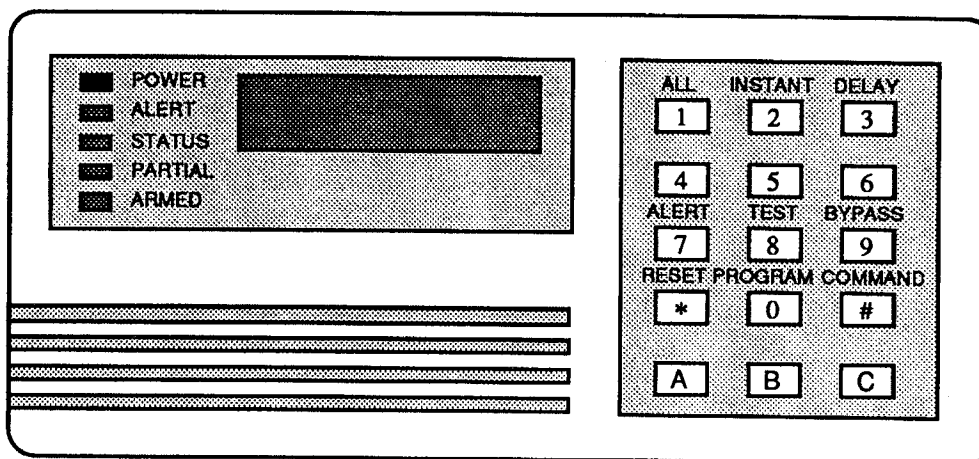


# Installation and Programming Manual

## 7100 Control/Communicator



### KEYPAD QUICK REFERENCE GUIDE

#### TURNING ON (arming) YOUR SYSTEM

Turn on all protection	COMMAND 1
Occupied no entry allowed	COMMAND 2
Occupied entry allowed	COMMAND 3

Custom Arming	COMMAND 4 for _____
	COMMAND 5 for _____
	COMMAND 6 for _____

Force Arming    Enter arming command above followed by 9

Area Bypass    COMMAND 9 followed by the AREA number

#### TURNING OFF (disarming) YOUR SYSTEM

Enter your USER CODE followed by COMMAND

#### COMMANDS FOR OTHER SYSTEM FEATURES

Alert Mode	COMMAND 7
Area Test	COMMAND 8 1
Alarm History	COMMAND 8 9
Alarm History Reset	COMMAND 8 9 *

Battery Test	COMMAND 8 0
Communicator Test	COMMAND 8 2
Fire Reset	COMMAND 8 0
Indicator Light and Display Test	COMMAND 8 4

Remote Program Dialout	COMMAND 8 3
Remote Program Answer	COMMAND 8 6
Sounder Test (alarm sounding devices)	COMMAND 8 5
Trouble Display	COMMAND 8 7
Trouble Display Reset	COMMAND 8 7 *

ACCESS CONTROL    Enter your Access Code followed by COMMAND

### TIME OF DAY PROGRAMMING

Enter time-of-day programming mode by entering a Master Code followed by COMMAND 0 7. Refer to section M of this manual for further help in setting the time parameters.

Current Time - 0 1
Current Day Of Week - 0 2
Opening & Closing Window Length - 0 3
Automatic Arming Time - 0 5

Monday Open Time - 1 1
Monday Close Time - 1 2
Tuesday Open Time - 2 1
Tuesday Close Time - 2 2
Wednesday Open Time - 3 1
Wednesday Close Time - 3 2

Thursday Open Time - 4 1
Thursday Close Time - 4 2
Friday Open Time - 5 1
Friday Close Time - 5 2

Saturday Open Time - 6 1
Saturday Close Time - 6 2
Sunday Open Time - 7 1
Sunday Close Time - 7 2

Weekday AUX Relay On At - 8 1
Weekday AUX Relay Off At - 8 2
Saturday AUX Relay On At - 8 3
Saturday AUX Relay Off At - 8 4
Sunday AUX Relay On At - 8 5
Sunday AUX Relay Off At - 8 6

# 7100 Specifications

## Housing

The standard enclosure is manufactured from 18 Ga., cold-rolled steel, and measures 12.75 in. Wide, by 17.5 in. High, by 3.5 in. Deep. A keyed lock is included and this enclosure has provision for an optional tamper switch to monitor the door.

The optional attack resistant enclosure is manufactured from 18 Ga., cold-rolled steel, and measures 12.75 in. Wide, by 17.5 in. High, by 3.5 in. Deep. A keyed lock is included. Order model 7100CC. This enclosure has provision for tamper switches to monitor the door and the wall.

## Temperature

+32°F. to +120°F.  
(0°C. to +49°C.)

## Power

### Input power

16.5VAC 40VA Max.  
50 or 60 Hz.

### Auxiliary regulated power

1Amp at 12VDC

### Auxiliary power voltage range

10.2 to 14.0VDC

### Optional Standby battery

12V 1.2 to 6.5 AH

(two batteries may be used)

### Control panel standby current

60ma

### 7101 expander standby current

20ma (in-guide 22216)

### 7120 keypad standby current

50ma (in-guide 21204)

### 7135 keypad standby current

70ma (in-guide 21035 )

### 7140 keypad standby current

100ma (in-guide 21283)

**NOTE:** Total current for all auxiliary devices, including keypads and smoke detectors is 1 Amp standby and 2 Amps in alarm. (1.3 Amps for UL Household Fire applications)

## Outputs

### Siren speaker

4 ohms minimum (sweep tone, cut J2 to make steady tone).

### Siren voltage

1 Form A, 2 Amp contact connected to auxiliary power.

### Aux relay

1 Form C, 2 Amp contact, common terminal connected to auxiliary power (may be removed by cutting J1).

### Optional access relay

1 Form C, 1 Amp contact, common terminal connected to auxiliary power (may be removed by cutting J3).

### Special function connector

10 outputs, auxiliary power at 40 ma. maximum each.

## Keypads

### Number of keypads

4 Keypads

### Maximum wire length each

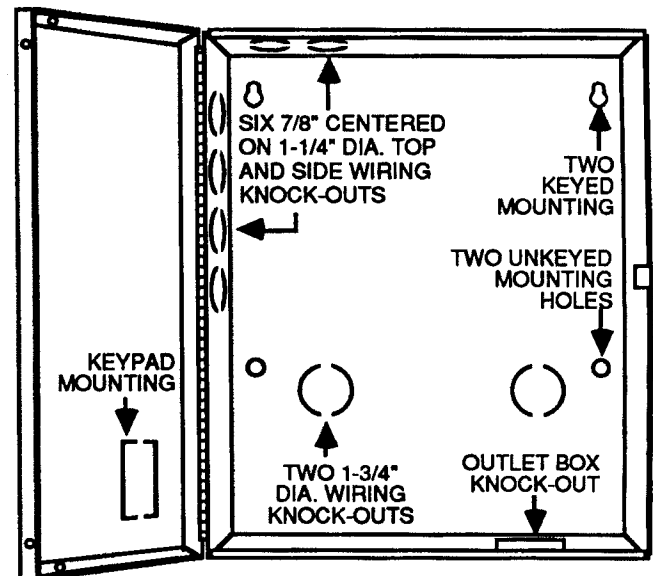
500 feet

### Wire type

4 conductor #22 AWG  
"Telephone quad"

## Communicator

Will report to two phone numbers with full single, double and back-up reporting. Communicates in 3/1, 4/1, 4/2 and BFSK with optional extended reporting.



FCC Registration Number is ESV5WH-19147-AL-E

DOC Registration Number is 1249 3387 A

The ringer equivalence is 0.1B

## Burglar Zone Inputs

### Number of circuits

14 Circuits

(8 connect at the panel and 6 connect to a DS7101 or to the keypads, 3 zones maximum per keypad)

### End of line resistor

2210 ohms

## Fire Signal Initiating Circuit (2 wire mode)

Fire circuit will work with 2 or 4 wire detectors and has optional alarm verification.

### Number of circuits

1 Circuit

### Type of circuit

Class B, latching

### End of line resistor

2210 ohms

### Supervisory current

5 ma.

### Minimum current for alarm

12 ma.

### Maximum short circuit current

80 ma.

### Maximum circuit resistance

150 ohms

### Circuit voltage range

10.2 to 14Vdc

### Maximum impedance for alarm

850 ohms

### Maximum detectors per zone

20 detectors (2 wire)

### Maximum smoke detector standby current

2.0 ma.

## Fire Listings

UL Household Fire

NFPA number 74 (Household Fire Systems)

CSFM - California State Fire Marshall

## Intrusion Listings

UL Household Burglary

UL Local Alarm Grade A and B

UL Police Station Connect

UL Central Station Grades AA, A, B and C

**NOTE:** See UL compatibility in section T. for the above listing requirements.



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## FCC Compliance Notice

This equipment generates and uses radio frequency energy. If not installed and operated properly -- that is, in strict accordance with the manufacturer's instructions and recommendations -- it may cause interference to radio and television reception. While this equipment has been type tested and found to comply with the specifications of Part 15, Subpart J of the FCC Rules for Class "A" computing devices, this is not a guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio or television reception -- which can be determined by turning the equipment off and on -- the installer is encouraged to correct the interference by one or more of the following measures:

- 1) Reorient or reposition the radio/television receiving antenna.
- 2) Connect the AC transformer to a different outlet so the control panel and television or radio are on different AC branch circuits.
- 3) Relocate the control panel with respect to the radio or television.
- 4) Move the control panel away from the radio or television.

If necessary, the installer should consult an experienced radio/television technician for additional suggestions. The booklet, "How to Identify and Resolve Radio-TV Interference Problems", prepared by the Federal Communications Commission (FCC), may also prove helpful. This booklet is available from the U. S. Government Printing Office, Washington, DC 20402. Please specify Stock No. 004-000-00345-4.

## Canadian Department of Communications

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

## FCC Notice to Users

The 7100 Control complies with Part 68 of the FCC rules.

On the inside of the enclosure is a label that contains, among other information, the FCC Registration Number and the Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your local telephone company.

The REN, 0.1B is useful to determine the quantity of devices that you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices that you may connect to your line, you may want to contact your local telephone company to determine the maximum REN for your local calling area.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Should this equipment cause harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advanced notice isn't practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this equipment, please contact the manufacturer for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning. The repairs to this equipment must be made by manufacturer and not by the user.

To guard against accidental disconnection, there is ample room to mount the Telco jack to the inside of the Control cabinet.

The operation of this Control may also be affected if events such as accidents or acts of God cause an interruption in telephone service.



## B) INSTALLATION CONSIDERATIONS

- B.1 DO read the installation instructions at least once through before attempting operation. Quite often, information gained from later parts of the instructions will influence early decisions.
- B.2 DON'T mount the unit outdoors, or in areas where the temperature will exceed the limits of +32°F. to +120°F. (0°C. to +49°C.).
- B.3 Do ground the control only from terminal 1 directly to a good earth ground such as a metallic cold water pipe. If near the water meter, choose the city side for the ground clamp connection.  
**Don't connect a second ground wire from any other point in the system to earth ground.**  
**Don't share a ground wire with any other electrical appliance, or use the third wire in an electrical outlet, or rely on a conduit for grounding.**
- B.4 DO *make and inspect* all loop and output wiring connections *before* installing the transformer and standby battery.
- B.5 DO use only 120 VAC primary service circuits that can not be accidentally shut off with a switch. Best installations will utilize a dedicated service from the fuse/breaker box. (Operating input limits for supplied TR16C transformer; 120 VAC, +10%, -15%).
- B.6 DO use only the transformer supplied with the control for input power. DON'T share the transformer with any other appliance or equipment.
- B.7 DON'T loop or run wire over the top of the control circuit board.
- B.8 DO make sure all input (zone) loops are terminated with an End-Of-Line (EOL) resistor. If an input loop is not run, install the EOL resistor across the appropriate terminals.

## C) MOUNTING THE CONTROL

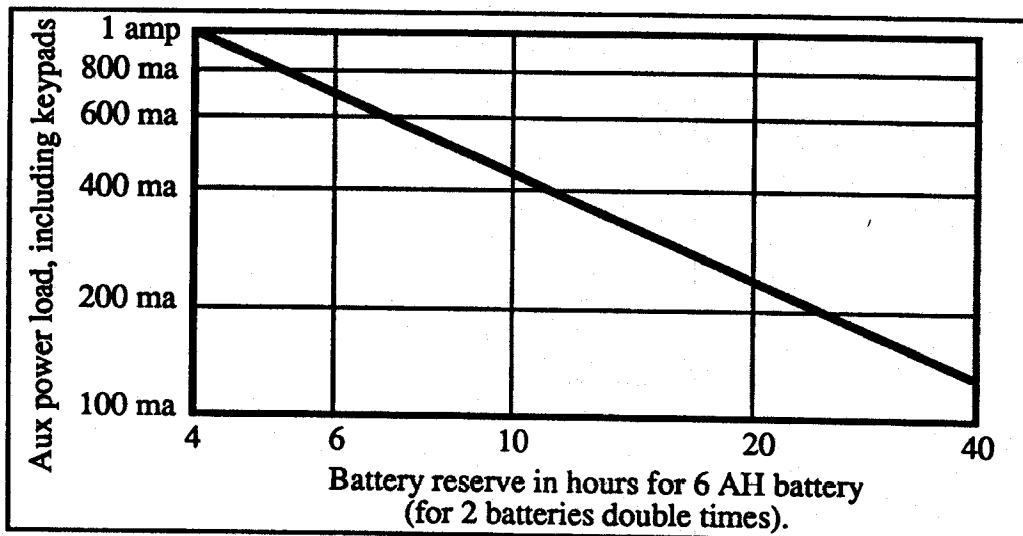
- C.1 It is recommended that the control be installed within a protected area, and where it will be accessible for wiring and service.
- C.2 Open the door to the control using one of the keys supplied.
- C.3 Select and carefully remove one or more of the prepunched knock-outs to expose the best cable entrances.

Two (2) 1-3/4 in. diameter knockouts are located on the back of the cabinet for through-the-wall wiring, with six (6) 7/8 in. centered on 1-1/4 in. diameter top and side knockouts.

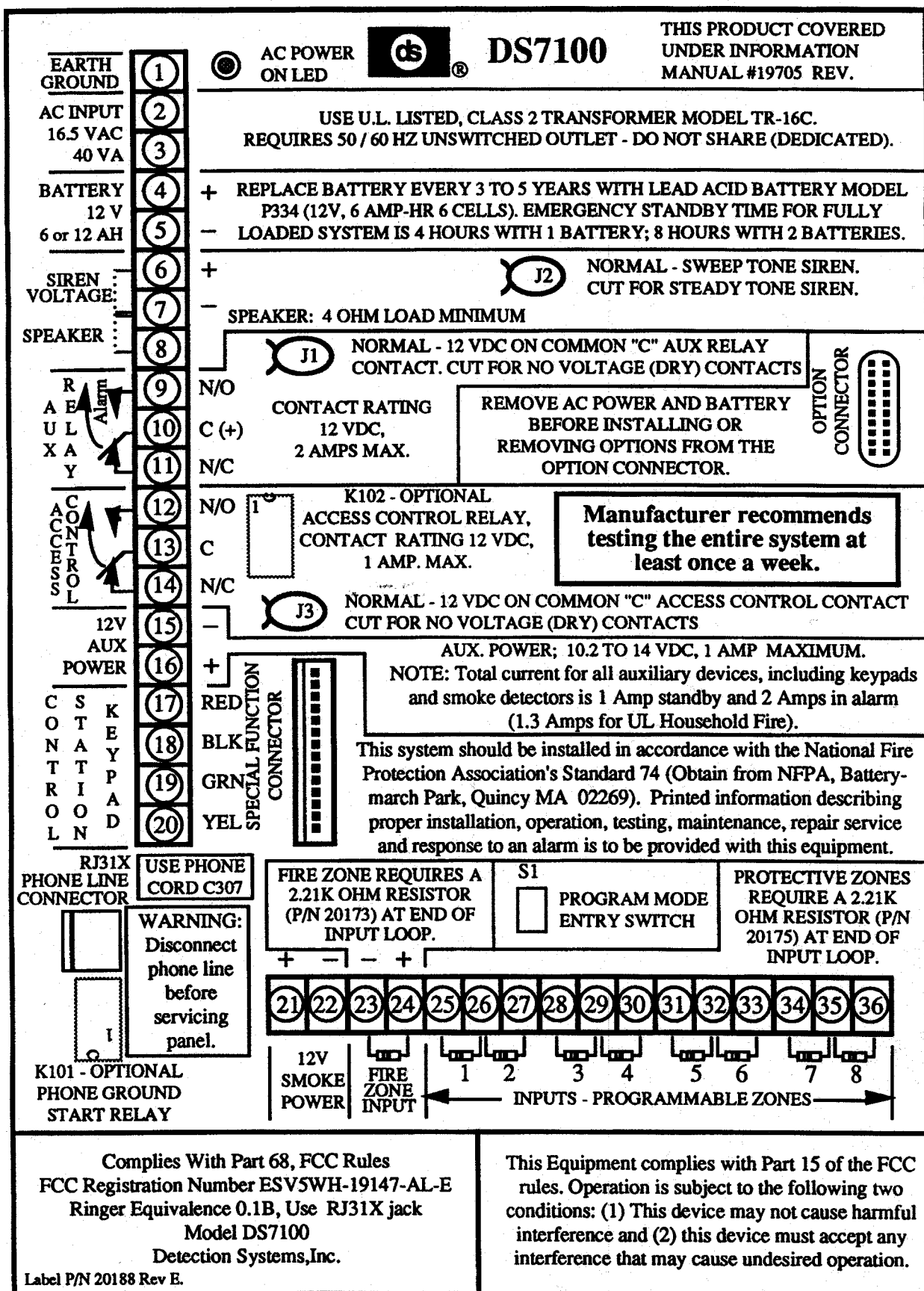
- C.4 If a 120 VAC primary circuit is to be brought to the control for termination in a single-gang outlet box, remove the rectangular knock-out from the bottom of the cabinet.
- C.5 Using the back of the cabinet as a template, locate and mark the four (4) mounting holes (two keyed at the top, two unkeyed at the bottom) on the mounting surface so that the mounting screws can be prestarted.
- C.6 Securely mount the cabinet to the mounting surface.

## D) MOUNTING THE KEYPAD

- D.1 It is recommended that the keypad be installed within a protected area, and where it will be accessible to the system users but not visible from outside the protected area. *The keypad must be mounted within the protected area on a UL certified installations where zones 9 through 14 are used.*
- D.2 The keypad must be mounted inside where it is not exposed to the effects of weather.



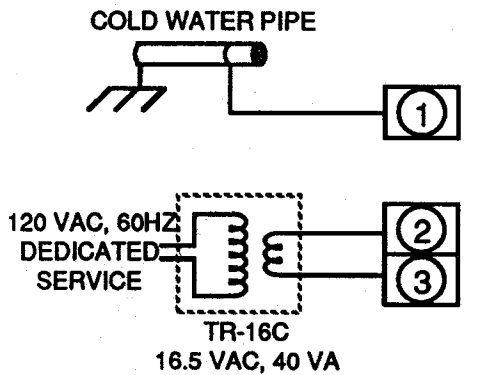
# PANEL WIRING OVERVIEW



E

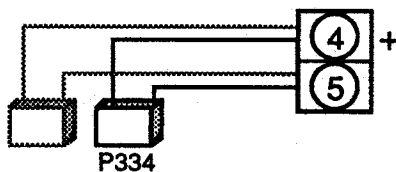
## CONTROL TERMINAL WIRING

### FUNCTION AND DESCRIPTION

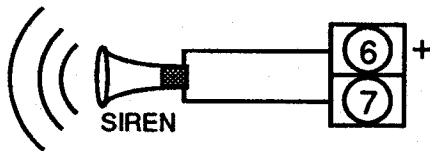


**EARTH GROUND.** Connect directly to a good earth ground such as a cold water pipe using at least #14 AWG wire. Do not share the ground wire with any other equipment, or use the third wire in an electrical outlet, or rely on conduit for grounding.

**16.5 VAC POWER INPUT.** Connect to the 16.5 VAC, 40 VA transformer (TR-16C) supplied with the control using no smaller than #16 AWG wire. **DO NOT INSTALL THE TRANSFORMER AT THIS TIME**, but locate it near a 120 VAC outlet not controlled by a switch. (A dedicated service should be used.) Please note that the transformer contains an internal fusible link that will permanently open if the 16.5 VAC output leads are shorted, even momentarily, after power has been applied.

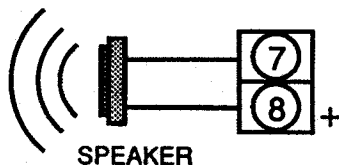


**STANDBY BATTERY.** For connection to one or two rechargeable 12 volt, 6 amp-hour, P334 sealed lead-acid batteries. No special harness is required to support two batteries. Locate the batteries on the bottom of the enclosure, **BUT DO NOT CONNECT TO TERMINALS UNTIL AFTER ALL OTHER WIRING CONNECTIONS HAVE BEEN MADE.** One P334 battery = 4 hours minimum standby. Two P334 batteries = 8 hours.



**SIREN VOLTAGE.** Used for connection of an electronic siren or like device. **Do not connect a speaker across these terminals as the applied voltage could damage the speaker. Do not connect vibrating bell-like devices to these terminals (see Auxiliary Relay).** Contacts rated at 1 amp max.

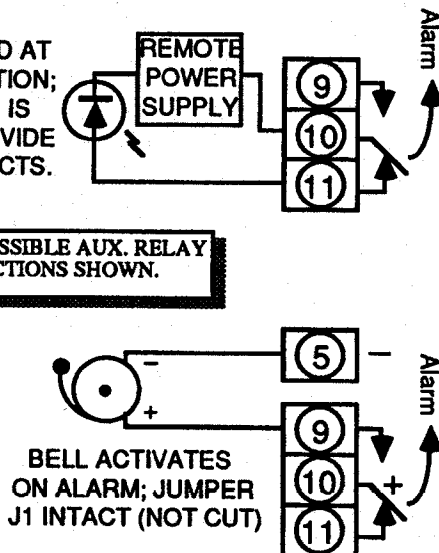
*Do not connect an electronic siren on UL certificated installations.*



**SPEAKER DRIVER OUTPUT.** Available for connection to one 4-ohm loud-speaker, or one 8-ohm loud-speaker, or two 8-ohm loud-speakers wired in parallel (4 ohms total). Zone programming (section L.1) will make each zone alarm output constant-on or pulsed. Normal output is a sweep tone; cut Jumper J2 for steady tone. *This output should not be used on UL certificated installations.*

REMOTE LED AT  
GUARD STATION;  
JUMPER J1 IS  
CUT TO PROVIDE  
DRY CONTACTS.

TWO POSSIBLE AUX. RELAY  
CONNECTIONS SHOWN.



**AUXILIARY RELAY.** Form "C" relay which can be programmed to respond to any alarm condition. During stand-by (no alarm), the terminal 10 common arm is connected to terminal 11. In the event of an alarm, the terminal 11 connection is broken, and terminal 10 is then connected to terminal 9. During the time of alarm, the terminal 10 to 9 connection may be held constant, or terminal 10 may pulse between terminals 9 and 11 depending on the programming of the zone in alarm. See "Siren/AUX Relay Interaction" in section Q. Contacts rated at 2 amps maximum.

**CAUTION:** Terminal 10 is normally supplied with +12 VDC to drive external devices such as a bell. Cut jumper J1 if "dry" contacts (no voltage) are required.

If "wet" contacts are desired, connect the negative (-) lead of the external device to terminal 5, and the positive (+) lead to either terminal 9 or 11 depending on whether the device is to be active during the alarm or no-alarm condition.

**12V ACCESS CONTROL RELAY (K102 OPTIONAL).** 12 VDC at up to 1 amp is available to drive devices such as electric door strikes. Output is controlled by an access code from a Control Station which will toggle the voltage between terminals 12 and 14. As access control power is supplied by the 12V Aux. Power Supply, the total current usage for the access control, smoke power and aux. power must not exceed 1 amp. Cut jumper J3 if terminal 13 "dry" contact (no voltage) is required. Contacts rated at 1 amp maximum.

**12V AUXILIARY POWER.** Regulated 12 VDC at up to 1 amp continuous to power auxiliary devices. To determine the maximum current available, subtract the Access Control current, the total smoke power current and total control station current from 1 amp. The voltage will vary from 10.2 to 14VDC under normal operation under AC and battery power. The control is not battery dependent.

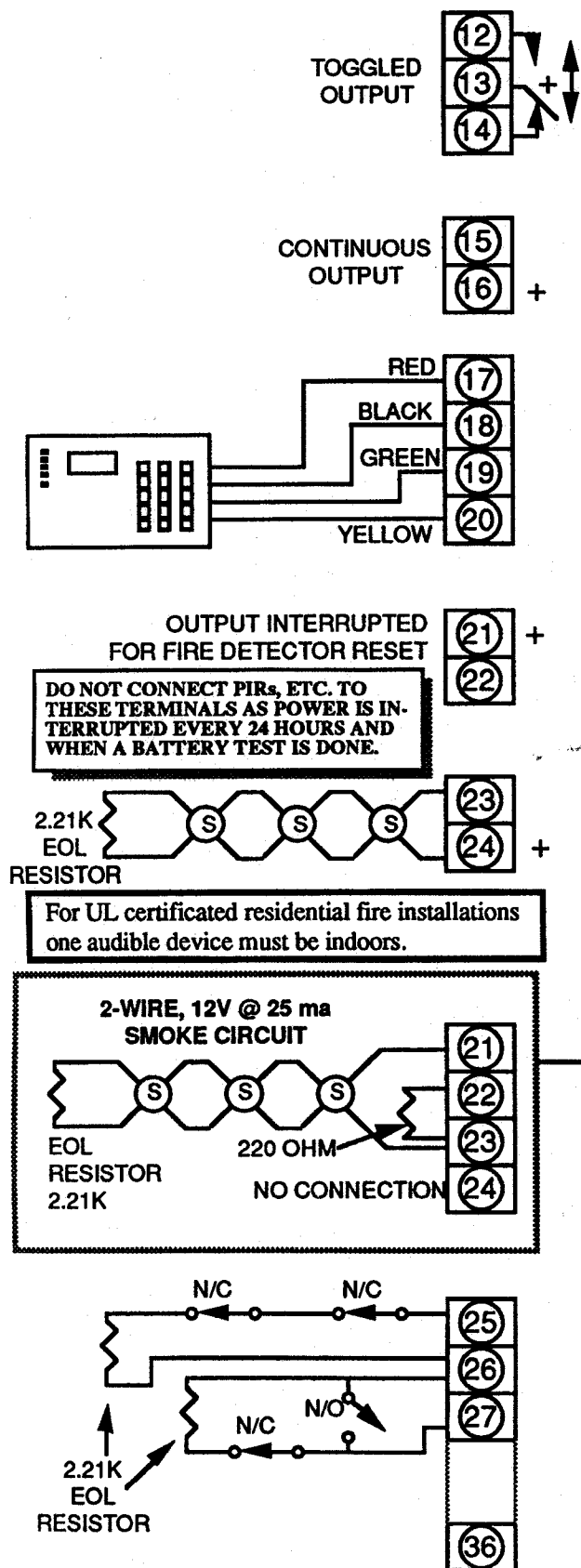
**CONTROL STATION CONNECTION.** The control will support four 4-Wire Control Stations. Each station must be wired from the control. A maximum of 500 ft. (150 m) of #22 AWG, non-shielded, 4-conductor cable is permitted in the wiring to each control station.

**12V SMOKE POWER.** Regulated 12 VDC to power fire detection devices. Voltage interrupted by code from any Control Station for detector reset. (Optional automatic fire verification will also interrupt power for detector reset.)

**FIRE ZONE INPUT.** 24 hour instant loop which will activate on closure of any connected N/O "dry" contact fire detection device. Requires 2.21K ohm EOL resistor at end of loop for supervision (Detection Systems part number 20173). Grounding either side of loop, or an opening in the loop wiring will result in a fire trouble report, but will not activate a fire alarm. If the fire loop is not used, connect EOL resistor to input terminals or program the loop as permanently shunted. Normally terminal 23 will be between 0.9 and 1.4 VDC and terminal 24 will be between 3.4 and 4.1 Vdc when measured to ground. A fire alarm will result if both terminals 23 and 24 are between 2.0 and 3.0 VDC. If either of the loop voltages are outside of the above limits, a fire trouble indication will result.

Shown to the left is a wiring configuration for a 2-Wire circuit. Note that there is no connection to terminal 24. A 220 ohm resistor (supplied) must be installed as shown. The loop is considered normal when the voltage on terminal 23 is between 0.6 and 1.3 VDC. An alarm results if the voltage is higher than 2.5 VDC.

**PROGRAMMABLE ZONE INPUTS.** There are eight (8) programmable zone inputs on the control panel for the connection of "dry" contact N/C and N/O protective device loops. Although intended for the connection of protective devices, one zone may instead be programmed for use with a remote keyswitch for arming and disarming. Each zone functions independently and does not interfere with the operation of the others. Each zone is permitted a maximum of 300 ohms of resistance in the wiring loop, and requires a 2.21K ohm EOL resistor for supervision. Connect an EOL resistor across the terminals of any unused loop or program the loop for permanent shunt. To guard against fast impulse "swinger" alarms, each loop requires an alarm condition exist for a minimum of 120 milli-seconds, but may be programmed for a longer time period. Note that terminals 26, 29, 32 and 35 are each common to two (2) loops. A normal (non faulted) loop will measure between 2 and 3 VDC from the loop input to ground. A loop is considered shorted if it measures 1.5 VDC or less and it is open if the voltage is 3.8 VDC or greater.



## FUNCTION AND DESCRIPTION

### RJ31X PHONE LINE CONNECTOR

If the control is to communicate with a central station via telephone lines, connect a commonly available interface cable (with a male RJ31X plug on both ends) between the RJ31X jack on the control board, and the one installed by the telephone company.

Red = Outside Telco Ring  
Green = Outside Telco Tip.  
Slate (grey) = Inside Phone Ring.  
Brown = Inside Phone Tip.

### SPECIAL FUNCTION INTERFACE STRIP

This 14-position pin strip is intended to mate with any one of the following single slide-on cable connectors: (See Section N.)

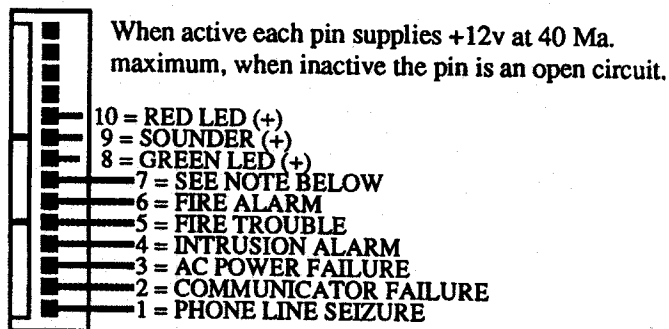
#### C-304

An optional 3 ft. long, 4-wire cable terminated with a 14-position connector at one end, and an 8 wide connector at the other. Allows direct connection of a portable Control Station for use as a temporary station for test and programming.

#### C-305

An optional 14-position connector with 14 one foot long flying leads. Depending on wires used, this multi-purpose cable will allow connection of a test/programmer control station, and/or a key switch arm/disarm control station, and/or a derived channel or long-range radio communicator.

If the control is not programmed for derived channel communications, pins 1 through 10 will function as follows:



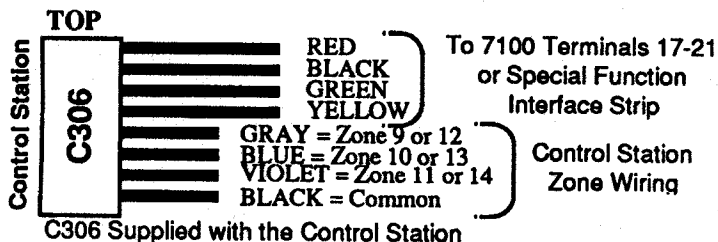
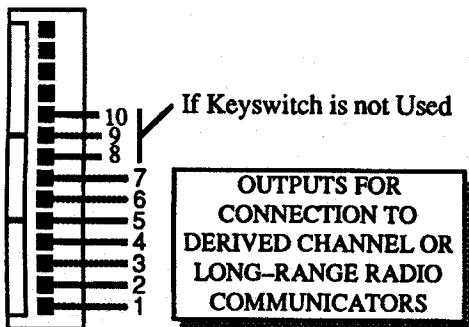
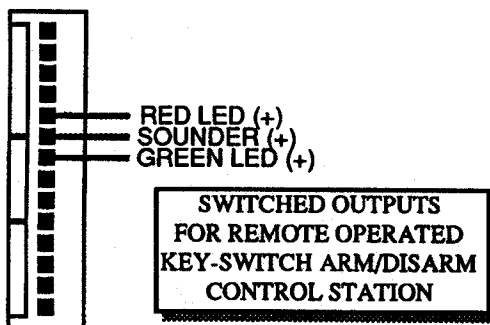
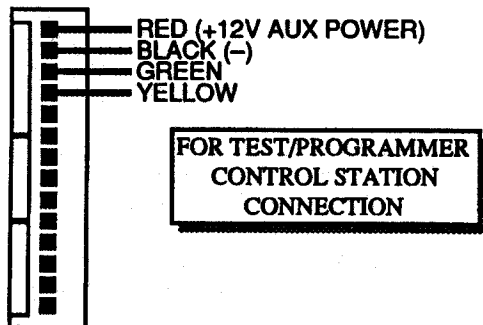
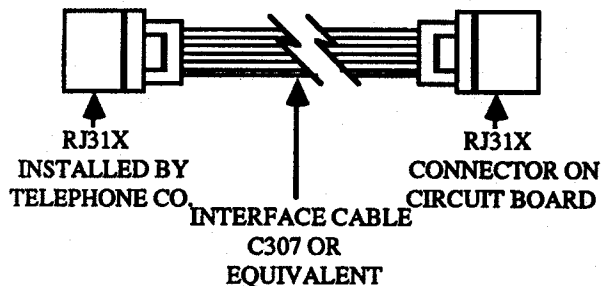
**NOTE:** Terminal 7 above - (will drive PIR memory circuits)

If +12V is applied, control is armed but not in Exit Delay.

If pin is open, control is disarmed or in Exit Delay and about to arm.

### CONTROL STATION WIRING

For detailed Control Station zone wiring information, please consult "KEYPAD ZONES" in section Q of this manual or the 7120, 7135 or 7140 Control Station Installation Instructions part numbers 21204, 21035 or 21283 respectively.

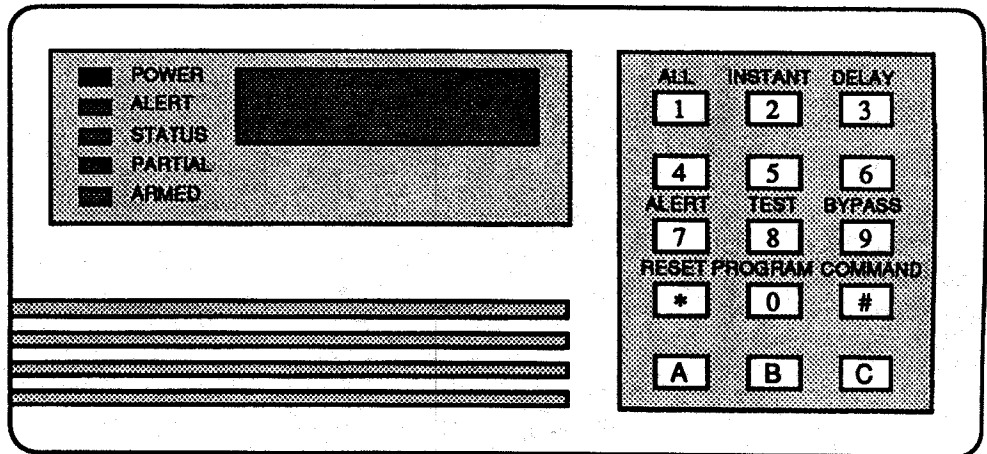


## F.1 KEYPAD AND SOUNDER OPERATION

Each press of a key will sound a short beep. If an alarm or entry prealert tone is currently sounding, a short quiet period will indicate the key press was accepted.

Each time a keypad command turns a function *on*, the sounder will give a long beep. When a function is turned *off*, a short beep is sounded.

**Keypad entry errors** will result in three (3) short beeps, and the message Err will show in the Display window. If an alarm or entry prealert tone is currently sounding, three short quiet periods will indicate the entry error.



Shown is the 7135 keypad

Pressing a key not recognized as part of the current input sequence will cancel the sequence, and the three beep error tone will sound.

If at any time during User-mode keypad operation the user delays more than five (5) seconds between key presses, the sequence will be cancelled and the three beep error tone will sound.

For all key input sequences, the [Reset/\*] key is used to reset the keypad to the start of a new sequence. When the [Reset/\*] key is pressed, the three beep error tone will sound and the keypad will be immediately ready for a new sequence.

If the local control station Quiet/Loud jumper is in the *Loud* position on the 7135 or 7140 keypads, all system key press and error code beeps will be heard. If in the *Quiet* position, only the key press and error code beeps for the local control station will be heard. In the event of an alarm, all keypad sounders will mimic the system siren output (continuous or pulse) regardless of the position of the jumper.

For further information on 7120, 7135 or 7140 keypad operation, refer to the keypad User Guides part number 21031, 21031 or 21340 respectively.

## F.2 INDICATOR LIGHT OPERATION

### Green Power Light:

- OFF – control has lost all power (no AC or battery).
- FLASHING – control problems exist (see *Error Display*, page 14).
- ON – control is running on AC power without problems.

### Yellow Alert Light:

- OFF – control is *not* in the instant mode (when armed), or in the Alert/Chime mode (when disarmed).
- FLASHING – Special Area is protected.
- ON – control *is* in the instant mode (when armed), or in the Alert/Chime mode (when disarmed).

### Green Status Light:

- OFF – One or more zones are violated, or the control is armed.
- FLASHING – exit delay period is in progress.
- ON – all zones are secure or bypassed

### Yellow Partial Light:

- OFF – control has *no* bypassed zones.
- FLASHING – control does have bypassed zones. The partial light will not flash when the panel is armed.
- ON – only the interior zones are bypassed.

### Red Armed Light:

- OFF – control is disarmed.
- FLASHING – control is armed, and an alarm has occurred.
- ON – control is armed; no alarms since arming.

The green *Status*, yellow *Partial*, and red *Armed* lights **Flashing together** indicate the control is in the "Zone Test" Mode. See section I.

The green *Status*, yellow *Partial*, and red *Armed* lights **ON constant together** indicate the control is in the Program Mode. See section K.

For 'A', 'B' and 'C' key operation see "Emergency Keypad Alarms" in section I.

## G.1 Before applying any power, inspect control unit wiring one more time!

- ( ) Make sure all terminals have been secured.
- ( ) Make sure all splices (if any) have been properly insulated.
- ( ) Check for a ground wire on terminal 1.
- ( ) Make sure at least one control station has been connected to terminals 17-20, or to the first four terminals of the Special Function Connector.
- ( ) Make sure terminals 23 through 36 terminate in either zone wiring, or an EOL resistor.

## G.2 Plug the transformer into a 24 hour, 120 VAC outlet, and connect the battery.

**NOTE:** The TR16C transformer contains an internal fusible link that will permanently open if the 16.5 VAC output leads are shorted even momentarily after power has been applied.

To connect the battery, mate the RED battery lead to the positive (+) battery terminal, and the black lead to the negative (-).

- ( ) Control Unit Activity: The red AC Power On light should light.
- ( ) Control station Activity: The green Power and green Zone Status lights should turn on constant.

**NOTE:** The Control will not transmit any intrusion alarms for four (4) minutes after power has been applied, including the reapplication of power after a total power failure (primary and standby). This will allow detectors time to "settle in" after power is applied.

## G.3 If other than described activity occurs.

### G.3.1 All Power lights remain OFF on the 7100 and control station.

- √ 16.5 VAC is not being applied to terminals 2 & 3.

### G.3.2 Power light on control unit circuit board turns on; Control Station Power light remains OFF.

- √ Control station is miswired to control unit, or
- √ Control station cable is not securely plugged in.

### G.3.3 Green Zone Status light remains OFF.

- √ One or more programmable zones are in alarm. This may be due to an alarmed protective device, or a missing, improperly connected or wrong value EOL resistor or incorrect zone programming.

### G.3.4 External speaker/siren activated; Control Station sounder activated with green Zone Status indicator on constant.

- √ Fire Alarm in progress, or
- √ Fire loop wiring shorted.

## G.4 If trouble, and control station installed

The control station digital readout will display error codes that are helpful in determining the cause of the problem.

**NOTE:** Information within brackets [ ] indicates a keypad key that must be depressed. A train of brackets [ ]-[ ]-[ ] indicates a sequence of keys that must be depressed.

### G.4.1 Control station green Power LED constant ON; green Zone Status LED OFF.

- √ One or more programmable zones are in alarm (faulted). This may be due to an alarmed protective device, or a missing, improperly connected or wrong value EOL resistor.

Depress [Command/#], and observe digital readout. Alarmed zones will first display the message FAUL followed by the letter F and the zone number (i.e., F 4 indicates that the zone 4 loop is faulted). The faulted zones will be displayed in numerical order, and will scan through twice.

### G.4.2 Control station green Power light FLASHING;

- √ A control error exists.

Depress [Command/#]-[Test/8]-[7], and observe digital readout. The error codes will be displayed in order, and will scan through twice.

C Er = Communicator failed to communicate.  
Lo b = Battery problem. Missing or low voltage.  
AC F = AC power failure.  
EE P = Error in Program Memory.

After the error has been corrected, depress [Command/#]-[Test/8]-[7]-[Reset/\*] and observe digital display for any additional errors.

## G.5 If FirE ProB displayed

- √ There is a problem in the fire circuit. May be due to a missing, improperly connected or wrong value EOL resistor. (See also Section P.3.)

## H.1 GENERAL

Programming is accomplished on-site using the keypad of any installed Control Station, or remotely using an IBM or IBM compatible PC and the CP7000 software or the HHP7000 hand held programmer. See "Remote Programming" in section Q.

Unless otherwise specifically noted, this manual details programming using an installed control station. Please refer to separately supplied instructions for remote programming.

Information within brackets [ ] indicates a keypad key that must be depressed. [Command/#], as an example, is the lower, right hand key in the keypad. A train of brackets [ ]-[ ]-[ ] indicates a sequence of keys that must be depressed.

The control can be programmed for *Commercial* or *Residential* mode of operation. In the commercial mode, a User Code or a Programmer Code must be entered before a program command is entered. In the residential mode, the users code is used only to disarm the control and to silence alarms. Therefore the users code is not entered before the program codes.

## H.2 PROGRAMMER AND END USER CODES

The control unit will support a *Programmer code* and thirty (30) *User codes*.

The **Programmer code** is used to install or modify the parameters of many of the Customer Unique programs. It may also be used to change User codes, but can not be used to recall (display) any existing codes, nor arm or disarm the system. In the Commercial mode of operation, the Programmer Code may also be used to enter any of the Program Commands that use the[Test/8] key. *The factory-shipped (default) Programmer code is the five digit sequence of 9 8 7 6 5.* See section K.

The 30 **User codes** may be any combination of *Master*, *Permanent*, *Temporary*, and *Access Control* codes. Each code may be from one to five digits in length.

Of the User codes, only the *Master code* may be used to change any of the other User Codes. The Master code can not change the Programmer code. Only one Master code can be assigned to a control unit. *The factory shipped (default) Master code is the four digit sequence of 1 2 3 4.* The remaining 29 User Codes have not been assigned a default code by the factory, and are blank. See section J.

Both the *Permanent* and *Temporary* codes may be programmed for Arm only; Arm only with Bypass privilege; Arm and Disarm only; or Arm and Disarm with Bypass privilege. While "Arm only" and "Arm only with Bypass" codes cannot disarm the control, they can acknowledge fire alarms. Temporary codes differ from Permanent in that Temporary codes will be disabled the next time a Permanent code is used to disarm the control.

The *Duress code* (or ambush code) will both disarm the control and report a silent duress alarm to the central station. The control will give no indication that a Duress code has been entered, and the duress alarm cannot be cancelled.

**NOTE:** *The Duress Code is not a programmed User Code. If the control is programmed to report a duress alarm, entering a code one digit higher than any existing code will initiate the alarm. For instance, if 9 7 5 1 is an existing code, entering 9 7 5 2 will initiate a duress alarm. Be careful of users codes that end in a 9. Example: For a User Code of 8349, the Duress Code is 8340.*

If the optional Access Control Power relay has been installed, an *Access Control code* can be used to switch access control voltage on (or off) for a programmed period of time before it returns to its original state, or keep the condition constant until the code is again entered. The access time may be programmed from 1 to 255 seconds in 1 second increments. If the access time is programmed for zero (0) seconds, voltage will be applied (or removed) when the Access Control code is first entered, and will remain until the next time the code is entered. The Access Control code may be used when the control is either armed or disarmed.

Keypad entry errors will result in three (3) short beeps. If an alarm or entry prealert tone is currently sounding, three short quiet periods will indicate the entry error.

Pressing a key not recognized as part of the current input sequence will cancel the sequence, and the three beep error code will sound.

For all key input sequences, the [Reset/\*] key is used to reset the keypad to the start of a new sequence. When the [Reset/\*] key is pressed, the three beep error code will sound and the keypad will be immediately ready for a new sequence.

Disarming the control cancels the Instant Entry Override mode imposed by Perimeter/Instant arming, maintains the Alert/Chime On/Off state, and removes all zone bypass (except 24 Hour zones and zones programmed as permanently shunted).

## FACTORY DEFAULT CODES:

Master Code = 1 2 3 4

Programmer Code = 9 8 7 6 5

*After installation change these codes before turning the system over to the end user.*



## ACCESS CONTROL



Access control is performed using an optionally installed Access Control Relay (model K102). First enter the Access Control code, followed by [Command/#]. Depending on the existing state of the device connected to the relay terminals, it will then reverse state (activate or deactivate) for the programmed time period. If programmed for zero (0) seconds, the new state will be maintained until the next time the access control code and [Command/#] sequence is entered. For time of day control see section M.6.

If the access control relay is turned on, ON will be displayed at the control station. OFF will be displayed when the access control relays turns off.

*Access control should not be used on UL certificated installations.*

## ALARM HISTORY DISPLAY



The alarm history can be activated only when the control is *disarmed*. When activated, the display can be commanded to show control activity events in reverse chronological order (starts with most recent event). These events are kept in a "history buffer" or log which will maintain a total of 96 events. As a new event is entered, it becomes the most recent, and causes the oldest event to be erased.

Each event consists of three (3) displays; the type of event, followed by a display consisting of the day of the week and an information descriptor based on the type of event, with a final display showing the time of the event (in 24 hour format). Each display is shown in reverse chronological order by momentarily depressing the [Command/#] key each time (most recent entry will show first).

If there is greater than a 40 second delay in entering the [Command/#] key for the next display, the display will blank, the three beep error tone will start, and the control will return to the disarmed state. The history display may also be cancelled by pressing the [Reset/\*] key. (See Section P, "History Display Information", for details.)

## ALERT / CHIME MODE



Activate Alert / Chime mode only when the control is disarmed. This mode causes the control station sounders to beep each time a perimeter zone is violated while the control is disarmed. The Alert / Chime mode will remain on until the next time the Alert / Chime code is entered.

When the control is disarmed, the Alert / Chime mode will light the yellow *Alert* light on all control stations. Arming and disarming the control does not affect the Alert / Chime mode, but the *Alert* light will turn off during armed periods.

When the zone is programmed for trouble reporting the alert / chime will only sound if the loop is shorted but not when it is opened. When the zone is not programmed for trouble reporting the alert / chime will sound on both open and short (see section L.1 digit 4).

## ARMING (General Notes)

The control may be armed in one of five different configurations; Default, Perimeter/Instant, Perimeter/Delay, Custom Configured (Special Key) or Forced.

To arm the control, the Control Station's green *Status* indicator light must be lit indicating all zones are secured and/or bypassed. After entering the proper code sequence, the red *Armed* indicator light will turn *ON* indicating the control is armed. Unless programmed instant, the green *Status* indicator light will pulse on and off during the exit delay interval, then turn *OFF* when the delay expires.

A beep will sound when arming the control. If programmed for "Dial Tone Test on Arm", the beep will sound only after the dial tone is detected, and the Exit Delay timer will not start until the beep is heard. *If the dial tone is not detected, the control will still arm, but the beep will not sound.* If also so programmed, the Auxiliary Relay and Siren will operate for two seconds.

If programmed for "Dial Tone Test on Arm" *and* a Closing Report, the beep will occur after the closing report is received at the central station (Ringback). The entry delay timer will not start until the beep is heard.

The control must be disarmed before any bypass or instant/delay configurations can be changed.

### ARMING (DEFAULT)

COMMAND ALL  
# 1

This is the normal system arming mode. All non-bypassed zones of protection will arm, and Entry/Exit delays are active. This is the only arming level that generates open and close reports.

### ARMING (PERIMETER / INSTANT)

COMMAND INSTANT  
# 2

The control will arm only those zones programmed as Perimeter protection, and they will become Instant entry zones regardless of entry delay programming. Zones programmed as Interior will not be armed (i.e., interior bypass). This arming level does not generate open and close reports.

While armed, the yellow *Alert* light will be lit. Disarming the control will cancel the Instant override mode. Exit delay programming is not affected.

### ARMING (PERIMETER / DELAY)

COMMAND DELAY  
# 3

The control will arm only those zones programmed as Perimeter protection, and Entry/Exit delays will be employed in zones where programmed. While armed, the yellow *Partial* light will be turned ON constant. This arming level does not generate open and close reports.

Zones programmed as Interior will not be armed (i.e., interior bypass).

### ARMING (SPECIAL KEY)

COMMAND COMMAND  
# 4 OR # 5  
COMMAND  
OR # 6

There are three customer (special) modes of arming, each of which can be a different combination of zone bypass and instant/delay.

To Special Key arm the control, the [Command/#] key is pressed first, then the [4], or [5], or [6] key. Zones so configured will then be automatically bypassed, and the instant/delay status will be set. (Section L.3)

If zone keyswitch arming is used, the [6] key programming will control the keyswitch zone's bypass and instant/delay status. (Section L.1)  
(See, also, *Emergency Keypad Alarms* and *Special Area Zones*.)

### ARMING (FORCED)

BYPASS  
Arm Sequence 9

The control will support Forced arming when the green *Status* light is off, indicating one or more zones are violated. This will cause an "Exception Closing with Bypass" (section L.5 line 55) report to be sent (if enabled). The number of zones that may be Force arm bypassed is programmable. (Section L.14, Data Digit 3.)

The exception to this is a violated zone that is programmed so that it can not be bypassed (Section L.1, Data Digit 3). In this case, the control can not be Force armed, and such zones will have to be restored prior to attempting to arm the control.

The control must be Force Armed during an AC power failure while operating on standby battery power. AC F will display at the first keypad key entry to warn of the power failure.

To Force arm the control, first enter one of the previous arm sequences, at which time the sounder will start a 5 second long beep. Then while the beep is sounding press [Bypass/9]. All violated zones will be bypassed, the sounder will cease, and the control will arm.

If a zone that was Force arm bypassed is restored during the *armed* period, it will not rearm itself (remains bypassed) even if programmed for restoral, *unless Swinger Shunt is activated, then it will restore.*

NOTE: *Swinger Shunt may not be activated in U.L. Certificated Installations.*

EXAMPLE:

COMMAND INSTANT BYPASS  
# 2 9

## BATTERY TEST

COMMAND TEST PROGRAM  
# 8 0  
SAME AS FIRE RESET COMMAND

In addition to the automatic battery test performed every 24 hours, the battery may also be tested upon key-command input. However, as the Battery test uses the same key-command sequence as the Fire reset, *the user is cautioned to understand that testing the battery will also reset any fire/heat/smoke detectors that may be in an alarm condition.*

The Power light will pulse on and off during the key-command battery test. If the battery tests OK, the Power light will return to normal after 10 seconds. If the test fails, the light will continue to pulse indicating a trouble condition. Enter [Command/#]–[Test/8]–[7], and a missing battery or a battery with low voltage will display the code Lo b. (See *Error Display*, page 14.)

The sounders will not operate during the key-command battery test, and a "Low Battery" report will not be generated.

## COMMUNICATOR TEST

COMMAND TEST INSTANT  
# 8 2

The Power light will pulse on and off during the communicator test, and a "Test" report will be sent to the central station.

A long beep will initially sound to acknowledge the start of the test. If the test is successful, the sounder will again issue one long beep, and the Power light will return to normal. If the test fails after the programmed number of retries, the light will continue to pulse. The sounder will also turn ON constant until the [Reset/\*] key is pressed. (See *Error Display*, page 14 for a display of the C Er message.) Programmed on line 59 of section L.5.

## DISARMING (DEFAULT)

COMMAND  
User Code (with Disarm) #

To disarm the control in the normal manner, first enter a User Code with disarm privileges, then press [Command/#]. The red *Armed* light will turn OFF, and the green *Status* light will turn ON if no zones are violated. As disarming the control removes all zone bypasses (except 24 hour zone bypass), violated zones will cause the green *Status* light to remain OFF.

Disarming the control also cancels the Instant entry override mode imposed on Perimeter zones when the Perimeter/Instant arm mode is employed.

The Alert/Chime function, if previously activated before the control was armed, will remain activated.

## DISARMING (DURESS)

COMMAND  
User Code (with Disarm) + 1 #

NOTE: Be careful of User Codes that end in a 9. Example: For a User Code of 229, the Duress Code is 220, and not 230.

Entering a code one digit higher than any existing User Code (with disarm privilege) will both disarm the control and report a *silent* duress (ambush) alarm to the central station.

The control will give no indication that a Duress command was used, and will outwardly respond the same as if the Default Disarm code was used. Once the Duress command has been completed, the duress alarm can not be cancelled. Duress is disabled for temporary codes. Programmed on line 52 of section L.5.

## EMERGENCY KEYPAD ALARMS

Fire Alarm (A)

Pressing the [A] key for two seconds will cause a Fire alarm in all control station modes except the Programmer mode. The report is enabled by line 30 in section L.4. To enable the Fire alarm key [A] see section L.18, data digit 3. Keypad fire alarms ("A" Key) will display like fire zone alarms. They must be reset by [COMMAND] [8] [0] after the alarm sounders are silenced.

Panic Alarm (B)

Pressing the [B] key for two seconds will cause a Panic alarm in all control station modes except the Programmer mode. The report is enabled by line 46 in section L.4. Enable the Panic alarm key [B] in section L.14, data digit 4. For silent keypad panic see section L.14 data digit 1.

Silent Alarm (C)

Pressing the [C] key for two seconds will cause a Silent alarm in all control station modes except the Programmer mode. The report and [C] key are enabled by programming line 45 in section L.4.

## ERROR DISPLAY

COMMAND	TEST	ALERT
#	8	7

Control problems are indicated and displayed only in the disarm mode. A pulsing green **Power** indicator light indicates that one or more control problems exist.

To display the problems, enter [Command/#]–[Test/8]–[Alert/7], and observe the display window. The error codes will be displayed one at a time and will scan through twice.

After problems have been corrected, the problem indications may be reset by first entering [Command/#]–[Test/8]–[Alert/7], then pressing [Reset/\*] while the problems are being displayed.

## ERROR RESET

COMMAND	TEST	ALERT	RESET
#	8	7	*

AC F = AC power failure.

C Er = Communicator failed to communicate.

EE P = Error in program memory.

Lo b = Battery problem. Missing or low voltage.

## FIRE RESET

COMMAND	TEST	PROGRAM
#	8	0

Enter the Fire Reset command sequence only in the disarm mode. This command initiates two functions: interrupts the smoke power at control unit terminal 21 for approximately ten (10) seconds to reset latched fire detectors, and performs a battery test. This command sequence will also cancel the *Fire* indication from displaying when the [Command/#] key is pressed.

After smoke power has been reapplied to terminal 21, the Control will ignore any alarms from the Fire Zone for the next two (2) seconds. This will allow detectors time to "settle down" after power is reapplied. **NOTE:** *The fire alarm must be silenced using a disarm code before a fire reset can be performed.*

## INDICATOR LIGHT/ DISPLAY TEST

COMMAND	TEST	
#	8	4

Enter the Indicator Light Test command sequence only in the disarm mode. When this test is run, all control station indicator lights and display segments will turn *ON* constant for five (5) seconds. At the end of this time, the lights will return to their previous condition and three beeps will sound.

## REMOTE PROGRAM DIAL-OUT

COMMAND	TEST	DELAY
#	8	3

Enter the Remote Program Dial-out command sequence only in the disarm mode. This will cause the phone line to be seized, and allows the control to dial the remote programmer if programmed in Program 77 (Section L.10).

## REMOTE PROGRAMMING ENABLE

COMMAND	TEST	
#	8	6

Enter the Remote Programming Enable command sequence only in the disarm mode. This will cause the phone line to be seized, and allows the control to accept remote programming *if the proper programming code is given by the remote programmer*. This command would be used if you are direct connected to the 7100 (without a phone line) or are already talking on the line that the 7100 and remote programmer are on and wish to connect to the programmer.

## SILENCE ALARMS

		COMMAND
User Code (with Disarm)		#

An alarm may be silenced by entering a User Code with disarm privileges followed by [Command/#]. This will disarm the control, and silence all sounders.

In the event of a *Fire* alarm or fire problem signal, entering the code and [Command/#] will silence the sounders and disarm the control (if armed), but will *not* reset the smoke detectors. Use the Fire Reset command sequence [Command/#]–[Test/8]–[Program/0] to then reset the detectors.

## SOUNDER TEST

COMMAND	TEST	
#	8	5

Enter the Sounder Test command sequence only in the disarm mode. This will cause the control station sounders, and control unit siren driver and Auxiliary relay to operate for two (2) seconds. At the end of this time, the sounders, siren driver and Auxiliary relay will return to their previous condition. The battery is tested during the sounder test. If the battery is low or missing the keypad power LED will flash (see error display above).

## SPECIAL AREA PROTECTION

COMMAND **#** **4** OR COMMAND **#** **5**  
COMMAND **#** **6**

Special Area Zones may be armed by entering one of the Special Key Arming commands. When activated, the yellow *Alert* indicator light will flash on and off. Special Area arming must only be engaged when the control is in the Commercial Mode of operation, and only User Code Numbers 26-30 may arm Special Area Zones. For further information on Special Area protection, please consult Section Q, and L.1 data digit 3.

## ZONE BYPASS

COMMAND BYPASS **#** **9** **Zone Nbr**

Zone bypassing is accomplished by entering [Command/#]–[Bypass/9], then the zone number (use 01 through 14). Enter the command sequence only in the disarm mode. Only one zone may be bypassed each time the command is used. If more than one zone requires bypassing, repeat the command for each zone that must be bypassed.

If in the Commercial mode of operation, zones may be bypassed and the control armed without having to continually re-enter the User Code ..... as long as there is no more than 5 seconds between key entries.

When one or more zones have been successfully bypassed, the yellow *Partial* indicator light will pulse on and off. The light will continue to pulse even while the control is armed. (Permanent shunted zones will not light the light.)

If a zone is already bypassed by the Zone Bypass command, re-entering the command will cancel the bypass for that zone.

Disarming the control from an *armed* mode automatically cancels all previously entered Zone Bypass commands (except 24 hour zones). This may also be accomplished in the *disarm* mode by entering [Command/#]–[Bypass/9]–[Reset/\*].

**NOTE:** Whenever the command of [Command/#]–[Bypass/9] is entered, the currently bypassed zones will be displayed in sequence as an S followed by the zone number.

## ZONE TEST

COMMAND TEST ALL  
**#** **8** **1**

The control will support an audible zone test indication while in the *disarm* mode. Entering the Zone Test command sequence will cause the green *Status*, yellow *Partial* and red *Armed* indicator lights to pulse on and off together.

The Zone Test is used to assure detectors connected to a zone loop will report an alarm condition back to the Control. While in Zone Test, the control station sounders will turn *ON* continuous when any zone is violated, and will remain on until all zones have been restored. This includes sounders in control stations programmed for *Quiet*.

Zone Test works on all programmable input zones including those designated Emergency and 24 Hour. However, zones that are *permanently shunted* are not affected, and will not sound. The Fire zone is also not affected, and will function normally. While in Zone Test, no Control alarms will occur with the exception of a fire alarm which will override the Zone Test function.

Each time the [Command/#]–[Test/8]–[All/1] sequence is entered, the display will show a U followed by the numbers (in sequence) of the untested zones that are not permanently shunted. A U followed by two dashes (U - -) indicates all zones have been tested.

While in the Zone Test mode, any key except [Reset/\*] may be pressed for a check on untested zones.

To exit the Zone Test mode, press [Reset/\*].

## J.1 GENERAL (SECTION H RECAP)

The control unit will support thirty (30) User codes which may be any combination of *Master*, *Permanent*, *Temporary* and *Access Control* codes. Each code may be from one to five digits in length.

Of the User codes, only the *Master code* is used to change any of the other User codes. Only one Master code can be assigned to a control unit, and of the 30 User codes it is the first code, or User Code Number 01. The Master Code must be programmed for arm and disarm, with bypass privileges.

Both *Permanent* and *Temporary* codes may be programmed for Arm only; Arm only with Bypass privilege; Arm and Disarm only; or Arm and Disarm with Bypass privilege. While "Arm only" and "Arm only with Bypass" codes cannot disarm the control, they can acknowledge fire alarms.

*Temporary* codes differ from *Permanent* in that *Temporary* codes will be disabled the next time a *Permanent* code is used to disarm the control.

The *Duress code* (or ambush code) will both disarm the control and report a silent duress alarm to the central station. The control will give no indication that a Duress code has been entered, and the duress alarm cannot be cancelled.

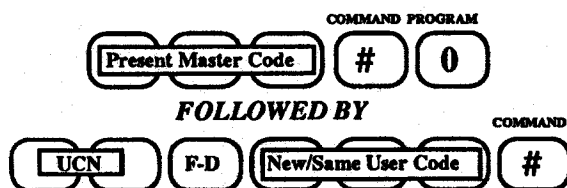
An *Access Control code* can be used to switch access control devices between activated and deactivated (on, off; open, closed; etc). The Access Control code may be used when the control is either armed or disarmed.

NOTE 1: An attempt to program a user or programmer code to the same digits as an existing code, or one digit higher or lower than an existing code, will produce the three beep error tone, and will not change the code.

NOTE 2: For Underwriter Laboratories' Certificated installations, all User Codes must be three (3) or more digits in length. Temporary codes should be programmed without bypass privileges (use function digits 6 or 7 only).

NOTE 3: Change the default user code (1234) before turning the system over to the end user. 1111 and 1234 should not be used as these are common defaults.

## J.2 BASIC FORMAT FOR CODE CHANGE



All User Code changes will follow the same basic format regardless of the change involved. First enter the present Master Code followed by [Command/#]–[Program/0]–[UCN]–[F-D], the same or new User Code, and finally [Command/#].

[UCN] is the 2-Digit User Code Number. There are 30 user codes, and [F-D] is assigned a number from 01 to 30. A number may be assigned to only one code.

NOTE: User Code Number 01 is assigned to the Master Code.

The key [F-D] is the code's Function Digit defined as:

- 0 = Arm, only, with bypass privileges.
- 1 = Arm and disarm, with bypass privileges. (The Master Code requires F-D=1.)
- 2 = Temporary code; Arm, only, with bypass privileges.
- 3 = Temporary code; Arm and disarm, with bypass privileges.
- 4 = Arm, only, without bypass privileges.
- 5 = Arm and disarm, without bypass privileges.
- 6 = Temporary code; Arm, only, without bypass privileges.
- 7 = Temporary code; Arm and disarm, without bypass privileges.
- 8 = Used for code read back, see NOTE below.
- 9 = Access code. Operate access control output.

Each User Code may be a new code just being programmed, or an existing code if the function of the existing code is being changed (e.g., removing bypass privileges). Attempting to assign the same User Code number as an existing user code (or one digit higher or lower) will result in the error message display USED followed by Cdx where xx is the User Code that caused the conflict.

NOTE: If F-D=8 is entered in response to the FUNC prompt, the display will show the User Code assigned to the UCN (if one exists). If two dashes are displayed, then none exists for that UCN. If the User Code is 5 digits long, it will display as "123-", then "--45". Otherwise, the display is "1234" with unprogrammed digits blank

As the present Master Code + [#]–[0] sequence is being entered, the display will remain blank. After the [0] key has been depressed, however, data entry will be prompted as follows:

USr

Enter 2-digit User Code Number (UCN)

FUNC

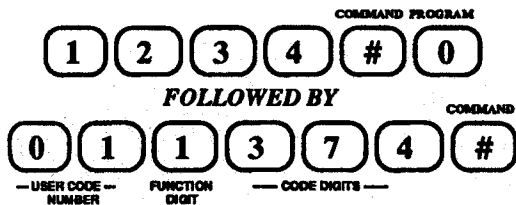
Enter Function Digit F-D

CODE

Enter New/Same User Code followed by [Command/#]

**NOTE: 3 digits minimum required for User Codes in U.L. Certificated installations.**

### J.3 CHANGEMASTER CODE



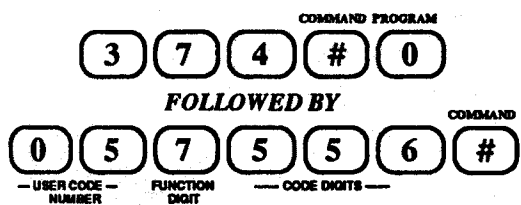
As an example, we wish to change the 4-digit factory pre-set Master Code 1 2 3 4, to a new 3-digit Master Code 3 7 4.

As this is a master code, the User Code Number must be 01 (UCN=01).

We must also arm and disarm with bypass privileges as previously defined, so the Function Digit assigned is also 1 (F-D=1).

If entered correctly, a long beep will sound at the end of the complete sequence. Remember to wait no longer than twenty (20) seconds between key presses when entering the *new* code information, or the three beep error tone will sound and the sequence will have to be restarted.

### J.4 PROGRAMTEMPORARYUSER CODE

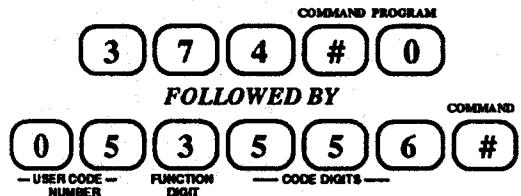


To create a temporary code (for use by the baby sitter later in the evening), again start with the present Master Code followed by [Command/#] [Program/0] [UCN] [F-D], a new code for the baby sitter, and finally [Command/#].

In this example, the Master Code is 3 7 4. Code 05 is currently not in use, so we will use the fifth code (UCN=05). We will allow the baby sitter to arm and disarm, but not bypass (F-D=7), and will provide the temporary user code of 5 5 6.

If entered correctly, a long beep will sound at the end of the complete sequence. The new temporary code may be used to arm and disarm the control any number of times, and will remain valid until the next time a permanent code is used to *disarm* the control.

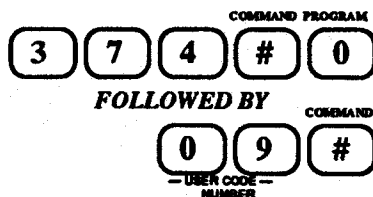
### J.5 MODIFYING A USER CODE



Just prior to leaving for the evening, we wish to upgrade the baby-sitter's temporary code to include bypass privileges. In effect, we wish to change the Function Digit from 7, to 3.

To do so, the sequence is the same as J.4 above, except (F-D=3). Looked at another way, we are creating a new User Code 05.

### J.6 CANCELLING A USER CODE



To cancel an existing code, enter the Master Code, then [Command/#] [Program/0] with the User Code Number to be cancelled, and then [Command/#].

In this example, we wish to cancel user code number 09 which was a permanent code assigned to contractors doing work on the building.

**NOTE: Master Codes can not be cancelled in this manner. Master Codes can be changed (as noted in section J.3), but not cancelled.**

### J.7 ENTERING THE TIME SET MODE



After entering the Master Code followed by [Command/#] [Program/0], the display will prompt for the User Code Number (USr will display). Enter the number 7 which is a special code used to enter the time of day programming mode. At this time the colon will light in the display and the green, yellow and red status indicator lights will light continuously on the keypad. See section M to set the time of day, day of week, auto arm time, window start times and lengths.

## K.1 GENERAL

Customer Unique programs may be entered and modified in the field to suit the installation. Some of the programs may be accessed by use of the Master Code, and the others by use of the Programmer code. In either case, the appropriate Program Mode must first be activated.

*The Program Mode may be activated* by code input at any Control Station. Depressing the *Program Mode Entry Switch* (located on the control unit's circuit board) for two (2) seconds will also allow modifications to be made to Programmer Code accessed programs, but not those accessed by the Master Code. The switch serves the purpose of allowing direct entry into the Program Mode in the event the programmer code is lost, and the control requires reprogramming.

The Program Mode may be activated by keypad entry only when the control is *disarmed*. However, the *Program Mode Entry Switch* allows the mode to be activated when the control is *armed or disarmed*.

While in the Program Mode, the 5-second timer for keypad entries is disabled. However, if no keys are pressed for four (4) minutes, the three beep error tone will sound and the control will exit the Program Mode to the disarmed state. The 4-minute timeout is the only timer running in the Program Mode.

During the time the unit is in the Program Mode, the control will remain in an inactive state (complete disarm), and will process no alarms including fire alarms. When the Program Mode is exited, the control will return to the normal disarm state regardless if the Program Mode was activated when the control was armed or disarmed.

When the Program Mode is successfully entered, a long beep will sound from the Control Station sounder, the green Status, yellow Partial and red Arm indicator lights will turn on continuously, and the display will remain blank.

At this time, a function, zone, etc., may be programmed by entering the 2-digit *Program Address* followed by the exact number of data entries, then terminated by [Command/#].

To display the input sequence, the first digit of the 2-digit program address will appear as the left-most digit. The second digit of the program address will then appear to the right of the first digit, while the remaining two right-most digits will remain blank.

The third digit entered starts entry of the data block of information. When the third digit is entered, the program address will disappear from the left side of the display, to be replaced by the number 1 representing the first digit of the data block. The two right-most digits will then display the value of the key just pressed.

When the fourth digit is entered, the left digits of the display will then display the number 2 (representing the second digit of the data block), and the right-most digits will display the value of the key just pressed. This sequence will continue until the [Command/#] key is entered to end the input sequence.

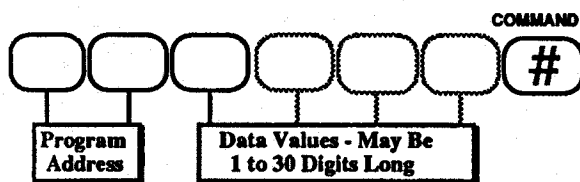
If the completed entry sequence is accepted by the control, a long beep will sound, and the program data will be recorded in memory. If an error is made (bad address, bad data value, or wrong number of data values), the three beep error tone will sound and the existing data in memory will not be changed.

After the long acceptance beep or three beep error tone is sounded, the display will blank and the control is ready to accept the next entry.

Pressing [Reset/\*] at any time in the Program Mode will cause the three beep error tone to sound, and cancels an entry sequence if not completed. Exceptions to this general rule are noted in the Phone Number and Account Code programs.

To cancel the Program Mode, press the [Reset/\*] key for two (2) seconds, then release. The three beep error tone will sound when the key is first depressed, followed by a long acceptance beep when the key is released. When the Program Mode is successfully cancelled, the indicator lights will return to normal operation and the control will return to the disarm state.

## K.2 BASIC FORMAT FOR PROGRAM CODE ENTRIES



All program coding will follow the same basic format for entry sequence. It may help to think of the entry sequence as consisting of three blocks of information; Program Address, Data values, and sequence terminator.

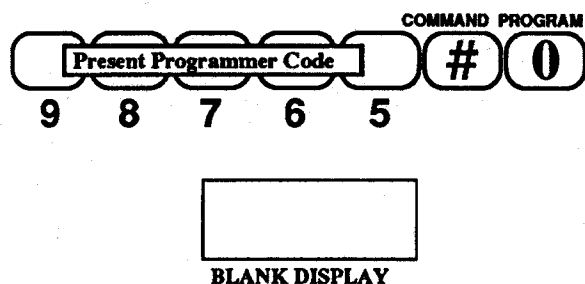
The Program Address will always consist of the first two (2) digits of the sequence. These two digits are actually telling the control which program the following data values in the sequence are to affect.

The last digit of the sequence is the [Command/#] terminator which tells the control that input has ended, and to execute the change if valid.

Between the program address and [Command/#] are the key-strokes necessary to provide the data for proper program execution. This data could be as short as one digit (used in EEPROM reset programming), to 30 digits (used in telephone number programming). Looked at another way, an entry sequence could be as short as four key-strokes, to as long as 33 key-strokes.



### K.3 ACTIVATE PROGRAM MODE

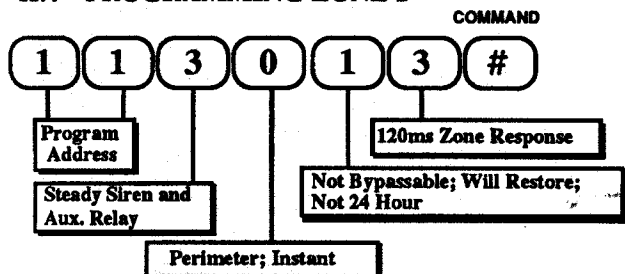


To activate the Programmer Mode, either press the Program Mode Entry switch located on the Control Unit's circuit board for two seconds, or enter the present programmer code at a Control Station keypad, followed by [Command/#]–[Program/0].

For the example at the left, we are still using the 5-digit *factory pre-set* programmer code 9 8 7 6 5, and the entry sequence at a Control Station is then [9]–[8]–[7]–[6]–[5]–[Command/#]–[Program/0]. Remember that the control must be *disarmed* when activating the Program Mode via a Control Station.

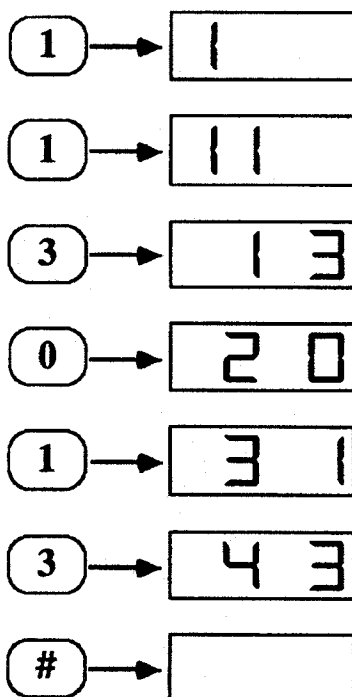
If the Program Mode has been entered successfully, a long beep will sound and the green *Status*, yellow *Partial* and red *Arm* indicator lights will turn *on* continuously, and the display will remain blank.

### K.4 PROGRAMMING ZONE 1



We wish to program zone 1 to perform within the following parameters: (See zone programming section L.1)

- Provide a steady siren and steady Auxiliary output upon alarm
- Function as a perimeter zone with instant alarm
- Can *not* be bypassed, and will *not* permit control to force arm if this zone is violated
- Restore to *Arm* status if zone violation clears
- Follow control's arm and disarm state; not a "24 Hour" zone
- Respond when zone is violated for any time greater than 120 milli-seconds.



The example to the lower left shows the proper entry sequence to achieve the zone response we are looking for. (For other variations, please consult Section L or M, "Program Detail Guide".)

The first two keys pressed represent the 2-digit *Program Address*. The first digit will appear as the left-most digit.

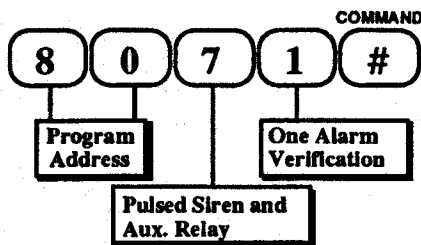
The second digit will appear to the right of the first digit, and the full address is displayed.

The third digit entered is the start of the data values. When entered, the program address will be replaced by the number 1, which represents the first digit of the data information. The number 3, that appears as the right-most digit, is the value of the key just pressed.

When the next key is pressed, the left side of the display advances to the number 2 to indicate the second data digit entered, while the right displays the value of the key just entered.

This display sequence will continue until the [Command/#] key is depressed to end the input sequence. At that time, the sounder should indicate a long beep verifying that the control has accepted the input sequence, and the display will blank in preparation for the next input.

## K.5 PROGRAMMING THE FIRE ZONE

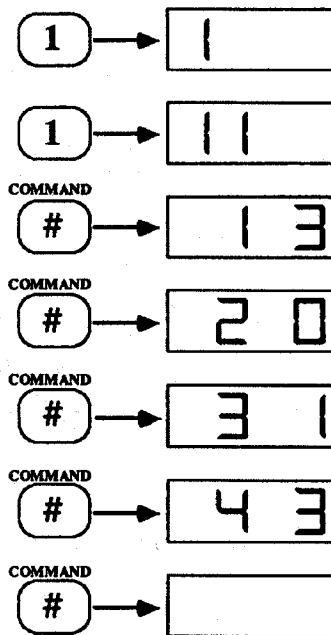


The fire zone program example to the left will cause the fire zone to perform within the following parameters:

- Provide a pulsed siren and pulsed Auxiliary output upon an alarm
- Verify an initial zone fire alarm by electronically disconnecting detector power for 10 seconds. Any fire zone alarm then received within the next four (4) minutes will cause a control unit fire alarm.

The example to the left shows the proper entry sequence to achieve the fire zone response we are looking for. (For other variations, please consult Section L or M, "Program Detail Guide".) (See fire zone programming section L.13)

## K.6 READ BACK DISPLAY



Program data information can be read back for verification at any time while in the Program Mode.

Starting with a blank display, first enter only the 2-digit Program Address. From that point, continue to momentarily depress the [Command/#] key until the display again blanks.

The example to the left shows the read-back verification for the example used in Section K.4. After entering [1]–[1] to establish the program address, depressing the [Command/#] next will replace the program address with a display indicating that the first data digit is a 3.

Depressing the [Command/#] a second time displays the second data digit, which is a zero (0).

Depressing the [Command/#] keys two more times displays the third data digit (a number 1), and the fourth (a number 3).

Depressing the [Command/#] one more time will then blank the display.

**NOTE:** After entering the Program Address and depressing the [Command/#] the first time, entering any other key but the [Command/#] key will cause the three beep error tone, and the display will blank. The program being displayed will not change, and the control is ready for the next input.

## K.7 CANCEL THE PROGRAM MODE



To cancel the Program Mode, press the [Reset/\*] key for two(2) seconds, then release. A long beep after the key is released will signal cancellation of the Program Mode, and the control will return to the disarm state.

## L.1 ZONE PROGRAMMING - ZONES 1 THROUGH 14

See the programming sheet at the end of this manual for the zone defaults.

COMMAND

#

## Program Address:

11 = Zone 1	24 = Zone 9
12 = Zone 2	25 = Zone 10
13 = Zone 3	26 = Zone 11
14 = Zone 4	27 = Zone 12
15 = Zone 5	28 = Zone 13
16 = Zone 6	29 = Zone 14
17 = Zone 7	
18 = Zone 8	

See the programming sheet at the end of this manual for the zone defaults.

## Data Digit 1:

- 0 = Silent
- 1 = Steady Siren and Sounder; Aux. Relay no change
- 2 = Steady Aux. Relay and Sounder; Siren no change
- 3 = Steady Siren, Sounder and Aux. Relay
- 4 = Steady Siren- Armed; Pulsed Sounder- Disarmed
- 5 = Pulsed Siren and Sounder; Aux. Relay no change
- 6 = Pulsed Aux. Relay and Sounder; Siren no change
- 7 = Pulsed Siren, Sounder and Aux. Relay
- 8 = Invisible Zone; Silent and No Display
- 9 = Silent, but Steady Siren on Communicator Failure

## Data Digit 2:

- 0 = Perimeter Instant Zone, no Day Monitor
- 1 = Interior Instant Zone, no Day Monitor
- 2 = Entry/Exit Delay Zone, no Day Monitor
- 3 = Interior Entry/Exit Delay Follower Zone, no Day Monitor
- 4 = Perimeter Instant Zone with Day Monitor
- 5 = Interior Instant Zone with Day Monitor
- 6 = Entry/Exit Delay Zone with Day Monitor
- 7 = Interior Entry/Exit Delay Follower Zone with Day Monitor
- 8 = Entry/Exit Delay Zone on Circuit Open, but Perimeter Instant on Circuit Short
- 9 = Interior Delay Follower Zone on Circuit Open, but Instant on Circuit Short

## Data Digit 4:

- 0 = 600 msec Zone Response; No Trouble
- 1 = 400 msec Zone Response; No Trouble
- 2 = 240 msec Zone Response; No Trouble
- 3 = 120 msec Zone Response; No Trouble
- 4 = 600 msec Zone Response; Trouble
- 5 = 400 msec Zone Response; Trouble
- 6 = 240 msec Zone Response; Trouble
- 7 = 120 msec Zone Response; Trouble
- 8 = Arm/Disarm Keyswitch Input
- 9 = Permanent Shunt

No Trouble = Alarm on Circuit Short or Open; No Trouble Indication.

Trouble = Alarm on Circuit Short; Trouble Indication on Circuit Open. See trouble (burglar zone) section Q.

*Arm/Disarm Keyswitch input not to be used on UL certificated installations.*

## Data Digit 3:

- |   |                          |             |
|---|--------------------------|-------------|
| 0 = Bypassable;   | Will Restore;            | Not 24 Hour |
| 1 = Not Bypassable;                                       | Will Restore;            | Not 24 Hour |
| 2 = Bypassable;   | Will <i>not</i> Restore; | Not 24 Hour |
| 3 = Not Bypassable;                                       | Will <i>not</i> restore; | Not 24 Hour |
| 4 = Bypassable;   | Will Restore;            | 24 Hour     |
| 5 = Not Bypassable;                                       | Will Restore;            | 24 Hour     |
| 6 = Bypassable;   | Will <i>not</i> Restore; | 24 Hour     |
| 7 = Not Bypassable;                                       | Will <i>not</i> restore; | 24 Hour     |
| 8 = Bypassable only by User Codes 1 and 2;                | Will Restore;            | 24 Hour     |
| 9 = Special area zone (see Special Area arming section Q) |                          |             |

For the recommended zone programming codes see the next page.

**Recommended zone programming:****See section L.4 for zone reporting**

<b>PERIMETER:</b>	<u>Restoral</u> No trouble	<u>Restoral</u> Trouble	<u>No restoral</u> No trouble	<u>No restoral</u> Trouble
Entry/exit - no day monitor	1200	1204	1220	1224
with day monitor	1600	1604	1620	1624
Instant - no day monitor	1000	1004	1020	1024
with day monitor	1400	1404	1420	1424
Entry/exit on open & instant on short	1800	1804	1820	1824

**INTERIOR:**

Delay - no day monitor	1300	1304	1320	1324
with day monitor	1700	1704	1720	1724
Instant - no day monitor	1100	1104	1120	1124
with day monitor	1500	1504	1520	1524
Delay on open & instant on short	1900	1904	1920	1924

**24 Hour zones:**

Panic (silent)	0050	0054	0070	0074
Panic (invisible)	8050	8054	8070	8074
Panic (loud)	1050	1054	1070	1074

Keyswitch	
silent tamper alarm	0008
loud tamper alarm	1008

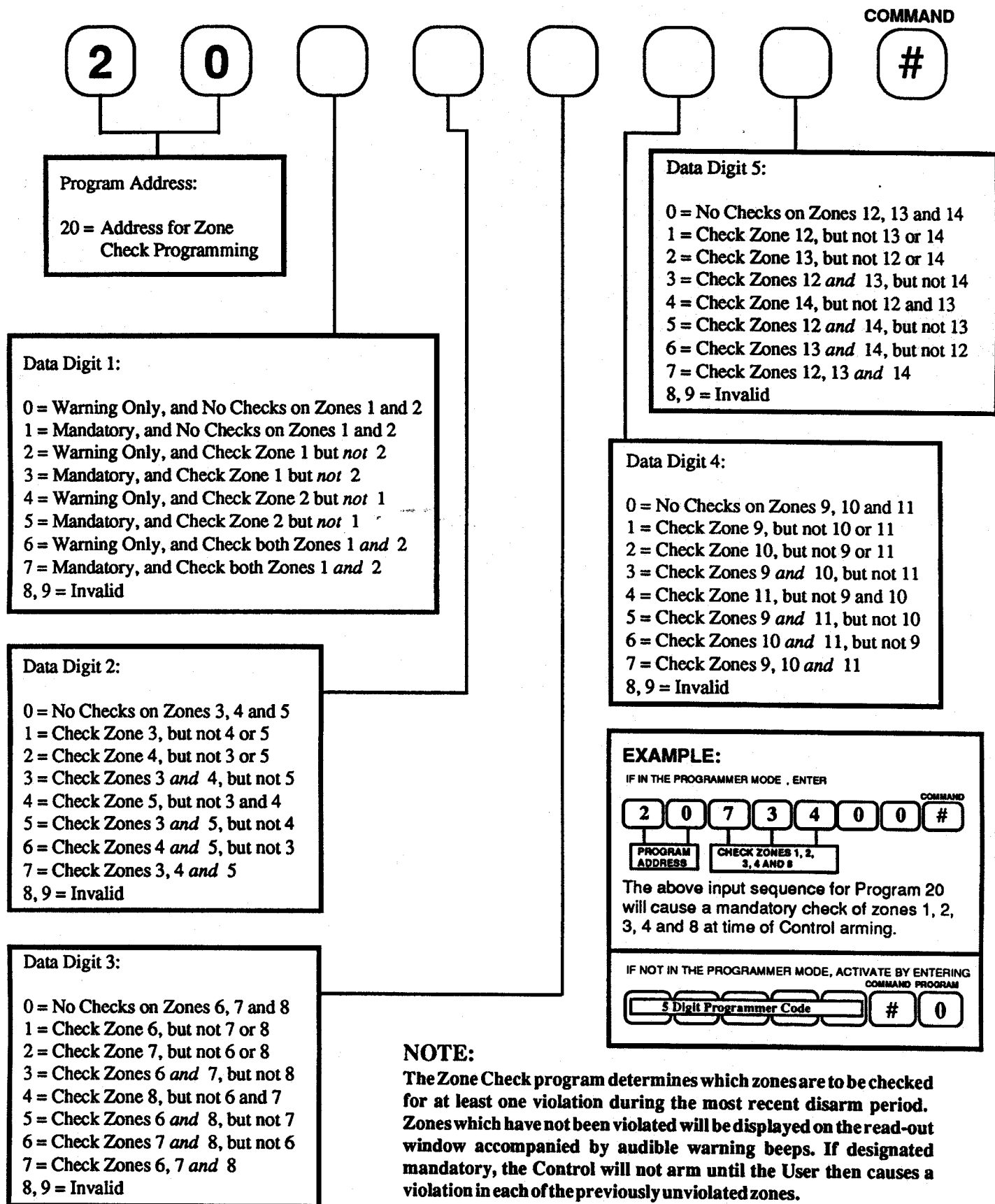
Permanent shunt	0009
-----------------	------

Special area zone	4090
-------------------	------

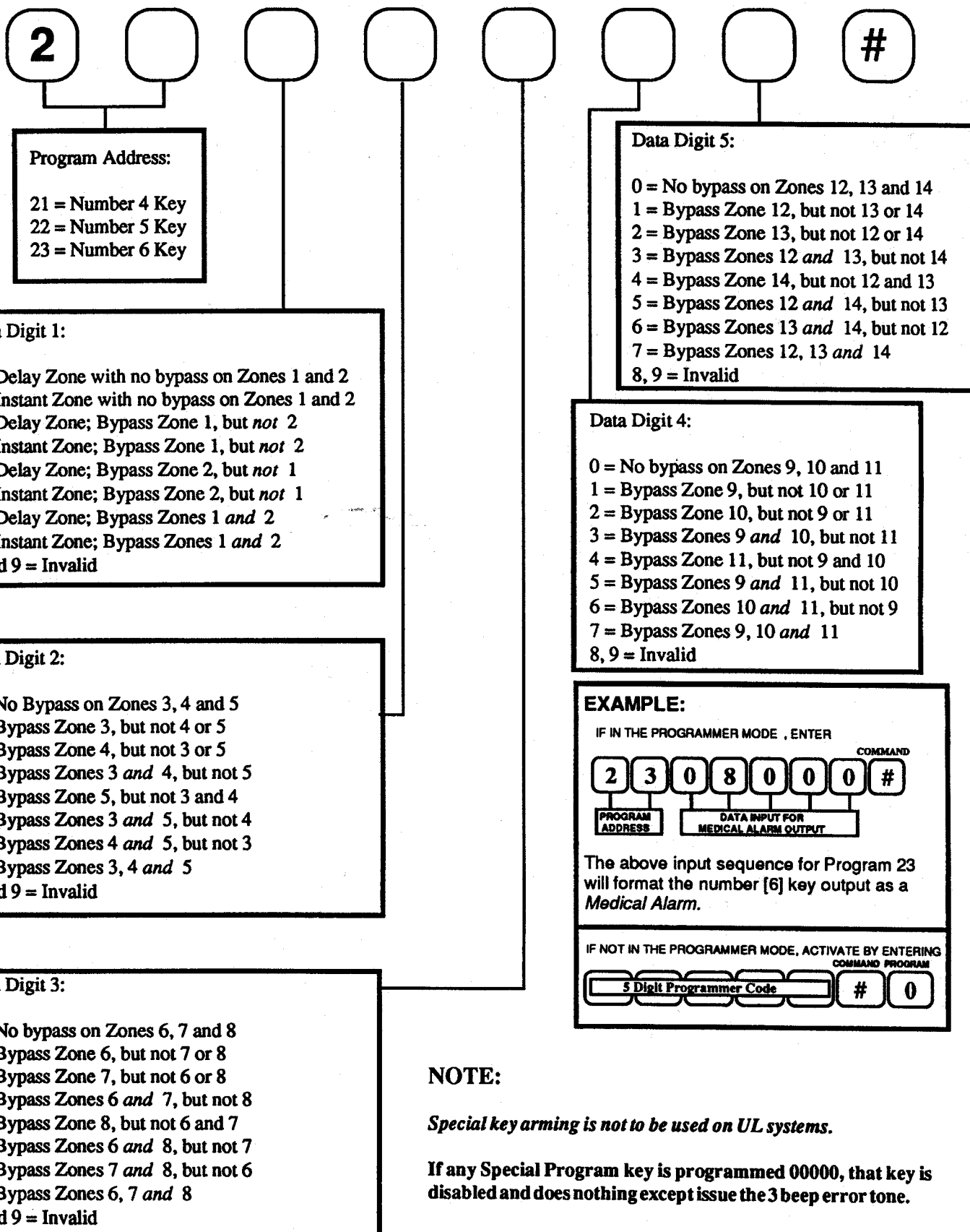
The above codes will sound a steady siren, to change the output substitute the following codes for the first digit.

- 0 = Silent
- 1 = Steady Siren and Sounder; Aux. Relay no change
- 2 = Steady Aux. Relay and Sounder; Siren no change
- 3 = Steady Siren, Sounder and Aux. Relay
- 4 = Steady Siren- Armed; Pulsed Sounder- Disarmed
- 5 = Pulsed Siren and Sounder; Aux. Relay no change
- 6 = Pulsed Aux. Relay and Sounder; Siren no change
- 7 = Pulsed Siren, Sounder and Aux. Relay
- 8 = Invisible Zone; Silent and No Display
- 9 = Silent, but Steady Siren on Communicator Failure

## L.2 ZONE CHECK PROGRAMMING - (default = 00000, disabled)



COMMAND



**NOTE:**

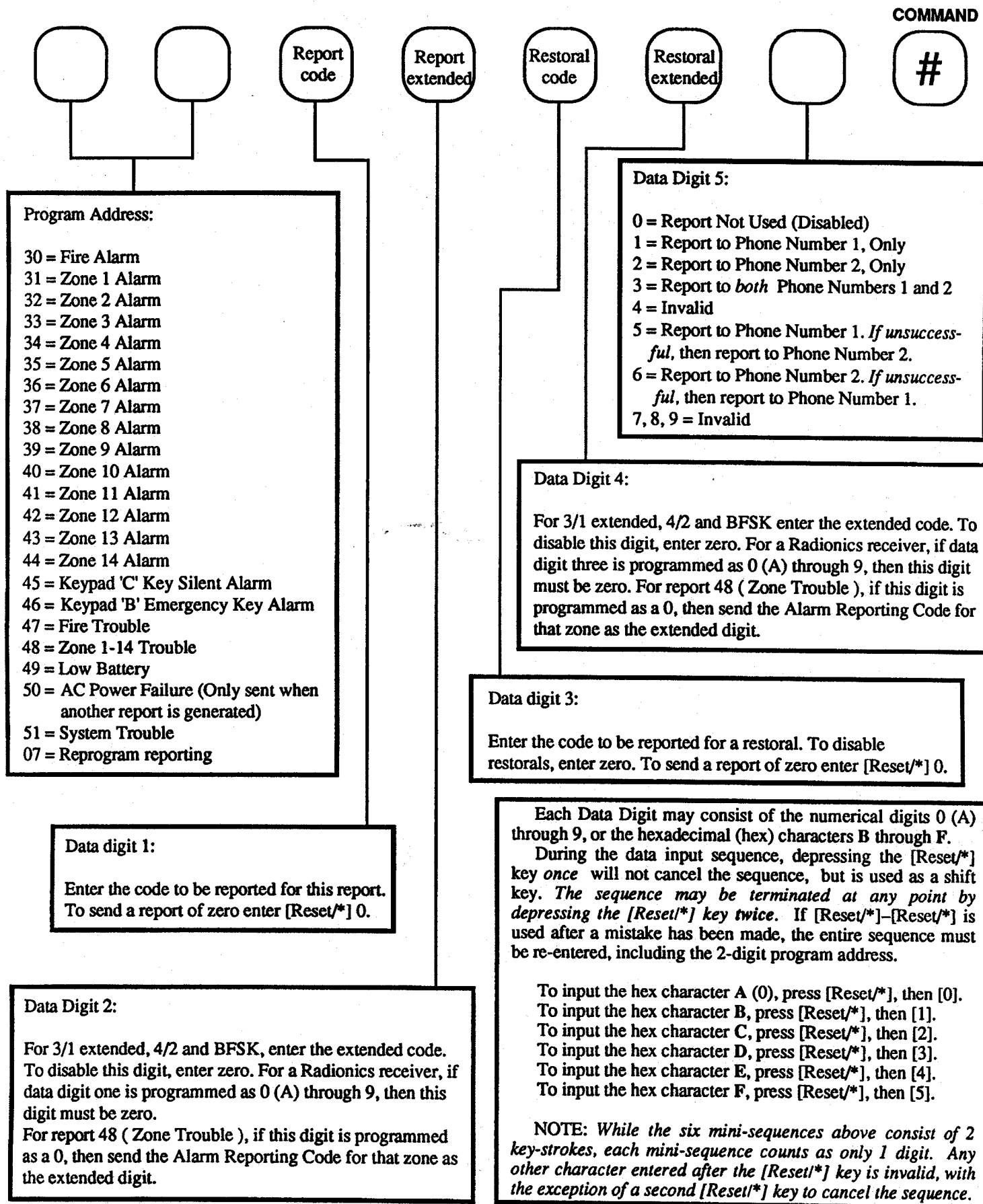
*Special key arming is not to be used on UL systems.*

**If any Special Program key is programmed 00000, that key is disabled and does nothing except issue the 3 beep error tone.**

## L.4 REPORT PROGRAMMING FOR REPORTS WITH RESTORAL

See the programming sheet at the end of this manual for the report defaults.

COMMAND



### Program Address:

30 = Fire Alarm  
31 = Zone 1 Alarm  
32 = Zone 2 Alarm  
33 = Zone 3 Alarm  
34 = Zone 4 Alarm  
35 = Zone 5 Alarm  
36 = Zone 6 Alarm  
37 = Zone 7 Alarm  
38 = Zone 8 Alarm  
39 = Zone 9 Alarm  
40 = Zone 10 Alarm  
41 = Zone 11 Alarm  
42 = Zone 12 Alarm  
43 = Zone 13 Alarm  
44 = Zone 14 Alarm  
45 = Keypad 'C' Key Silent Alarm  
46 = Keypad 'B' Emergency Key Alarm  
47 = Fire Trouble  
48 = Zone 1-14 Trouble  
49 = Low Battery  
50 = AC Power Failure (Only sent when another report is generated)  
51 = System Trouble  
07 = Reprogram reporting

### Data digit 1:

Enter the code to be reported for this report.  
To send a report of zero enter [Reset/\*] 0.

### Data Digit 2:

For 3/1 extended, 4/2 and BFSK, enter the extended code. To disable this digit, enter zero. For a Radionics receiver, if data digit one is programmed as 0 (A) through 9, then this digit must be zero.  
For report 48 ( Zone Trouble ), if this digit is programmed as a 0, then send the Alarm Reporting Code for that zone as the extended digit.

### Data Digit 5:

0 = Report Not Used (Disabled)  
1 = Report to Phone Number 1, Only  
2 = Report to Phone Number 2, Only  
3 = Report to both Phone Numbers 1 and 2  
4 = Invalid  
5 = Report to Phone Number 1. If unsuccessful, then report to Phone Number 2.  
6 = Report to Phone Number 2. If unsuccessful, then report to Phone Number 1.  
7, 8, 9 = Invalid

### Data Digit 4:

For 3/1 extended, 4/2 and BFSK enter the extended code. To disable this digit, enter zero. For a Radionics receiver, if data digit three is programmed as 0 (A) through 9, then this digit must be zero. For report 48 ( Zone Trouble ), if this digit is programmed as a 0, then send the Alarm Reporting Code for that zone as the extended digit.

### Data digit 3:

Enter the code to be reported for a restoral. To disable restorals, enter zero. To send a report of zero enter [Reset/\*] 0.

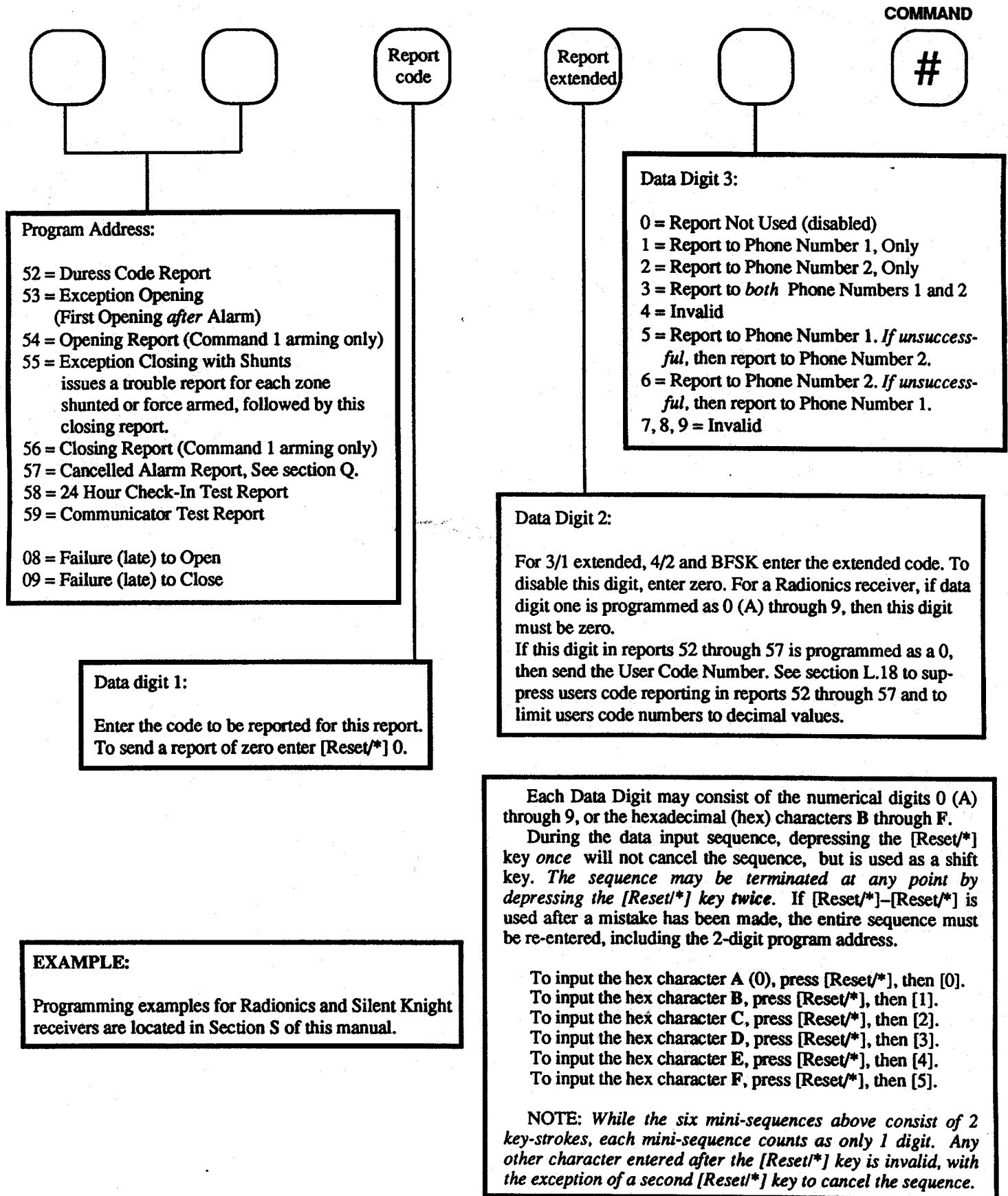
Each Data Digit may consist of the numerical digits 0 (A) through 9, or the hexadecimal (hex) characters B through F.

During the data input sequence, depressing the [Reset/\*] key *once* will not cancel the sequence, but is used as a shift key. The sequence may be terminated at any point by depressing the [Reset/\*] key *twice*. If [Reset/\*]—[Reset/\*] is used after a mistake has been made, the entire sequence must be re-entered, including the 2-digit program address.

To input the hex character A (0), press [Reset/\*], then [0].  
To input the hex character B, press [Reset/\*], then [1].  
To input the hex character C, press [Reset/\*], then [2].  
To input the hex character D, press [Reset/\*], then [3].  
To input the hex character E, press [Reset/\*], then [4].  
To input the hex character F, press [Reset/\*], then [5].

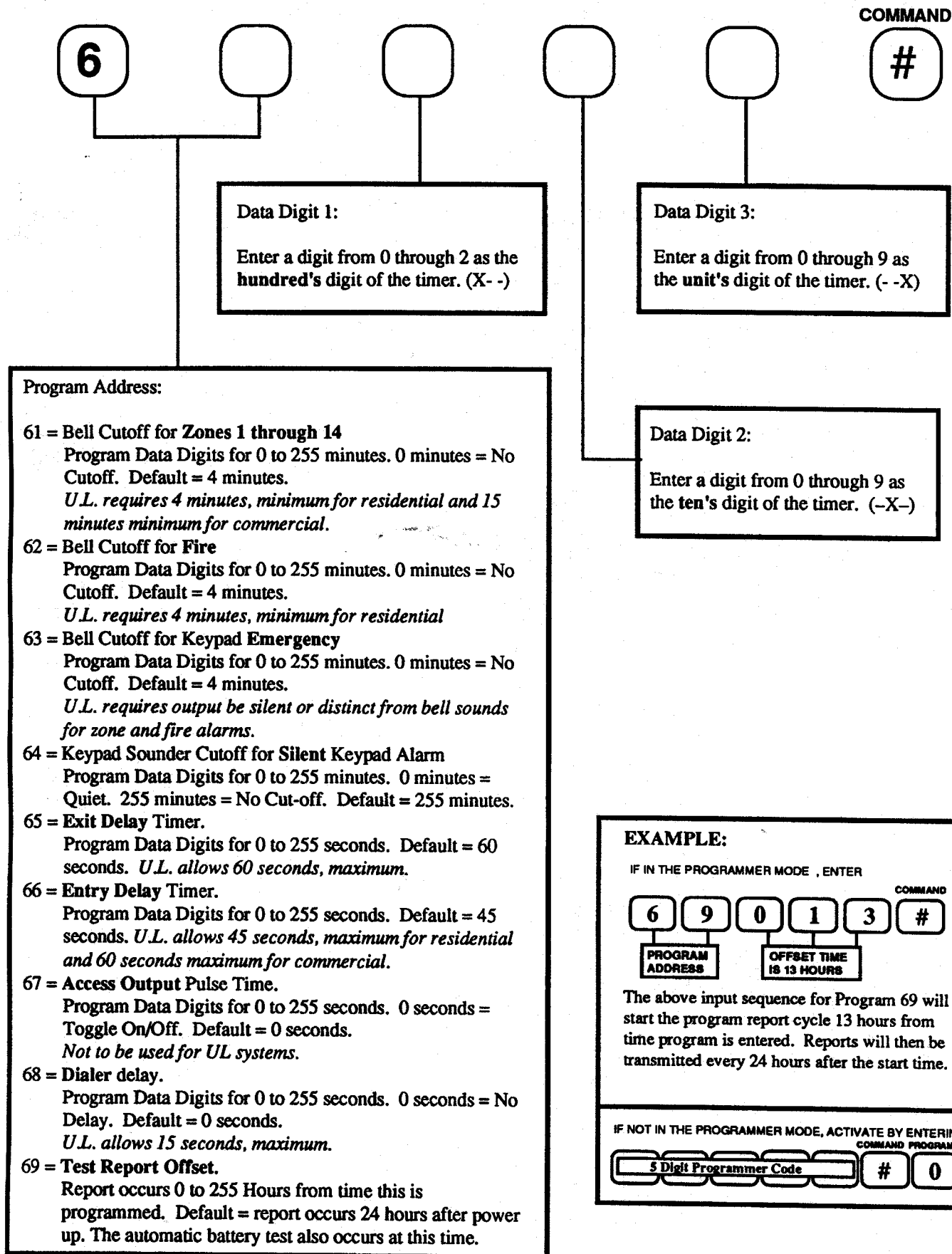
NOTE: While the six mini-sequences above consist of 2 key-strokes, each mini-sequence counts as only 1 digit. Any other character entered after the [Reset/\*] key is invalid, with the exception of a second [Reset/\*] key to cancel the sequence.

## L.5 REPORT PROGRAMMING FOR REPORTS *WITHOUT* RESTORAL - (default = 000, disabled)



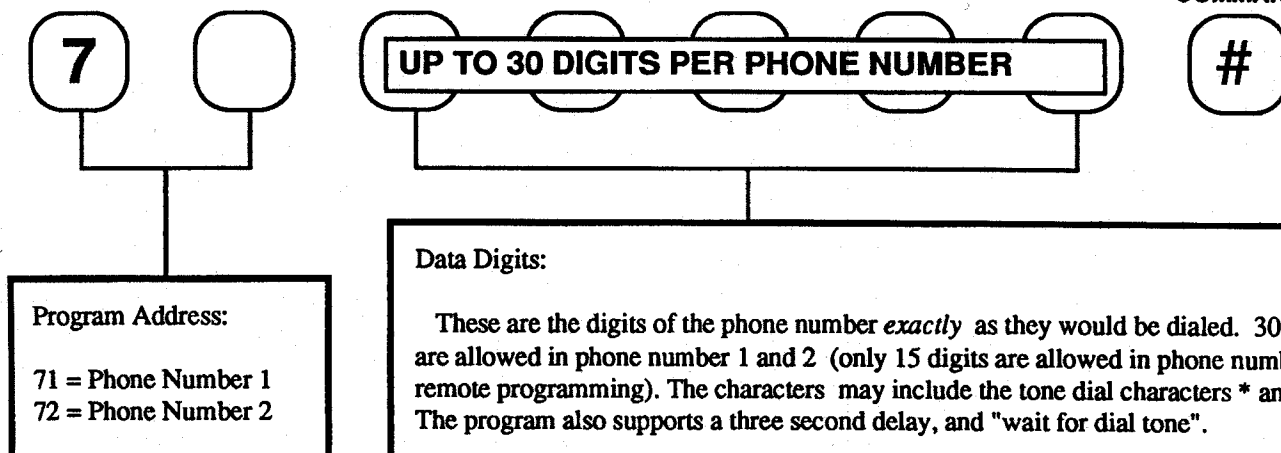


## L.6 TIMER (SYSTEM) PROGRAMMING



## L.7 PHONE NUMBER PROGRAMMING - (default = disabled)

COMMAND



### NOTE:

It is recommended that the phone line, to which the 7100 is connected, not have a call waiting feature. If it must have call waiting, then program the code to disable call waiting and a three second delay before the phone number. This will prevent incoming call(s) from interrupting a communication. For example, call waiting can be disabled in many areas by dialing \*70 before the phone number for tone dial and 1170 for pulse dial.

### Data Digits:

These are the digits of the phone number *exactly* as they would be dialed. 30 digits are allowed in phone number 1 and 2 (only 15 digits are allowed in phone number 3, remote programming). The characters may include the tone dial characters \* and #. The program also supports a three second delay, and "wait for dial tone".

During the data input sequence, depressing the [Reset/\*] key *once* will not cancel the sequence, but is used as a shift key. *The sequence may be terminated at any point by depressing the [Reset/\*] key twice.* If [Reset/\*]–[Reset/\*] is used after a mistake has been made, the entire sequence must be re-entered, including the 2-digit line number.

To input the keypad character \*, press [Reset/\*], then [1] (Hex "B").

To input the keypad character #, press [Reset/\*], then [2] (Hex "C").

To input a 3 second delay, press [Reset/\*], then [3] (Hex "D").

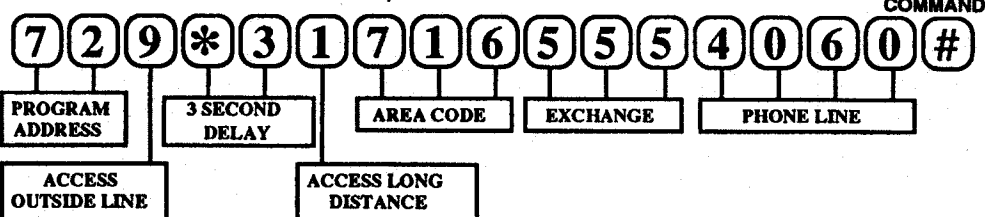
To input a "Wait for dial tone", press [Reset/\*], then [4] (Hex "E"). Normally the 7100 waits seven seconds and dials without listening for dialtone. Programming the first character of the phone number as "E" will cause the 7100 to dial as soon as dialtone is detected. If the phone system is overloaded dialtone may be very slow in coming therefore an "E" will wait as long as 30 seconds for dialtone.

To disable a phone number, press [Reset/\*], then [5] (Hex "F") as the first data digit, then press [Command/#]. Also program Line Number 75 or 76 as 000000.

**NOTE:** While the four mini-sequences above consist of 2 key-strokes, each mini-sequence counts as only 1 digit. Any other character entered after the [Reset/\*] key is invalid, with the exception of a second [Reset/\*] key to cancel the sequence.

### EXAMPLE:

IF IN THE PROGRAMMER MODE , ENTER

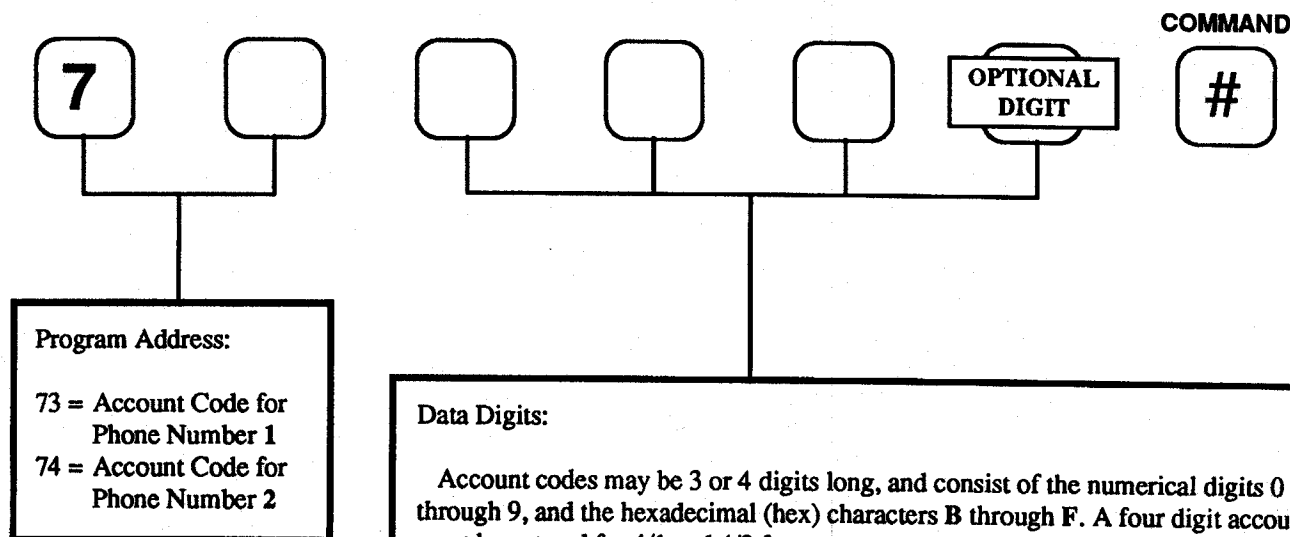


The above Phone Number 2 program is a long-distance call for a control unit connected to a phone system requiring the access digit 9 for an outside line.

IF NOT IN THE PROGRAMMER MODE, ACTIVATE BY ENTERING  
COMMAND PROGRAM



## L.8 ACCOUNT CODE PROGRAMMING - (default = disabled)



To input the hex character B, press [Reset/\*], then [1].

To input the hex character C, press [Reset/\*], then [2].

To input the hex character D, press [Reset/\*], then [3].

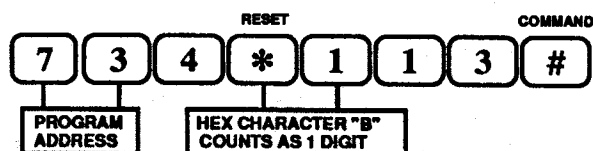
To input the hex character E, press [Reset/\*], then [4].

To input the hex character F, press [Reset/\*], then [5].

**NOTE:** While the five mini-sequences above consist of 2 key-strokes, each mini-sequence counts as only 1 digit. Any other character entered after the [Reset/\*] key is invalid, with the exception of a second [Reset/\*] key to cancel the sequence.

### EXAMPLE:

IF IN THE PROGRAMMER MODE , ENTER

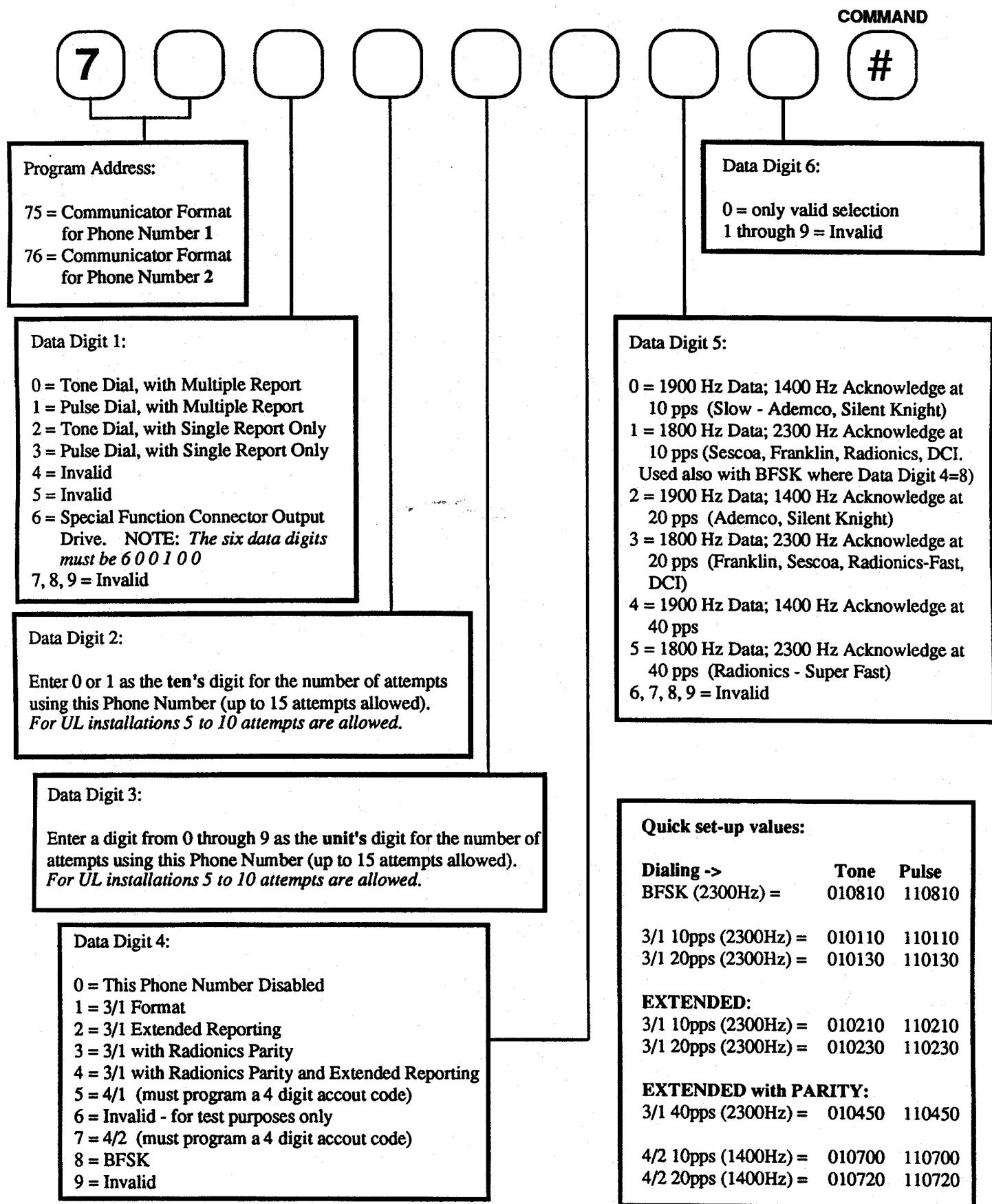


The above program assigns the Account Number 4B13 to Phone Number 1. Note that the hex character B has been entered by pressing the keys [Reset/\*]–[1].

IF NOT IN THE PROGRAMMER MODE, ACTIVATE BY ENTERING  
COMMAND PROGRAM

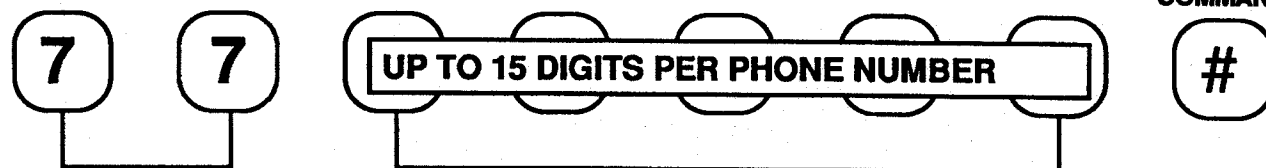


## L.9 COMMUNICATION FORMAT PROGRAMMING - (default = 000000, disabled)



## L.10 REMOTE PROGRAMMER PHONE NUMBER PROGRAMMING - (default = disabled)

COMMAND



Program Address:

77 = Phone Number 3

### Data Digits:

These are the digits of the phone number *exactly* as they would be dialed. 30 digits are allowed in phone number 1 and 2 (only 15 digits are allowed in phone number 3, remote programming). The characters may include the tone dial characters \* and #. The program also supports a three second delay, and "wait for dial tone".

During the data input sequence, depressing the [Reset/\*] key *once* will not cancel the sequence, but is used as a shift key. *The sequence may be terminated at any point by depressing the [Reset/\*] key twice.* If [Reset/\*]–[Reset/\*] is used after a mistake has been made, the entire sequence must be re-entered, including the 2-digit line number.

To input the keypad character \*, press [Reset/\*], then [1] (Hex "B").

To input the keypad character #, press [Reset/\*], then [2] (Hex "C").

To input a 3 second delay, press [Reset/\*], then [3] (Hex "D").

To input a "Wait for dial tone", press [Reset/\*], then [4] (Hex "E"). Normally the 7100 waits seven seconds and dials without listening for dialtone. Programming the first character of the phone number as "E" will cause the 7100 to dial as soon as dialtone is detected. If the phone system is overloaded dialtone may be very slow in coming therefore an "E" will wait as long as 30 seconds for dialtone.

To disable a phone number, press [Reset/\*], then [5] (Hex "F") as the first data digit, then press [Command/#]. Also program Line Number 75 or 76 as 000000.

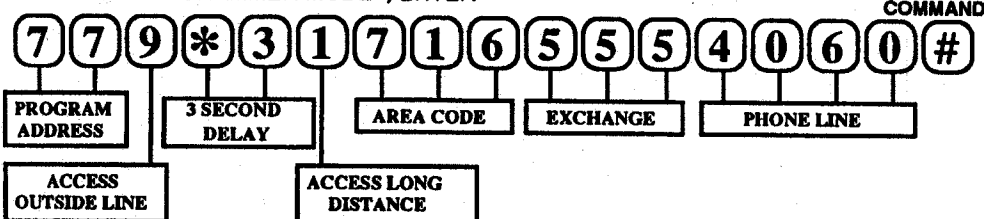
**NOTE:** While the four mini-sequences above consist of 2 key-strokes, each mini-sequence counts as only 1 digit. Any other character entered after the [Reset/\*] key is invalid, with the exception of a second [Reset/\*] key to cancel the sequence.

### NOTE:

It is recommended that the phone line, to which the 7100 is connected, not have a call waiting feature. If it must have call waiting, then program the code to disable call waiting and a three second delay before the phone number. This will prevent incoming call(s) from interrupting a communication. For example, call waiting can be disabled in many areas by dialing \*70 before the phone number for tone dial and 1170 for pulse dial.

### EXAMPLE:

IF IN THE PROGRAMMER MODE , ENTER



The above Phone Number 3 program is a long-distance call for a control unit connected to a phone system requiring the access digit 9 for an outside line.

IF NOT IN THE PROGRAMMER MODE, ACTIVATE BY ENTERING  
COMMAND PROGRAM

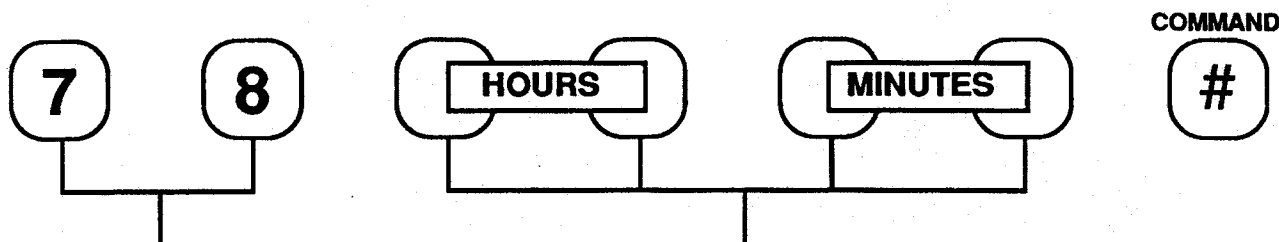


### NOTE:

See "Remote Programming" section Q.

For automatic dial-out to the remote programmer program lines 78 and 79 must also be programmed.

## L.11 AUTOMATIC HISTORY REPORT AND REPROGRAMMING TIME - (default = 0000, disabled)



Program Address:

78 = Address for  
History report-  
ing time.

Data Digits 1 through 4:

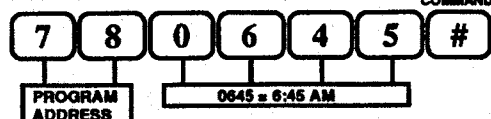
Enter four digits for the automatic history reporting  
time in 24 hour format.

For example:

0000 = Unprogrammed  
0001 = 12:01 AM  
0010 = 12:10 AM  
1159 = 11:59 AM  
1200 = 12 Noon  
1201 = 12:01 PM  
1210 = 12:10 PM  
2359 = 11:59 PM  
2400 = 12 Midnight

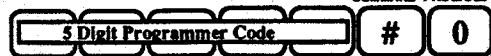
### EXAMPLE

IF IN THE USER PROGRAM MODE<sup>2</sup>, ENTER



The above input sequence will program the  
control to report to the remote programmer at  
6:45 AM.

IF NOT IN THE PROGRAMMER MODE, ACTIVATE BY ENTERING  
COMMAND PROGRAM



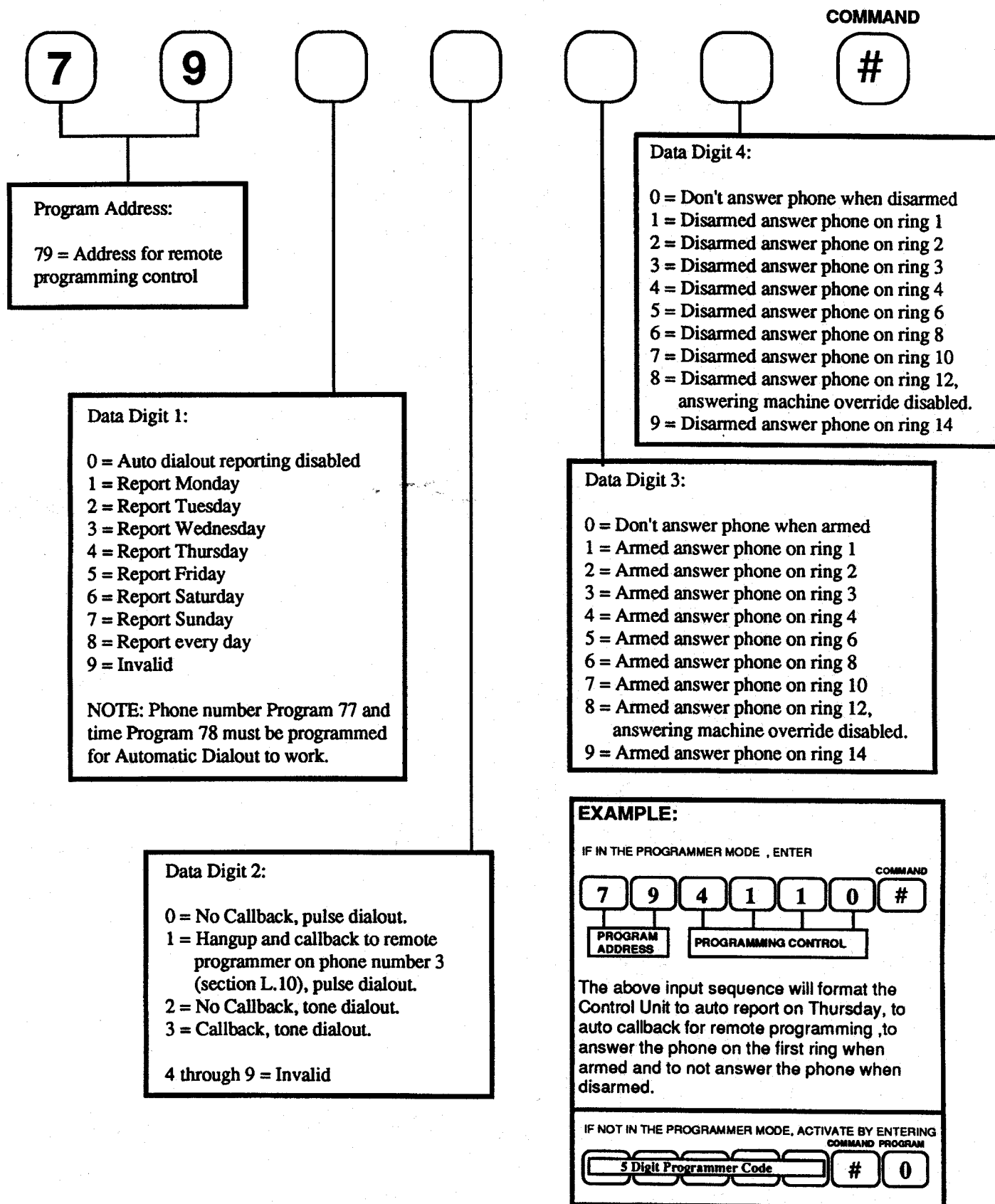
### NOTE:

See "Remote Programming" section Q.

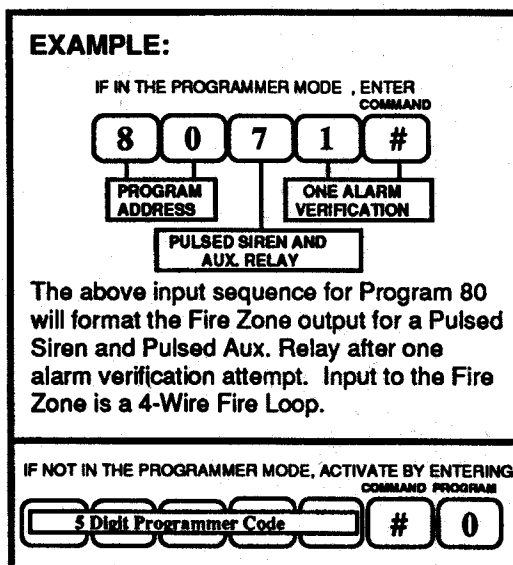
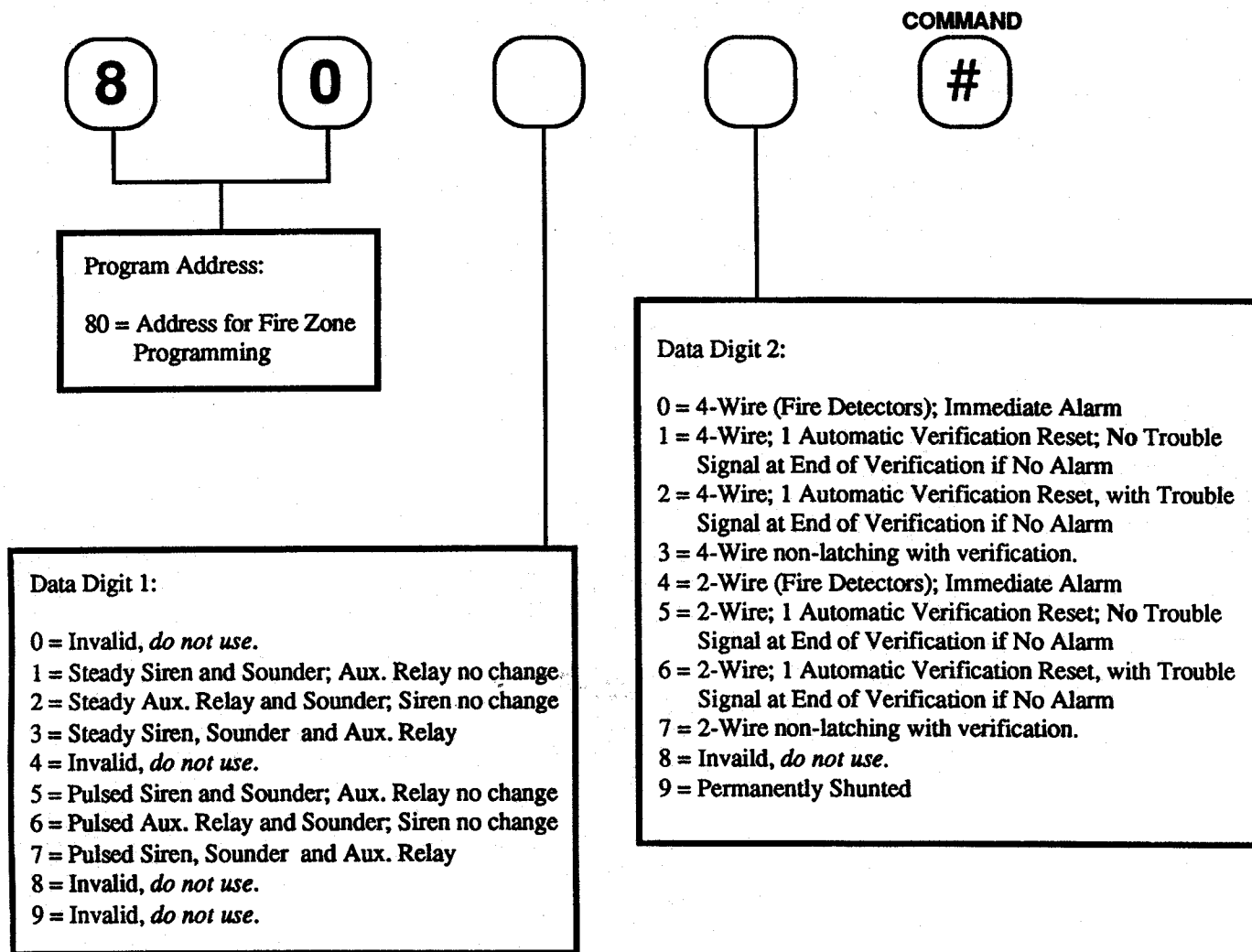
The day of week in Program 79 and phone  
number 3 in Program 77 must also be  
programmed for this feature to work.

The 7100 will automatically dial the phone number programmed in line 77, on the day programmed in line 79, digit 1, and at the time of day programmed in line 78. When the remote programmer answers, the history buffer will be automatically transferred. The 7100 may also be automatically reprogrammed by an unattended remote programmer at that time. This will also cause an automatic dial-out at 70 unreported events (out of the 96 event buffer), and if a low battery is detected while the AC power has failed. If the phone number in line 77 and the day of the week in line 79 are programmed, but the time of day in line 78 is not programmed, then auto dial-out will occur only at 70 unreported events, at low battery and at AC failure.

**L.12 REMOTE PROGRAMMING CONTROL** - (default = 0000, disabled, don't answer phone)  
See "Remote Programming" section Q.



**L.13 FIRE ZONE PROGRAMMING** - (default = 71, pulsed with verification)  
See "Smoke Detector Placement" section Q.





**L.14 GENERAL CONTROL PROGRAMMING** - (default = 4030, residential mode, loud keypad emergency, with swinger shunting and you may force arm three zones)

COMMAND

8

1

#

Program Address:

81 = Address for General Control Programming

Data Digit 4: See "Zone Status Display" in section Q.

0 = Disable Zone Status Display, Time Of Day Display, and the 'B' Emergency Key  
 1 = Activate Zone Status Display  
 2 = Activate Time Of Day Display  
 3 = Both 1 and 2 Above  
 4 = Activate 'B' Emergency Key, for silent or loud see data digit one.  
 5 = Both 1 and 4 Above  
 6 = Both 2 and 4 Above  
 7 = 1, 2 and 4 Above  
 8, 9 = Invalid

Data Digit 3: See "Force Arm" in section Q.

Enter a digit from 1 through 9 as the Number of Zones Allowed to Force Arm. If 0 (zero) is entered, Control will not Force Arm.  
*UL certificated installations must be programmed 0.*

Data Digit 2: See "Closing Ringback" in section Q.

0 = No Phone Line Test or Bell test upon Arming  
 1 = Test Phone Line but Not Bell upon Arming  
 2 = Test Bell but Not Phone Line upon Arming  
 3 = Test Phone Line and Bell upon Arming  
 4, 5, 6, 7, 8, 9 = Invalid

*For UL residential program 0, for UL commercial program 3.*

Data Digit 1: See "Swinger Shunt", "Residential Mode" and "Commercial Mode" in section Q.

0 = Residential Mode; Loud Keypad Emergency; NO Swinger Shunt  
 1 = Commercial Mode; Loud Keypad Emergency; NO Swinger Shunt  
 2 = Residential Mode; Silent Keypad Emergency; NO Swinger Shunt  
 3 = Commercial Mode; Silent Keypad Emergency; NO Swinger Shunt  
 4 = Residential Mode; Loud Keypad Emergency; with Swinger Shunt  
 5 = Commercial Mode; Loud Keypad Emergency; with Swinger Shunt  
 6 = Residential Mode; Silent Keypad Emergency; with Swinger Shunt  
 7 = Commercial Mode; Silent Keypad Emergency; with Swinger Shunt  
 8, 9 = Invalid

*UL certificated installations may only be programmed 1 or 3.*

**EXAMPLE:**

IF IN THE PROGRAMMER MODE, ENTER

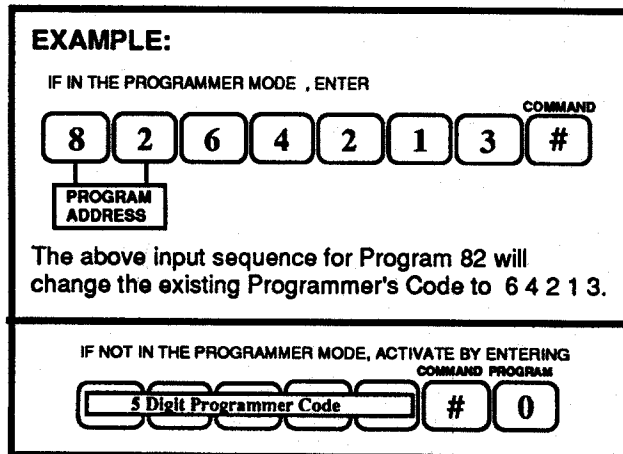
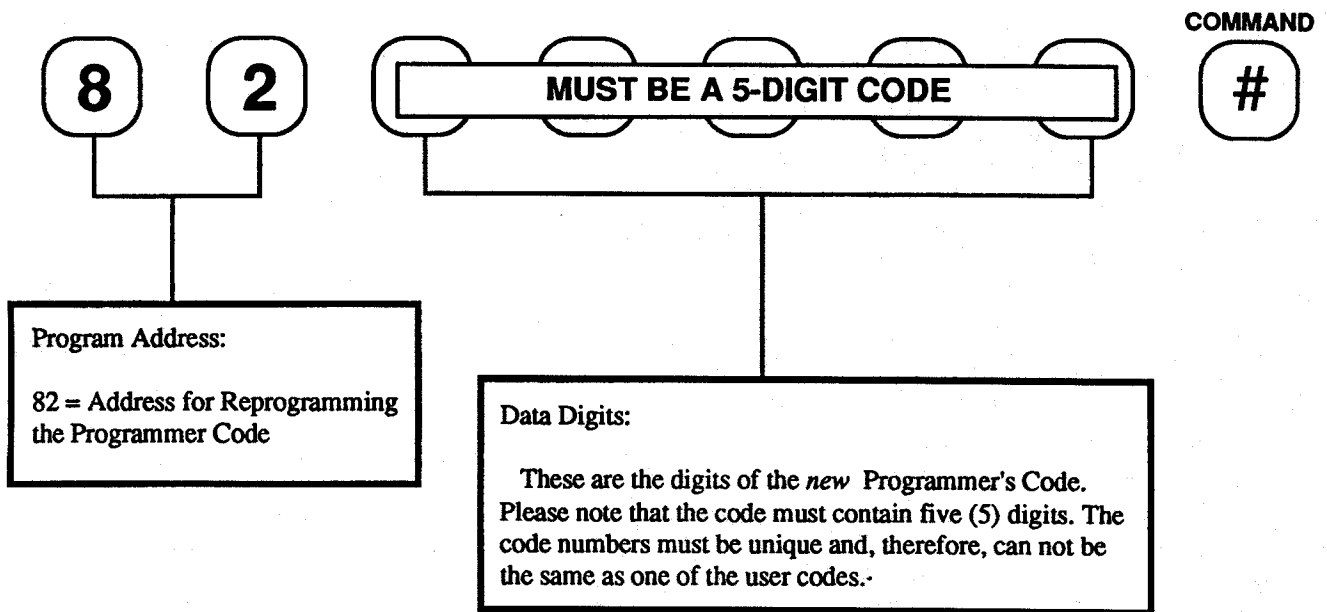
8 1 4 1 1 0 #  
 PROGRAM ADDRESS GENERAL PROGRAMMING

The above input sequence for Program 81 will format the Control Unit for Residential Mode with a siren upon a keypad emergency. On arming the control, the phone line will be tested, but not the siren. A maximum of 1 violated zone may be force arm shunted, and the zone status and time of day displays, along with keypad emergency are disabled. Swinger shunt is enabled.

IF NOT IN THE PROGRAMMER MODE, ACTIVATE BY ENTERING  
 COMMAND PROGRAM

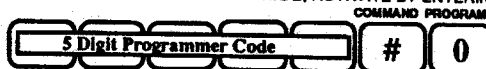
5 Digit Programmer Code # 0

## L.15 PROGRAMMER CODE PROGRAMMING - (default = 98765)



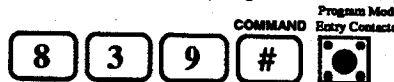
To use any of the following commands, the 7100 must be in the program mode. To get into this mode, enter the command sequence to the right or press and hold the program mode entry contactor (switch S1) on the 7100 control board for two seconds. When the program is entered, the green zone status, yellow partial status and red armed status indicator lights will be on steady. The default programmer code is 98765.

IF NOT IN THE PROGRAMMER MODE, ACTIVATE BY ENTERING

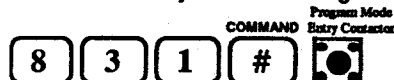


To reset the 7100 to the default parameters (shown on the programming worksheet at the end of the manual), enter the command sequence shown to the right. When the program mode entry contactor should be pressed, "PUSH" will be displayed. This command resets all parameters including the agency and remote pass codes used by the remote programmer to access the 7100 (phone numbers are not reset). After this command is used, the agency and remote pass codes will be "wildcards".

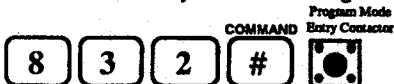
Re-initialize 7100 program to factory defaults



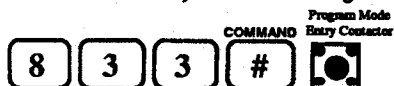
Write Personality Module storage area 1 program to 7100



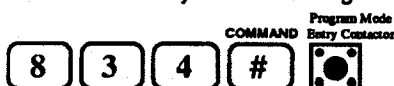
Write Personality Module storage area 2 program to 7100



Write Personality Module storage area 3 program to 7100



Write Personality Module storage area 4 program to 7100



The key sequences shown to the left transfer the programming from one of the four storage areas in a personality module to the 7100's program. Use the following procedure:

- 1) Remove AC power and the battery power.
- 2) Install the Personality Module in the option connector.
- 3) Enter the program mode (see top item above).
- 4) Enter one of the key sequences to the left.
- 5) Remove AC power and the battery power.
- 6) Remove the Personality Module.

Re-power the 7100, change the account code(s) and any other parameters that are different from the default program that was just downloaded, and you are done. If the word Err appears in the display, the EEPROM memory being written to is defective and will not take the new program. If a 3 beep error tone is heard, the Personality Module program is defective or unprogrammed, and can't be used.

The key-input sequences, shown to the right, transfer the programs from a 7100 to one of 4 storage areas in a Personality Module so that they, in turn, can be used to program other 7100s. Use the following procedure:

- 1) Remove AC power and the battery power.
- 2) Install the Personality Module in the option connector.
- 3) Enter the program mode (see top item above).
- 4) Enter one of the key sequences to the right.
- 5) Remove AC power and the battery power.
- 6) Remove the Personality Module.

If the 7100 has previously communicated with a remote programmer, then the agency and remote pass codes will be written into the Personality Module. This causes all subsequent 7100s programmed from this storage area of this Personality Module to be protected by the same agency and remote pass codes. To remove the agency and remote pass codes, reset the 7100's program to factory defaults using the sequence above. Then use the keypad to program the 7100 to the desired configuration, before using this command.

Write 7100 program to Personality Module storage area 1



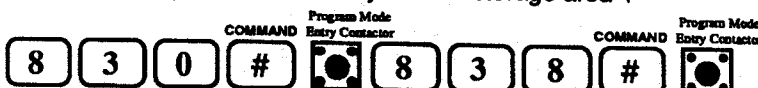
Write 7100 program to Personality Module storage area 2



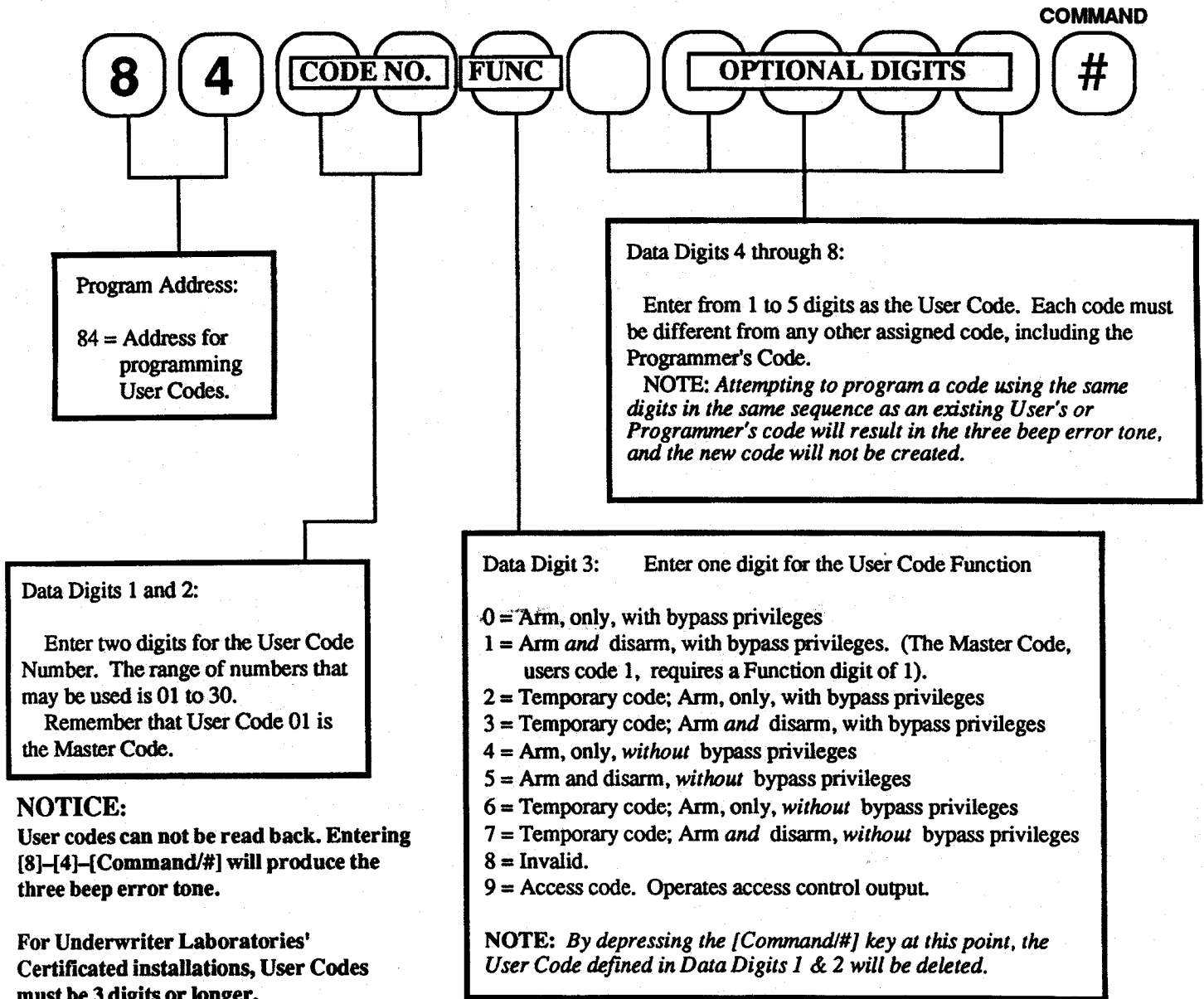
Write 7100 program to Personality Module storage area 3



Write 7100 program to Personality Module storage area 4

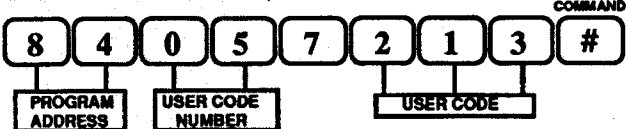


**L.17 USER CODE PROGRAMMING and CLEARING** - (default = users code 1 = 1234, all other users codes are disabled)



**EXAMPLE - PROGRAMMING A USER CODE**

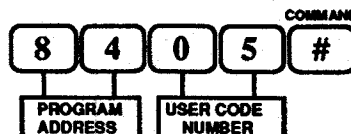
IF IN THE PROGRAMMER MODE , ENTER



The above input sequence will program temporary User Code Number 05 as 2 1 3, and with the ability to arm and disarm, but without shunt privileges.

**EXAMPLE - CLEARING A USER CODE**

IF IN THE PROGRAMMER MODE , ENTER



To clear or *delete* a User Code, enter Program 84 and the User Code Number, then [Command/#]. The function and user code digits are **NOT** entered. In the above example, User Code 05 will be deleted.

IF NOT IN THE PROGRAMMER MODE, ACTIVATE BY ENTERING



**COMMAND**

**8**

**5**

**#**

**Program Address:**

85 = Address for System Configuration.

**Data Digit 1:**

- 0 = 60 Hz AC, restore zone when sounders silence.
- 1 = 50 Hz AC, restore zone when sounders silence.
- 2 = 60 Hz AC, restore zone when zone restores.
- 3 = 50 Hz AC, restore zone when zone restores.
- 4 = 60 Hz AC, restore zone when sounders silence. Invert special function connector pins 1 - 7
- 5 = 50 Hz AC, restore zone when sounders silence. Invert special function connector pins 1 - 7
- 6 = 60 Hz AC, restore zone when zone restores. Invert special function connector pins 1 - 7
- 7 = 50 Hz AC, restore zone when zone restores. Invert special function connector pins 1 - 7
- 8 & 9 = invalid

**Data Digit 4:**

- 0 = test report each day
- 1 = test report each day
- 2 = test report each 2 days
- 3 = test report each 3 days
- 4 = test report each 4 days
- 5 = test report each 5 days
- 6 = test report each 6 days
- 7 = test report each 7 days
- 8 = test report each 28 days
- 9 = test report each hour

For UL commercial program 0.

**Data Digit 3:**

- 0 or 4 = keypad "A" key disabled, HEX users codes sent.
- 1 or 5 = keypad "A" key initiates a Fire Alarm, HEX users codes sent.
- 2 or 6 = keypad "A" key disabled, Decimal users codes sent.
- 3 or 7 = keypad "A" key initiates a Fire Alarm, Decimal users codes sent.
- 0 through 3 = send alarm report digit as trouble extended digit for 3/1 extended and BFSK reporting (normal setting).
- 4 through 7 = send alarm report extended digit as trouble extended digit for 3/1 extended and BFSK reporting.

**Data Digit 2:** See "Users Code Reporting" Section Q.

- 0 = Enable all users code reporting. Report 15 user codes
- 1 = Suppress users code reporting in open, close and exception close reports. Report 15 user codes
- 2 = Suppress users code reporting in exception open and cancel reports. Report 15 user codes
- 3 = Suppress users code reporting in open, close, exception close, exception open and cancel reports. Report 15 user codes
- 4 = Enable all users code reporting. Report 30 user codes
- 5 = Suppress users code reporting in open, close and exception close reports. Report 30 user codes
- 6 = Suppress users code reporting in exception open and cancel reports. Report 30 user codes
- 7 = Suppress users code reporting in open, close, exception close, exception open and cancel reports. Report 30 user codes
- 8 & 9 = invalid

**EXAMPLE:**

IF IN THE USER PROGRAM MODE\*, ENTER

**COMMAND**

**8 5 1 0 0 0 #**

**PROGRAM ADDRESS**

**50 Hz AC POWER**

The above input sequence for Program 85 instruct the control that it is operating off of 50 Hz AC power.

IF NOT IN THE PROGRAMMER MODE, ACTIVATE BY ENTERING

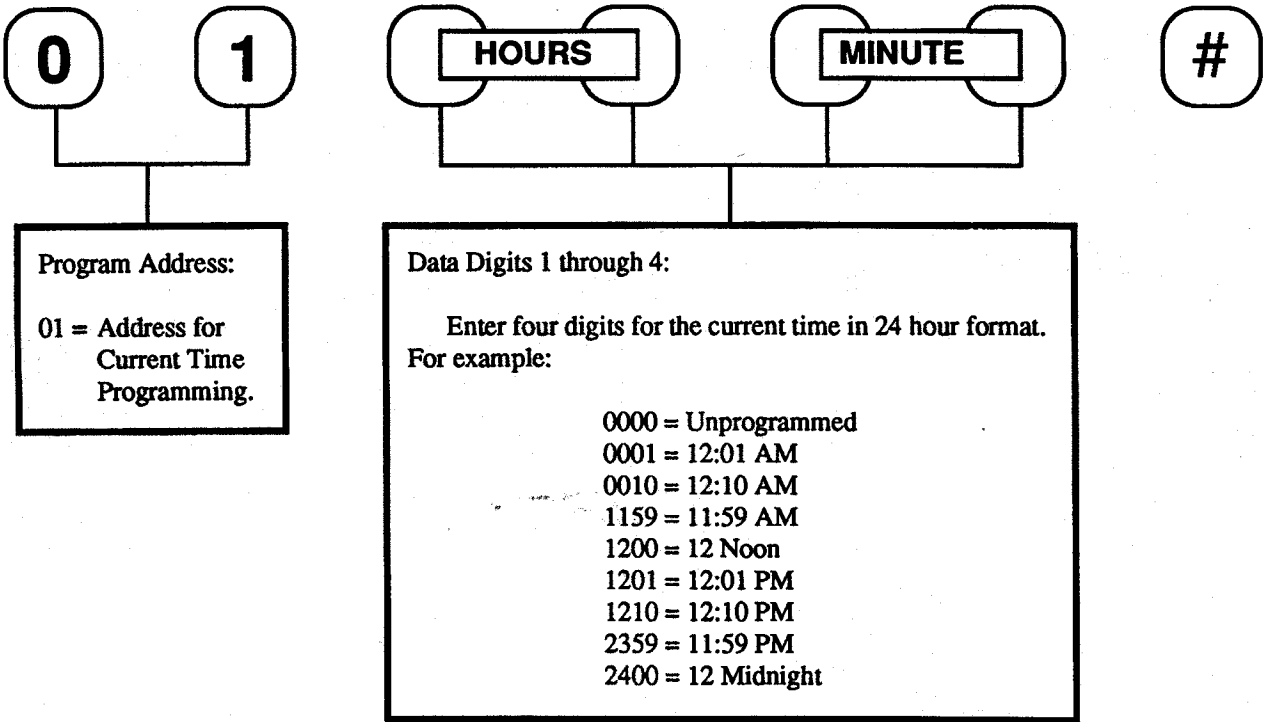
**COMMAND PROGRAM**

**5 Digit Programmer Code # 0**

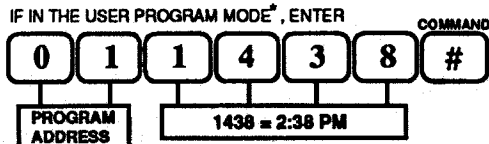
**NOTE:**  
This function is accessed by the **MASTER CODE** programming and not the programmer code.  
See section J.7 "Entering the Time Set Mode".

**M.1 CURRENT TIME PROGRAMMING** - (default = 0000, disabled)

COMMAND



**EXAMPLE**



The above input sequence will program the control to the current time of day ..... which, we hope, is 2:38 PM.

\* IF NOT IN THE USER PROGRAM MODE, FIRST ACTIVATE MODE BY ENTERING COMMAND PROGRAM ALERT



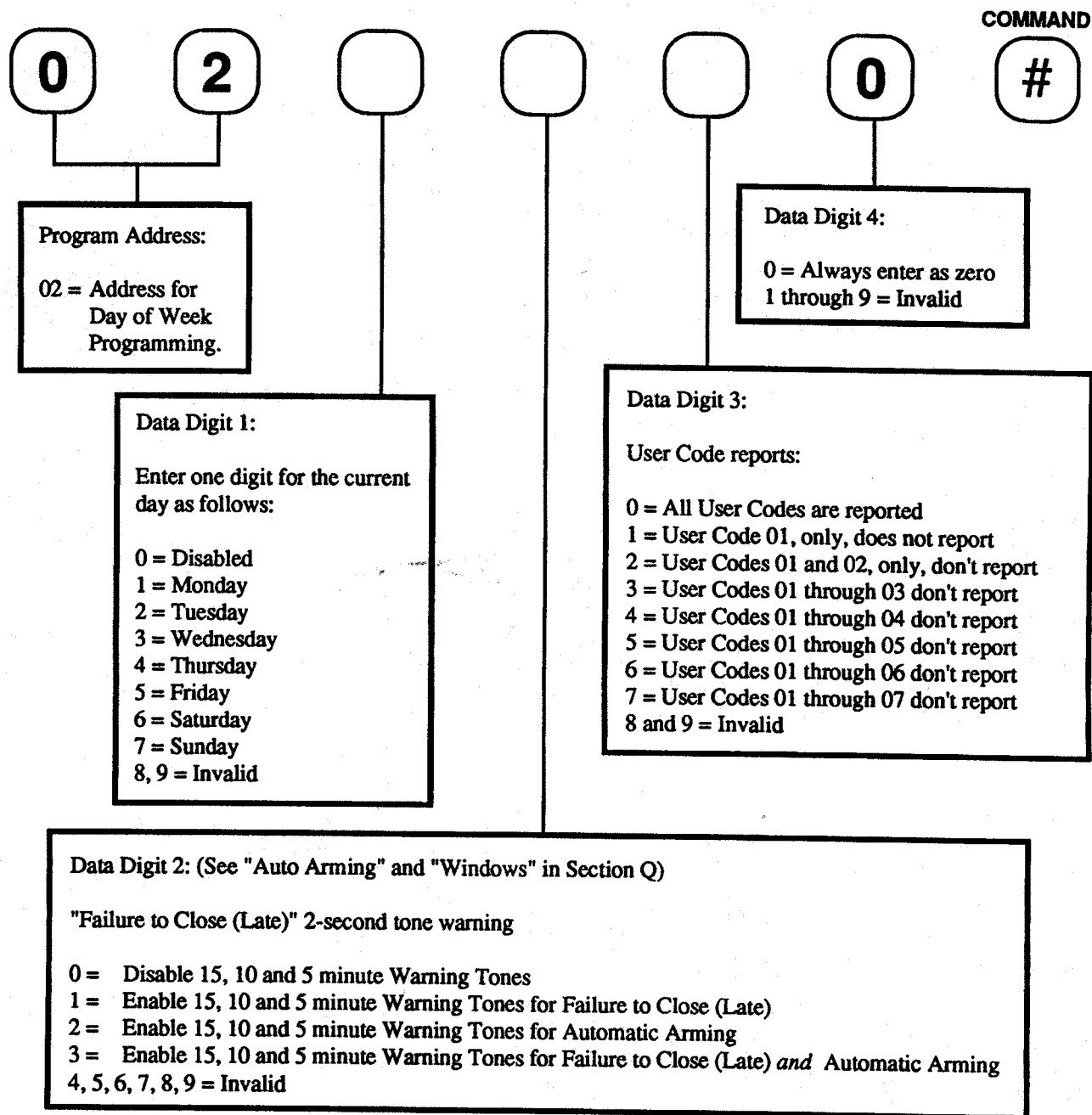
**NOTE:**

On a total power failure (AC failure and battery loss) the time of day, day of the week, history buffer and 24 hour report offset will be lost and they must be set either from the keypad or the remote programmer, if these functions are desired.

The control will not automatically compensate for shifts in time due to switches between Standard and Daylight Savings time. Use Program 01 or the remote programmer to reset to the new time for each change into and out of Daylight Savings.

**NOTE:**

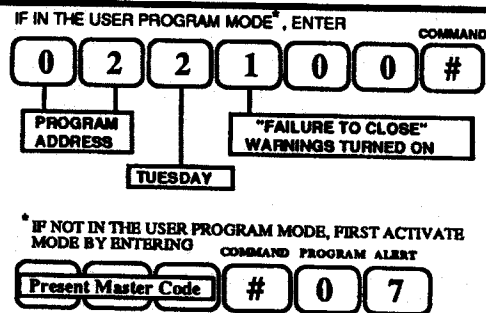
This function is accessed by the **MASTER CODE** programming and not the programmer code. See section J.7 "Entering the Time Set Mode".



**EXAMPLE**

The input sequence to the right will program the control to Tuesday (which should be the current day of the week).

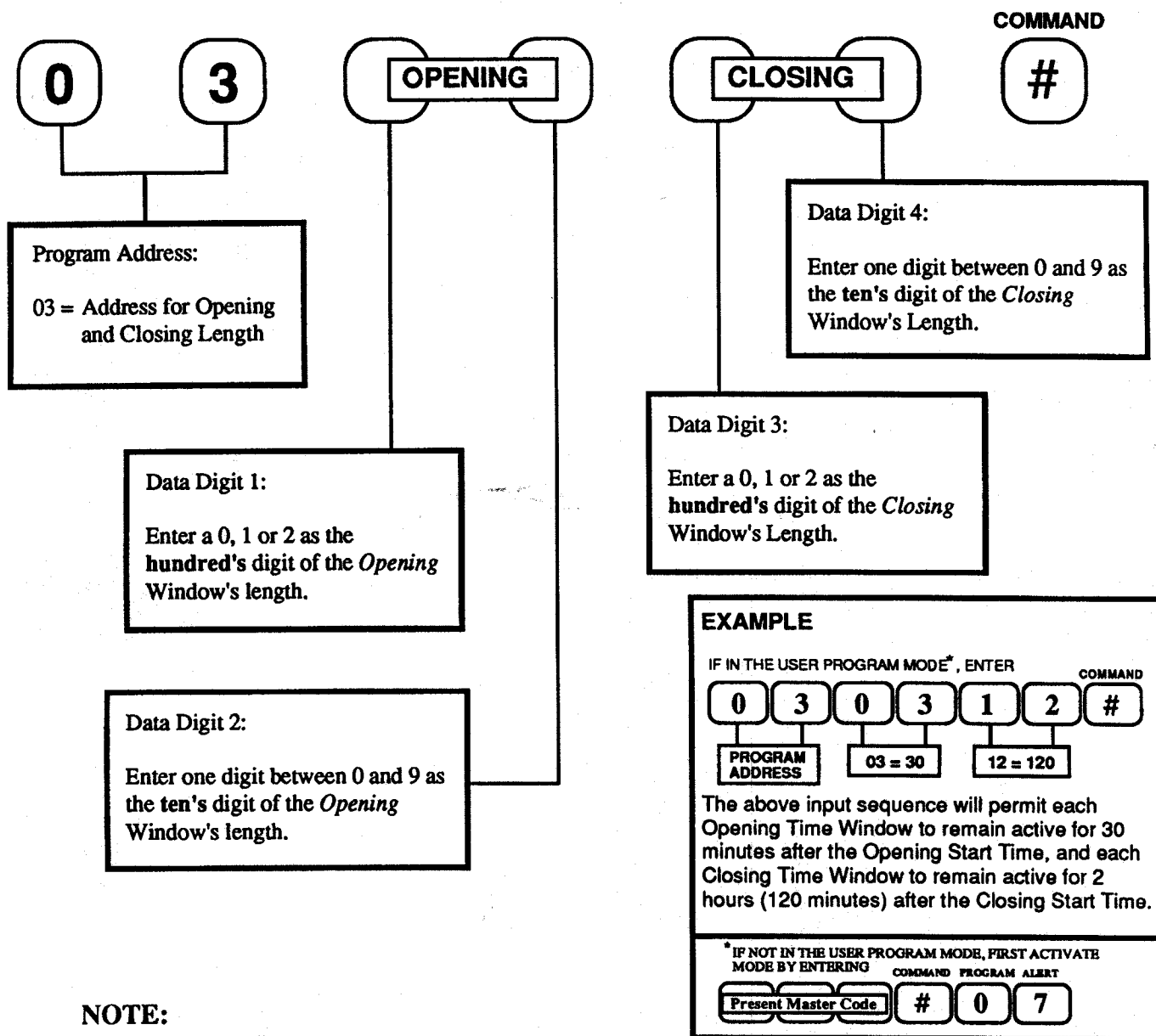
The 2-second "Failure to Close (Late)" warning tones will also sound if the control is disarmed, and the Closing Window approaches 15, then 10, then 5 minutes of the end of the time period.



**M.3 OPENING and CLOSING WINDOW LENGTH** - (default = 0000, disabled)  
(0 Minutes Min., 240 Minutes Max. Allowed for each window length)

**NOTE:**

This function is accessed by the **MASTER CODE** programming and not the programmer code. See section J.7 "Entering the Time Set Mode".



**NOTE:**

Openings and closings consist of time periods called "Windows", with each window composed of a start time and a length.

The start time determines the time of day the window will activate, while the length determines how long the window will remain active. Openings and closings that occur during the appropriate windows are not reported as these are normal occurrences. However, openings and closings that occur outside of these windows will be reported if such reports are programmed (See section L.5 line 54 and 56).

Setting the window length = 0 will cause Failure (late) open and close reports to occur at the window start time, without suppressing any open or close reports.

Failure (late) to open or close during the appropriate window may also be reported (See section L.5 line 08 and 09).

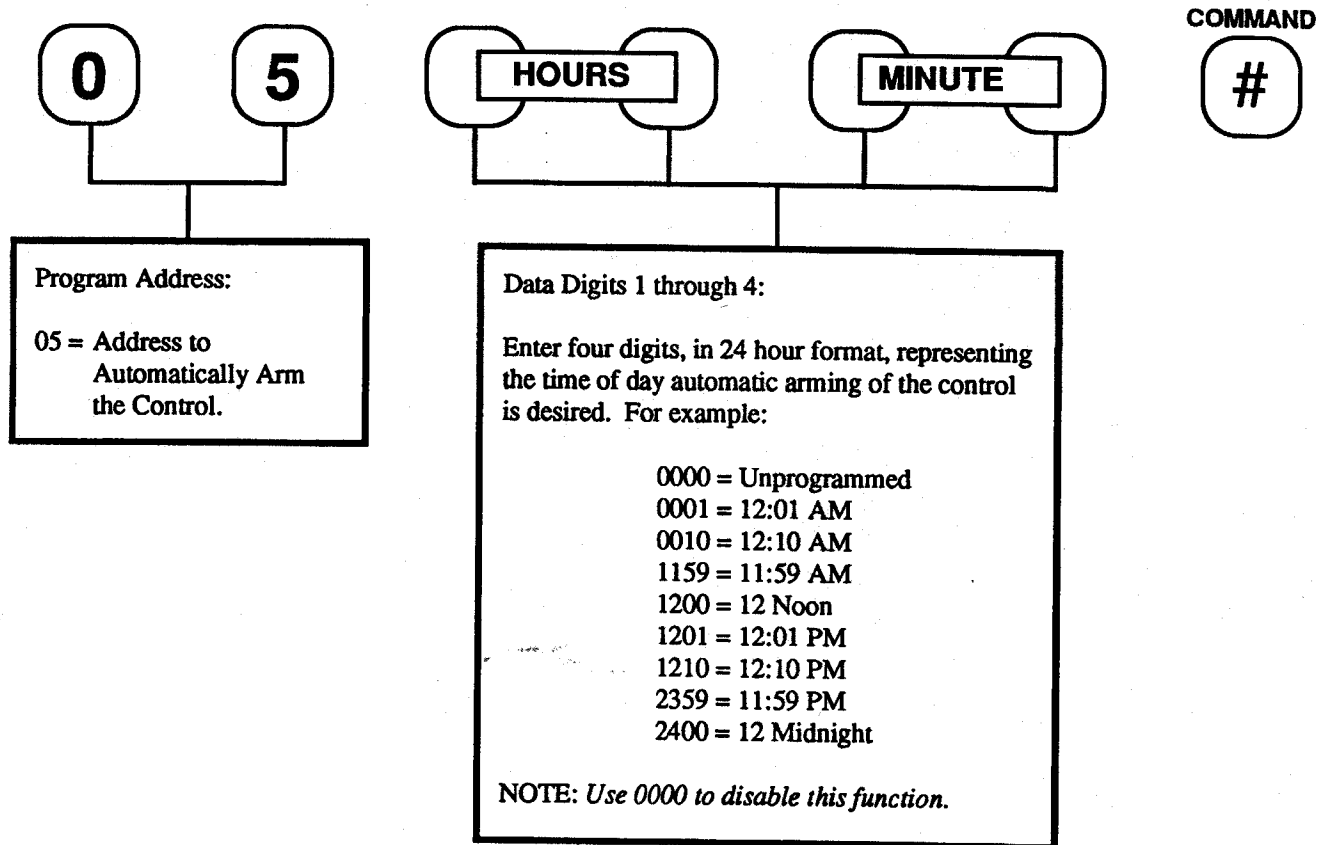
See Section M.6 for Start Time programming.

See Section M.2 for Failure (late) to close warning siren.



**NOTE:**

This function is accessed by the **MASTER CODE** programming and not the programmer code. See section J.7 "Entering the Time Set Mode".



**NOTE:** (See, also, "Auto Arming" in Section Q)

The Automatic Arm program, if employed, will not rearm an already armed control.

If one or more zones are violated at time of automatic arming, Program 05 will force arm the Control, and has precedence over the maximum number of bypassable zones permitted by Program line 81 (see section L.14).

In other words, if Data Digit 3 of Program 81 only permits a maximum of two bypassed zones to allow force arming, and four zones are violated at time of automatic arming, Program 05 will force arm by bypassing the four violated zones.

Program 05 will also force arm the Control even if one or more violated zones have been programmed "Unbypassable" by Programs 11 through 18 or 24 through 29 (see section L.1). In either case, the Control will then send an "Exception Close with Shunts" Report if so programmed (see section L.5 line 55).

Automatic Arming will show as a User Code F in the Extended Close report (in 3/1 reporting at 10pps and 4/2 reporting the users code will be 0) and as Arming Level 8 and Users Code 98 in the history display.

**EXAMPLE**

IF IN THE USER PROGRAM MODE\*, ENTER **COMMAND**

**0** **5** **2** **1** **3** **0** **#**

**PROGRAM ADDRESS** **2130 = 9:30 PM**

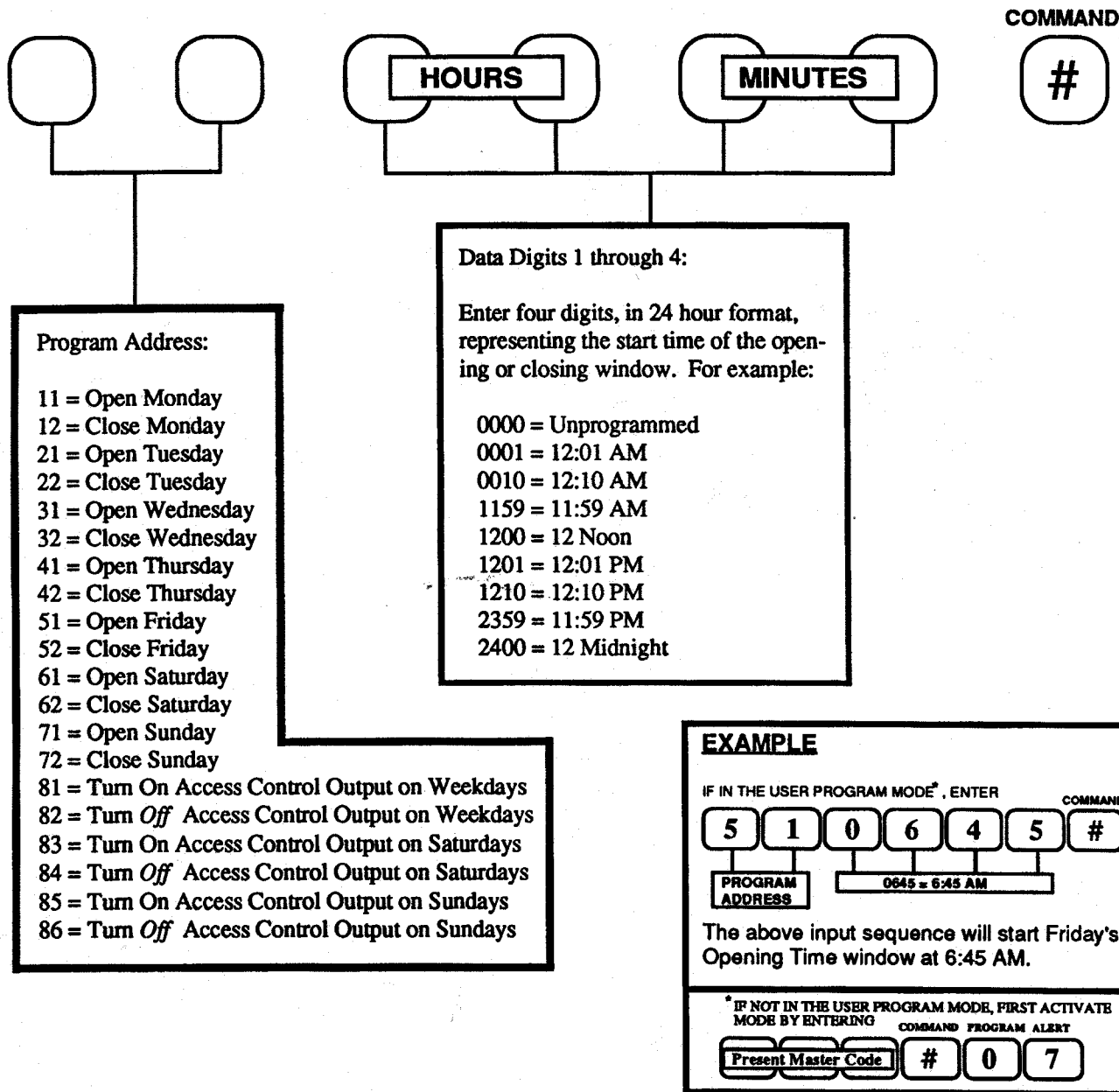
The above input sequence will automatically arm a disarmed control at 9:30 PM. Just prior to arming, a 2 second warning will sound from all system sounders and sirens. Pre-arm warnings will also sound at the 15, 10 and 5 minute time periods if so programmed by Program 02.

\* IF NOT IN THE USER PROGRAM MODE, FIRST ACTIVATE MODE BY ENTERING **COMMAND PROGRAM ALERT**

**Present Master Code** **#** **0** **7**

**NOTE:**

This function is accessed by the **MASTER CODE** programming and not the programmer code. See section J.7 "Entering the Time Set Mode".

**NOTE:**

Openings and closings consist of time periods called "Windows", with each window composed of a start time and a length.

The start time determines the time of day the window will activate, while the length determines how long the window will remain active. Openings and closings that occur during the appropriate windows are not reported as these are normal occurrences. However, openings and closings that occur outside of these windows will be reported if such reports are programmed (See section L.5 line 54 and 56).

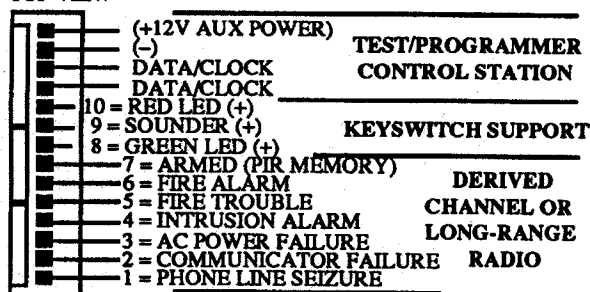
Setting the window length = 0 will cause Failure (late) open and close reports to occur at the window start time, without suppressing any open or close reports.

Failure (late) to open or close during the appropriate window may also be reported (See section L.5 line 08 and 09).

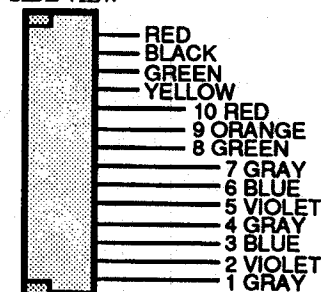
See Section M.3 for window length programming.

See Section M.2 for Failure (late) to close warning siren.

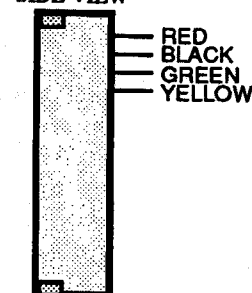
TOP VIEW

**Special Function Interface Strip**

SIDE VIEW

**C305 Interface Cable**

SIDE VIEW

**C304 Keypad Cable**

## N.1 GENERAL

The 14-pin Special Function Connector is intended for use with the C-304 and C-305 cable/connector assemblies, and provides the interface connections for three general functions;

- Test/Programmer Control Station
- Remote, Momentary Keyswitch Support
- Derived Channel or Long-Range Radio Interface

## N.2 TEST/PROGRAMMER CONTROL STATION

The Special Function Connector provides +12 VDC, negative (-) return, and two data/clock lines on the top four (4) pins, allowing an installer to quick connect a portable Control Station directly into the control using the C304 cable. The control station may then be used to test, set-up or troubleshoot the control, and create or modify programs.

## N.3 KEYSWITCH CONTROL STATION

If a zone has been programmed for keyswitch operation, the control will supply +12 VDC at 40 Ma. maximum to drive external annunciators associated with the keyswitch. These include a green *Zone Status* LED (pin 8), a red *Armed* LED (pin 10), and a sounder (pin 9). Use the C-305 cable for the +12 VDC drives. A negative (-) return wire can be brought back to any control unit terminal marked (-), or the black wire of C305.

See Section L.1 for the appropriate keyswitch zone programming. The programming for the Special Program [6] key will determine the shunting and instant/delay status of the keyswitch zone (see Section L.3).

**NOTE:** *If no zone has been programmed for keyswitch operation, pins 8 through 10 are assigned for derived-channel or long-range communicator use, along with pins 1 through 7.*

## N.4 COMMUNICATOR INFORMATION

Pins 1 through 7 are available to operate a derived-channel or long-range radio transmitter. If a zone has not been programmed for keyswitch operation, then pins 1 through 10 are available.

To operate these pins, the Communication Format for Phone Number 1 (Line 75 of Section L.9) or Phone Number 2 (Line 76 of Section L.9) must be programmed to drive these pins, and not the phone line. This is done by entering 7 5 6 0 0 1 0 0 or 7 6 6 0 0 1 0 0 while in the Program Mode

The appropriate Phone Number program (Line 71 or 72 of Section L.7) is then used to control which pin is activated for each alarm or trouble. Each phone number Data Digit is assigned to a report, and the number entered for that Data Digit is the pin that the report will output to. To disable a report, enter [Reset/\*]-[1] for that Data Digit.

For instance; the first Data Digit is a fire alarm. If we wish the alarm to report to pin 3, the first Data Digit would be a 3. If we were programming Phone Number 2, the input sequence would be 7 2 3.

The second Data Digit is a Zone 1 alarm. If we wished to report Zone 1 alarms to pin 5, then the second Data Digit would be a 5, and our input sequence would extend to 7 2 3 5.

The third Data Digit is a Zone 2 alarm. If we wished to also report Zone 2 alarms to pin 5 (along with Zone 1 alarms), then the third Data Digit would be a 5, and our input sequence would extend to 7 2 3 5 5.

The fourth Data Digit is a Zone 3 alarm. If we wished to *disable* this function so that no Zone 3 alarms are reported, we would enter [Reset/\*]-[1] for the fourth digit, and the sequence would extend to 7 2 3 5 5 [Reset/\*]-[1].

As there are 28 digits in the Special Functions application, our sequence would continue until we had entered a pin number into 28 Data Digits, then terminate the sequence with [Command/#].

The pins are activated at the time the communicator would have issued a report. If the control has been programmed for a dialer delay, the pins will not activate until after the delay has expired to allow time for an unwanted alarm to be cancelled. The pin will restore when a restoral report would be issued by a digital communicator.

## N.5 INTERFACE PROGRAM EXAMPLE

Shown below is an example of Program 71 (for Phone Number 1) modified to activate pins 1 through 10 of the Special Function Connector. The entire sequence is shown from top to bottom.

**NOTE 1:** The example also lists the function or output that is assigned to each data digit in this program. In other words, Data Digit 1 will always reference a Fire alarm; Data Digit 2, a Zone 1 alarm; and so on. The Special Function Connector pin number is the number that is programmed.

**NOTE 2:** In order for a report to activate the appropriate connector pin, the report must be programmed to the proper phone number. In our example to the left, Data Digit 1 for Fire Alarm Report 30(Section L.4) must require the report be sent to Phone Number 1 in order for the report to activate Pin 1.

**NOTE 3:** Entering the [Command/#] key at any time before the end of the complete sequence will terminate the sequence at that point, and set all remaining Data Digits to zero (disabled). For instance, if it is not necessary to communicate any reports for Data Digits 20 through 28, entering [Command/#] after Data Digit 19 has been entered will disable the program for Data Digits 20 through 28.

**NOTE 4:** Entering a User Code with Disarm privileges when the Control is already disarmed will reset the Special Function connector pins designated for Duress, Failure to Close, Fire Alarm from keypad, keypad Emergency and keypad Medical.

**NOTE 5:** Fire alarm, fire trouble, other troubles, closing and intrusion zone alarms should be programmed on different pins to provide a unique indication to the central station.

7		Program Address – Phone Number 1, (see Section L.7)
1		
1	—	Data Digit 1 = Fire Alarm from Zone Loop or Keypad Keys – Send to Pin 1
7	—	Data Digit 2 = Zone 1 Alarm – Send to Pin 7
7	—	Data Digit 3 = Zone 2 Alarm – Send to Pin 7
8	—	Data Digit 4 = Zone 3 Alarm – Send to Pin 8
8	—	Data Digit 5 = Zone 4 Alarm – Send to Pin 8
9	—	Data Digit 6 = Zone 5 Alarm – Send to Pin 9
9	—	Data Digit 7 = Zone 6 Alarm – Send to Pin 9
0	—	Data Digit 8 = Zone 7 Alarm – Send to Pin 10
0	—	Data Digit 9 = Zone 8 Alarm – Send to Pin 10
0	—	Data Digit 10 = Zone 9 Alarm – Send to Pin 10
0	—	Data Digit 11 = Zone 10 Alarm – Send to Pin 10
9	—	Data Digit 12 = Zone 11 Alarm – Send to Pin 9
9	—	Data Digit 13 = Zone 12 Alarm – Send to Pin 9
8	—	Data Digit 14 = Zone 13 Alarm – Send to Pin 8
7	—	Data Digit 15 = Zone 14 Alarm – Send to Pin 7
2	—	Data Digit 16 = Keypad Medical Alarm – Send to Pin 2
2	—	Data Digit 17 = Keypad Emergency Alarm – Send to Pin 2
3	—	Data Digit 18 = Fire Trouble – Send to Pin 3
3	—	Data Digit 19 = Zone Trouble – Send to Pin 3
5	—	Data Digit 20 = Low Battery – Send to Pin 5
5	—	Data Digit 21 = AC Power Failure – Send to Pin 5
3	—	Data Digit 22 = System Trouble – Send to Pin 3
2	—	Data Digit 23 = Duress (Ambush) Alarm – Send to Pin 2
4	—	Data Digit 24 = Exception Close with Shunts – Send to Pin 4
4	—	Data Digit 25 = Closing – Send to Pin 4
6	—	Data Digit 26 = Failure to Open – Send to Pin 6
6	—	Data Digit 27 = Failure to Close – Send to Pin 6
5	—	Data Digit 28 = Communicator Failure – Send to Pin 5
Cmd #	—	Input Sequence Terminator

## P.1 GENERAL

Control Unit activity events are kept in an electronic file called a "History Buffer", which will store a total of 96 events.

When power is first applied to the unit, the history buffer is empty. (This could also occur when the control is re-powered after a loss of all power - AC and battery.) As activities occur, they are stored in the buffer until a total of 96 events are present. At that point, as each new event occurs, it is stored as the most recent causing the oldest event to be erased.

Entering [Command/#]-[Test/8]-[Bypass/9] while the control is disarmed will play back the contents of the history buffer starting with the most recent event.

Each stored event consists of three (3) displays which are shown in the following order by momentarily depressing the [Command/#] key after each display;

- type of event
- day of the week, with information descriptor based on the type of event
- time of the event in 24 hour format

If the delay between [Command/#] key presses is greater than 40 seconds, the display will blank, the three beep error tone will sound, and the control will return to the normal disarmed state. The history display may also be cancelled by depressing the [Reset/\*] key.

Although not shown in this section the system trouble (error) displays (see Section I) will also be recorded in the history in the same format as the other displays below. They are:

AC failure - "AC F"  
Communicator error - "C Er"  
Low battery - "Lo b"  
EEPROM error - "EE P"

## P.2 ACTIVITY DISPLAY INFORMATION

ALARM

**ALARM**

Indicates a Zone alarm (Zones 1 through 14, but not the Fire Zone), including a Day Monitor alarm.

WE 6

Second Display = Day of the week, and violated zone.  
(Shown is Wednesday, Zone 6)

2:56

Third Display = Time Event Occurred  
(Shown is 2:56 AM)

CLOS

**CLOSE (ARM)**

Indicates a Closing (Control was armed).

TU 4

Second Display = Day of the Week, and Arming Level (the number of the key used to arm the system).  
(Shown is Tuesday, and key [4])

Commercial  
Mode, only

UC 1

Special Display = User Code Number used to arm the system.  
Consists of the letters UC, and the 2-digit User Code Number where UC 98 = Auto Arm or remote arm, and UC 99 = Keyswitch Arm.

17:58

Third Display = Time Event Occurred  
(Shown is 5:58 PM)

EMERGENCY

**EMERGENCY**

Indicates emergency alarm activated by either a Special key program, or simultaneously depressing the [Reset/\*] & [Command/#] keys.

Fr 0

Second Display = Day of the Week, and Key-Entered Identifier where 4, 5 and 6 is the key used, and 0=[Reset/\*] and [Command/#] keys.  
(Shown is Friday, with [Reset/\*]-[Command/#] having been used)

12:00

Third Display = Time Event Occurred  
(Shown is 12 Noon)

OF, r

#### **FIRE ALARM**

Indicates fire alarm activated by a Special key program.

NO 6

Second Display = Day of the Week, and Key-Entered Identifier  
where 4, 5 and 6 is the key used  
(Shown is Monday, with the [6] key having been used)

6:10

Third Display = Time Event Occurred  
(Shown is 6:10 AM)

F, rE

#### **FIRE ALARM**

Indicates a zone fire alarm.

SA 15

Second Display = Day of the Week, and violated zone.  
(Shown is Saturday, Zone 15)

13:59

Third Display = Time Event Occurred  
(Shown is 1:59 PM)

ONEd

#### **SILENT ALARM**

Indicates a Silent alarm activated by a Special key program.

SU 5

Second Display = Day of the Week, and Key-Entered Identifier  
where 4, 5 and 6 is the key used  
(Shown is Sunday, with the [5] key having been used)

11:59

Third Display = Time Event Occurred  
(Shown is 11:59 AM)

OPEN

#### **OPEN (DISARM)**

Indicates an Opening (Control was disarmed).

TH 3

Second Display = Day of the Week, and User Code Number used  
to disarm the control, where User Code 98 = Remote  
Disarmed and User Code 99 = Keyswitch Disarmed.  
(Shown is Thursday, and User Code Number 03.)

23:59

Third Display = Time Event Occurred  
(Shown is 11:59 PM)

ProL

### PROGRAM MODE ENTERED LOCALLY

The L after Pro indicates the program mode was entered using a Control Station or the Program Mode Entry switch.

ProR

### PROGRAM MODE ENTERED REMOTELY

The r after Pro indicates the program mode was entered from a remote location such as a Central Station download via telephone lines.

SA 15

Second Display = Day of the Week, and type of programs changed.  
(shown is Saturday with Special arming, user codes and reports changed.)

The local programming code for the first digit (tens digit) of the program change is:

- 0 = No changes made
- 1 = Special Arming Changed
- 2 = General Control Changed
- 3 = 1 and 2 above
- 4 = System Timers Changed
- 5 = 1 and 4 above
- 6 = 2 and 4 above
- 7 = 1 and 2 and 4 above.

The local programming code for the second digit (units digit) is:

- 0 = No changes made
- 1 = Reports, Phone Number or Account Codes Changed
- 2 = Intrusion or Fire Zone Parameters Changed
- 3 = 1 and 2 above
- 4 = Programmer or User Codes Changed
- 5 = 1 and 4 above
- 6 = 2 and 4 above
- 7 = 1 and 2 and 4 above.

The remote programming codes are:

- 0 = No changes made
- 70 = Changed any parameter
- 71 = Set back to default parameters

13:59

Third Display = Time Event Occurred  
(Shown is 1:59 PM)

FSHU

**FORCE SHUNT** Indicates a zone has been force armed.

SHUN

**SHUNT** Indicates a zone has been bypassed.

Fr 6

Second Display = Day of the Week, and Bypassed Zone.  
(Shown is Friday, Zone 6)

NOTE: Bypass events are stored only when arming the control, and they display after the arming event. Force arming the control will record all bypassed zones as if they were entered individually. 24 Hour zone bypasses are stored as they occur.

12:01

Third Display = Time Event Occurred  
(Shown is 12:01 PM)

UNSH

### UNSHUNTED

Indicates a 24 Hour zone has been unbypassed.

Fr 5

Second Display = Day of the Week, and unshunted Zone.  
(Shown is Friday, Zone 5)

NOTE: Zone unshunting is stored only when a 24 Hour zone is involved.

12:01

Third Display = Time Event Occurred  
(Shown is 12:01 PM)

### P.3 CHARACTERS and OTHER DISPLAYS USED ON THE 7135 KEYPAD.

**SA** = Saturday  
**SU** = Sunday  
**MO** = Monday  
**TU** = Tuesday  
**WE** = Wednesday  
**TH** = Thursday  
**FR** = Friday

**ALAr** = Alarm  
**CHEC** = Check  
**CoDe** = Code  
**Er r** = Error  
**FAUL** = Fault  
**FUNC** = Function  
**FirE** = Fire  
**OFF** = Off  
**ON** = On  
**Prob** = Problem  
**USEd** = Used  
**USr** = User

**A** = A  
**C** = C  
**D** = D  
**E** = E  
**F** = F  
**H** = H  
**I** = I  
**L** = L  
**M or N** = M or N  
**O** = O  
**P** = P  
**R** = R  
**S** = S  
**T** = T  
**U or W** = U or W  
**0** = 0  
**1** = 1  
**2** = 2  
**3** = 3  
**4** = 4  
**5** = 5  
**6** = 6  
**7** = 7  
**8** = 8  
**9** = 9

**AC F** = AC power Failure.  
**ALAr** = Alarm.  
**Cd** = Code conflict (followed by user code number).  
**C Er** = Communicator Failure.  
**CoDe** = Code. A prompt to enter the new User's Code.  
**CHEC** = Check. Indicates which zones must be violated, before the system is armed, as a check to assure that zones are in operating order.  
**EE P** = Error. Indicates that an error exists in the control's program memory.  
**Err** = Error. Indicates a time-out or an error in the User's operation of the Control, and is accompanied with the 3 beep error tone.  
**FAUL** = Fault. Indicates that a zone, programmed for a trouble indication, is shorted, or a zone *not* programmed for a trouble indication, is open or shorted.  
**FirE ALAr** = Fire Alarm (see fire reset).  
**FirE Prob** = Problem in the fire circuit. May be due to an improperly connected component or detector, a missing detector (removed for cleaning?), or a broken wire. When trouble is detected, the sounder will beep every five seconds, and the words **FirE** followed by **Prob** will display. You should first determine and correct the problem, then enter your disarm code to silence the sounder.

**FUNC** = Function. A prompt to enter a code's Function Digit (F-D).  
**HOLD** = Hold the 4, 5 or 6 key for 2 seconds to create emergency, fire or medical keypad alarms.  
**Lo b** = Low Battery. Indicates a problem with the standby battery power.  
**OFF** = Off. Indicates that an Access Control code was entered to turn off Access Control Power.  
**ON** = On. Indicates that the Access Control code was entered to pulse or operate Access Control Power.  
**Prob** = Problem. Indicates a burglary zone, programmed for a trouble indication, is open. If preceded by **FirE**, then fire zone is open.  
**S** = Shunt (bypass). Displayed with a number to indicate a shunted (bypassed) zone.  
**U** = Zone Test. When displayed with a number, indicates an untested zone. When followed by two dashes, indicates all zones have been tested.  
**USEd** = Used. Indicates a User Code has been entered that matches an existing one. The following "Cd" display shows which user code the conflict occurred with.  
**USr** = User. A prompt to enter the User Code Number (UCN).



### ACCESS OUTPUT

The control will support from 1 to 29 access codes. The access output codes are programmed as shown in section J.

The access output is a optional relay (K102) that plugs into the control board. Its operation is programmed in section L.6 on line 67. If programmed to a value between 1 and 255, the relay will operate for that number of seconds and then return to its normal state each time an access code is entered at the keypad. This would normally be used to operate a door strike.

If line 67 is programmed to zero, then each time an access code is entered at the keypad, the state of the relay will change and remain in the new state until the access code is entered again. In this state, the access output can also be turned on and off once a day by lines 81 through 86 in section M.6. This can be used to control outside lighting, heating setback etc. The keypad access codes can be used to temporally override the output; the next scheduled on/off command will remove the temporary override. Each time the access code is entered at the keypad, the state that the access output is going to will be displayed (ON/OFF).

### ARMING LEVELS

Arming level refers to the key that is used to arm the control. Level "1" (enter COMMAND followed by 1) arms all zones (that are not bypassed) and leaves the entry and exit delays in place. Level 1 is the only arming level that generates open and close reports. Level "2" bypasses the interior zones and makes the entry delay instant. Level "3" also bypasses the interior zones but both the entry and exit delays remain in place. Level "4", "5" and "6" can be custom configured to bypass any compliment of zones and may make the entry delay delayed or instant (see section L.3).

### ARMING STATUS PHONE TEST

The control may be programmed to answer the phone in line 79 of section L.12 (even if remote programming is not used). If the number of rings at which the control answers is different for arm and disarm states by at least two, then it is possible to call the control's phone number and count the rings before it answers to see if the control is armed or disarmed!

### AUTO ARMING

The control can be set to automatically arm itself at a preset time of day by programming line 05 in section M.5. If the control is disarmed at the programmed automatic arming time, the control will arm with the normal exit delay. The system sirens will sound for two seconds as a warning to anyone still in the premises. If the control is disarmed, warnings can be programmed (section M.2, data digit 2) to sound the siren for 2 seconds at 15, 10 and 5 minutes prior to the time set for auto arming.

If there are zones faulted when the system auto arms, they will be force armed. This will occur even if a faulted zone is programmed non-bypassable (section L.1, data digit 3), or the number of zones exceeds the programmed number of zones that can be force armed (section L.14, digit 3). This is done to provide the maximum protection possible. If the control is programmed to report exception closing (section L.5 line 53), then a trouble report will be issued for each zone bypassed, followed by a closing report.

### AUTO ARMING TEMPORARY HOLD-OFF

# 9 9 Hrs

Permits delaying Automatic Arming from 1 to 9 hours. This feature requires the system to be programmed in Commercial mode (see section L.14 digit 1), and requires a User Code with both Disarm and Bypass privileges (function digit of 1, see section J).

Automatic Arming may be temporarily delayed by entering # 9 9 followed by a single-digit number for the number of hours of delay. For instance, if auto arming is programmed to occur at 7 PM, and a qualified user enters # 9 9 4 at 5 PM, then auto arming will be delayed until 9 PM.

The delay is effective for that evening, only, and the system will revert to auto arming at 7 PM the next evening. Entering # 9 9 0 will cancel any auto arming delay that may be in progress.

Using this command records two "bypass" events in the history buffer. In the first event, the second display will show the day of the week followed by a 9 and the single-digit number for the hours of delay (94 in our example). In the second event, the second display shows the day of the week followed by the User Code Number used to enter the auto arm hold-off.

Any "Failure (Late) to Close" reports programmed to occur during the delay period will be suppressed, and a "Closing" or "Automatic Arming" report will be transmitted at the end of the delay period.

### CLOSING RINGBACK

If the control is programmed for "Dial Tone Test on Arm" (section L.14, data digit 2), a beep will sound when arming the control, but only after the dial tone is detected. If the dial tone is not detected, the control will still arm, but the beep will not sound.

If programmed for both "Dial Tone Test on Arm" and a Closing Report (section L.5, line 56), a keypad beep will occur only after the closing report is received at the central station (Ringback). The entry delay timer will not start until the beep is heard, or a communicator failure is detected.

If so programmed (section L.14, data digit 2), the Auxiliary Relay and Siren will operate for two seconds at the same time that the ringback beep sounds at the keypad. If the ringback test fails, no beep or siren will be heard. A low battery condition will prevent the closing ringback from being heard.

## COMMERCIAL MODE

The control can be programmed for Commercial or Residential mode of operation (see section L.14 data digit 1). In the commercial mode, a User Code or a Programmer Code must be entered before any program command is entered, except emergency alarms. In the residential mode, the user code is used only to disarm the control and to silence alarms. Therefore, the user code is not entered before program codes.

### DAY MONITOR

If a zone is programmed for day monitor (section L.1, data digit 2), any violation of that zone while the control is disarmed will cause the keypad beepers to sound continuously. An entry indicating alarm on the violated day monitor zone is made in the history buffer. Pressing the [COMMAND] key will show "ALAr" followed by the violated day monitor zone. The keypad beepers can only be silenced by entering a valid disarm user code. No central station report will be made for a day monitor violation. This feature can be used to monitor stockrooms, emergency doors, gun and liquor cabinets, etc.

### DELAY ZONE FOLLOWER

This is an interior zone that "follows" the entry/exit zone. This zone is instant unless the entry/exit zone is in entry or exit delay. Then the "follower" zone is delayed.

### FIRE ALARM

If a Fire alarm occurs, then the keypads will display "FirE" followed by "ALAr". The system sounders can be silenced by entering a valid user code. The "FirE" "ALAr" will continue to display. This display can be cancelled only by resetting the smoke detectors (see fire reset in section I). Entering [COMMAND] [8] [0] will reset the alarm light on the smoke detector, and cancel the "FirE" "ALAr" display. The system sounders must be silenced using a valid user code before the fire reset command will work.

In keyswitch systems the fire zone can be programmed non-latching. If an external momentary switch is provided to open the smoke power, the smoke detectors may be reset without a keypad in the system. Program section L.13 data digit 2 to a 3 for four wire systems or to a 7 for two wire systems.

Keypad fire alarms ("A" Key) will display like fire zone alarms. They must be reset by [COMMAND] [8] [0] after the alarm sounders are silenced.

### FIRE TROUBLE

A fire trouble signal will be sounded if a break occurs in the fire loop, or one or both sides of the fire loop are grounded. If a fire trouble occurs, then the keypads will display "FirE" followed by "Prob". The keypad beepers will sound a short beep every five seconds. The beepers can be silenced by entering a valid user code. The "FirE" "Prob" will continue to display. This display can be cancelled only by correcting the cause of the fire trouble, and then entering a valid users code.

## FORCE ARM

If the green zone status light is off when an arming command is entered, the control may be force armed. To enable force arming, program section L.14, data digit 3 with the number of zones that may be force armed. If programmed to zero, force arming is disabled. Force arming is also disallowed if one of the violated zones is programmed as a non-bypassable zone (section L.1 data digit 3). When force arming is allowed, and an arming command is entered with the green zone status light off, the keypad beeper will sound for five seconds. If the [BYPASS/9] key is pressed during the five second beep, the control will be forced armed. Otherwise the control will not arm. If the control is programmed to report exception closing (section L.5, line 53), then a trouble report will be issued for each zone bypassed, followed by a closing report.

If swinger shunting is off (section L.14, data digit 1), then the force armed zones are truly bypassed and will not restore even if they return to normal. This will cause the yellow partial light on the keypad to start flashing when force armed. If swinger shunt is programmed "on", then the force armed zones are not bypassed and will restore if they return to normal and are programmed to restore (section L.1, data digit 3). Since the force armed zones are not bypassed (they may restore), the yellow partial LED will not come on.

### INVISIBLE ZONE

When a zone is programmed invisible, there is no outward indication that this zone is faulted. The zone is silent, and even the green zone status light on the keypad gives no indication that this zone is faulted. This feature is programmed in section L.1, data digit 1. It is intended for use on money clips and other similar applications.

### KEYPAD ZONES

Eight intrusion zones are available on the control. An additional six zones may be wired to the keypads for a total of 14 intrusion zones. Up to three zones may be wired to a keypad.

Three things must be done to enable the keypad zones. The zone must be wired to the keypad cable and returned to the bottom black wire in that cable through the supplied 2.21K ohm end-of-line resistor. A jumper (supplied) must be placed on the back of the keypad to assign the zone wire used to one of two possible zones (the gray wire may be assigned to zone 9 or zone 12 for example). In section L.1 lines 24 through 29 that zone must be programmed.

Wire	Jumper	Zone
Gray	A	9
Gray	D	12
Blue	B	10
Blue	E	13
Violet	C	11
Violet	F	14

NOTES: Each zone (jumper position) may be used on only one keypad in the system. Using the gray wire zone and placing the "A" jumper on two keypads in the system would only issue an alarm on zone 9 if both gray wire zones were faulted at the same time, therefore alarms would be missed! Zones may be used in any order or any number (0, 1, 2 or 3) on a keypad as long as no two keypads use the same zone.

The keypad zones work exactly the same as zones that connect to the panel except if they are programmed for trouble. When programmed for trouble a zone trouble report will be generated only if the the panel loses communication with the keypad that the zone is connected to while that zone is disarmed. If that zone is armed when communication is lost then an alarm will be generated. Keypad zones do not distinguish between open and short.

### KEYSWITCH ZONE

One zone may be programmed in section L.1 for keyswitch arming. A keyswitch may be used without keypads, or in combination with keypads, on the same system. The keyswitch must be momentary, and must short the zone lines together. The keyswitch zone is end-of-line supervised, and opening (cutting) the loop results in a trouble while the system is disarmed and an alarm when the system is armed. This allows the keyswitch to be tampered by a separate switch that opens the loop. The zone bypasses and instant entry delay override from special key 6 programming are used when the system is armed using the keyswitch (section L.3). Key switches can't be used on UL systems.

The keyswitch may be programmed to work at arming level 6 if line 23 is also programmed. Opening and closing reports will be sent if they are programmed. If the keyswitch is programmed but line 23 (arming level 6) is not programmed then the keyswitch will arm at level 1. As usual with level 1 arming, opening and closing reports will be sent, if they are programmed. The keyswitch open and close report user number will be "F" if the communicator reports in HEX and it will be "0" if the communicator is programmed decimal. The keyswitch will always show as user "0" in the history.

### PERSONALITY MODULE

The optional personality module PM7000 is provided to aid in quickly programming the control. Four different programs may be stored in the personality module and downloaded into the control with a simple key sequence. To use; plug the personality module into the option connector, turn on the power and enter the download key command, then change the account code and any other customer specific programming. Remove the personality module and the program changes are completed. The key commands are given in section L.16.

### POWER FAILURE

When AC power fails, the control continues to operate from battery power. As energy is drawn from the battery, its voltage will drop. When the battery voltage drops to 12VDC,

Low Battery and AC Failure reports will be issued. (See section L.4, lines 49 and 50.) If programmed for automatic transfer, the history buffer will also be sent now (sections L.10, 11 and 12).

When the battery voltage drops to 10.2VDC, the Aux relay and siren will turn off to save the battery. The control and communicator will continue to function to 7.5VDC, when it will shut down.

After a total power failure (AC and battery), when AC power is restored the control will return to the arm/disarm state (including any bypasses) that it was in when the power failed.

The control will function normally except that if the control is armed a zone violation will not issue an alarm for 4 minutes to allow the sensors to power up and function normally. This delay does not apply if the control was disarmed. All system parameters are saved through the power failure except time of day, day of week, 24 hour report offset and the history buffer (which can be automatically transferred). The time parameters may be set at the keypads, or by the remote programmer.

### QUIET / LOUD KEYPAD SOUNDER

Keypads are jumper selectable for loud or quiet operation. Sounder operation is selected by placing a jumper (supplied with keypad) in either the "L" or "Q" position on the back of the keypad. If a jumper is not installed, the keypad is set for loud operation.

When the jumper is in the loud "L" position, all sounder signals issued by the control panel, including entry prealerts, sound at the keypad. If quiet keypad operation is needed, for instance in bedrooms, placing the jumper in the "Q" position results in a keypad that inhibits all sounder operation except; alarms, zone tests and keypad entries actually made at the quiet keypad.

### REMOTE PROGRAMMING

The remote programmer may change all programming and monitor the state of and shunt zones. The control may be armed and disarmed and the state of all outputs and troubles are monitored. The history buffer can be transferred automatically and custom opening and closing reports may be printed. The control may be remotely programmed by the CP7000 IBM PC software or the HHP7000 hand held programmer.

The CP7000 IBM PC software will operate on any truly IBM compatible computer with a Hayes compatible modem. This includes the small lap-top computers that meet the compatibility requirement. The software will also work with the Tecmar Third Mate Modem but it is not recommended. Refer to the instruction manuals for the CP7000 and HHP7000 for their setup and operation.

### PHONE LINE ANSWERING

The control may be programmed to answer the phone line when it is armed and/or when it is disarmed. The answer ring count can be set for a different number of rings, armed and disarmed. This allows the control to pickup the phone line after a short number of rings, after hours, thereby saving operator time. Note this feature is not available on most competitors remote programmers, so their offerings may waste much valuable operator time. The number of rings is programmed in section L.12 on line 79 digits 3 and 4.

Even if you are not planning to use a remote programmer now, you may desire to program line 79 to 0099 so that the control will answer the phone. This allows remote programming to be used in the future without a trip to the job site. This will set the panel to answer the phone after 14 rings (1 minute and 24 seconds).

The control can be forced to seize the phone line by pressing [COMMAND #] [TEST 8] [6] on its keypad. This is useful if the control is not programmed to answer the phone or if you are already talking to the operator of the remote programmer on the control's phone line. This feature also allows direct connection to the remote programmer without a phone line for bench programming.

### ANSWERING MACHINE OVERRIDE

If an answering machine answers the phone hang up and dial the system back within a minute. The control will answer the phone on the first ring, the second time the phone rings within a minute. To disable answering machine override program the system to answer the phone on 12 rings.

### REMOTE AGENCY CODES AND PASSWORDS

There are 10 HEXadecimal digits for passcodes to gain remote entry to a control (5 digits of agency code and 5 digits of remote password). These give more than one trillion unique combinations! The remote programmer must give the correct 10 digit passcode when it contacts a control or the control will hang-up immediately without allowing access.

When the control is shipped or the EEPROM is reset to initial conditions (see section L.16) the agency code and remote password are made wildcards. This means that the first time a control is called from a remote programmer any agency code and remote password is accepted and access will be granted. The control will retain the agency code and remote password that it was given on that first access and that code must be given on all future calls or access will be denied.

The agency code and remote password can not be viewed or changed from keypad programming except if the entire EEPROM is reset to initial conditions.

The agency code and remote password may be changed in the future but only after contact is made with the panel using the old agency code and remote password.

With the HHP7000 hand held programmer the control may be accessed with only the agency code. In this mode no programming may be viewed or changed. You may shunt zones only if the panel is disarmed. The panel may be armed but not disarmed. Also the output state and panel history may be viewed.

### CALLING THE REMOTE PROGRAMMER

There is a third phone number to allow the control to call the remote programmer (see section L.10 line 77). This phone number should be programmed with the phone number of the remote programmer. In order for the remote programmer to identify the panel calling in, phone number 1 (line 71 section L. 7) and account number 1 (line 73 section L.8) must be programmed. The remote programmer will not attempt to call out unless phone numbers 1 and 3, and account code 1 are programmed. ROM revision 2.3 is required for auto dialout to the remote programmer.

When the third phone number is programmed, pressing [COMMAND #] [TEST 8] [3] on the keypad instructs the control call the remote programmer. This covers those cases where the programming has been changed at the keypad and

those changes are to be recorded in the remote programmer. This feature may also be used if a control is going to be powered down, and you want to save the history buffer, or for some reason the control can not be allowed to answer the phone (answering machine or a business phone that is answered during the day) the panel will seize the phone line and call out.

Callback is a feature that increases the security of remote access by having the panel hang-up on the remote programmer before granting access and calling the remote programmer back on a preprogrammed (third) phone number.

This allows only the remote programmer at the central station etc. to be used to program this panel. It has the further advantage of charging the cost of a toll call to the customer, since the longer second phone call will be originated by the panel.

The disadvantages of callback are that the panel can only be programmed from one phone number which prevents hand held and other portable remote programmers from being used to assist in closing or for after hours support. A further disadvantage is that the operator must not only wait for the initial call to be setup and answered by the panel but must also wait the time required for the panel to hang up and call back.

The control optionally supports callback on an individual panel basis by programming line 79 digit 2 of section L.12. Phone number 1 (line 71 section L. 7) and account number 1 (line 73 section L.8) must also be programmed. The remote programmer will not attempt to callback unless phone numbers 1 and 3, and account code 1 are programmed.

### AUTOMATIC DIALOUT

To support unattended remote programming and history buffer transfer the control can automatically call the remote programmer on a programmed time of day and day of week. This allows the Remote Programming software to generate open and closing and other custom reports that can reduce your central station costs.

To support automatic dialout the following must be programmed:

- The third phone number, section L.10 line 77.
- The automatic history report time, section L.11 line 78.
- The reporting day of the week, section L.12 line 79.
- Phone number 1, section L. 7 line 71.
- Account number 1, section L.8 line 73.

When the above items are programmed the control will automatically callout to the remote programmer at the programmed time and day. The remote programmer will not attempt to call out unless phone numbers 1 and 3, and account code 1 are programmed. Should communications fail to be established after 6 attempts the panel will wait for one hour and try again at one attempt per hour. When this feature is enabled the panel will also call out when an AC power failure has lowered the battery to the point of a low battery report or when 70 unreported events are recorded in the 96 event history buffer.

If the third phone number and reporting day of the week are programmed but the time of day is not programmed, then the panel will only call out on a low battery report with AC power fail, or when 70 unreported events are recorded in the 96 event history buffer. The disadvantage of this mode is that the remote programmer must be left on line all the time in automatic answer mode waiting for unscheduled calls. Also if weekly open and close custom reports are to be generated the data may not have been automatically transferred to the remote programmer in time to print the custom report.

The remote programmer can be set to modify the control's EEPROM programming when the control calls in. The remote programmer doesn't have to be attended for this to occur (the remote programmer must be left on its login screen for auto answer). This allows you to modify the control's programming without having to waste an operators time establishing a phone connection and waiting for the download to occur.

### ANTI TAKEOVER

From the remote programmer the control can be programmed to lockout all keypad programming or to only prevent the changing of the three phone numbers and the resetting of the EEPROM programming. This prevents someone from taking over one of your accounts and using the panel in place. This data can be changed by the remote programmer only if you know the agency code and remote password.

### MASTER / SLAVE OPERATION

More than one remote programmer may be allowed access to a panel. When a remote programmer that is programmed as a slave changes the programming in a panel, that panel can automatically call the master remote programmer (phone number 3) and update its copy of the panels programming. This process is completely unattended and automatic. The remote programmer will not attempt to call out to the master unless phone numbers 1 and 3, and account code 1 are programmed.

### REMOTE PROGRAMMING SAFEGUARDS

The control remains functional during the remote access session. If an intrusion or fire alarm is detected the local alarms will sound and the connection to the remote programmer will be dropped. The alarm will then be reported to the central station. The end user need not know that a remote program session is in progress, however the operator can see zones as they are violated and will also see openings, closings, shunts and other events as they happen. Many other remote programmers shut a panel down totally during the remote programming session. Therefore a fire alarm may be missed totally or at least withheld, even preventing the sounding of local alarms, until the remote program session is over.

Every user authorized to have access to the remote programmer software is assigned an authority level and password. To sign-on to the remote programmer they must give their password which tells the remote programmer that users authority level. Every piece of data in the remote programmer can independently be assigned an authority level to be able to see and a different level to be able to change that

piece of data. Therefore a user can be restricted to what he may see and change. There are 15 different authority levels and an unlimited number of user passwords may be issued. Authority levels and passwords may be changed by the alarm company to suit their needs.

For remote communication with a control to take place, the agency code and remote password must match exactly before access is given. With over one trillion combinations and the limit of one attempt per phone call (one minute each) it would take 20 million years to try all combinations.

All communications are rigidly formatted and are protected by two types of error checking. All messages require an acknowledgement so you know that it was received correctly without error. If there was an error in transmission the system automatically retries the transmission.

As a safeguard against partial or erroneous program changes to a control, program changes are held in a temporary buffer and not allowed to change the control's working EEPROM memory until matching checksums are verified from both the control and the remote programmer. This procedure allows changes of small portions of the EEPROM memory, which speeds downloads, and it also protects you against creating a partially programmed EEPROM (which can happen with most other systems) if a phone line is disconnected. A total download takes 2 minutes, however changing a single item may be as short as eight (8) seconds.

The control can be programmed to transmit a reprogramming report to your central station when it has been reprogrammed.

This report will be sent every time a remote programming session is successful. A reprogramming restoral report will be issued if the remote programming session was unsuccessful. This includes dropped phone connections, sessions ended with a reset at end of session command and sessions that never started because of login rejection by the panel.

Any reprogramming (installers or users codes) that takes place at the keypad is flagged to the remote programmer the next time it contacts the control for any reason. This keeps the remote programmers data base automatically up to date with the control. Users code changes may be prevented by withholding the master code. Keypad installers programming may be restricted or disabled from the remote programmer.

Every time the control is accessed by a remote programmer a history buffer entry is made with the time and date.

If the phone line connection is dropped the control will release the line within one minute.

If the phone connection is still good but no actions have been taken in the last 15 minutes the control will LOG OFF the remote programmer and drop the phone line.

### RESIDENTIAL MODE

The control can be programmed for Commercial or Residential mode of operation (see section L.14 data digit 1). In the commercial mode, a User Code or a Programmer Code must be entered before any program command is entered, except emergency alarms. In the residential mode, the user code is used only to disarm the control and to silence

alarms. Therefore, the user code is not entered before the program codes.

## SIREN / AUX RELAY INTERACTION

Each zone can be programmed to provide individual control of the siren and aux relay. The burglar zones are programmed in section L.1, data digit 1, and the fire zone is programmed in section L.13, data digit 1. The fire zone has priority, and no matter what state the siren and aux relay are in, they will go to the state programmed for the fire zone when it alarms.

In the case of alarms other than fire, if the siren is on continuous and a new zone alarms that is programmed for a pulsing siren, it will cause the siren to pulse. However, if the siren is pulsing and new zone alarms that is programmed for continuous, it will have no effect on the siren. Pulsing always overrides continuous output for the siren and aux relay independently. If the siren is pulsing and the aux relay is off when a new zone alarms that is programmed for continuous siren and aux relay, will have no effect on the siren but the aux relay will come on continuous.

## SMOKE DETECTOR PLACEMENT

Proper location of detection devices is one of the most critical factors in a properly installed and operating fire alarm system. For best results, the detectors should be located in accordance with National Fire Protection Association (NFPA) recommendations. For commercial or industrial installations, refer to NFPA Standard 72E "Automatic Fire Detectors". When considering the detectors for residential applications, refer to NFPA Standard 74, "Household Fire Warning Equipment". These standards are available at a nominal cost from: The National Fire Protection Association, Batterymarch Park, Quincy, MA., 02269.

In all installations, good engineering judgement should prevail. Following are some general considerations:

- ✓ Smoke detectors should not be installed close to ventilating or air-conditioning outlets where smoke might be circulated away from the detector. Locations near return air inlets should be favored.
- ✓ Avoid areas subject to normal smoke concentrations such as kitchens, near fireplaces, and in garages.
- ✓ Do not install smoke detectors where normal ambient temperatures are above 100 degrees F. (38 degrees C.) or below 32 degrees F. (0 degrees C.), nor in "dead air" spaces. Areas of high humidity and dust concentrations should also be avoided.
- ✓ The nearest edge of ceiling mounted detectors should not be closer than 4 inches (10 cm) from any wall.
- ✓ Locate the top edge of wall mounted detectors between 4 and 12 inches (10 to 30 cm) from the ceiling.

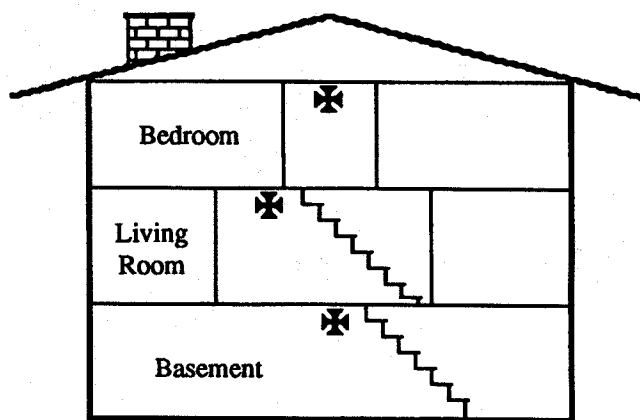
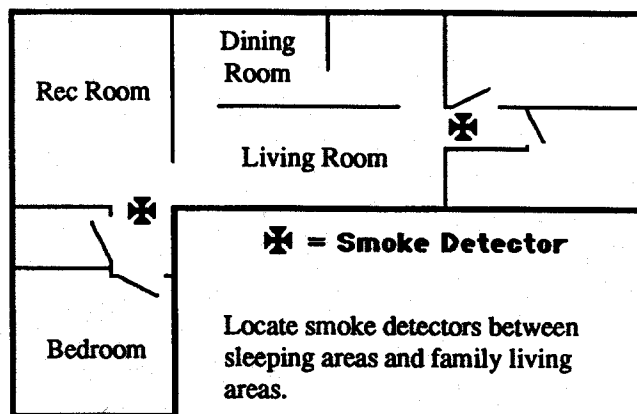
For residential installations, the following is a Basic Requirement excerpt from NFPA Standard 74:

### 2-1 Required Protection

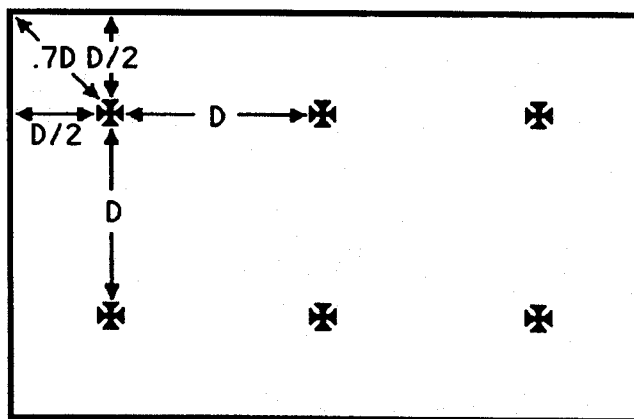
2-1.1 This standard requires the following detectors within the family living unit.

2-1.1.1 Smoke detectors shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit including basements and excluding crawl spaces and unfinished attics.\*

2-1.1.2 For family living units with one or more split levels (i.e., adjacent levels with less than one full story separation between levels), a smoke detector required by 2-1.1.1 shall



A smoke detector should be located on each story including basements, but excluding crawl spaces and unfinished attics.



Commercial Installations:  
Smooth ceiling application where  $D=30$  feet (9m) may be used as a guide as required by NFPA 72E.



suffice for an adjacent lower level, including basements.

*Exception: Where there is an intervening door between one level and the adjacent lower level, a smoke detector shall be installed on the lower level.*

\* The provisions of 2-1.1.1 represent the minimum number of detectors required by this standard. It is recommended that the householder consider the use of additional smoke or heat detectors for increased protection for those areas separated by a door from the areas protected by the required smoke detectors under 2-1.1.1 above. The recommended additional areas are: living room, dining room, bedroom(s), kitchen, attic (finished or unfinished), furnace room, utility room, basement, integral or attached garage, and hallways not covered under 2-1.1.1 above. However, the use of additional detectors remain the option of the householder.

End of excerpt from NFPA Standard 74.

### SPECIAL AREA PROTECTION

Any compliment of zones may be programmed as a special area (section L.1 data digit 3). When one or more zones are programmed as special area zones, only users codes 26 through 30 may bypass or disarm the special area.

The control must be in the commercial mode (section L.14 data digit 1) for this feature to function properly. This requires the user code to be entered before all keypad commands are issued.

One of the special arming keys [4], [5] or [6] should also be programmed (section L.3) to bypass all zones except the special area zones. Bypassed zones must also include zones that are permanently shunted. Don't forget the keypad zones 9 through 14. They must be bypassed also if they are not part of the special area. When programmed to arm the special area, only a special area user will be allowed to enter the command and engage special area protection (it will not bypass the indicated zones).

Any user code may arm the control using [COMMAND] [1] arming and all protection including the special area is armed. The keypad indicator lights will follow their normal pattern, red light on, green light flashing for the exit delay, yellow partial light off and the yellow alert light off.

If a non-special area user (codes 1 through 25) disarms the control, the red light will go off, the yellow partial light will be off, and the green light will start following the current zone status. The yellow alert light will start flashing to indicate that the special area is still armed. Any violation of the special area at this point will cause an alarm.

When a special area user (codes 26 through 30) enters the building, they should enter their user code which would remove the special area protection and stop the yellow alertlight from flashing.

If the special area user desires to rearm the special area without rearming the entire control, they would use the special arming key 4, 5, or 6 sequence programmed above. This will start the yellow alert light flashing, and arm the special area protection zones.

The zone alarm response (section L.1 data digit 1) can be programmed to any desired response. Often, it is programmed

to sound the keypad beepers only when disarmed (red armed status light off), and the siren when the entire control is armed (red armed status light on) if desired.

**A special area zone MUST NOT be programmed as a delay zone!**

[Command] 2 and [Command] 3 arming will not bypass a special area zone that is also programmed as interior. The special area zone will remain armed if it was previously.

Keypad zones may be used as special area zones, however if they are used at least one zone connected to the panel must also be programmed as a special area zone. Otherwise the alert light will not function properly.

Special area arming and disarming are entered into the history buffer.

### SPECIAL KEY ARMING

Three custom arming configurations may be provided, thereby eliminating the need to do individual zone bypasses (see section L.3).

Keys [4], [5] and [6] can be programmed to custom arm the control or to generate emergency alarms. When one of the these keys is programmed for custom arming, it can bypass any combination of zones and override the entry delay if desired.

The three keys may also be programmed to generate emergency, fire and silent alarms. The keys may be used in any combination, one for keypad alarms and two for arming, for example.

### SWINGER SHUNT

Swinger shunt is intended to reduce central station traffic from burglar zone "swingers". If a zone is programmed for restoral (section L.1 data digit 3), and swinger shunt is on (section L.14 data digit 1), that zone will restore only three times. On the third and last time that this zone reports an alarm, a trouble report is sent in the same phone call indicating that the zone is now in "swinger shunt" and will not report again until the control is disarmed.

NOTE for FORCE ARMING: If swinger shunting is off (section L.14 data digit 1), then force armed zones are truly bypassed, and will not restore even if they return to normal. This will cause the yellow partial light on the keypad to start flashing when force armed. If swinger shunt is programmed "on", then the force armed zones are not bypassed, and will restore if they return to normal and are programmed to restore (section L.1 data digit 3). Since the force armed zones are not bypassed (they may restore), the yellow partial light will not come on.

### STONE DIALING

Tone or pulse dialing is programmed in data digit 1 of section L.9. When programmed for tone dial, the first half of the programmed attempts will use tone dial, and the last half of the attempts will use pulse dialing. For example, if programmed for 10 attempts, then the first 5 would use tone dial and the last 5 (if needed) would use pulse dialing

## TROUBLE (BURGLAR ZONE)

A zone may be programmed to monitor for zone loop problems or tamper (section L.4 line 48 and section L.1 data digit 4). In this mode of operation, a 24 hour zone reports a trouble if a zone loop opens, and an alarm is reported if a zone is shorted. 24 hour zones operate this way regardless of whether the control is armed or disarmed.

Non-24 hour loops report trouble only when the loop opens and the control is disarmed. During armed periods, an alarm is generated on either an open or shorted loop condition.

The zone number reported in a trouble report is not the physical zone number. For 4/2 reporting, the alarm report extended digit for that zone is sent as the zone number (see section L.4 lines 31 through 44). For 3/1, 4/1 and BFSK, the alarm report code is sent as the zone number. This assures the central station sees the same zone number in alarm and trouble reports.

When a keypad zone is programmed for trouble, a zone trouble report will be generated only if the the panel loses communication with the keypad that the zone is connected to while that zone is disarmed. If that zone is armed when communication is lost then an alarm will be generated. Keypad zones do not distinguish between open and short.

## WINDOWS (OPEN AND CLOSE)

To reduce the opening and closing traffic to the central station, normal opening and closing reports may be suppressed during programmable windows. The open and close events are held in the history buffer, and may be automatically reported once a week at off hours. The starting times of each window are programmed in lines 11 through 72 of section M.6. The length of the windows is set in section M.3. Any opens that occur during an opening window, and any closing that occurs in a closing window, will be suppressed (not transmitted). All open and close events that occur outside of the programmed windows are reported as they occur.

Optional failure (late) to open and failure (late) to close reports may be programmed so that, rather than report every open and close report, only the failure (late) to open or close will be reported. This greatly reduces the central station traffic by only reporting the exception rather than the event. The length of the windows (section M.3) may be programmed to zero so no open or closed reports are suppressed while failure to open and close reports are still generated.

## ZONE CHECKING

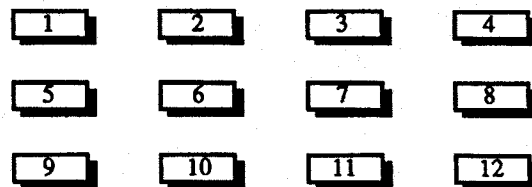
Zone checking is intended to automatically perform an unobtrusive walk test of the control's protective zones. Zone checking can catch jumped out protection, "sleepers", blocked and sabotaged space protection. It monitors the programmed zones each disarmed period to see if they have been faulted one or more times. If all checked zones were faulted during the disarmed period, the user is allowed to arm normally and would see nothing other than the normal displays. If the checked zones were not all faulted during the disarmed period, attempting to arm will result in a "CHEC" message followed by the zone number(s) to show which zones may not be functional. This is the "warning" mode. If programmed as

"mandatory", the user would not be allowed to arm until he has walked (faulted) the checked zones. Users may bypass the mandatory check zones, but not force arm. This causes an Exception Close report to be reported (a trouble report, for each zone bypassed, followed by a close report. See section L.5 line 55). Any combination of zones may be programmed to be checked in section L.2.

Mandatory zone checking is ignored if the control is disarmed for less than an hour before it is rearmed. The CHEC message is still displayed but mandatory checking is overridden and you may rearm without walking the "check zones". This allows entry of a building after hours or on a weekend for a short time without being bothered by the zone checking.

## ZONE STATUS DISPLAY

The zone status display is programmed in data digit 4 of section L.14. When programmed on, the horizontal bars of the four digit display on the 7135 keypad will light up when the zone that it represents is faulted. The display only appears when the control is disarmed, and it will turn off if there is an AC power failure to save battery life. There is no indication for a bypassed zone in this display as the LEDs for bypassed zones remain off. In the display below, the numbers on the LED bars indicate which zones are displayed on that LED. The one exception is that if zone 12, 13 or 14 is faulted, then bar 12 will light. There is no need to memorize which bar corresponds to which zone, pressing [COMMAND] will show which zones are faulted.

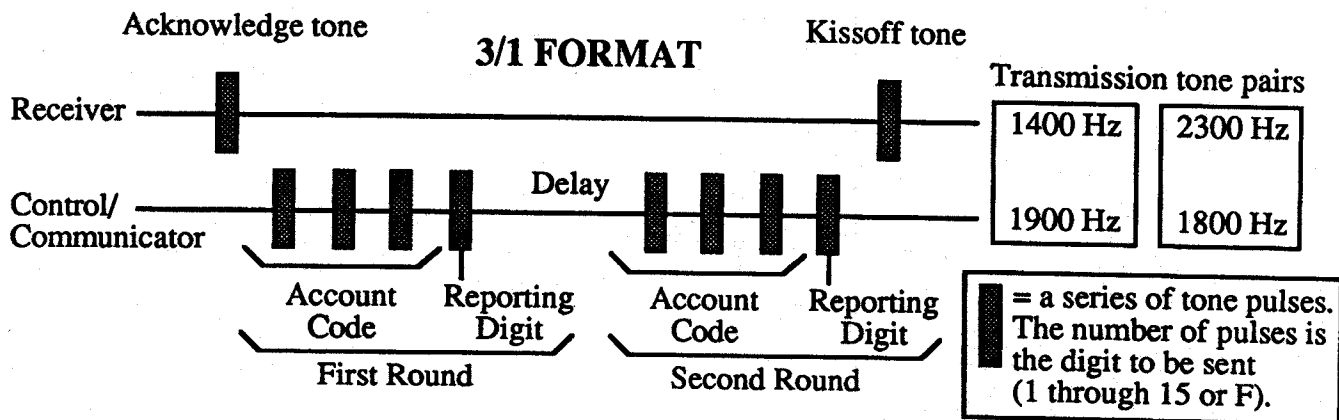


## ZONE TEST

When the control is disarmed, entering [COMMAND] [8] [1] will enter the zone test mode. The green, yellow and red status lights above the keypad will all flash together while the zone test is active. All zones not programmed for permanent shunt (section L.1 data digit 4) will be in test mode and will not cause alarms. This includes 24 hour zones, but not the fire zone which continues to operate normally. When one or more zones are faulted, the keypad beepers will sound continuously. Pressing any key other than [RESET] will show all zones that have not been tested (faulted). This display will show a "U" followed by the zone number (U=untested). The display of a "U" followed by two dashes (U--) indicates that all zones have been tested.



## COMMUNICATION BASICS



### COMMUNICATION BASICS

#### 3/1 FORMAT

This format is shown on the next page. A three digit account code is sent followed by a one digit reporting code. A double round is sent so the receiver can verify the data. This format is usually transmitted at 10 pps or 20 pps (pulses per second).

#### 3/1 EXTENDED FORMAT

This format works by sending two transmissions, each looking like the 3/1 format above. In the first transmission the account code is sent followed by the first digit of the reporting code. The second transmission repeats the first digit of the reporting code three times (in place of the account code) followed by the second digit of the reporting code. This format is usually transmitted at 10 pps or 20 pps

For example if the account code was 345 and the first and second digits of the reporting code were F and 9, the first transmission would send two rounds of 345 F. The second transmission would be two rounds of FFF 9.

#### 3/1 FORMAT with PARITY

This format differs from 3/1 in that only a single round of account code and reporting code is sent followed by a parity digit. The double round is not needed because the parity digit is used to verify the data. This format is usually transmitted at 40 pps.

#### 3/1 EXTENDED FORMAT with PARITY

This format works by sending two transmissions, each looking like the 3/1 format with parity above. In the first transmission the account code is sent followed by the first digit of the reporting code. The second transmission repeats the first digit of the reporting code three times (in place of the account code) followed by the second digit of the reporting code. This format is usually transmitted at 40 pps.

#### 4/1 FORMAT

This format works the same as the 3/1 format above except that four digits of account code are sent rather than three in both of the double rounds. This format is usually transmitted at 10 pps or 20 pps.

#### 4/2 FORMAT (Silent Knight)

This format transmits like 3/1 except four digits of account code and two digits of reporting code are sent in each of the two rounds. This format is usually transmitted at 10 pps or 20 pps.

#### BFSK

BFSK sends three digits of account code and two digits of reporting code in a single transmission that consist of constant tones. The format has built in error checking and therefore does not need a double round.

#### RECEIVER PRINTED OUTPUT

In the 3/1 extended format example a transmission of 345 F was followed by a transmission of FFF 9. Depending on the type of receiver the printed output from these transmissions would typically take one of three different forms.

- 1) 345 F  
FFF 9
- 2) 345 F9
- 3) 345 TROUBLE ZONE 9

All three printed messages above are the result of the same transmissions into three different receivers.

#### COMMUNICATOR PROGRAMMING

##### AC POWER FAIL REPORT

AC power failure does not initiate an immediate report to the central station. The report will be sent to the central station only if the power is still failed when another report is generated for some other reason. Typically this would be a low battery report. This is done to prevent many calls to the central station that would be caused by a massive power outage covering a large area. Programmed in section L.4 line 49.

##### AUTOMATIC TEST REPORT

This report will be sent to the central station automatically at the interval programmed in section L.18 line 85 digit 4. This report is used as an automatic test of the digital communicator. Programmed in section L.5 line 58.

## **AUTOMATIC TEST REPORT OFFSET**

The number of hours until the next automatic test report will be sent is programmed in line 69 of section L.6.

## **CALL WAITING**

We do not recommend connecting control panels to phone lines equipped with a call waiting feature. If the control panel must be connected to a line with call waiting, then the programmed central station phone number should be preceded by the call waiting disable code and a three second delay.

This will prevent incoming call(s) from interrupting a communication. For example, call waiting can be disabled in many areas by dialing \*70 before the phone number for tone dial and 1170 for pulse dial. The phone numbers are programmed in section L.7 lines 71 and 72.

## **CANCELLED ALARM REPORT**

A cancelled alarm report will be issued if an alarm is silenced while the alarm sounders are sounding (line 57, section L.5). When the exception opening report is programmed (line 53, section L.5), don't program the cancelled alarm report.

## **CLOSING REPORT**

This report is sent to the central station only when COMMAND 1 arming is used to arm the system (or a keyswitch arms at level 6). Any other form of arming will not send a closing report. Programmed in section L.5 line 56.

## **COMMUNICATOR TEST REPORT**

The communicator test report is programmed in line 59 of section L.5. When programmed a [COMMAND] [8] [2] entered at the keypad will generate a test report. The power light on the keypad will pulse during the test. If the report is successful the power light will return to normal, and a long keypad beep will be heard. If the communication is unsuccessful after the programmed number of retries, the power light will continue to flash, and the keypad beeper will come on continuously. Pressing [RESET] will quiet the beeper, but a communication error is latched into the system error memory and history buffer. With this operation, if you have a unique reporting code to the central station for test reports, a phone call to the central station operators before and after the test would not be required. You have positive feedback on the result of the test communication even if you are not paying close attention to the control during the test report.

## **DIALER DELAY**

The number of seconds that the communicator will wait before an alarm report is sent to the central station. This delay allows a false alarm to be cancelled before it is reported. Typically used only in residential. Programmed in section L.6 line 68.

## **DURESS REPORT**

This report is sent to the central station when a users code one digit higher, in the last digit, than a valid users code is used to disarm the system (duress code). The duress report is used to indicate that you have disarmed the system under "duress". If both the opening and duress reports are programmed, the duress and not the opening report will be sent when the system is disarmed with a duress code as outlined above. A duress report is not delayed by the dialer delay, and it can't be cancelled. Programmed in section L.5 line 52.

## **EXCEPTION CLOSING REPORT**

This report is sent to the central station only when [Command/#]-[1] arming is used to arm the system and one or more zones have been bypassed or forced armed. This report does not require the closing report to be programmed. If both the closing and exception closing reports are programmed, the exception closing and not the closing report will be sent when the system is armed with bypassed or force armed zones. Before the exception closing report is sent, a trouble report will be sent for each zone bypassed or force armed. Programmed in section L.5 line 55.

## **EXCEPTION OPENING REPORT**

This report is sent to the central station only the first time the system is disarmed after an alarm has occurred during an armed period. This report does not require the opening report to be programmed. If both the opening and exception opening reports are programmed, the exception opening and not the opening report will be sent the first time the system is disarmed after an alarm. Programmed in section L.5 line 53.

## **LATE TO CLOSE and LATE TO OPEN REPORTS**

Opening and closing windows may be programmed. Each window composed of a start time and a length. Refer to section M for the time setting parameters.

The start time determines the time of day the window will activate, while the length determines how long the window will remain active. Openings and closings that occur during the appropriate windows are not reported as these are normal occurrences. However, openings and closings that occur outside of these windows will be reported. All openings and closings are stored in the history buffer, whether or not they occur within a window.

Late to close reports will be sent if the control is not closed (armed) at the end of the closing window. Late to open reports will be sent if the control is not open (disarmed) at the end of the opening window. Setting the window length = 0 will cause the late to open and late to close reports to occur at the window start time, without suppressing any open or close reports.

Late to open or late to close reports are enabled on lines 08 and 09 in L.5.

## **MULTIPLE REPORT**

When selected up to 8 reports may be sent in one phone call to the central station. This is the default setting and it should be used with all but the oldest receivers. Programmed in section L.9 lines 75 and 76 data digit 1.

## **OPENING REPORT**

This report is sent to the central station only the first time the system is disarmed after [Command#]-[1] arming was used to arm the system. An open after any other form of arming will not send an opening report. Programmed in section L.5 line 54.

## **REPORT CODE**

The report code is the reporting digit sent after the account code in 3/1, 4/1 and BFSK reporting. It is also the first reporting digit sent after the account code in 4/2 reporting. It is programmed in the first data digit in sections L.4 and L.5. If a report of "Zone 0" is to be sent to the receiver program this location with a RESET key followed by 0 (HEX A). If this report is enabled never program this location with a 0 which will disable this digit from being sent.

## **REPORT EXTENDED**

The report extended digit is the extended report digit sent in the second round of an extended 3/1 or 4/1 report. It is also the second reporting digit sent after the account code in 4/2 reporting. It can not be used for alarm reporting in BFSK. It is programmed in the second data digit in sections L.4 and L.5. If a report of "Zone 0" is to be sent to the receiver, program this location with a RESET key followed by 0 (HEX A). When this location is programmed with a 0, this report will not be extended (it will only send one report in 3/1 and 4/1). This digit must be programmed to a non zero value for 4/2 reporting. For zone trouble reporting (line 48 section L.4) if this digit is programmed as a zero then the alarm reporting code for the troubled zone will be sent as the extended reporting code in 3/1, 4/1, 4/2 and BFSK formats.

## **REPROGRAM REPORTING**

Reprogram reporting is used to inform the central station that the system has been remotely programmed or keypad programmed. After a successful remote program session the report code and report extended reports will be sent to the central station. If the remote program session failed after the remote programmer was allowed access to the system the restoral code and restoral extended reports will be sent. This function is programmed in section L.4 on line 07.

## **RESTORAL CODE**

The restoral code is the reporting digit sent after the account code in 3/1, 4/1 and BFSK restoral reporting. It is also the first reporting digit sent after the account code in 4/2 restoral reporting. It is programmed in the third data digit in section L.4. If a report of "Zone 0" is to be sent to the receiver program this location with a RESET key followed by 0 (HEX A). When this location is programmed with a 0, restoral reporting for this report will be disabled.

## **RESTORAL EXTENDED**

The restoral extended digit is the extended report digit sent in the second round of an extended 3/1 or 4/1 restoral report. It is also the second reporting digit sent after the account code in 4/2 reporting. It is programmed in the fourth data digit in section L.4. If a report of "Zone 0" is to be sent to the receiver program this location with a RESET key followed by 0 (HEX A). When this location is programmed with a 0, this restoral report will not be extended (it will only send one report in 3/1 and 4/1). This digit must be programmed to a non zero value for 4/2 restoral reporting. For zone trouble restoral reporting (line 48 section L.4) if this digit is programmed as a zero then the alarm reporting code for the restored zone will be sent as the extended restoral reporting code in 3/1, 4/1, 4/2 and BFSK formats.

## **RESTORAL REPORT**

Any time a zone that is programmed for restoral report sends an alarm report, trouble report, force arming trouble report or swinger shunt trouble report, a restoral report will be sent. Restoral from trouble will be sent when the zone restores regardless of the arming state of the panel. Restoral from alarm will be sent when the zone restores unless the system is disarmed first and then the restoral will be sent at the time an open report would have been sent. If open reports are programmed they will be sent at this time.

## **SINGLE REPORT**

When selected only one report may be sent in one phone call to the central station. This is setting should be used only with the oldest receivers which can receive only one report per phone call. Programmed in section L.9 lines 75 and 76 data digit 1.

## **SYSTEM TROUBLE REPORT**

This report will be sent to the central station when the system has detected an internal fault and is still in good enough working order to report. Programmed in section L.4 line 51.

## **TONE DIALING**

Tone or pulse dialing is programmed in data digit 1 of section L.9. When programmed for tone dial, the first half of the programmed attempts will use tone dial, and the last half of the attempts will use pulse dialing. For example, if programmed for 10 attempts, then the first 5 would use tone dial and the last 5 (if needed) would use pulse dialing.

## **USER CODE REPORTING**

The control has 30 user codes. In 3/1, 4/1 and BFSK reports, user codes 1 through 14 will report uniquely as 1 through E, and user codes 15 through 30 will report as user F. In 4/2 reporting, and 3/1 reporting at 10pps only, user codes 1 through 9 will report uniquely as 1 through 9, and user codes 10 through 30 will report as user 0.

If programmed in line 85 of section L.18 all 30 users codes can be reported. Program the open and closing reports (lines 54 and 56 of section L.5) to go to phone number one. Program both account codes (lines 73 and 74 of section L.8) with different codes. User codes 1 through 15 will be reported as codes 1 through F to phone number one with account code one. User codes 16 through 30 will be reported as codes 1 through F to phone number one with account code two.

In the history buffer, all 30 user codes are recorded uniquely and, therefore, are reported through the automatic history buffer report. They also may be read back by the remote programmer and at the keypad.

User Codes 1 through 7 may be restricted from sending opening and closing reports by appropriately programming data digit 3 in section M.2.

Users code extended reporting in open, close and exception close reports may be suppressed by programming line 85 digit 2 in section L.18.

Users code extended reporting in exception open, cancel and duress reports may be suppressed by programming line 85 digit 2 in section L.18.

For those receivers that can only receive decimal codes program section L.18 line 85 digit 3 to limit extended user code reporting to decimal codes. When decimal reporting is used only 10 unique users codes per account code can be reported to the central station.

### **ZONE TROUBLE REPORTING**

The zone number reported in a trouble report is not the physical zone number. For 4/2 reporting, the alarm report extended digit for that zone is sent as the zone number (see section L.4 lines 31 through 35). For 3/1, 4/1 and BFSK, the alarm report code is sent as the zone number. This assures the central station sees the same zone number in alarm and trouble reports. Also see section L.18 line 85 digit 3 if the extended reporting digit is the zone number rather than the reporting digit.

# EXAMPLE PROGRAM - SILENT KNIGHT SK9000 4/2 FORMAT "0"

## SECTION L.4

FIRE ZONE	3 0 1 8 2 8 5 #	Report "Alarm 18" and "Alarm Restore 18"
ZONE 1	3 1 A 1 2 1 5 #	Report "Alarm 01" and "Alarm Restore 11"
ZONE 2	3 2 A 2 2 2 5 #	Report "Alarm 02" and "Alarm Restore 12"
ZONE 3	3 3 A 3 2 3 5 #	Report "Alarm 03" and "Alarm Restore 13"
ZONE 4	3 4 A 4 2 4 5 #	Report "Alarm 04" and "Alarm Restore 14"
ZONE 5	3 5 A 5 2 5 5 #	Report "Alarm 05" and "Alarm Restore 15"
ZONE 6	3 6 A 6 2 6 5 #	Report "Alarm 06" and "Alarm Restore 16"
ZONE 7	3 7 A 7 2 7 5 #	Report "Alarm 07" and "Alarm Restore 17"
ZONE 8	3 8 A 8 2 8 5 #	Report "Alarm 08" and "Alarm Restore 18"
ZONE 9	3 9 A 9 0 0 5 #	Report "Hold Up Alarm" and no restorals
ZONE 10	4 0 1 A 2 A 5 #	Report "Alarm 10" and "Alarm Restore 10"
ZONE 11	4 1 1 1 2 A 5 #	Report "Alarm 11" and "Alarm Restore 10"
ZONE 12	4 2 1 2 2 A 5 #	Report "Alarm 12" and "Alarm Restore 10"
ZONE 13	4 3 1 3 2 A 5 #	Report "Alarm 13" and "Alarm Restore 10"
ZONE 14	4 4 1 4 2 A 5 #	Report "Alarm 14" and "Alarm Restore 10"
SILENT ALARM	4 5 1 6 0 0 5 #	Report the keypad 'C' key as "Alarm 16".
EMERGENCY ALARM	4 6 A A 0 0 5 #	Report the keypad 'B' key as "Panic Alarm".
FIRE TROUBLE	4 7 6 8 7 8 5 #	Report fire trouble as zone 68, restore as 78.
ZONE 1-14 TROUBLE	4 8 6 0 7 0 5 #	Automatically report zone number on trouble and trouble restore.
LOW BATTERY	4 9 6 9 7 9 5 #	Report "Low Battery" and "Battery Restore".
AC POWER FAILURE	5 0 6 A 7 A 5 #	Report "AC Trouble" and "AC Restore".
SYSTEM TROUBLE	5 1 3 9 0 0 5 #	Report "Data loss".
REPROGRAM REPORT	0 7 0 0 0 0 0 #	Disable reprogram report.

## SECTION L.5

DURESS ALARM	5 2 1 5 5 #	Report zone 15 alarm.
EXCEPTION OPENING	5 3 3 8 5 #	Report "Cancel".
OPENING	5 4 9 0 5 #	Report as "Open ID" (9x).
EXCEPTION CLOSING	5 5 4 0 5 #	Report as "Close ID" (4x).
CLOSING	5 6 4 0 5 #	Report as "Close ID" (4x).
CANCELLED ALARM	5 7 0 0 0 #	Disable cancel report (see exception opening)
24 HOUR CHECK-IN	5 8 3 A 5 #	Report as "Test".
COMMUNICATE TEST	5 9 3 A 5 #	Report as "Test".
FAILURE TO OPEN	0 8 0 0 0 #	Disable failure to open report.
FAILURE TO CLOSE	0 9 0 0 0 #	Disable failure to close report

COMMUNICATOR FORMAT 1 - (Section L.9)	7 5 0 1 0 7 0 0 #	4/2 reporting 10 attempts.
COMMUNICATOR FORMAT 2 - (Section L.9)	7 6 0 1 0 7 0 0 #	4/2 reporting 10 attempts.

## SECTION L.4

FIRE ZONE	3 0 0 0 0 0 0 #	Disable the fire zone and keypad fire report.
ZONE 1	3 1 1 0 E 1 5 #	Report zone 1 alarm and restoral on zone 1.
ZONE 2	3 2 2 0 E 2 5 #	Report zone 2 alarm and restoral on zone 2.
ZONE 3	3 3 3 0 E 3 5 #	Report zone 3 alarm and restoral on zone 3.
ZONE 4	3 4 4 0 E 4 5 #	Report zone 4 alarm and restoral on zone 4.
ZONE 5	3 5 5 0 E 5 5 #	Report zone 5 alarm and restoral on zone 5.
ZONE 6	3 6 6 0 E 6 5 #	Report zone 6 alarm and restoral on zone 6.
ZONE 7	3 7 7 0 E 7 5 #	Report zone 7 alarm and restoral on zone 7.
ZONE 8	3 8 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 9	3 9 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 10	4 0 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 11	4 1 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 12	4 2 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 13	4 3 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 14	4 4 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
SILENT ALARM	4 5 0 0 0 0 0 #	Disable the keypad 'C' key silent alarm.
EMERGENCY ALARM	4 6 9 0 0 0 5 #	Report the keypad 'B' key as zone 9.
FIRE TROUBLE	4 7 0 0 0 0 0 #	Disable the fire zone.
ZONE 1-14 TROUBLE	4 8 F 0 E 0 5 #	Automatically report zone number on trouble.
LOW BATTERY	4 9 F 9 E 9 5 #	Report trouble zone 9 and restoral on zone 9.
AC POWER FAILURE	5 0 F A E A 5 #	Report trouble zone 0 and restoral on zone 0.
SYSTEM TROUBLE	5 1 F D E D 5 #	Report trouble zone D and restoral on zone D.
REPROGRAM REPORT	0 7 E F F F 5 #	Report restoral zone F and trouble on zone F.

## SECTION L.5

DURESS ALARM	5 2 A 0 5 #	Report zone 0 alarm.
EXCEPTION OPENING	5 3 D 0 5 #	Report as cancel report (D).
OPENING	5 4 B 0 5 #	Report as open report (B).
EXCEPTION CLOSING	5 5 C 0 5 #	Report as close report (C).
CLOSING	5 6 C 0 5 #	Report as close report (C).
CANCELLED ALARM	5 7 0 0 0 #	Disable cancel report (see exception opening)
24 HOUR CHECK-IN	5 8 E E 5 #	Report as restoral on zone E.
COMMUNICATE TEST	5 9 E E 5 #	Report as restoral on zone E.
FAILURE TO OPEN	0 8 F B 5 #	Report as trouble on zone B (open).
FAILURE TO CLOSE	0 9 F C 5 #	Report as trouble on zone C (close).
COMMUNICATOR FORMAT 1 - (Section L.9)	7 5 0 1 0 8 1 0 #	BFSK reporting 10 attempts.
COMMUNICATOR FORMAT 2 - (Section L.9)	7 6 0 1 0 8 1 0 #	BFSK reporting 10 attempts.

## SECTION L.4

FIRE ZONE	3 0 1 0 E 1 5 #	Report zone 1 alarm and restoral on zone 1.
ZONE 1	3 1 0 0 0 0 0 #	Disable zone 1 (avoid conflict with fire zone).
ZONE 2	3 2 2 0 E 2 5 #	Report zone 2 alarm and restoral on zone 2.
ZONE 3	3 3 3 0 E 3 5 #	Report zone 3 alarm and restoral on zone 3.
ZONE 4	3 4 4 0 E 4 5 #	Report zone 4 alarm and restoral on zone 4.
ZONE 5	3 5 5 0 E 5 5 #	Report zone 5 alarm and restoral on zone 5.
ZONE 6	3 6 6 0 E 6 5 #	Report zone 6 alarm and restoral on zone 6.
ZONE 7	3 7 7 0 E 7 5 #	Report zone 7 alarm and restoral on zone 7.
ZONE 8	3 8 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 9	3 9 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 10	4 0 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 11	4 1 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 12	4 2 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 13	4 3 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
ZONE 14	4 4 8 0 E 8 5 #	Report zone 8 alarm and restoral on zone 8.
SILENT ALARM	4 5 0 0 0 0 0 #	Disable the keypad 'C' key silent alarm.
EMERGENCY ALARM	4 6 9 0 0 0 5 #	Report the keypad 'B' key as zone 9.
FIRE TROUBLE	4 7 F 1 E 1 5 #	Report zone 1 trouble and restoral on zone 1.
ZONE 1-14 TROUBLE	4 8 F 0 E 0 5 #	Automatically report zone number on trouble.
LOW BATTERY	4 9 F 9 E 9 5 #	Report trouble zone 9 and restoral on zone 9.
AC POWER FAILURE	5 0 F A E A 5 #	Report trouble zone 0 and restoral on zone 0.
SYSTEM TROUBLE	5 1 F D E D 5 #	Report trouble zone D and restoral on zone D.
REPROGRAM REPORT	0 7 E F F F 5 #	Report restoral zone F and trouble on zone F.

## SECTION L.5

DURESS ALARM	5 2 A 0 5 #	Report zone 0 alarm.
EXCEPTION OPENING	5 3 D 0 5 #	Report as cancel report (D).
OPENING	5 4 B 0 5 #	Report as open report (B).
EXCEPTION CLOSING	5 5 C 0 5 #	Report as close report (C).
CLOSING	5 6 C 0 5 #	Report as close report (C).
CANCELLED ALARM	5 7 0 0 0 #	Disable cancel report (see exception opening)
24 HOUR CHECK-IN	5 8 E E 5 #	Report as restoral on zone E.
COMMUNICATE TEST	5 9 E E 5 #	Report as restoral on zone E.
FAILURE TO OPEN	0 8 F B 5 #	Report as trouble on zone B (open).
FAILURE TO CLOSE	0 9 F C 5 #	Report as trouble on zone C (close).
COMMUNICATOR FORMAT 1 - (Section L.9)	7 5 0 1 0 8 1 0 #	BFSK reporting 10 attempts.
COMMUNICATOR FORMAT 2 - (Section L.9)	7 6 0 1 0 8 1 0 #	BFSK reporting 10 attempts.

# Addendum to the DS7100 Series Control/Communicator Installation Manual for U.L. Certificated Installations

The DS7100 is U.L. Listed for Household Fire Alarm, Household Burglary Alarm, Local Burglary Alarm Grades A, and B, Police Station Connection grade A, and Central Station Burglary Alarm grades AA, A, B, and C. The DS7100 should be installed in accordance with U.L. 681, Installation and Classification of Mercantile and Bank Burglar Alarm Systems, or U.L. 1641, Installation and Classification of Residential Burglar Alarm Systems.

## INSTALLATION CONSIDERATIONS

- The DS7100 control must be mounted indoors and within the protected area.
- Enclosure tamper switches (if used) must be connected to a 24 hour zone.
- For commercial grade installations, wiring to the bell (if used) must be in conduit with no other wiring.
- For commercial grade installations requiring a bell and bell housing, the bell circuit must be made and supervised by means of metallic conductors to two ground clamps spaced at least 1/4 inch apart.
- Grounding must be to a cold water pipe where possible.
- At least one UL listed keypad with zone display must be connected.
- Zones must be connected to U.L. Listed, compatible devices.
- If zones 9-14 are used, the keypad(s) that they are connected to must be mounted within the protected area.
- 50 Hz AC input cannot be used in U.L. certificated installations.
- Optional Access Control Relay cannot be used in U.L. certificated installations.
- Optional Keyswitch cannot be used in U.L. certificated installations.
- Siren, and Speaker outputs cannot be used in U.L. certificated installations.
- The U.L. Listed compatible digital alarm communicator receivers (if used) are the Radionics Models 6000 and 6500, ITI CS-4000, and the Silent Knight Model 9000.
- When the special functions connector is used it must be programmed on phone line one.

## PROGRAMMING THE DS7100

When used in U.L. certificated installations, the DS7100 must conform to certain programming requirements. The following is a list of the required program entries and required accessories for specific U.L. certificated installations.

1. **Household Fire Alarm using Digital Alarm Communicator Transmitter with local bell**  
The DS7100 must be installed in accordance with NFPA 74, and the U.L. 985 standard.

**Required Accessories:** At least one Detection Systems, Inc. Model DS200-2W (2 wire), or DS200-4W (4 wire) smoke detector, and one Wheelock 46T-G10-12 bell or 34T-12 horn (will provide 85db for UL 985 and NFPA 74 requirements; other listed compatible devices with a voltage range of 12 to 13.8V may be used) is required for this application and it must be installed inside the protected area. The standard DS7100 enclosure can be used. At least one DS7030 Keypad must be used and configured for "Loud" operation.

### A. Report Programming:

- Fire Zone Report (Program Address 30) must be programmed.
- Low Battery Report (Program Address 49) must be programmed.
- AC Failure Report (Program Address 50) must be programmed.

### B. Timer Programming:

- Bell Cutoff Time (Program Address 62) must be programmed for not less than 4 minutes.
- Dialer Delay (Program Address 68) must be programmed for not longer than 15 seconds.

### C. Communication Format Programming:

- Telephone Control (Program Addresses 75, 76; Data Digits 2, 3) must be programmed to make 5-10 dialing attempts.



## **2. Household Burglary Alarm using Digital Alarm Communicator Transmitter with local bell**

The DS7100 must be installed in accordance with the U.L. 1641, and 1023 standards.

Required Accessories: At least one Wheelock 46T-G10-12 bell or 34T-12 horn (other listed compatible devices with a voltage range of 12 to 13.8V may be used) is required for this application. The standard DS7100 enclosure can be used.

### **A. Zone Programming:**

- Data Digit 3 of Program Addresses 11-18 and 24-29 must be programmed for "Will Restore" (enter 0, 1, 4, 5, 8, or 9).

### **B. Report Programming:**

- Burglar Zone Reports (Program Addresses 31-44) must be programmed for those zones used.
- Low Battery Report (Program Address 49) must be programmed.
- AC Failure Report (Program Address 50) must be programmed.

### **C. Timer Programming:**

- Bell Cutoff Times (Program Addresses 61, 63) must be programmed for not less than 4 minutes.
- Exit Delay Timer (Program Address 65) must be programmed for not longer than 60 seconds.
- Entry Delay Timer (Program Address 66) must be programmed for not longer than 45 seconds.
- Dialer Delay (Program Address 68) must be programmed for not longer than 15 seconds.

### **D. Communication Format Programming:**

- Telephone Control (Program Addresses 75, 76; Data Digits 2, 3) must be programmed to make 5-10 dialing attempts.

### **E. General Control Programming:**

- Residential or Commercial Mode (Program Address 81, Data Digit 1) must be programmed for NO Swinger Shunts (enter 0, 1, 2, or 3).

**NOTE:** For combination fire and burglary alarm applications, the DS7100 must be programmed to pulse the bell for a fire alarm (Program Address 80, Data Digit 1, enter 6, or 7), and produce a steady bell for a burglar alarm (Program Addresses 11-18 and 24-29, Data Digit 1, enter 2, or 3).

## **3. Local Burglary Alarm**

The DS7100 must be installed in accordance with the U.L. 681, and 609 standards for all grades of service.

### **A. Grade A and B Installations using Digital Alarm Communicator Transmitter with local bell**

Required Accessories: The DS7100 must be mounted in the AE7100 attack resistant enclosure (order DS7100CC) with a cover actuated tamper switch installed. The Ademco Model AD10-12 bell must be mounted in the Ademco Model AB-12 bell housing.

#### **1. Zone Programming:**

- Data Digit 3 of Program Addresses 11-18 and 24-29 must be programmed for "Will Restore" (enter 0, 1, 4, 5, 8, or 9).

#### **2. Report Programming:**

- Burglar Zone Reports (Program Addresses 31-44) must be programmed for those zones used.
- Low Battery Report (Program Address 49) must be programmed.
- AC Failure Report (Program Address 50) must be programmed.
- Open Report (Program Address 54) must be programmed.
- Close Report (Program Address 56) must be programmed.
- 24 Hour Check-In Report (Program Address 58) must be programmed.

#### **3. Timer Programming:**

- Bell Cutoff Times (Program Addresses 61, 63) must be programmed for not less than 15 minutes.
- Exit, Entry Delay Times (Program Addresses 65, 66) must be programmed for not longer than 60 seconds.
- Dialer Delay (Program Address 68) must be programmed for not longer than 15 seconds.

#### **4. Communication Format Programming:**

- Telephone Control (Program Addresses 75, 76; Data Digits 2, 3) must be programmed to make 5-10 dialing attempts.

#### **5. General Control Programming:**

- Commercial Mode (Program Address 81, Data Digit 1) must be programmed for NO Swinger Shunts (enter 1, or 3).

#### 4. Police Station Connection

The DS7100 must be installed in accordance with the U.L. 681, 365, and 1635 standards.

##### A. Grade A Installations using Digital Alarm Communicator Transmitter with local bell

Required Accessories: The DS7100 must be mounted in the AE7100 attack resistant enclosure (order DS7100CC) with a cover actuated tamper switch installed. The Ademco Model AD10-12 bell must be mounted in the Ademco Model AB-12 bell housing.

##### 1. Zone Programming:

- Data Digit 3 of Program Addresses 11-18 and 24-29 must be programmed for "Will Restore" (enter 0, 1, 4, 5, 8, or 9).

##### 2. Report Programming:

- Burglar Zone Reports (Program Addresses 31-44) must be programmed for those zones used.
- Low Battery Report (Program Address 49) must be programmed.
- AC Failure Report (Program Address 50) must be programmed.
- Open Report (Program Address 54) must be programmed.
- Close Report (Program Address 56) must be programmed.
- 24 Hour Check-In Report (Program Address 58) must be programmed.

##### 3. Timer Programming:

- Bell Cutoff Times (Program Addresses 61, 63) must be programmed for not less than 15 minutes.
- Exit, Entry Delay Times (Program Addresses 65, 66) must be programmed for not longer than 60 seconds.
- Dialer Delay (Program Address 68) must be programmed for not longer than 15 seconds.

##### 4. Communication Format Programming:

- Telephone Control (Program Addresses 75, 76; Data Digits 2, 3) must be programmed to make 5-10 dialing attempts.

##### 5. General Control Programming:

- Commercial Mode (Program Address 81, Data Digit 1) must be programmed for NO Swinger Shunts (enter 1, or 3).
- Phone Line/Bell Test (Program Address 81, Data Digit 2) must be programmed (enter 3).

#### 5. Central Station Burglary Alarm

The DS7100 must be installed in accordance with the U.L. 681, 1610, and 1635 standards for all grades of service.

##### A. Grade AA Installations using the Ademco Subscriber Terminal Unit (STU) only

Required Accessories: The DS7100 must be mounted in the AE7100 attack resistant enclosure (order DS7100CC) with a cover actuated tamper switch installed. The required communication equipment is the Ademco Model 698UL Subscriber Terminal Unit (STU). The Ademco Model 698UL STU must be installed in the same room as the DS7100 and the wiring from the Ademco Model 698UL STU to the DS7100 must be in conduit. A ringback indicator with a maximum rating of 10 mA @ 30 Vdc must be connected to the STU between terminals 5 and 18. The indicator must be internal to the STU or in an interconnected control with enclosure. The Model 698UL STU inputs should be connected to the special functions connector pins.

##### 1. Zone Programming:

- Data Digit 3 of Program Addresses 11-18 and 24-29 must be programmed for "Will Restore" (enter 0, 1, 4, 5, 8, or 9).

##### 2. Report Programming (the following reports are to be programmed to phone number one, enter last data digit as 1):

- Burglar Zone Reports (Program Addresses 31-44) must be programmed for those zones used.
- Low Battery Report (Program Address 49) must be programmed.
- Close Report (Program Address 56) must be programmed.
- The Phone Number 1 (Program Address 71) must be programmed to enable the above reports to drive special function connector pins. The above reports should be programmed to unique pins so they can be distinguished at the central station. The burglar zones may be grouped to a number of pins to provide more zone information if desired. If the Fire zone is used the Fire alarm report and Fire trouble report must be programmed to their own unique pins.
- Program Address 75, Data Digits 1-6, enter 6,0,0,1,0,0, respectively.

##### 3. Timer Programming:

- Exit, Entry Delay Timer (Program Addresses 65, 66) must be programmed for not longer than 60 seconds.

NOTE: Digital Transmitter (if used) and Derived Channel communications must be connected to separate telephone lines.

##### 4. General Control Programming:

- Commercial Mode (Program Address 81, Data Digit 1) must be programmed for NO Swinger Shunts (enter 1, or 3).
- Program Address 81, Data Digit 2 must be programmed for NO Phone Line Test (enter 0, or 2).

### **B. Grade A Installations using Long Range Radio and Digital Alarm Communicator Transmitter**

Required Accessories: The DS7100 must be mounted in the AE7100 attack resistant enclosure (order DS7100CC) with a cover actuated tamper switch installed. The required communication equipment is the Ademco Model 7622CD10 Long Range Radio Transmitter with the Model 7625 Transmitter Antenna, and Model 7621AD Transmitter Interface. The Ademco Model 659EN Telephone Line Fault Monitor is required for this application. The Ademco Model 7621AD Transmitter Interface must be mounted inside the control panel enclosure, and secured with at least two screws. The recommended mounting position is the lower right side of the back cover. If the Ademco Transmitter Interface is not powered by the DS7100, the wiring connecting the Transmitter Interface and the power supply must be in conduit. The Model 7621AD Transmitter Interface's inputs must be wired to the output of the Model 659EN Telephone Line Fault Monitor and pin 4 of the special functions connector which must be in the default mode (no programming required).

#### **1. Zone Programming:**

- Data Digit 3 of Program Addresses 11-18 and 24-29 must be programmed for "Will Restore" (enter 0, 1, 4, 5, 8, or 9).

#### **2. Report Programming for the Digital Alarm Communicator Transmitter:**

- Burglar Zone Reports (Program Addresses 31-44) must be programmed for those zones used.
- Low Battery Report (Program Address 49) must be programmed.
- AC Failure Report (Program Address 50) must be programmed.
- Open Report (Program Address 54) must be programmed.
- Close Report (Program Address 56) must be programmed.
- 24 Hour Check-In Report (Program Address 58) must be programmed.

#### **3. Timer Programming:**

- Exit, Entry Delay Timer (Program Addresses 65, 66) must be programmed for not longer than 60 seconds.
- Dialer Delay (Program Address 68) must be programmed for not longer than 15 seconds.

#### **4. Communication Format Programming:**

- Telephone Control (Program Addresses 75, 76; Data Digits 2, 3) must be programmed to make 5-10 dialing attempts.

#### **5. General Control Programming:**

- Commercial Mode (Program Address 81, Data Digit 1) must be programmed for NO Swinger Shunts (enter 1, or 3).
- Phone Line Test (Program Address 81, Data Digit 2) must be programmed (enter 1).

### **C. Grade B Installations using Long Range Radio Communications only with local bell**

Required Accessories: The DS7100 must be mounted in the AE7100 attack resistant enclosure (order DS7100CC) with a cover actuated tamper switch installed. The Ademco Model AD10-12 bell must be mounted in the Ademco Model AB-12 bell housing. The Ademco Model 7622CD10 Transmitter with Model 7625 Transmitter Antenna, and Model 7621AD Transmitter Interface is required. The Ademco Model 7621AD Transmitter Interface must be mounted inside the control panel enclosure, and secured with at least two screws. The recommended mounting position is the lower right side of the back cover. If the Ademco Transmitter Interface is not powered by the DS7100, the wiring connecting the Transmitter Interface and the power supply must be in conduit. The Model 7621AD Transmitter Interfaces inputs should be connected to the special functions connector pins.

#### **NOTE:**

Wiring from the Transmitter Interface to the Transmitter must be in conduit.

#### **1. Zone Programming:**

- Data Digit 3 of Program Addresses 11-18 and 24-29 must be programmed for "Will Restore" (enter 0, 1, 4, 5, 8, or 9).

#### **2. Report Programming (the following reports are to be programmed to phone number one, enter last data digit as 1):**

- Burglar Zone Reports (Program Addresses 31-44) must be programmed for those zones used.
- Low Battery Report (Program Address 49) must be programmed.
- AC Failure Report (Program Address 50) must be programmed.
- Close Report (Program Address 56) must be programmed.
- 24 Hour Check-In Report (Program Address 58) must be programmed.
- The Phone Number 1 (Program Address 71) must be programmed to enable the above reports to drive special function connector pins. The above reports should be programmed to unique pins so they can be distinguished at the central station. The burglar zones may be grouped to a number of pins to provide more zone information if desired. If the Fire zone is used the Fire alarm report and Fire trouble report must be programmed to their own unique pins.
- Program Address 75, Data Digits 1-6, enter 6,0,0,1,0,0, respectively.

**3. Timer Programming:**

- Bell Cutoff Times (Program Addresses 61, 63) must be programmed for not less than 15 minutes.
- Exit, Entry Delay Timer (Program Addresses 65, 66) must be programmed for not longer than 60 seconds.

**4. General Control Programming:**

- Commercial Mode (Program Address 81, Data Digit 1) must be programmed for NO Swinger Shunts (enter 1, or 3).
- Bell Test (Program Address 81, Data Digit 2) must be programmed (enter 2).

**D. Grade B Installations using Digital Alarm Communicator Transmitter with local bell**

Required Accessories: The DS7100 must be mounted in the AE7100 attack resistant enclosure (order DS7100CC) with a cover actuated tamper switch installed. The Ademco Model AD10-12 bell must be mounted in the Ademco Model AB-12 bell housing.

**1. Zone Programming:**

- Data Digit 3 of Program Addresses 11-18 and 24-29 must be programmed for "Will Restore" (enter 0, 1, 4, 5, 8, or 9).

**2. Report Programming:**

- Burglar Zone Reports (Program Addresses 31-44) must be programmed for those zones used.
- Low Battery Report (Program Address 49) must be programmed.
- AC Failure Report (Program Address 50) must be programmed.
- Open Report (Program Address 54) must be programmed.
- Close Report (Program Address 56) must be programmed.
- 24 Hour Check-In Report (Program Address 58) must be programmed.

**3. Timer Programming:**

- Bell Cutoff Times (Program Addresses 61, 63) must be programmed for not less than 15 minutes.
- Exit, Entry Delay Timer (Program Addresses 65, 66) must be programmed for not longer than 60 seconds.
- Dialer Delay (Program Address 68) must be programmed for not longer than 15 seconds.

**4. Communication Format Programming:**

- Telephone Control (Program Addresses 75, 76) must be programmed to make 5-10 dialing attempts (Data Digits 2, 3).

**5. General Control Programming:**

- Commercial Mode (Program Address 81, Data Digit 1) must be programmed for NO Swinger Shunts (enter 1, or 3).
- Phone Line/Bell Test (Program Address 81, Data Digit 2) must be programmed (enter 3).

**E. Grade C Installations using Digital Alarm Communicator Transmitter only**

Required Accessories: The DS7100 must be mounted in the AE7100 attack resistant enclosure (order DS7100CC) with a cover actuated tamper switch installed.

**1. Zone Programming:**

- Data Digit 3 of Program Addresses 11-18 and 24-29 must be programmed for "Will Restore" (enter 0, 1, 4, 5, 8, or 9).

**2. Report Programming:**

- Burglar Zone Reports (Program Addresses 31-44) must be programmed for those zones used.
- Low Battery Report (Program Address 49) must be programmed.
- AC Failure Report (Program Address 50) must be programmed.
- Open Report (Program Address 54) must be programmed.
- Close Report (Program Address 56) must be programmed.
- 24 Hour Check-In Report (Program Address 58) must be programmed.

**3. Timer Programming:**

- Exit, Entry Delay Timer (Program Addresses 65, 66) must be programmed for not longer than 60 seconds.
- Dialer Delay (Program Address 68) must be programmed for not longer than 15 seconds.

**4. Communication Format Programming:**

- Telephone Control (Program Addresses 75, 76) must be programmed to make 5-10 dialing attempts (Data Digits 2, 3).

**5. General Control Programming:**

- Commercial Mode (Program Address 81, Data Digit 1) must be programmed for NO Swinger Shunts (enter 1, or 3).
- Phone Line Test (Program Address 81, Data Digit 2) must be programmed (enter 1).
- Phone Line/Bell Test (Program Address 81, Data Digit 2) must be programmed (enter 3).



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# 7100 PROGRAM WORKSHEET

## Zone Programming (Section L.1)

## Reporting Code (Section L.4)

		Defaults		Defaults
ZONE 1	1 1	# (3200, entry zone)	3 1	# (10E11)
ZONE 2	1 2	# (3000, perimeter instant)	3 2	# (20E21)
ZONE 3	1 3	# (3000, perimeter instant)	3 3	# (30E31)
ZONE 4	1 4	# (3000, perimeter instant)	3 4	# (40E41)
ZONE 5	1 5	# (3300, interior follower)	3 5	# (50E51)
ZONE 6	1 6	# (3300, interior follower)	3 6	# (60E61)
ZONE 7	1 7	# (0009, disabled)	3 7	# (70E71)
ZONE 8	1 8	# (0009, disabled)	3 8	# (80E81)

## Keypad Zones

ZONE 9	2 4	# (0009, disabled)	3 9	# (00000, disabled)
ZONE 10	2 5	# (0009, disabled)	4 0	# (00000, disabled)
ZONE 11	2 6	# (0009, disabled)	4 1	# (00000, disabled)
ZONE 12	2 7	# (0009, disabled)	4 2	# (00000, disabled)
ZONE 13	2 8	# (0009, disabled)	4 3	# (00000, disabled)
ZONE 14	2 9	# (0009, disabled)	4 4	# (00000, disabled)

FIRE ZONE - (Section L.13)	8 0	# (71, pulsed, verification)	3 0	# (00000, disabled)
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ZONE CHECKING (Section L.2)	2 0	# (00000, disabled)
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SPECIAL ARMING KEY 4 (Section L.3)	2 1	# (00000, disabled)
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SPECIAL ARMING KEY 5 (Section L.3)	2 2	# (00000, disabled)
------------------------------------	-----	---------------------

SPECIAL ARMING KEY 6 (Section L.3)	2 3	# (00000, disabled)
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## REPORT PROGRAMMING (Section L.4)

(defaults = 00000, disabled)

SILENT ALARM	4 5	#
EMERGENCY ALARM	4 6	#
FIRE TROUBLE	4 7	#
ZONE 1-14 TROUBLE	4 8	#
LOW BATTERY	4 9	#
AC POWER FAILURE	5 0	#
SYSTEM TROUBLE	5 1	#
REPROGRAM REPORT	0 7	#

## (Section L.5)

(defaults = 000, disabled)

DURESS ALARM	5 2	#
EXCEPTION OPENING	5 3	#
OPENING	5 4	#
EXCEPTION CLOSING	5 5	#
CLOSING	5 6	#
CANCELLED ALARM	5 7	#
24 HOUR CHECK-IN	5 8	#
COMMUNICATE TEST	5 9	#
FAILURE TO OPEN	0 8	#
FAILURE TO CLOSE	0 9	#

TIMERS (Section L.6)	BELL CUTOFF TIMER FOR ZONES 1-14	6 1	#	(004 minutes) (defaults)
	BELL CUTOFF TIMER FOR FIRE	6 2	#	(004 minutes)
	BELL CUTOFF TIMER FOR EMERGENCY	6 3	#	(004 minutes)
	KEYPAD SOUNDER TIMER FOR SILENT ALARM	6 4	#	(255 seconds)
	EXIT DELAY TIMER	6 5	#	(060 seconds)
	ENTRY DELAY TIMER	6 6	#	(045 seconds)
	ACCESS CONTROL TIMER	6 7	#	(000 seconds = toggle)
	DIALER DELAY TIMER	6 8	#	(000 seconds)
	24 HOUR OFFSET TIMER	6 9	#	(024 hours)

