors 33-37, 97,98,99)

AL TR BY RE [ ][ ]

. The first digits of the 2 digit event codes used to report alarm, trouble, bypass, and restore for sensors 33-37, 97, 98, 99.

SENSOR ID CODES *71
(2nd digit)
(Sensors 33-37, 97, 98, 99)

33 34 35 36 37 97 98 99 [ ][ ]

. The second digit of the 2 digit event code used for each of sensors 33-37, 97, 98, 99 alarm, trouble, bypass, and restore reports.
. Sensor 98 reporting is irrelevant unless a 4152LMB Class 'A' Polling Loop Module is used. A polling loop 'open' circuit **cannot** be detected otherwise. The way to deal with this non-event is to assign it the same code as another event (ex: 97-polling loop short).

OPEN REPORT *72
(1st digit)

[ ][ ]

. In order to disable the open report, both Fields *72 and *73 must be programmed as ØØ.
. Must be a "B" (hex 11) if English language printout of "open" is desired on 685 Receiver.
. Must be a "B" (hex 11) if opening by user is to be processed on an Ademco CAPS Automation System.

OPEN REPORT *73
(2nd digit)

[ ][ ]

. The second digit represents the user ID for the Master Security code. User No. 2 is automatically assigned an ID 1 higher than this code (ex: If 01 is keyed, User 2 reports as 2, User 3 as 3, etc...)

CLOSE REPORT *74
(1st digit)

[ ][ ]

See first comment for Field *72.
. Must be a "C" (hex 12) if English printout of "close" is desired on 685.
. Must be a "C" (hex 12) if closing by user is to be processed on an Ademco CAPS Automation System.

CLOSE REPORT *75
(2nd digit)

[ ][ ]

See comment for Field *73.

LOW BATT REPORT (1st digit) *76 — See first comment for Field *72.

LOW BATT REPORT (2nd digit) *77 — See first comment for Field *72.

TEST REPORT (1st digit) *78 — See first comment for Field *72.

TEST REPORT (2nd digit) *79 — See first comment for Field *72.

LOW BATT RESTORE REPORT (1st digit) *80 — See first comment for Field *72.

LOW BATT RESTORE REPORT (2nd digit) *81 — See first comment for Field *72.

CENTRAL STATION REMOTE CONTROL/ PROGRAMMING PHONE NUMBER *82

COMMENTS:
- EACH DIGIT REQUIRES A 2 DIGIT ENTRY (EXAMPLE 01=1, 02=2, ETC.)
- ENTER UP TO 11 DIGITS, 0-9. DO NOT FILL UNUSED SPACES.
- FACTORY PROGRAM = NONE (DISPLAYS SINGLE ZERO WHEN VIEWED).
- THIS PHONE NUMBER UTILIZES THE PABX ACCESS CODE PROGRAMMED IN FIELD *29.

CENTRAL STATION ID# *83

- ONLY NEEDED WHEN REMOTE PROGRAMMING/COMMANDING OVER TELEPHONE LINES WILL BE USED. THIS CODE IS ID OF THE NO. 699 PROGRAMMER OR PC (personal computer) THAT IS ALLOWED TO TALK TO THE 4153.
- CANNOT BE VIEWED USING #83.
- ENTER 8 HEXADECIMAL DIGITS, 0-9/B-F [00-15]

ALARM SOUNDING AFTER 4 HOUR LOSS OF AC *84

- ENTER 0 (NO) OR 1(YES)

COMMENTS:
- MANDATORY SELECTION FOR UL609 GRADE A INSTALLATIONS.
- MANDATORY FOR UL1635 INSTALLATIONS.
- ALSO ACTIVATES TROUBLE COMMUNICATION REPORT TO THE CENTRAL STATION.
- FACTORY PROGRAM = NO

SWINGER (INTERMITTENT SENSOR) REPORT SUPPRESSION *85

COMMENTS:
- ENTER 0 (NO REPORT SUPPRESSION) OR 1 (REPORT SUPPRESSION ENABLED)
- FACTORY PROGRAM = NO SUPPRESSION

			. ONLY APPLICABLE TO 4+2 SENSOR REPORTING. FIELD *41 MUST BE PROGRAMMED AS 1. . WHEN SUPPRESSION IS ENABLED, A MAXIMUM OF 15 ALARM AND 15 ALARM RESTORE REPORTS PLUS 15 TROUBLE AND 15 TROUBLE RESTORE REPORTS WILL BE PERMITTED IN AN ARMED PERIOD FROM THE SYSTEM. WHEN THESE PARAMETERS ARE EXCEEDED, THAT REPORT TYPE WILL BE INHIBITED.
GROUND START TELCO LINE TEST	*86	COMMENTS: ☐	. ENTER 0 (NO) OR 1 (YES) . MANDATORY SELECTION FOR UL611 GRADE A INSTALLATIONS USING ONE WAY LONG RANGE RADIO (7621AD) ON GROUND START PHONE LINES. . CAN ONLY BE USED IN CONJUNCTION WITH No. 4259 TELCO LINE MONITOR/ TRANSPONDER. . FACTORY PROGRAM = 0
DURESS CODE	*87 ☐☐ (1st digit) ☐☐ (2nd digit)		
		COMMENTS:	. TWO DIGIT ENTRIES ARE REQUIRED BECAUSE HEXADECIMAL CODES ARE ALLOWED (0-9, B-F) . FACTORY PROGRAM = 00 00
NOT USED	*88		**DO NOT PROGRAM**
SUPERVISED ALARM TRIGGER OUTPUTS	*89	COMMENTS: ☐	. ENTER 0 (NO) OR 1 (YES) . MANDATORY SELECTION FOR UL611 GRADE A OR AA INSTALLATIONS USING TWO WAY LONG RANGE RADIO. . CAN ONLY BE USED WITH No. 7920SE TRANSCEIVER. (REVISION 5.0 OR HIGHER). . FACTORY PROGRAM = 0
FACTORY DEFAULTS	*90	COMMENTS:	. ONLY ENTERED IF ALL PROGRAM OPTIONS ARE TO BE SET TO FACTORY DEFAULTS.
NOT USED	*91		**DO NOT PROGRAM**
NOT USED	*92		**DO NOT PROGRAM**
NOT USED	*93		**DO NOT PROGRAM**
NOT USED	*94		**DO NOT PROGRAM**

CONDITIONAL OPENING *95
(CANCEL) REPORT

COMMENTS: ☐

- ENTER 0 (NO) OR 1 (YES)
- SHOULD ONLY BE USED IF NORMAL OPENING/CLOSING REPORTING IS NOT USED.
- AN OPEN REPORT IN ADDRESS 51 OR ADDRESSES 72 AND 73 MUST BE PROGRAMMED.
- THIS OPTION SHOULD NOT BE SELECTED IF 16 SECOND DIALER DELAY (ADDRESS 52) IS SELECTED, SINCE A CANCEL REPORT COULD BE RECEIVED WITHOUT ANY PRIOR ALARM REPORT.
- ONLY SENDS OPEN REPORT IF SYSTEM IS DISARMED DURING AN ALARM.
- FACTORY PROGRAM = 0

4+1/4+2 EXPRESS *96
FORMAT FOR ZONE
OR SENSOR REPORTING

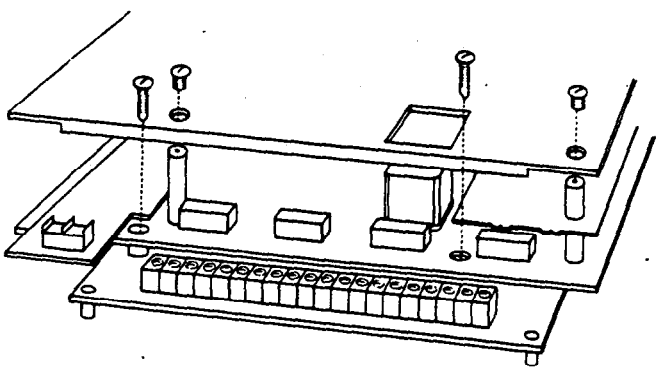
COMMENTS: ☐

- ENTER 0 (NO) OR 1 (YES)
- SHOULD ONLY BE USED WITH COMPATIBLE DIGITAL RECEIVERS (EX. ADEMCO 685/LEVEL 4.3 AND HIGHER SOFTWARE).
- RECEIVER DISPLAY AND PRINT-OUT IS THE SAME AS FOR THESE MESSAGES NOT USING THIS HIGH SPEED (10 CHAR/SEC) DTMF FORMAT.
- FACTORY PROGRAM = 0.

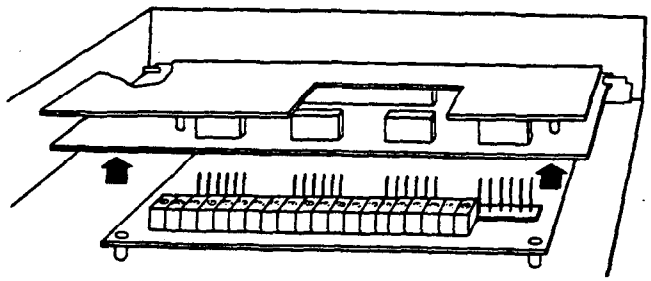
INSTALLING AND REMOVING CIRCUIT BOARDS

Removing a 4153 MAIN BOARD

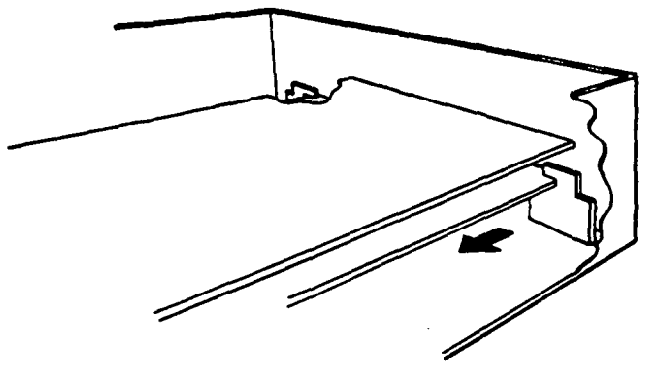
The main circuit board is removed and re-installed with the circuit board cover intact to protect the components from damage. Do not remove the upper cover. Make certain that all power to the system has been removed from the system before work begins. Re-install the board by reversing the following procedure.



Remove lower cover and circuit board mounting screws.

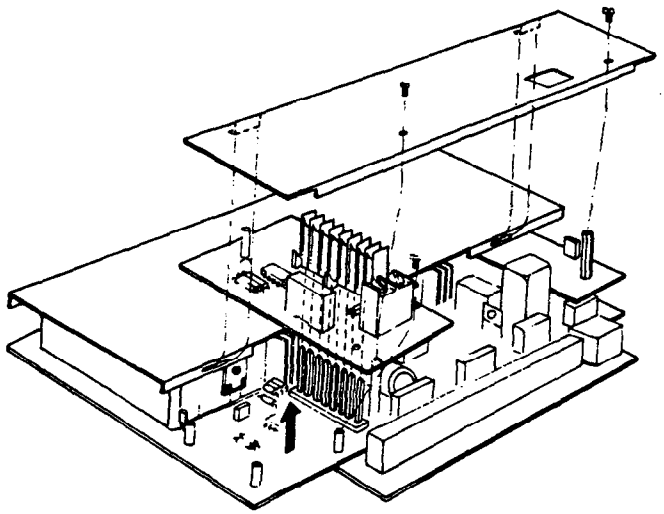


Lift and disconnect the circuit board from the square post connectors. Take care not to bend any of the connectors.

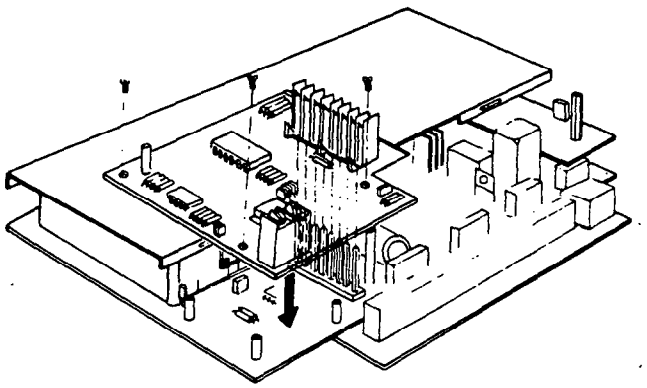


Remove the board by sliding it away from the slotted mounts.

Installing a 4152LMB



Remove the lower circuit board cover after removing the holding screws. Remove the No. 4153RD mounting screw. Carefully remove the 4153RD module from the square post connectors.



Install the 4152LMB by carefully inserting the square post connectors into the header. Take care not to insert the posts too far. Replace the lower circuit board cover.

BEFORE RELEASING THE SYSTEM

After installing all equipment you must thoroughly Test the system. After powering up, wait one minute before checking the contact loops.

- If the system is connected to a central station notify them of a test in progress.
- Power up the system. The console will beep rapidly for approximately 10 seconds and stop. **WAIT FOR 1 MINUTE.**
- Arm the system.
- With the external sounder disconnected for this test, go to each protection point and fault the contact. Check window foil by momentarily removing (and replacing) a wire from the RPM. Check the entry delay. As each point is faulted, the corresponding ID number will appear on the console display.
- If the **TAMPER** option was selected, remove (and replace) the RPM covers. The corresponding ID numbers will appear on the console display.
- With the external sounder connected, enter the SECURITY CODE and TEST to test the battery and external sounders.
- Show the user how to perform all functions.

Notify central station of all tests and verify results.

VIII. SERVICE:

RECALLING ALARM AND TROUBLE MESSAGES

The system will recall ten day's worth of ALARM and TROUBLE messages for display to service personnel with the following procedure:

ENTER SECURITY CODE + 0

The memory will retain alarm and trouble reports ten days from the last alarm or trouble event, pinpointing their specific sensor location. If no subsequent events occur, then all previous events are automatically removed from memory. If new events occur within the ten day period, then all events are retained and the ten day cycle starts again.

After displaying all alarm and trouble reports, the memory is erased when this mode is exited, by entering CODE + OFF.

This feature does not provide information concerning time of occurrence or sequence of occurrence. It simply indicates that an alarm or trouble occurred on a particular point during the period.

WARNING!

If the system is armed and the user exits through various interior sensors and then through the entry/exit door and one interior sensor remains faulted, the system will go into alarm at the end of the exit delay (plus entry delay), as it should. However, the console will not only display the sensor that remained faulted, but also every other sensor that the user faulted on his way out (which had been restored).

If an ALARM occurs during the AWAY mode and the user returns and directly transits from the AWAY mode to the STAY mode, then user alarm memory is lost. Subsequent disarming results in a blank numeric display and the READY LED remains out (requiring CODE + OFF to restore it).

IX. SPECIFICATIONS: [@ 32°F (0°C) - 120°F (50°C) 90% RH non condensing]

No. 4153 C-COM

1. **PHYSICAL**

WIDTH:	12.25"	(306 mm)
HEIGHT:	17"	(432 mm)
DEPTH:	4"	(102 mm)

2. **ELECTRICAL**

VOLTAGE INPUT: 18 VAC (from ADEMCO No. 1349 PLUG-IN TRANSFORMER), 40 VA.

CONTINUOUS OUTPUT: 12VDC, 750 mA (combined output available from the Auxiliary and Console Power Output Terminals)

POLLING LOOP CURRENT AVAILABLE: 60 mA @ 11V max. (Cannot be used as a D.C. supply)

ALARM SOUNDER OUTPUT: 1.5 AMPS @12V

ALARM TRIGGER OUTPUTS: ON = 5V @ 1.5 mA
OFF = 0V

4152LMB DRAIN: 64 mA @ 11V max.

STANDBY: BATTERY 12 VDC, 2.7 AH (No. 465-627; 2 EACH) or 5.4AH (No. 465-654, 2 each)

MAXIMUM STANDBY TIMES (IN HOURS) UNDER CONTINUOUS LOAD (IN MILLIAMPS). CURRENT REQUIREMENT EQUALS 120 mA PER CONSOLE PLUS AUXILIARY POWER.

BATTERY	200	250	300	350	400	450	500	550	600	650	700
*465-627	4.1	3.6	3.2	3.0	2.8	2.7	2.5	2.4	2.3	2.1	2.0
*465-654	7.8	7.3	6.8	6.3	5.9	5.6	5.3	5.0	4.7	4.5	4.3
*465-680	9.1	8.5	8.0	7.6	7.2	6.8	6.5	6.2	6.0	5.7	5.5

. ALL UL INSTALLATIONS MUST HAVE A STANDBY TIME OF 4 HOURS OR MORE.
. BATTERY NORMALLY NEED NOT BE REPLACED FOR AT LEAST 5 YEARS.

*TWO BATTERIES REQUIRED; WIRE IN SERIES

FUSES:
BATTERY: 4A (No. 90-17)
BELL: 3A (No. 90-12)
CONSOLE POWER: 1A (No. 90-14)
AUX. POWER: 2A (No. 90-2)

No. 4157 CONSOLE

1. **PHYSICAL** H 4" (102 mm) W 6-1/2" (165 mm) D 1" (25 mm)

2. **ELECTRICAL** VOLTAGE INPUT: 12VDC
CURRENT DRAIN: 120 mA

No. 4137 REMOTE CONSOLE

1. **PHYSICAL** H 4.75" (121 mm) W 8.4" (213 mm) D 1.1" (28 mm)

2. **ELECTRICAL:** VOLTAGE INPUT: 12VDC
CURRENT DRAIN: 60 mA

No. 5330 CONSOLE

1. **PHYSICAL** H 4.37" (113 mm) W 7.75" (207mm) D 1.25" (32mm)

2. **ELECTRICAL** VOLTAGE DRAIN: 12VDC
CURRENT DRAIN: 80 mA (standby)
105 mA (lit display)

No. 4190WH DUAL POINT RPM

1. **PHYSICAL** H 3-1/4" (81mm) W 2-1/8" (53mm) D 1" (23mm)

2. **ELECTRICAL** VOLTAGE INPUT: 8 - 11 volts
CURRENT DRAIN: 2 mA (HIGH CURRENT)
1 mA (LOW CURRENT)

No. 4192SD PHOTOELECTRIC SMOKE DETECTOR

1. **PHYSICAL** BASE DIA.: 5.0" (127mm), COVER HGT: 3" (76mm), COVER DIA.: 3.15" (80mm)

2. **ELECTRICAL** VOLTAGE INPUT: 7-11VDC
CURRENT DRAIN: Less than 320 uA (standby)
320-400 uA (Active)

No. 4192SDT PHOTOELECTRIC SMOKE DETECTOR W/BUILT-IN 135°F/57°C HEAT DETECTOR

1.	**PHYSICAL**	BASE DIA: 5.0" (127mm), COVER HGT: 3" (76mm), COVER DIA.: 3.15" (80mm)	
2.	**ELECTRICAL**	VOLTAGE INPUT:	7-11VDC
		CURRENT DRAIN:	Less than 320 uA (standby) 320-400 uA (Active)

No. 4192CP IONIZATION DETECTOR

1.	**PHYSICAL**	BASE DIA: 5.0" (127mm), COVER HGT: 3" (76mm), COVER DIA.: 3.15" (80mm)	
2.	**ELECTRICAL**	VOLTAGE INPUT:	7-11VDC
		CURRENT DRAIN:	Less than 320 uA (standby) 320-400 uA (Active)

No. 4196 PASSIVE INFRARED DETECTOR/RPM

1.	**PHYSICAL**	H 4-1/4" (108mm) W 3-1/4" (82.6mm) D 2-1/8" (54mm)
2.	**ELECTRICAL**	VOLTAGE INPUT: 8 - 11V CURRENT DRAIN: 0.8 mA (OPERATING) 1 mA (ALARM)

No. 4197 LINE EXTENDER MODULE

1.	**PHYSICAL**	H 5" (127mm) W 3.94" (100mm) D 1.25" (32mm)
2.	**ELECTRICAL**	VOLTAGE INPUT: 12VDC CURRENT DRAIN: 80 mA

No. 4208 8 POINT RPM (Cover included)

1.	**PHYSICAL**	H 7" (178mm) W 3-7/8" (98mm) D 1-3/8" (35mm)
2.	**ELECTRICAL**	VOLTAGE INPUT 8-11V CURRENT DRAIN 16 mA

No. 4275 PIR/TRANSPONDER

1.	**PHYSICAL**	H 3.7" (94mm) W 3" (76mm) D 1.5" (38mm)
2.	**ELECTRICAL**	VOLTAGE INPUT 8-11V CURRENT DRAIN Less than 1 mA (LED inactive) 6 mA (LED Active)

No. 4194WH SURFACE MOUNT REED CONTACT/TRANSPONDER

1.	**PHYSICAL**	L 4.25" (108mm) W .625" (16mm) H .75" (19mm)
2.	**ELECTRICAL**	VOLTAGE INPUT 8-11V CURRENT DRAIN 0.5 mA
3.	**GAP**	.75" (19mm)

No. 4139WH/GY/BR SURFACE MOUNT REED CONTACT/TRANSPONDER

1.	**PHYSICAL**	H .56" (14mm) W .50" (13mm) L 1.5" (64mm)	
2.	**ELECTRICAL**	VOLTAGE INPUT	8-11V
		CURRENT DRAIN	0.5 mA
3.	**GAP**	.875" (22mm)	

No. 4191WH RECESS MOUNT REED CONTACT/TRANSPONDER

1.	**PHYSICAL**	DIAMETER .50" (13mm) LENGTH 2" (51mm)

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.

"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 type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in 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.
- Plug the control/communicator into a different outlet so that it and the receiver are on different branch circuits.
- Move the antenna leads away from any wire runs for control/communicator.

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.

WARNING
THE LIMITATIONS OF THIS ALARM SYSTEM

While this system is an advanced design security system, it does not offer guaranteed protection against burglary or fire or other emergency. Any alarm system, whether commercial or residential, is subject to compromise or failure to warn for a variety 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.
- 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.
- Alarm warning devices such as sirens, bells or horns may not alert people or wake up sleepers if they are located on the other side of closed or partly open doors. If warning devices are located on a different level of the residence from the bedrooms, then they are less likely to waken or alert people inside 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.
- 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.

ADEMCO
LIMITED WARRANTY

Alarm Device Manufacturing Company, a Division of Pittway Corporation, and its divisions, subsidiaries and affiliates ("Seller"), 165 Eileen Way, Syosset, New York 11791, warrants its products to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for 18 months from the date stamp control on the product or, for products not having an Ademco date stamp, for 12 months from date of original purchase unless the installation instructions or catalog sets forth a shorter period, in which case the shorter period shall apply. Seller's obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labor, any part which is proved not in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. Seller shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than Ademco factory service. For warranty service, return product transportation prepaid, to Ademco Factory Service, 165 Eileen Way, Syosset, New York 11791.

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Seller does not represent that its product may not be compromised or circumvented; that the product will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the product will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm may only reduce the risk of a burglary, robbery or fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE WARNING. However, if Seller is held liable, whether directly or indirectly, for any loss or damage arising under this Limited Warranty or otherwise, regardless of cause or origin, Seller's maximum liability shall not in any case exceed the purchase price of the product, which shall be the complete and exclusive remedy against Seller.

This warranty replaces any previous warranties and is the only warranty made by Seller on this product. No increase or alteration, written or verbal, of the obligation of this Limited Warranty is authorized.

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