



# MOOSE Z2000

Security System Control

Specifications, Installation  
and Programming Guide

# Introduction

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## LIMITATIONS

This control panel is part of a system designed to warn against unauthorized entry and other situations. However, it is not a guarantee of protection against the occurrence of those events. Any alarm system is subject to compromise or failure to warn for various reasons. Unauthorized access can be gained through unprotected points or by disarming or bypassing protected points. Sensing devices are power driven and do not operate without electrical power. Telephone lines over which alarm signals are transmitted may be out of service or rendered inoperable by an intruder. Smoke detectors have limitations and cannot detect all types of fires or sense smoke out of the effective range of the detector.

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## **SPECIAL NOTE** referencing the word “Fire” in this manual.

Use of this control for fire detection and/or annunciation may not be permitted by certain states, counties, municipalities or local jurisdiction. It is the responsibility of the installing alarm company to check with the local A.H.J. (Authority Having Jurisdiction) or State Fire Marshal's office prior to using this control for fire detection.

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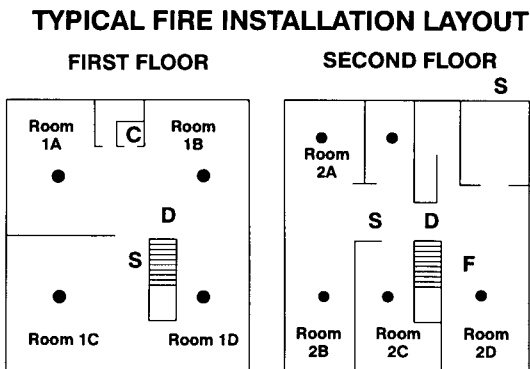
# Installation And Wiring

## 1.1 Planning The Installation

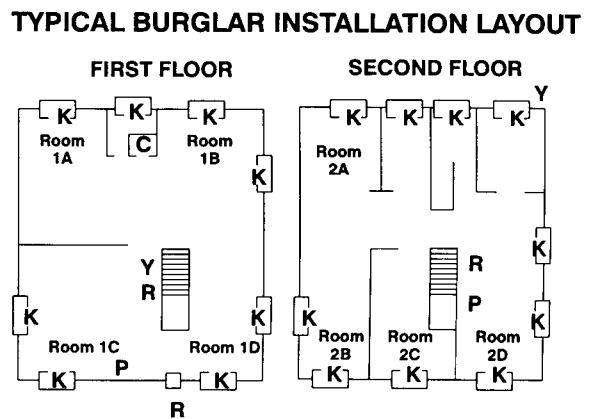
The first step in any multi-zone security system installation is planning the job.

1. **Read through this entire manual** to familiarize yourself with all system features and procedures before actually beginning the installation. Chapter 5 contains information regarding Underwriters Laboratories (UL) and NFPA requirements.
2. Perform a physical survey of the installation site. Use the figures below as a guide in planning the installation.
3. Discuss the installation requirements and applications with the customer.
4. Compare the installation requirements and applications with the factory default settings to determine what customized programming is needed to meet the specific installation requirements.
5. Bench test the system prior to installation.

LEGEND			
C – Control	D – Smoke Detector	K – Contact	P – Panic Button
S – Siren (Steady Output)	● – Thermostat	R – Keypad	
Y – Siren (Yelp Output)	F – Fire Trouble Sounder		



Note: Alternate locations may be required for the devices indicated.



Note: All perimeter openings from ground level up to 18' should be provided with protection.

FIGURE 1-1. Typical Installation Layout

# Installation And Wiring

## 1.2 Parts Diagram & Descriptions

FIGURE 1-2 details the parts of the control panel. These parts are referenced in later sections of this manual.

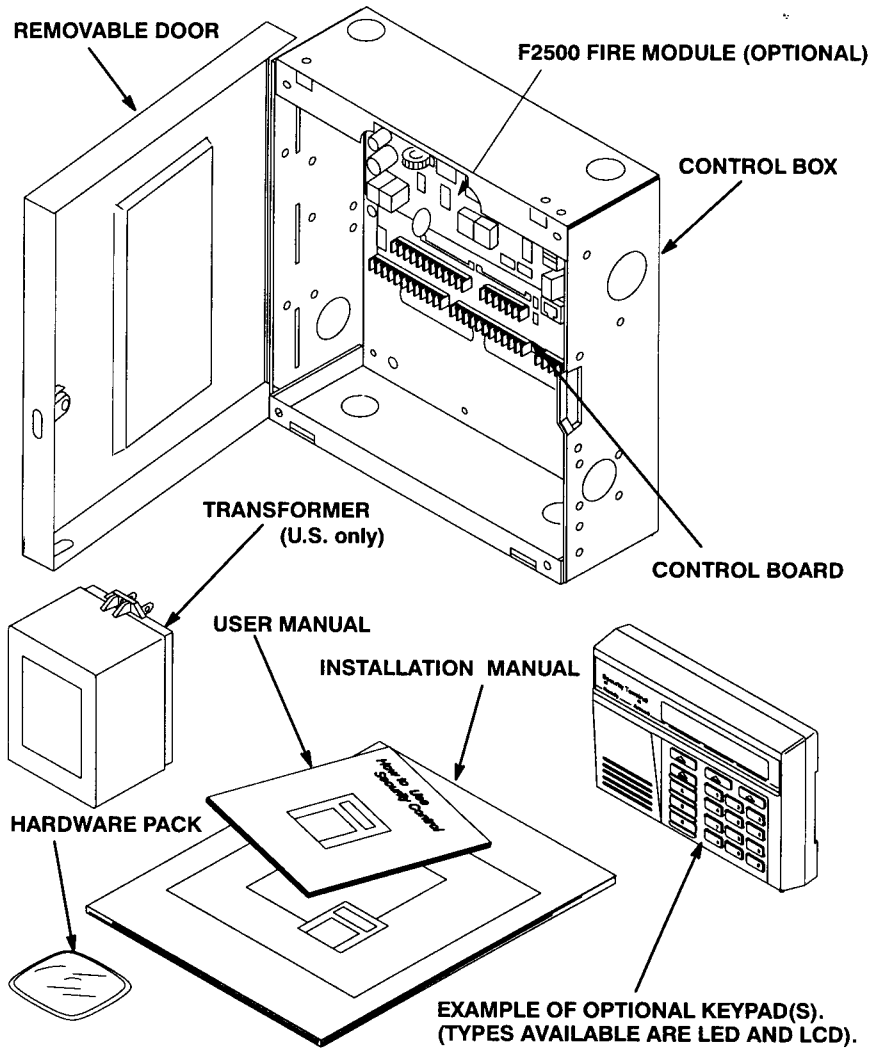


FIGURE 1-2. Parts List

## 1.3 Mounting And Wiring Preparation

### System Control Mounting

Remove all packing material and compare the system components with those in the figure above to familiarize yourself with the part names. Mount the control in a secure, dry location where the ambient temperature inside the control box can remain at 32° to 120° Fahrenheit (0° to +49° Celsius). Choose a location that allows easy wiring to an unswitched power outlet and to a grounding conductor for the control. A central location makes running system wiring easier. Remove control box knockouts that best suit your wiring needs. Mount the control using the upper center slotted hole to level. Install and connect all necessary wiring for the power transformer, detection loops, keypads and siren outputs. Refer to FIGURE 1-4, page 1-4.

# Installation And Wiring

## Control Station Mounting

Select a mounting location 48–52 inches above the floor with an ambient temperature range of 32° – 120° F (0° to +49° C) away from direct sunlight. Run a 22-gauge, four-conductor cable from the control. (Stranded wire provides lower resistance and additional protection from breakage.) The maximum resistance per wire is 25 Ohms. For wire runs between 200' and 1000', a minimum size of 18 awg. is recommended. Device placement beyond 1000' is not recommended. Pop the keypad apart from the mounting plate with a screwdriver. Fasten the mounting plate to the electrical box (or directly to the wall using anchors) with the appropriate screws. Be sure to use flat head or oval head screws to prevent shorting of the circuit board.

### WARNING

**TO PREVENT INJURY, MAKE SURE THAT POWER IS REMOVED FROM THE CONTROL.**

Splice the four conductor cable to the plug-in connector supplied with the keypad. Press the splices back through the hole and seal the hole with insulation to prevent air infiltration and dust. Plug the connector into the keypad and pop the keypad back onto the mounting plate. Wire the four conductor cable to the control. (See Wiring Instructions on page 1–8.) Remove the control station screen protective plastic film after installation is complete.

## 1.4 Wiring

### Earth Ground Connection

In order for the control's lightning and transient protection to be effective, it is essential that Terminal 5 be connected to an earth ground (ground rod or other grounding electrode). Finding a proper ground path can affect selection of the control mounting location since the ground wire should be as short and straight as possible.

An ideal ground for a security system is a unified earth ground. In this type ground, the power line, telephone and security system ground rods are bonded together. This reduces the chance of step voltage blowout, a problem that may occur during lightning strikes. See the figure below.

Refer to NEC Article 250 for proper grounding requirements.

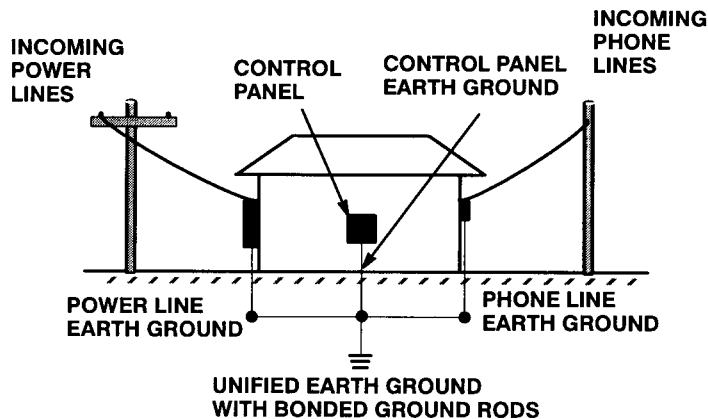


FIGURE 1–3. Unified Earth Ground

Use a minimum 14 gauge solid ground wire. Secure the ground wire to Terminal 5, the earth ground terminal, on the control panel. Run the earth ground wire and attach to a bonded earth ground. Be sure to keep wire runs short and avoid 90° or sharp turns. Use a minimum radius of eight inches for bends. Remember, ground wires must be routed separately. Be sure to route toward the earth. Always use eight-foot copper clad ground rods. Never run parallel to metal without properly bonding to that metal.





# Installation And Wiring

## Standby Battery Connection (Terminals 1 and 2)

To connect the battery, remove the red and black battery leads from the hardware pack. Connect the red wire to the screw terminal marked Bat +12V (Terminal 2). Connect the black lead to the screw terminal marked Bat. Neg. (Terminal 1).

### CAUTION

The control is designed with reverse polarity protection on the battery charging circuit; however, prolonged improper connection of the battery to the control results in damage. The power should remain disconnected until all connections have been made and checked for accuracy.

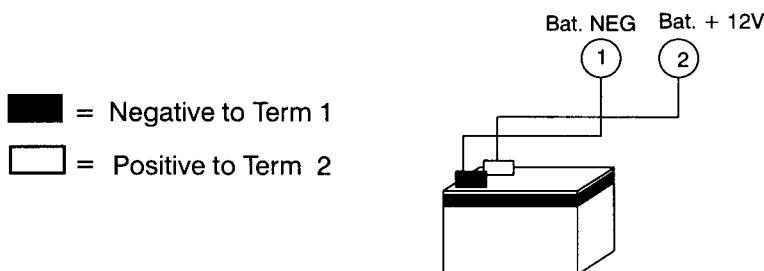


FIGURE 1-5. Battery Connection

## Low Battery And AC Failure

The control is designed to operate with and recharge a 12 volt, 7 amp-hour sealed lead acid battery as a backup for the primary power supply. The control maintains a float charge for the battery of 13.8 VDC at 100 mA. This is in addition to the continuous output of 1.5 A (1.0 A for Listed commercial fire systems) that the control panel power supply maintains (see maximum current drains for UL Listed Systems). The battery automatically takes over in the event of an AC power outage. If the AC power fails and the battery voltage drops to 11.2 VDC, the control annunciates a Low Battery trouble condition. The AC Fail trouble condition displays visually at the keypad upon power outage, but is not reported to the central station for a programmable time delay or, for UL 864 systems, for approximately seven hours. The trouble prompt for each of these conditions is present until the condition (Low Battery or AC Fail) is corrected. The control performs a battery test every fifteen minutes. The installer may manually activate a battery test if desired.

## Low Battery Cutoff Relay (optional) P/N AR100

Whenever AC power is not present, the control receives its power directly from the standby battery. Should the battery voltage drop below 8.5 VDC, the control performs an internal "safe shut-down." However, power continues to be drawn from the battery by the control and other external devices. In order to protect the battery against deep discharge, the optional P/N AR100 Relay may be installed into socket K8. This relay disconnects the battery at 8.5 VDC, and does not re-connect until the AC power has been restored.

The shorting bar Jumper J-17 is required to complete the battery connection if the AR100 Relay is not installed.

### CAUTION

Remove all power (disconnect the AC transformer and battery) before installing the AR100 relay. Refer to the AR100 instruction sheet for proper orientation of the relay. After installation, remove the shorting bar on Jumper J-17 prior to applying power.

# Installation And Wiring

## A/C Transformer Primary Power Input (Terminals 3 and 4)

The control is powered by a T-1850 18 VAC, 50 VA, internally fused, UL Listed Class II (power limited) transformer, supplied with the control package (U.S. only). The specified transformer **must** be used to operate this control.

### CAUTION

**Do not short the terminals of the transformer together. This causes the internal fuse to blow. The transformer must be connected to a 120 VAC, 24-hour outlet not controlled by a switch other than an approved over-current protection device.**

To prepare the control for primary power connection, connect the screw terminals on the transformer to Terminals 3 and 4 of the control using 18-awg. wire not exceeding 50 feet between the transformer and the control. Do not run the AC primary power in a multiconductor with other system circuits. Do not plug the transformer in at this time. Final connection of the transformer and standby battery should be made after all other connections have been made.

### NOTE

**For commercial fire applications, an F2600 transformer enclosure must be installed prior to connection of the primary power source. The AC power wiring must be routed through dedicated conduit and a dedicated enclosure knockout. It may not be intermixed with any low voltage power limited field wiring per NFPA 70.**

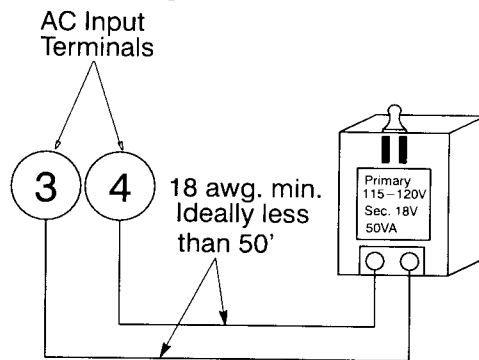


FIGURE 1-6. Transformer Connection

## PTC (Positive Temperature Coefficient) Circuit Breakers

The control is equipped with thermal activating, self-restoring, solid state overcurrent protection devices (PTC's) which interrupt current flow demands when it exceeds a given threshold. When the keypad indicates "BLOWN FUSE", a PTC has interrupted current flow.

- CB1 (1.85 A) protects + 12V AUX1 (Terminals 36 & 38)
- CB2 (1.85 A) protects + 12V AUX2 (Terminals 40, 42, 44, 45 & 48)
- CB3 (1.85 A) protects + 12V KP1 (Terminals 33)
- CB4 (1.85 A) protects + 12V KP2 (Terminals 34)
- CB5 (3.05 A) protects + 12V BATT (Terminals 2)

If power has been interrupted to any of these circuits, remove the field wiring from the terminals for approximately 20 seconds in order for the PTC to reset. If the PTC resets, determine the problem with the field wiring and repair. If the PTC does not reset, the problem is with the terminal strips and/or main circuit board and must be replaced.

## Zones 1 Thru 16 (Terminals 8 - 31)

The zone wiring is connected to terminals 8-31. Each zone terminal is labeled Z1, Z2, Z3, . . . etc. Each zone pair has a common negative terminal located between the two zone inputs. Example: zones 1 and 2 (terminals 8 and 10) share the negative terminal 9. The protective loops are designed so that any closed loop device (a device in which a closed circuit occurs when mounted normally in a non-violated condition) is in series with the EOL resistor and other closed loop devices in the same circuit. Open loop devices (devices which create an open circuit when mounted normally in a non-violated state) must be wired so that they are in parallel with the EOL resistor.

# Installation And Wiring

## NOTE

The use of normally closed devices is not permitted on UL Listed commercial fire systems.

The resistor must be placed at the end of the loop. Fire zones require use of UL Listed Model CR851 2.2 k $\Omega$  end-of-line resistor. All other zones take a standard 2.2 k $\Omega$  EOL resistor PN 32034071.

The operation of the protective loop can be checked from the screw terminals with a voltage reading. A Class B protective loop on this control panel should show approximately 6.5 VDC in a normal condition. If the circuit is violated in an open condition, the voltage rises to 13.8 VDC. If the circuit is shorted across the EOL resistor, the voltage is approximately 0 VDC.

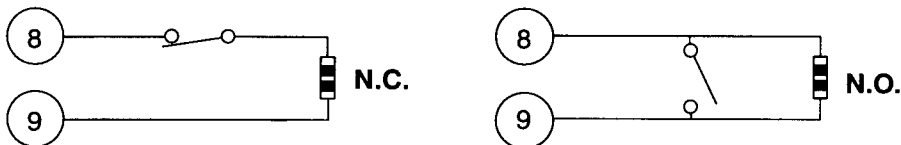


FIGURE 1-7. Typical Wiring Class B Zone

It is possible to wire the protective loop in a way that places the EOL resistor inside the control panel and maintains the supervision of the circuit, utilizing a four-conductor cable as shown in FIGURE 1-8.

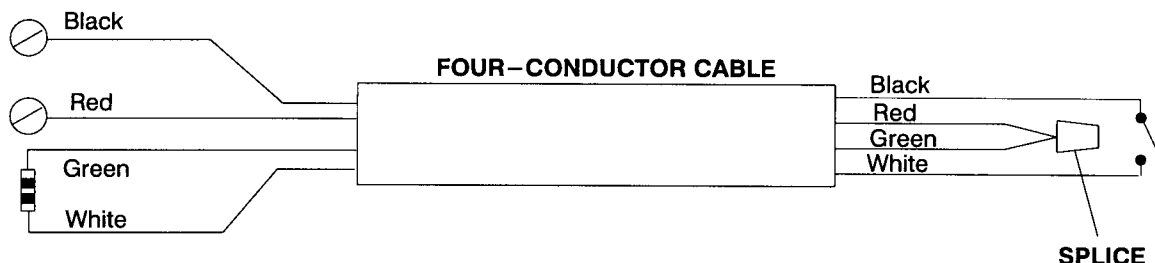


FIGURE 1-8. Special Wiring of Protective Loop

Connect a typical installation configuration as follows:

1. Connect all alarm sensors to the zone wiring per the instructions provided by the sensor manufacturer and FIGURE 1-4 on page 1-4.
2. Connect each zone wire to the terminals according to FIGURE 1-4. Each zone has an input terminal and a common (negative) return. Please note that a negative terminal is shared by two zones and that all negatives are common to each other.

## Special Zones (Terminals 29, 30, and 31)

This control makes special provisions for two-wire smoke detectors and for devices which may require pulse extenders.

### Quick Loop (Zone 15, Terminals 29 and 30)

Zone 15 is designed with an optional feature allowing a built-in solid state circuit to extend violation time of any violation detected. Use of this feature eliminates the need for field mounted accessories. It is most useful for fast reacting devices such as mercury and piezo type glass break detection equipment. To select this option, place the J-16 jumper on the lower two pin connection. The quick loop option works only with closed loop devices and extends a 10 ms violation to a 5-10 second violation. For normal Class B operation, J-16 must be on the upper two pins.

### Two-Wire Smoke Detector Loop (Zone 16, Terminals 30 and 31)

Zone 16 is designed with an optional feature which allows operation with two-wire loop type smoke detectors. To enable this feature, move the J-18 jumper to the lower two pins. Program Zone 16 as a two-wire smoke detection loop and connect the smoke detector(s) to Zone 16.

# Installation And Wiring

## NOTE

For the two-wire smoke detector option, the zone definition (Menu 3) for Zone 16 must be a value of 2007 or 9007 (verified fire). When selected, a CR852 1.8 K  $\Omega$  EOL must be used instead of the 2.2 K $\Omega$  CR851. The CR852 resistor is furnished with the panel.

The loop wiring resistance must not exceed 60 Ohms. Use only detectors listed as compatible accessories in Chapter 4. Use the same model detector throughout the installation. The maximum number of smoke detectors that may be connected are listed in Chapter 4 with each detector type.

## Data Bus Device Connections (Terminals 6 and 7)

Devices which use the four-wire data bus are the LCD control stations, LED keypads, zone concentrators and the printer interface module. These devices require two conductors for the transfer of data and two conductors for the operating voltage. The data bus connections are Terminals 6 and 7, labeled KPA and KPB. These are parallel connections and may be home run or may be branched at a field connection. When using the wiring harness supplied with the keypad, the Green wire goes to KPA and the White wire goes to KPB. Power for these devices is supplied from Terminals 32, 33, and 34. Terminal 32 is the negative power supply terminal. Terminals 33 and 34 supply the +12 VDC for the data bus devices. These terminals are separately fused for convenience. In the event that a short circuit occurs or a malfunctioning device causes the overcurrent protection to remove power from a particular device or branch, the device(s) powered by the alternate source terminal continues to operate. The control panel terminal strip also has a four-pin polarized connector (J-3) which is designed to connect any of the data bus devices directly to the control via the Z-217 four-conductor ribbon cable. This cable may be used when setting up bench testing, programming or servicing devices. However, do not use J-3 as a permanent connection.

## Data Bus Device I.D. Setting

The control stations and the zone concentrators contain a DIP switch bank (Dual In-line Package) where the identification number for the device must be set. The valid settings for all control stations are 1-8. **No more than eight control stations are permitted on the control. No more than one control station may be set to a specific address.** The valid settings for the zone concentrators are 1-4. **No more than four zone concentrators may be connected to the control. No more than one zone concentrator may be set to a specific address.** In all devices a setting of 0 disables the device. The printer interface is self-assigning and requires no set up before operation. Refer to the labels on the silk screen for the concentrators and the enclosed label for the switch settings on the LED keypads and the LCD control stations.

## CAUTION

**Be careful when setting the DIP switches on the concentrators. The switch alignment on the concentrators may be different from the control stations.**

The addresses of the control stations are independent of the addresses of the zone concentrators. Set the first device of any type as #1, the second as #2 etc. Do not set the keypad as device #1 and the zone concentrator as device # 2 and so on.

Concentrator Device ID	1	2	3	4
Zones Added: (Z2300/2350)	17-24	25-32	33-40	41-48
Outputs Added: (Z2350)	11-20	21-30	31-40	41-50

## Outputs

The control has 10 outputs, expandable to 50. The first 10 outputs are accessed through the lever or "latch" type connectors. Insert the end of the stripped conductor (strip 3/8" of insulation) into the corresponding output and lock the plastic lever. Output 1 is at the lower end of the rail. Each output provides 13.8 VDC at 40 mA when active.

# Installation And Wiring

All 50 outputs are enabled through programming and may be connected so that multiple outputs activate a common device. These outputs should not trigger devices that exceed the current limitations. The first 10 outputs must be terminated within the control panel box. The K1 & K2 Relays or auxiliary low current relays (such as the MPI-206) may be triggered to drive higher current demands.

## NOTE

For UL Listed fire systems, outputs 2 to 6 are not programmable. They must be programmed as follows:

	<u>Default Values</u>	<u>Listed Fire Values</u>
10	10 (Trouble)	10 (Trouble)
9	09 (Lamp)	09 (Lamp)
8	08 (Violation)	08 (Violation)
7	07 (Armed)	07 (Armed)
6	06 (Ready)	10 (System Trouble)
5	05 (Tamper)	11 (Audible System Trouble)
4	04 (Auxiliary)	20 (Fire Trouble)
3	03 (Hold Up)	25 (Fire Supervisory)
2	02 (Fire Output)	02 (Fire Alarm)
1	01 (Burglar Output)	01 (Burglar Alarm)

FIGURE 1-9. Special Application Programmable Outputs (Latch Type Connector)

## Auxiliary Power Connections (Terminals 36, 38, 40 and 42)

Devices requiring unswitched 24-hour power (motion detectors, glass break detectors, etc.) should be connected to one of the auxiliary terminals, auxiliary 1 (Terminals 36 and 38), or to auxiliary 2 (Terminals 40 and 42). The negative terminal of the load device should be connected to any convenient negative terminal such as terminal 35, 37, 39, or 41. All negative terminals on the terminal strip are at the same reference and may be used whenever a circuit ground is required. Use caution when wiring the control to distribute the load devices among the supply and the negative terminals evenly. No device should share the same negative terminals as a high current consuming device such as a siren driver.

## NOTE

**Circuit ground refers to any negative terminal connection on this control. This does not refer to the earth ground terminal or to the common terminals of the K1 and K2 relays. These terminals are not at the same voltage potential and should not be wired so that they are electrically connected to a negative.**

## Switched Power Connections (Terminal 43 and 44) (For use with UL Listed four-wire smoke detectors)

Some devices require a temporary break in the operating supply voltage to allow reset or unlatch from the alarm state (i.e. smoke detectors, etc.). These devices must be connected to the +12VDC switched power at Terminal 44. When a smoke reset is performed, the operating voltage to these devices is momentarily interrupted.

## K1 And K2 Hook-up And Operation (Terminals 45 – 50)

Two Form C Relays (K1 & K2) rated for 5 Amps @ 28 VAC/VDC are included on the control board. Each may be configured to provide “dry” contact closure or voltage (+12 VDC) output by placement of shorting bars on Jumpers J4 & J8 respectively. Refer to the enclosure interconnect diagram or FIGURE 1-4 for specific details.

The trigger or coil inputs of these relays are electrically connected on board to the first two programmable outputs of the control. Relay K1 is activated by Output 1 and relay K2 is activated by Output 2. Programming of these outputs is discussed in a separate section.

# Installation And Wiring

Outputs 1 & 2 on the “Latch Type” terminal block are parallel to the relay coils and may also be used so long as the maximum current draw of 40 mA is not exceeded. Refer to the list of compatible devices in Chapter 4.

The 10 programmable outputs on the latch type connector are open collector when inactive and +12V when active. This allows other outputs to be tied to Output 1 to activate the K1 Relay and to Output 2 to activate the K2 Relay. The affected relay can be used to drive a common siren for several programmed conditions. For example, Output 1 can be programmed as a pulsing burglar alarm and Output 3 as a steady fire alarm. When wired as shown in FIGURE 1-10, the K1 Relay will activate for both burglar and fire alarms.

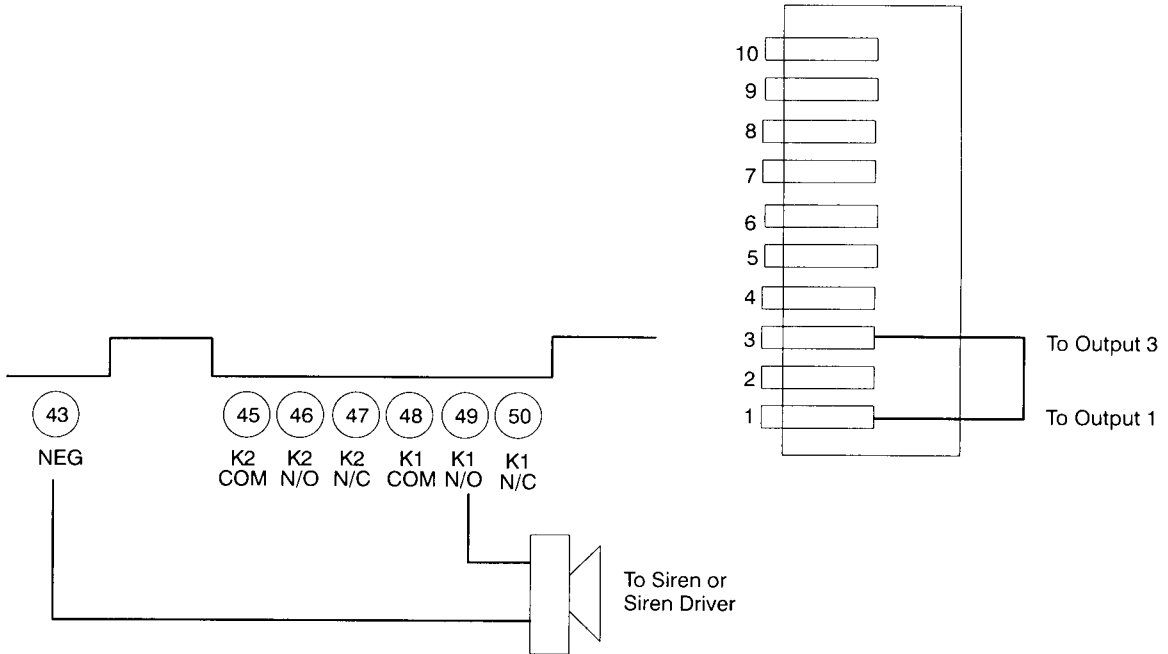


FIGURE 1-10. K1 Relay Wiring

## Telephone Line Connection (Connectors L1 and L2)

The telephone interface is connected by the use of an approved interconnect jack such as the RJ-31X (FIGURE 1-11). These devices allow the subscriber to disconnect the control/communicator from the public switched telephone network in the event of harm or malfunction. The control is equipped with line seizure so that the premises telephone service is interrupted during communication to the central station. Connection to the approved jack is done with a “plug to plug” (consult your distributor) cord which connects to L1 and the jack. Telephone Line #2 (Connector L2) is an option and may be enabled by adding an additional plug-in relay (P/N AR 101) in the socket labeled K-5. If two phone lines are used, it is recommended that they be routed into the building at different locations for added security.

### NOTE

**For commercial fire applications, wiring for telephone lines L1 and L2 must not be routed through the same knockouts or conduit as the AC/DC power wiring.**

# Installation And Wiring

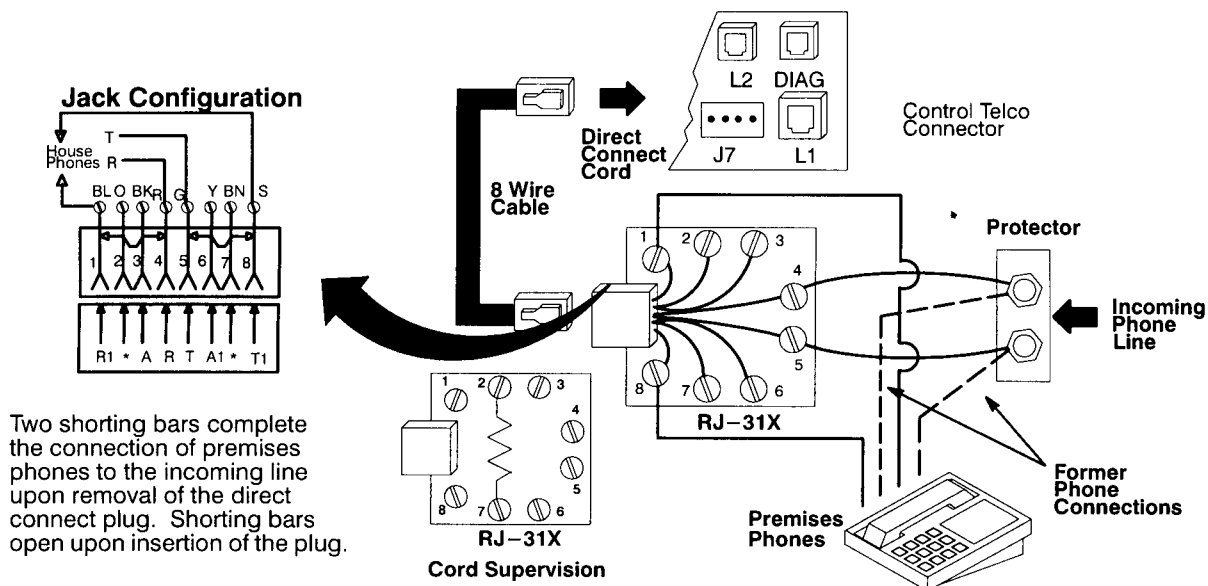


FIGURE 1-11. Telephone System Connection

## RJ31X Cord Supervision (Connector J7)

RJ31X cord supervision requires cable assembly #60051-A (CA-4 SM connector assembly keypad cable). When an EOL resistor is placed between terminals 2 and 7 of the RJ31X jack, you will have a closed circuit between the black and white wires. If Telco line two is used, an EOL resistor is placed between terminals 2 and 7 of the second RJ31X jack; you will have a closed circuit between the red and green wires.

## Ground Start Telephone Networks

The system has two options to allow communication over a ground start type telephone network (single line —Telco 1— only).

### NOTE

**The use of a ground start telephone network is not permitted on UL Listed installations.**

1. To use the on-board K1 Relay for Ground Start:

Program Output 1 (which drives K1) for Ground Start (Condition 33). Place a jumper over pins 2 and 3 of J8, making K1 Dry Contact. Place a jumper over both pins of J6, connecting K1 to Telco Tip. Install a wire jumper between Terminal 5 (Earth Ground) and Terminal 48 (K1 Common).

The K1 Relay now provides a one-second short between Earth Ground and one side of the phone line as part of the dialing routine.

2. To use a Z232 Ground Start Module, connect it to the system as follows:

White wire to Pin SP1 (Ground Start trigger), located just below LED D-18

Red wire to a +12VDC Aux Power terminal

Black wire a NEG terminal

Orange wire to Terminal 5 (Earth Ground)

Blue wire to the bottom pin of the J6 jumper (Telco 1 Tip)

The Z232 provides a 1.5 second short between Earth Ground and one side of the phone line as part of the dialing routine.



# Installation And Wiring

## Hardware Options

### JUMPER #      FUNCTION

- J-4      Selects output type for relay K1. For +12 VDC output from N.O., place shorting bar on Pins 1 & 2. For Dry (no voltage) Closure between COM. and N.O., place shorting bar on Pins 2 & 3.
- J-6      Ground Start option jumper. Allows the K1 Relay to provide a momentary connection between earth ground and one side of the phone line (see Ground Start instructions). Use the shorting bar provided in the hardware pack to enable this feature. NOTE: Never short J6 without first placing a jumper on Pins 2 and 3 of J8.
- J-8      Same as J-4 above, but for K2 relay.
- J-16      Selects the operation of zone 15. To disable pulse extender feature place shorting bar on Pins 1 & 2. To enable the pulse extender feature, place the shorting bar on pins 2 & 3 (10 ms loop operation). Closed circuit devices only.
- J-17      Low battery cutoff option. A shorting bar is required on this Jumper to complete the battery connection if the optional AR100 Low Battery Cutoff Relay is not installed. Refer to K8 below.
- J-18      Selects hardware option for zone 16. To enable two-wire smoke detection circuit, place shorting bar on pins 2 & 3. The factory provided 1.8K $\Omega$  EOL resistor must replace the standard 2.2K $\Omega$ . Additional programming required.

### LED #

- |          |                     |                              |
|----------|---------------------|------------------------------|
| LED1     | AC Power Indicator  | On = Pwr On<br>Off = Pwr Off |
| LED D-18 | Telephone #2 Active | On = Active                  |
| LED D-24 | Telephone #1 Active | On= Active                   |

### AUXILIARY RELAYS

- K8      Low Battery Cutoff (P/N AR100)      Insert for low battery cutoff.

<b>CAUTION</b>
----------------

**Remove all power (disconnect the AC transformer and battery) before installing the AR100 Relay. Refer to the AR100 instructions for proper orientation of the relay. After installation, remove the shorting bar on Jumper J-17 prior to applying power.**

- K5      Telephone Line #2 (P/N AR101)      Insert to enable Telco L2.

# Operating The System

Chapter

2

## 2.1 Introduction

After all connections have been made and checked thoroughly, the control may be powered up by connecting the AC and the battery terminals. For best operation during bench testing, all zones should be terminated with end of line resistors and the correct transformer and battery should be connected to the unit. The control comes from the manufacturer with a factory set (default) program. The factory set code for user passcode No. 1 is 12345. This code is authorized to operate all user passcode related features on the system. The system is designed to accommodate the grouping of specific zones into partitions called areas. The default program is designed to assign all zones to a single area (#1). This is the most common mode in which the system operates. This section of the manual gives an overview of powering up and basic keypad functioning.

## 2.2 Powering Up With The Keypad

Upon powering up the first time, the control performs self-diagnostics and establishes contact with all keypads and devices. During this time, each keypad should display its installed ID number and the IDs of the functional keypads 1 through 8.

(Panel type) REV X.XX  
KEYPAD 1 OF 123 . . .

This identification number corresponds to the DIP switch setting on the back side of the keypad. If a problem arises during power up, remove power and re-check the position of the DIP switches on the keypads. Up to eight keypads (either LCD or LED) may be used in any combination with the system.

### NOTE

**ACR 505 card reader keypad counts in the same way as a standard LCD or LED keypad.**

Once the panel has been configured and the zones are secure, keypad screen displays:

AREA 1 READY TO ARM  
ARM

The ARM command appears directly above the soft key required to arm the system.

### NOTE

**The words "AREA 1" in this example refer to the name of the area affected by this keypad. An appropriate name is programmed into this field at the time of installation. Detailed descriptions of partitions and alphanumeric entries are discussed in Chapter 3.**

## Menu Key

One of the guidance tools on the keypad is the menu key which causes the keypad to display a list of control options that changes with each key press.

## Soft Keys

The keypad is equipped with three soft keys which are centered below the screen and point to areas of the display from which user operation choices are made. Each soft key corresponds to a control option displayed directly above that key. When an item is selected by pressing the corresponding soft key, additional sub-options such as NEXT, CLEAR, QUIT, ENTER, STORE, CHANGE, and PREV appear as necessary.

# Operating The System

Nearly every option on the control requires the use of a valid user passcode. The user passcode may be used for functions in a specific area or system-wide. Several of the options may be performed at any time, even while the control is fully or partially armed. The menu system is designed to be next-step-oriented so that after a brief explanation of the options, the user may begin operating the system immediately. For purposes of discussion, the installer and the end consumer are both considered users, but have different levels of authorization.

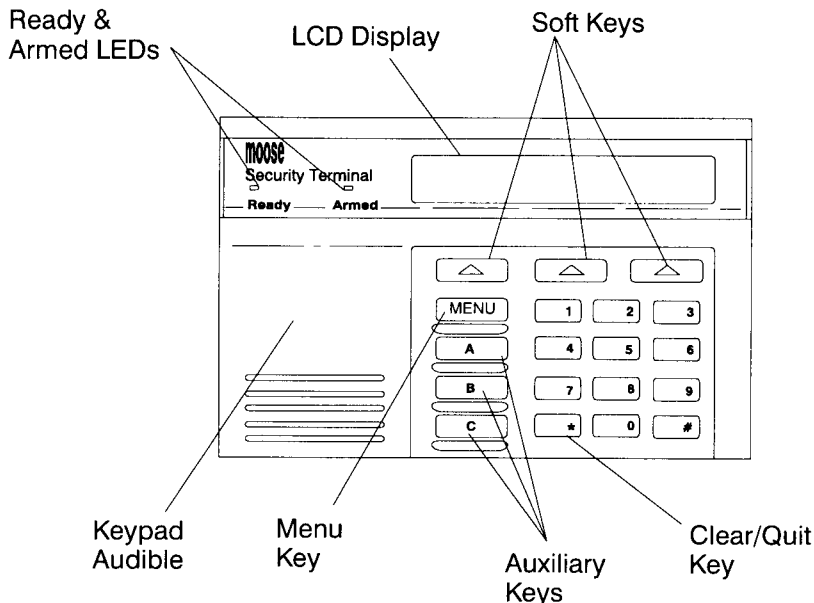


FIGURE 2-1. Control Station with Keypad

## 2.3 Control Station Overview

- |                          |  |
|--------------------------|--|
| Ready and Armed LED's    | These LEDs indicate the status of the burglar zones assigned to the keypad's primary area. The Ready LED illuminates when the burglar zones are all secure. The Armed LED illuminates when the area has been armed and flashes after an armed burglar zone has been violated, setting off an alarm.  |
| Menu Key                 | The menu key allows the user to scroll through all available options. Each time the menu key is pressed, a new selection of options appears on the screen. The user can activate/select a function by pressing the soft key directly below that option. After the desired option is selected, the user is prompted for a user passcode. Additional sub-menu options may appear to assist the user. The user may return to the status screen by pressing the * key. |
| Keypad Audible           | The piezo resonator activates for conditions including entry and exit notification, alarm, trouble, chime, etc.  |
| Auxiliary Keys           | When programmed, these keys activate auxiliary alarms (Panic, Fire, Emergency, etc.).  |
| Clear/Quit Key           | The * key is used to reset code entry errors and to allow the user to escape out of a menu. Pressing and holding the * key for three seconds acts as the reset key for missing keypad, memory error and failed to communicate system troubles.   |
| Soft Keys                | The soft keys allow the user to access options directly from the screen.   |
| Control Station Lighting | The keypad contains recessed lights to provide illumination during operation.  |
| # Key                    | The # key displays the clock.  |

## 2.4 Installer Operations

The control has 99 user passcodes and one installer passcode. The User's Guide contains a description of panel operations accessible to the user passcodes. Panel operations accessed by the installer passcode are slightly different.

### Arming and Disarming

The installer passcode has limited arm/disarm privileges. It may be used to arm all areas and may disarm any area, so long as that area was armed with the installer passcode. It may be used to silence alarms in an area armed with the installer passcode or in an area that is not armed. The installer passcode may also be used to silence a trouble condition in a disarmed area. For a full description of arming and disarming procedures, see the security system User's Guide.

### Menu Features

The menu key allows the user to scroll through the available options. Each time the menu key is pressed, a new selection of options will appear on the LCD screen. By pressing the soft key below the desired option, the user may activate that function. After the desired option has been entered, the user is prompted for a passcode. Additional sub-menu options may appear to assist the user. The user may return to the status screen by pressing the \* key.

First Key Press:

RESET	VIEW	ENABLE
ALARM	STATUS	CHIME

Second Key Press:

EVENT	EXTEND	SMOKE
HISTORY	CLOSING	RESET

Third Key Press:

KEYPAD	PROG	SYSTEM
OPTIONS	OPTIONS	TEST

Fourth Key Press:

SET	REMOTE	COMM
CLOCK	CONNECT	TEST

This section describes the menu options when the installer passcode (96321 at default) is entered.

### First Key Press Menu:

**RESET ALARM:** Resets silent Hold-up Alarms only. **This function or a disarm of the entire area must be performed to get a new Hold-up Alarm.**

**VIEW STATUS:** Allows the status of each zone and area to be viewed. While viewing zone status, it is possible to bypass any zones defined as bypassable. **Note: Bypassing burglary zones in armed areas is not permitted. The area must be disarmed first, then the zone bypassed and then the area re-armed in order to achieve a bypass.**

# Operating The System

**ENABLE CHIME:** Provides an audible annunciation from the control station(s) when certain doors and windows are opened while the system is disarmed. This feature is commonly used for residential door annunciation or as customer entry notification in retail establishments. The display screen on this feature is similar to the status screen. Pressing the **CHANGE** soft key turns the chime on or off.

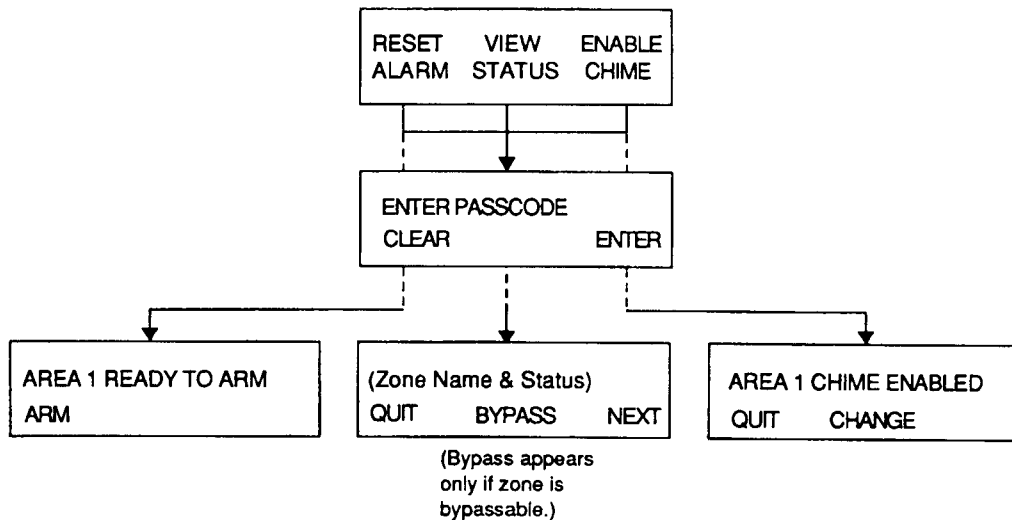


FIGURE 2-2. First Key Press Menu

## Second Key Press Menu

**EVENT HISTORY:** Permits the display of a limited number of past events from the event memory log. This log displays events such as openings, closings, alarms, troubles, and accesses. Along with the type of event, the log contains information such as date, time, user, zone, etc. associated with the event. Events are sorted on a first-in, first-out basis. After pressing the **EVENT HISTORY** soft key and entering the installer passcode, the LCD displays **EVENT HISTORY** with menu choices **QUIT**, **PRINT**, and **DISPLAY**.

**QUIT:** Resets system.

**PRINT:** Allows the printing of the history data on an external printer if the system is equipped with one.

**DISPLAY:** Displays the history data on the LCD. It prompts **START WITH MOST RECENT?** with menu choices **QUIT**, **YES**, and **NO**.

**QUIT:** Returns display to the previous screen.

**NO:** Prompts for the date with which the listing should begin.

**YES:** Lists the events beginning with the most recent. When an event is on the LCD screen, pressing the **DISP** key displays additional information such as user name, zone name, date, and time.

**EXTEND CLOSING:** The installer passcode is not operational for this function.

**SMOKE RESET:** Allows the resetting of the smoke detectors after an alarm.

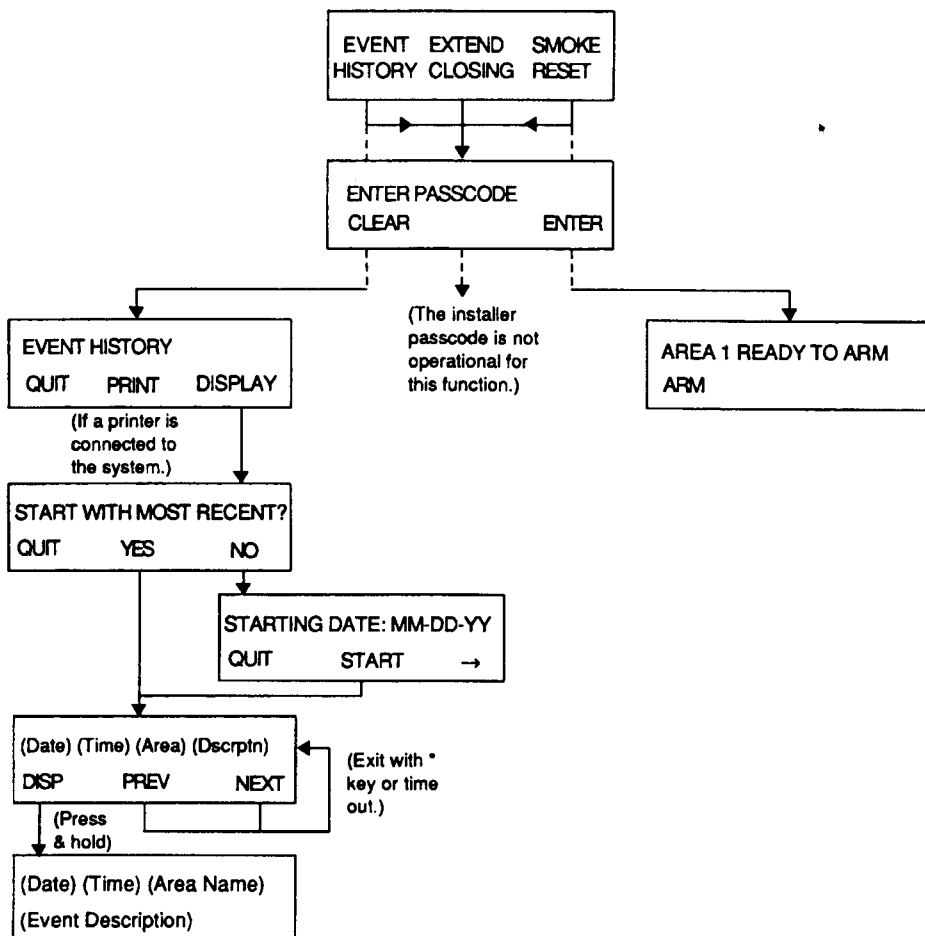


FIGURE 2-3. Second Key Press Menu

### Third Key Press Menu:

**KEYPAD OPTIONS:** Allows the adjusting of the downlighting (not operational on all keypads), piezo volume and screen viewing angle of the keypad in use. The AC Fail Light lamp adjustment allows you to set a keypad to provide light during a power failure or to be dim to conserve the system's battery.

**PROG OPTIONS:** Initiates Local Programming (see Chapter 3).

**SYSTEM TEST:** Allows the testing of various aspects of the system.

**VOLTS/AMPS:** Displays the system operating voltage and current.

**LOCAL TEST:** Allows testing of individual zones (see Chapter 5 for a description of LOCAL TEST operation).

**BATTERY TEST:** Displays the battery voltage.

# Operating The System

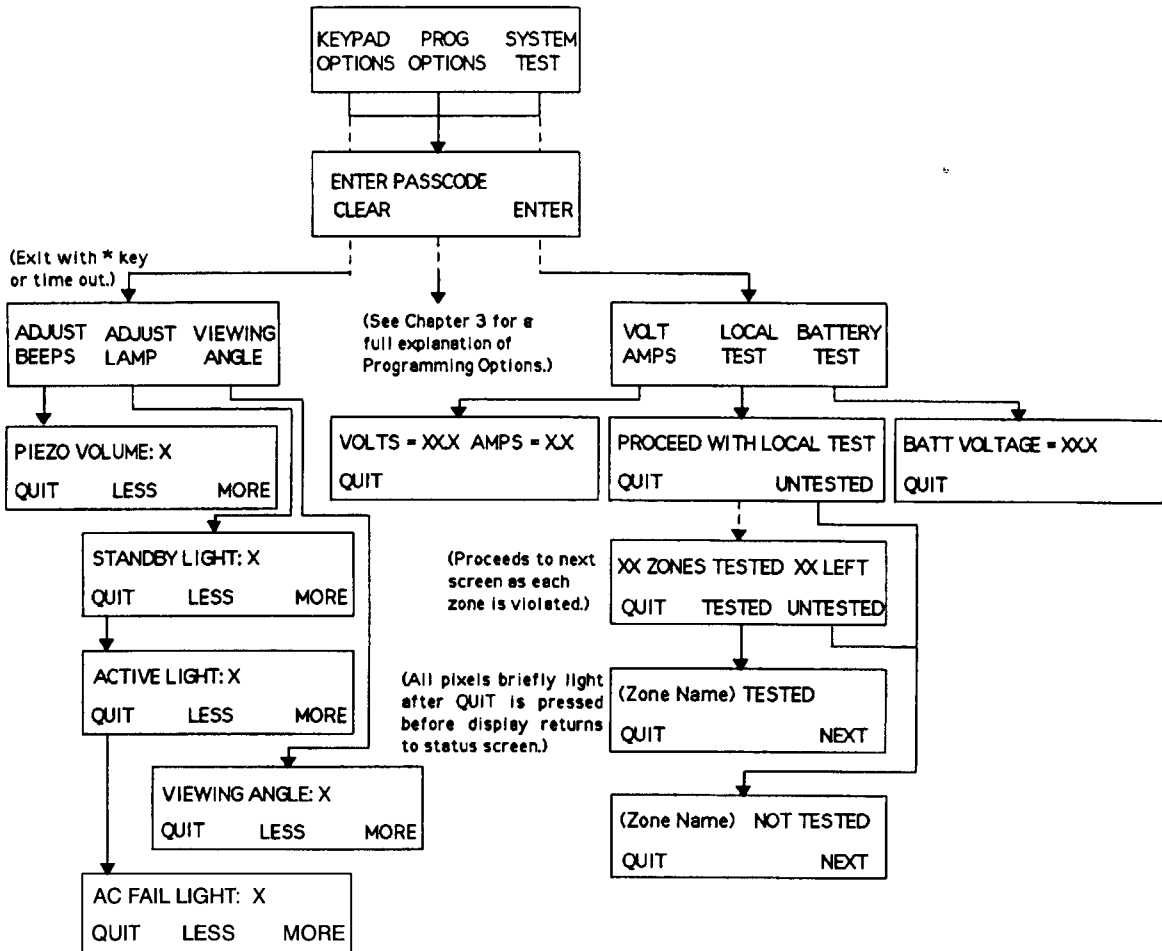


FIGURE 2-4. Third Key Press Menu

## Fourth Key Press Menu:

**SET CLOCK:** Allows the adjusting of the system's clock.

**REMOTE CONNECT:** This feature is used to manually connect the panel to a remote programming computer. The control panel seizes the telephone line.

**COMM TEST:** Allows the testing of the communications link to the central station. The panel calls the central station, but hangs up without reporting upon initial handshake. If communication with the central station is established, the keypad displays **COMM TEST SUCCESS**.

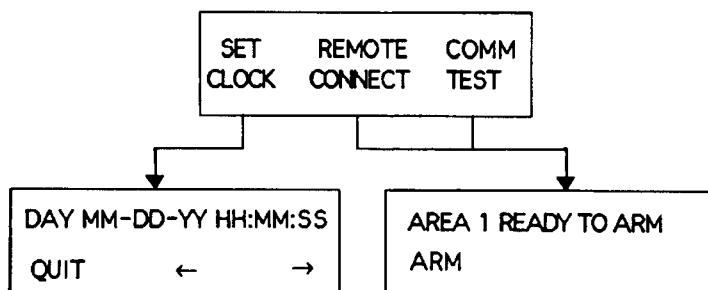


FIGURE 2-5. Fourth Key Press Menu

# Programming The Control

Chapter

3

## 3.1 Introduction

The control may be programmed locally from any LCD keypad. Local programming uses a powerful, yet friendly, menu-driven interface. It may also be programmed using upload software, known as RPM/2.

## 3.2 Local Programming

There are two levels of operation for programming the control locally, user level and installer level.

User level programming provides the ability to add, change, or delete user passcodes and names. It also allows scheduled events to be changed. A master user code is required to access the user programming level. User programming is explained in the User's Guide.

Installer level programming allows total customization of the control's operating features. Only the installer code may access this level. **If the installer code is lost or forgotten, it is impossible to program the control locally.** Anyone attempting installer level programming should be familiar with the contents of this publication prior to programming the control panel.

If remote programming is used, it is possible to "lock out" or prevent takeover of a control by another installation company by selecting "Lockout Local Prog." This prevents the installer passcode from gaining access to programming via an LCD keypad. The installer passcode may still be used for the non-programming functions described in Chapter 2. **Lockout Local Prog** does not affect remote programming.

## 3.3 Remote Programming (RPM/2)

Remote programming utilizes extensive error checking and security safeguards, including data encryption, password log-on, panel IDs and agency codes.

Panel IDs are used by RPM/2 to identify a control during a remote session. The agency code is used by the control to identify the remote programmer during initialization of a remote session. These codes are loaded into the control by RPM/2 during the first RPM/2 session. They cannot be viewed by local programming.

The panel ID and agency code work together to prevent illegal takeover by another RPM/2 computer. Once the agency code is programmed, the control also prevents local changing of reporting telephone numbers and disables the RESTORE DEFAULTS function.

## 3.4 Area Partitioning

The control may be divided (partitioned) into 1-8 independent areas. To the customer, each area appears to be a full-featured system. This allows one control to be shared by multiple, independent departments within a common structure. Any combination of zones, user codes, and keypads may be assigned to any area up to the maximum number available.

When reporting to the central station, events such as AC Power Failure, Low Battery, automatic tests, etc., are considered system reports and are transmitted as an Area 1 account although they are displayed on all keypads regardless of area.

Each area can be programmed to control separate outputs with a dedicated audible or annunciator. It is also possible to common the outputs of multiple areas so that a central siren or bell can be used. The burglar alarm audible should be positioned so that it can be heard by all partitions. Commercial fire alarm circuits cannot be partitioned. When partitioning is not desired, simply designate all zones to a single area (Area 1). This is the default or factory setting for zones 1-16.



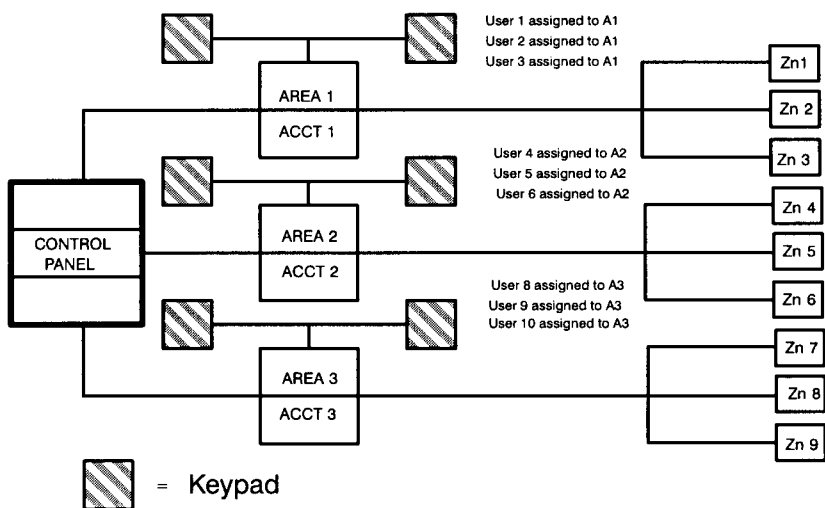
# Programming The Control

An example of a partitioning application is a business that is divided into separate departments with each department occupied by a different manager. The control communicator would be installed in a secure area (common utility closet) with dedicated and uninterrupted AC power and telephone service. This must be considered when planning the control panel position as the power and phone service to a tenant may be terminated if that tenant leaves.

Each tenant's compartment is assigned an area with a number of zones, codes, and keypads. When an area experiences an alarm or other event, the adjacent system areas are not alerted to the event since the keypad would be programmed to respond only to events in the assigned areas.

Perhaps the most unique programming feature is the ability to allow crossover between areas. This is called multi-area operation and is an optional feature that allows the user(s) from one area to operate another area from a designated keypad. Programming is discussed in detail later in this manual. By factory default, users are only allowed to see and operate their primary assigned area. Multi-area operation may be useful for applications where the security system is installed in a facility that is divided into departments. Each department has a set of users who are responsible for arming and disarming only the security system to which they are assigned. If desired, the system may be set up to allow one or more users to have control over multiple areas.

Another popular feature is common area or vestibule arming. In some installations, one area may be set up to be common to other areas, such as a medical or legal commons with a general reception area. The common area or vestibule should arm with the last area out and disarm with the first area opened.



Each area may have a separate account number at the central station and may report to two receivers or just one; or one with the second as backup. The type of activity within a specific area / account may be divided among the two receivers as well. Ex. Open / Close reports may transmit to rec. A and alarm activity may transmit to rec. B.

1. Maximum Zones = 48

Any number of zones may be assigned to any area in any sequence

2. Maximum Users = 99

Any number of users may be assigned to operate on any combination of areas.

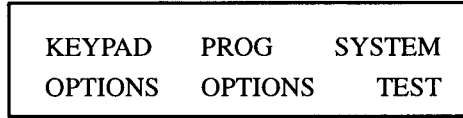
3. Maximum Keypads = 8

These may be assigned to any area with ability to operate in other areas if desired.

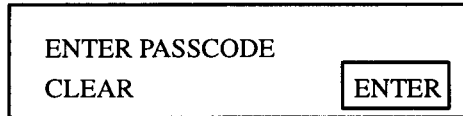
FIGURE 3-1. Area Partitioning

## 3.5 Installer Level Programming

From an idle keypad, press the menu key several times until PROG OPTIONS appears as a selection (refer to Installer Operations in Chapter 2).



Press the soft key titled PROG OPTIONS. The display changes to:



Enter the installer code (96321 at default).

### NOTE

**The manufacturer recommends that the installer code be changed from factory default for security against unauthorized programming changes.**

Press the ENTER soft key. The keypad briefly displays the panel's configuration. There are three possible configurations:

1. Multi-Area, Listed Fire System
2. Multi-Area
3. Separate Areas

Configuration 1 (Multi-Area, Listed Fire System) forces the panel to operate as required for UL 864. See Chapter 5 for UL 864 operation.

In configuration 2 (Multi-Area), user codes may be assigned to operate in more than one area and keypads may have a primary and extended areas of operation.

In configuration 3 (Separate Areas), each user code and keypad may only be assigned to operate in one of the areas.

If the panel has not been configured (i.e. it is being programmed for the first time), then the keypad displays the panel configuration questions.

The first question is "Listed Fire System?".

If YES is pressed, the panel is set to Configuration 1 and the second question is not asked.

If NO is pressed, the second question, "Allow Multi-Area Codes?", is displayed.

If YES is pressed for the second question, the panel is set to Configuration 2. If NO is pressed, the panel is set to Configuration 3.

Once these questions are answered they are not asked again unless the panel is completely defaulted. Be careful to answer these questions correctly.

### NOTE

**Until the panel has been configured, it may not be programmed remotely with RPM/2.**

**When the panel is first powered-up, the name displayed for Area 1 is "DEFAULT". Once the panel is configured, the name displayed for Area 1 is automatically changed to "AREA 1". Therefore, if the keypad displays "DEFAULT READY TO ARM", then the panel has not been configured yet and it may not be remote programmed.**

**If a programmed panel is later defaulted, the name displayed for Area 1 shall return to "DEFAULT".**

# Programming The Control

After the panel configuration has been briefly displayed, the first programming menu, M1: AREA DEFINITIONS is displayed.

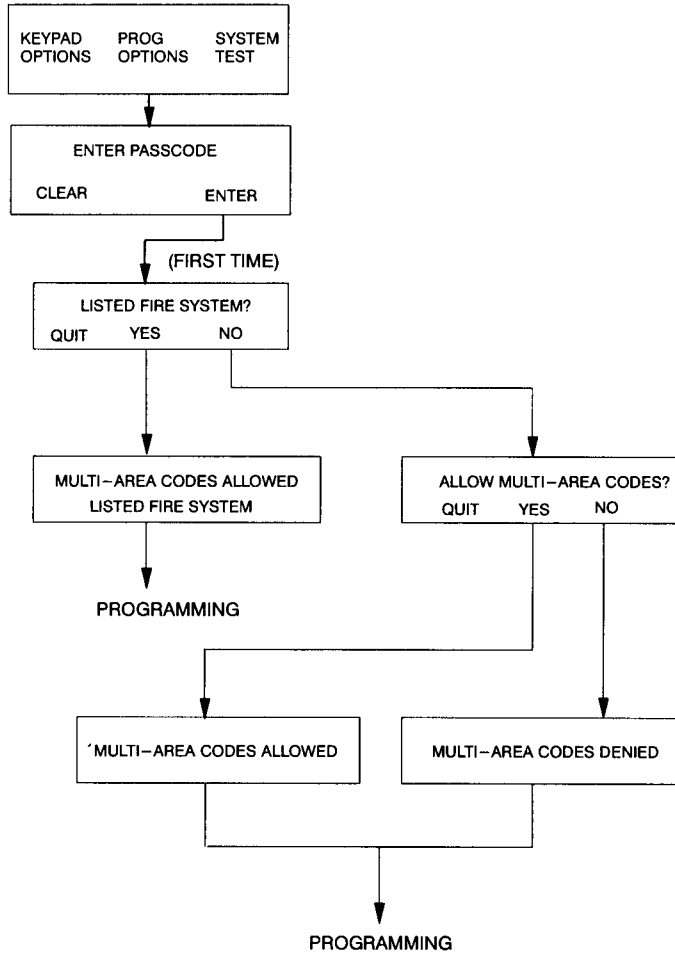


FIGURE 3-2. Setting Panel Configuration

# Programming The Control

## Programming Menus

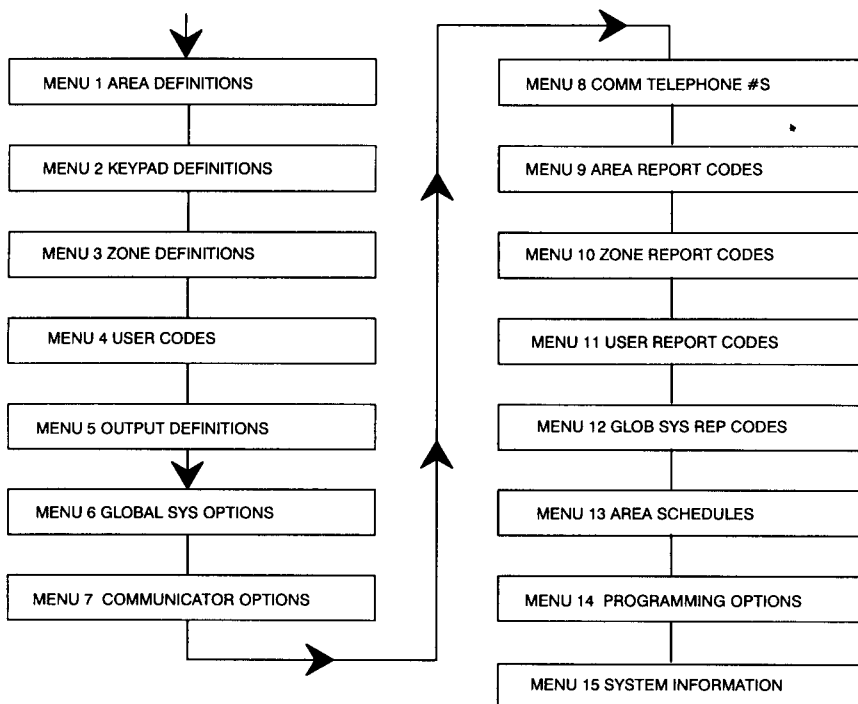


FIGURE 3-3. Main Menu Flow Chart

## 3.6 Soft Keys Used During Programming

### NOTE

**After becoming familiar with the menu structure, it is recommended to read about the powerful navigation abilities explained in Section 3.9. The control exits program mode after three minutes of inactivity. Pressing the \* key twice exits to the normal operations mode.**

- \* This key is available for all menus and is used to back up one level or exit programming.
- NEXT May be used to step forward from one screen or menu to the next.
- SELECT Used to choose the currently displayed menu or menu item so that it may be programmed.
- STORE After entering a numeric value for a menu item, this key must be pressed to store the data in permanent memory.
- CHANGE Available with options that display either a Yes or No choice. With each press of the key, the currently displayed choice is changed.
- CLEAR Used to erase an incorrect digit entry.
- PREV May be used for backing up one item (level) at a time.
- > Used to move the blinking cursor (data entry point) when programming menus that have more than one option, and when programming names (characters and words) for areas, zones, etc.

# Programming The Control

## 3.7 Programming Names Using The Text Editor

To program the name of an area, keypad, zone, or user, place the flashing cursor inside the quote marks by pressing the arrow → key. While inside the quote marks, the numeric touchpad keys produce characters. Pressing the 2 key once produces an “A” character. Pressing 2 again produces a “B” and so on. The keys and characters correspond to the alphanumeric association on a telephone touch pad: the 2 key= A, B, and C, the 3 key= D, E, and F, and so on. Once the desired character is displayed, advance the cursor by pressing the arrow → key. Repeat the character entries until the desired name is complete, then press NEXT to complete the process. It is also possible to use a library of pre-programmed words. The library is accessed by pressing the pound # key after the cursor is placed into the name field. Instead of individual characters, the numeric touchpad keys now produce the words that correspond to each letter. Pressing the pound # key a second time produces soft keys for inserting or deleting spaces or characters.

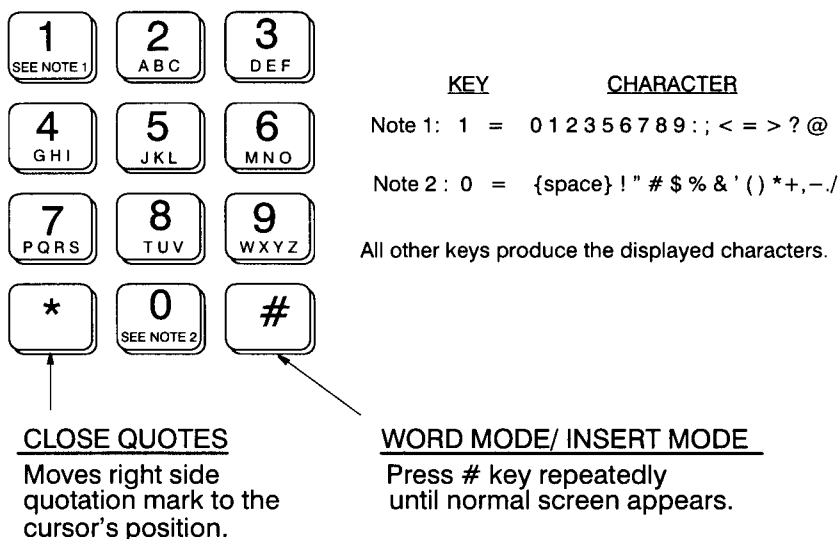


FIGURE 3-4. Text Editor

## BUILT-IN LIBRARY OF WORDS

<b>A (2)</b>	<b>D (3)</b>	<b>F</b>	<b>I</b>	<b>M (6)</b>	<b>PHOTO</b>	<b>SKYLIGHT</b>	<b>V</b>
ALARM	DELAY	FAMILY	INFRARED	MAIN	PIR	SLIDING	VALVE
AREA	DEN	FIRE	INSIDE	MASTER	PLAY	SMOKE	VAULT
ATTIC	DETECTOR	FIRST	INTERIOR	MAT	POLICE	SOUTH	
	DINING	FLOOR		MOTION	POOL	SPRINKLER	<b>W (9)</b>
	DOOR	FOYER	<b>J (5)</b>	MICROWAVE	PRESSURE	STORAGE	WALL
<b>B</b>	DOWNSTAIRS	FREEZER	JANITOR			SYSTEM	WAREHOUSE
BACK	DRIVEWAY	FRONT		<b>N</b>	<b>R</b>		WATER
BAR			<b>K</b>	NORTH	REAR	<b>T (8)</b>	WEST
BASEMENT	<b>E</b>	<b>G (4)</b>	KITCHEN		ROOF	TAMPER	WINDOW
BATHROOM	EAST	GARAGE		<b>O</b>	ROOM	TRAP	
BEDROOM	ENTRANCE	GLASS	<b>L</b>	OFFICE			<b>Y</b>
BELL	EXIT	GUEST	LAUNDRY	OUTSIDE	<b>S</b>	<b>U</b>	YARD
	EXTERIOR		LIVING	OVERHEAD	SAFE	ULTRASONIC	
<b>C</b>		<b>H</b>	LOBBY		SECOND	UPPER	<b>Z</b>
CAFETERIA		HALL	LOWER	<b>P (7)</b>	SENSOR	UPSTAIRS	ZONE
CARPOT		HOUSE		PANIC	SHOP	UTILITY	
CEILING				PASSIVE	SIDE		
CLOSET							

( ) INDICATES THE KEY TO PRESS TO BEGIN WORDS WITH THAT LETTER.

FIGURE 3-5. Built-In Library Of Words

# Programming The Control

## 3.8 Entering Programming

### Menu 1

M1: AREA DEFINITIONS		
PREV	NEXT	<input type="button" value="SELECT"/>

Press Select to program this menu. Press Next to advance to the next menu. Another screen then appears for choosing which area to program.

AREA 1 DEFINITIONS		
PREV	NEXT	<input type="button" value="SELECT"/>

Press Select to program Area 1. Press Next to proceed to the next area. Press Prev to back up one area or exit to the top of this menu. Area 1 menu is typical of every area definition menu. Following is a list of the descriptions and factory default settings for Area 1.

<b>NOTE</b>
-------------

**When entering values into the menu items, it is possible to enter values which exceed the valid range of the programmed option. It is the responsibility of the installer to ensure the correct value of any entry programmed into the control.**

ITEM AND DEFAULT	DESCRIPTION																		
A1: "AREA 1"	Area name (up to 10 characters). Refer to Text Editor on page 3–6.																		
A1: EXIT TIME = 60	Exit delay time in seconds for delay and interior follower defined burglary zones. Valid range is 0–255.																		
A1: ENTRY 1 TIME = 20	Amount of time in seconds to enter burglary zones defined as Delay #1. Valid range is 0–255.																		
A1: ENTRY 2 TIME = 40	Amount of time in seconds to enter burglary zones defined as Delay #2. Valid range is 0–255.																		
A1: KEY A DEF. = 2	Defines the condition to be activated by Panic Key A on the keypads in this area. Select from the following table.																		
	<table border="1"> <thead> <tr> <th>Available Value Selection</th> <th></th> <th>Functional Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>=</td> <td>Key Not Used</td> </tr> <tr> <td>1</td> <td>=</td> <td>Burglar Alarm</td> </tr> <tr> <td>2</td> <td>=</td> <td>Fire Alarm</td> </tr> <tr> <td>3</td> <td>=</td> <td>Holdup Alarm</td> </tr> <tr> <td>4</td> <td>=</td> <td>Auxiliary Medical Alarm</td> </tr> </tbody> </table>	Available Value Selection		Functional Description	0	=	Key Not Used	1	=	Burglar Alarm	2	=	Fire Alarm	3	=	Holdup Alarm	4	=	Auxiliary Medical Alarm
Available Value Selection		Functional Description																	
0	=	Key Not Used																	
1	=	Burglar Alarm																	
2	=	Fire Alarm																	
3	=	Holdup Alarm																	
4	=	Auxiliary Medical Alarm																	
A1: KEY B DEF. = 3	Defines the condition to be activated by Panic Key B. See table.																		
A1: KEY C DEF. = 4	Defines the condition to be activated by Panic Key C. See table.																		
A1: SIL. KP ON BURG: NO	Eliminates the keypad piezo sounder upon burglar alarm.																		
A1: SIL. KP ON HOLDUP: YES	Eliminates keypad piezo sounder and visual display upon holdup alarm.																		
A1: REPORT LOCKOUT = 0	Selects the number of communicator reports allowed by each zone in this area. Valid range is 0–15.																		

# Programming The Control

ITEM AND DEFAULT	DESCRIPTION
A1: AUDIBLE LOCKOUT = NO	Determines if the intrusion output should be locked out after the first alarm for this area. Resets with disarm. (Lock out is not timed).
A1: ENABLE BYPASS: YES	Enables selective bypassing of any zone that is defined as bypassable in this area.
A1: ENABLE FORCE ARM: NO	Permits the arming of areas with 1 or more zones faulted. Faulted zones are temporarily bypassed and return to operation if the fault is corrected. Only zones that are defined as bypassable may be force armed.
A1: AUTO INTER. OFF: NO	<p>Automatically turns off interior defined zones at end of exit delay if a delay zone isn't violated (i.e. no exit occurs), switching the arming mode from Away to Stay.</p> <p>Note: Auto-Interior Off is only checked when:</p> <ol style="list-style-type: none"> <li>1. a keyswitch Away arm is performed,</li> <li>2. a keypad is used to change arming level of that keypad's primary area from some armed state to Away mode, or</li> <li>3. a keypad is used to arm that keypad's primary area in Away mode.</li> </ol> <p>Auto-Interior Off is ignored:</p> <ol style="list-style-type: none"> <li>1. for Area 1 when it is armed in Away mode due to the Common Area 1 areas being armed,</li> <li>2. when an area is auto-armed,</li> <li>3. when an area is armed or force armed in Away mode from RPM,</li> <li>4. when a keypad is used to arm an area other than that keypad's primary area (even when that area is armed in conjunction with the keypad's primary area, i.e., Multi-Area arming).</li> </ol>
A1: OPEN AFTER ALARM: NO	Restricts opening reports upon disarming to after an actual alarm only. Prevents regular opening reports.
A1: CLOSING RINGBACK: 0	<p>Determines how the system annunciates the successful transmission of a closing report to the central station.</p> <p>0 = Ringback Output only            1 = Ringback Output and keypad audible            2 = Ringback and Burglar Outputs and keypad audible.</p>

# Programming The Control

## Menu 2

M2: KEYPAD DEFINITIONS		
PREV	NEXT	<input type="button" value="SELECT"/>

Press Select to program this menu. Press Next to proceed to the next menu. Another screen then appears for choosing keypad definitions.

KEYPAD 1 DEFINITIONS		
PREV	NEXT	<input type="button" value="SELECT"/>

Press Select to program this keypad. Press Next to proceed to the next keypad. Press PREV to back up one keypad or exit to the top of this menu.

Every keypad must be assigned a unique data address number. The data address is selected by setting the DIP switch on the keypad (see Chapter 1). In programming or defining each keypad, the address number must correspond with the keypad being programmed.

Each keypad definition has several options.

ITEM AND DEFAULT	DESCRIPTION
KP1: "KEYPAD 1"	Keypad name (up to 10 characters) displayed upon non-silent panic key alarms. Refer to Text Editor on page 3-6.
KP1 A:1 E:1 . . . . .	(A:) Defines the primary area to which the keypad is assigned. (E:) Defines extended area operation and is available only if the multi area codes feature was selected upon first time entry into programming. The primary area assignment is automatically included in the extended area field.
KP1 ENABLE PANIC A: NO	Defines if Panic Key A is to be enabled at this keypad.
KP1 ENABLE PANIC B: NO	Defines if Panic Key B is to be enabled at this keypad.
KP1 ENABLE PANIC C: NO	Defines if Panic Key C is to be enabled at this keypad.
KP1 SILENT EXIT = NO	Silences the exit alert at the keypad.
KP1 SILENT ENTRY = NO	Silences the entry alert at the keypad.
KP1 ACCESS TIME = 5  Valid Range = 0-255 0 = Toggle  <b>Note: This control is not a UL Listed Access Control System. The access feature should not be used in UL Listed installations.</b>	Time in seconds for an access output activated from this keypad. Toggle access feature allows the output to latch ON/OFF. Access is performed at the keypad by entering a 0 prior to a valid passcode with sufficient authorization. Typically used to activate electrically operated door strikes.  All access outputs assigned to this keypad (See Menu 5) are affected when a valid code is entered for this keypad. It is not area dependent.

Press Next after the last item in this menu to advance to the next keypad. Press the \* key twice to exit to the user mode.



# Programming The Control

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## Menu 3

M3: ZONE DEFINITIONS		
PREV	NEXT	SELECT

Press Select to program this menu. Press Next to proceed to the next menu.

Every zone has two programming screens. Each screen displays the physical zone number followed by the programmable entry fields.

## Screen 1

ZN 01: "ZONE 01"		
PREV	NEXT	→

Screen 1 of each zone allows a custom zone name (up to 16 characters) to be programmed. The arrow key moves the cursor into the name field and advances one character with each entry. Refer to text editor on page 3–6. Whenever a zone is displayed on the keypad, only the custom name appears. No zone number is displayed unless programmed as part of the description. This way each partition can essentially display consecutive zone numbers i.e. Z1 through Z? regardless of the physical zone numbers. The physical zone number is never used except by the installer.

Press Prev to return to the previous display. After the zone name is complete, press Next to store the name. Press Next again to proceed to screen 2.

## Screen 2

ZN 01: AREA:1 DEF:1100		
PREV	NEXT	→

Screen 2 provides two entry fields. The first field (Area:) requires a single digit entry (0–8) to assign the zone to an area. The second field (Def:) requires a four digit entry to define the zone operation. The arrow key moves the cursor into the Def: field. The four digit zone code can be created using the zone definition tables on page 3–11. Enter four digits until the field is complete, then press Store.

Press Next to proceed to screen 1 of the next zone. Press Clear to erase an incorrect digit entry. Pressing Store completes the entry and stores the data in memory. Entering a number from 1–48 and then pressing Zone, quickly navigates (jumps) to the definition screens for that zone (this is only recommended for experienced users). For detailed instructions regarding creating the zone definition value see the following zone definition tables.

# Programming The Control

## Digit 1 – Defines The Zone Type

0	Null (Disables the zone completely)	9	Verified Fire * (2 minute window)
1	Burglary	10 (A)	Fire Supervisory
2	Fire 24 Hour	11 (B)	Universal **
3	Holdup 24 Hour	12 (C)	Universal Logged**
4	Auxiliary 24 Hour	13 (D)	Sentry Test Burglar ***
5	Momentary Keyswitch (Arm AWAY/ Disarm)	14 (E)	Listen-In Module Input ****
6	Communicator Report 24 Hour (CCM)	15 (F)	Momentary Keyswitch (Arm STAY/No Disarm)
7	Tamper (24 Hour Burglary)		
8	Burglary Chime (Always) Regardless Of Area Chime		

\* **Verified Fire:** Upon activation, control removes switched smoke power for 5 seconds. The loop is ignored for an additional 25 seconds. Subsequent activations within the next 60 seconds cause alarms.

\*\* **Universal:** May be used to activate a programmable output (Non-Reporting). Universal Logged is also recorded in Event Log when activated.

\*\*\* **Sentry Test:** Ensures that a zone is capable of initiating an alarm by preventing arming until one violation has occurred from the zone during each disarm period.

\*\*\*\* See Chapter 5 for UL notes.

To program an A, B or C digit, press the # key followed by 0, 1 or 2 respectively.

To program an D, E or F digit, press the # key followed by 3, 4 or 5 respectively.

NOTE: See Programming Notes on page 3–34 for important information about **Verifying or Self Verifying Burglar** zones, **Trouble Open/Short** and the **Listen-In Module**.

## Digit 2 – Defines The Response

0	Perimeter Instant	8	Verifying Interior Instant ****
1	Perimeter Delay 1	9	Self-Verifying Interior Instant ****
2	Perimeter Delay 2	10 (A)	Verifying Interior Follower ****
3	Interior Instant	11 (B)	Self-Verifying Interior Follower ****
4	Interior Follower	12 (C)	Verifying Interior Night Follower ****
5	Interior Night Follower	13 (D)	Self-Verifying Interior Night Follower ****
6	Interior Delay 1		
7	Interior Night Delay 1		

NOTE: Digit 2 only applies to Burglar Zones (digit 1 = 1, 8, or D). Exit time applies to all burglar zones except Perimeter Instant. All Follower zones have entry delay after a delay zone violation.

When armed in the AWAY mode: Perimeter, Interior and Interior Night zones are armed.

When armed in the STAY mode: Perimeter zones are armed, Interior and Interior Night zones are bypassed.

When armed in the NIGHT mode: Perimeter and Interior zones are armed and Interior Night zones are bypassed.

## Digit 3 – Defines Bypassing (0 or 1 ONLY)

0	Not Bypassable (Any zone can be programmed as bypassable. Fire should not be programmed as bypassable.)
1	Bypassable

# Programming The Control

## Digit 4 – Defines Troubles/Supervision

0	Supervised, no trouble output (Standard for Burglar)
1	24 Hr. Trouble on Loop Open, Alarm on Loop Short (Required for Fire)
2	24 Hr. Trouble on Loop Short, Alarm on Loop Open
3	Burg Day Alert on Loop Open, Alarm on Open/Short When Armed.
4	Burg Day Alert on Loop Short, Alarm on Open/Short When Armed.
5	Non Supervised, (Closed circuit contacts only, no end-of-line resistor)
6	Non Supervised, (Open circuit contacts only, no end-of-line resistor)
7	Two wire Smoke, (Zone 16 Only, Refer to Hardware Options, J-18)
8	Trouble on Open and Short, No Alarm

Burg Day Alert = Trouble When Disarmed

Factory supplied zone names and definitions of the first 16 zones in the control:

SCREEN	DESCRIPTION OF ZONE
ZN 01: "ZONE 01" ZN 01 AREA:1 DEF:1110	(BURG., DELAY #1, BYPASSABLE, NO TROUBLE/SUPV)
ZN 02: "ZONE 02" ZN 02 AREA:1 DEF:1210	(BURG., DELAY #2, BYPASSABLE, NO TROUBLE/SUPV)
ZN 03: "ZONE 03" ZN 03 AREA:1 DEF:1310	(BURG., INTERIOR INSTANT, BYPASSABLE, NO TROUBLE/SUPV)
ZN 04: "ZONE 04" ZN 04 AREA:1 DEF:1310	(BURG., INTERIOR INSTANT, BYPASSABLE, NO TROUBLE/SUPV)
ZN 05: "ZONE 05" ZN 05 AREA:1 DEF:1300	(BURG., INTERIOR INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 06: "ZONE 06" ZN 06 AREA:1 DEF:1300	(BURG., INTERIOR INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 07: "ZONE 07" ZN 07 AREA:1 DEF:1300	(BURG., INTERIOR INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 08: "ZONE 08" ZN 08 AREA:1 DEF:1300	(BURG., INTERIOR INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 09: "ZONE 09" ZN 09 AREA:1 DEF:1000	(BURG., PERIMETER INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 10: "ZONE 010" ZN 10 AREA:1 DEF:1000	(BURG., PERIMETER INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 11: "ZONE 11" ZN 11 AREA:1 DEF:1000	(BURG., PERIMETER INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 12: "ZONE 12" ZN 12 AREA:1 DEF:1000	(BURG., PERIMETER INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 13: "ZONE 13" ZN 13 AREA:1 DEF:1000	(BURG., PERIMETER INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 14: "ZONE 14" ZN 14 AREA:1 DEF:1000	(BURG., PERIMETER INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 15: "ZONE 15" ZN 15 AREA:1 DEF:1000	(BURG., PERIMETER INSTANT, NON-BYPASS, NO TROUBLE/SUPV)
ZN 16: "ZONE 16" ZN 16 AREA:1 DEF:2001	(FIRE, 4-WIRE, NON-BYPASS, TROUBLE/OPEN)

The zone definition menu continues up to Zone 48. There are no pre-set factory default values beyond Zone 16.

# Programming The Control

## Menu 4

M4: USER CODES		
PREV	NEXT	SELECT

Press Select to program this menu. Press Next to advance to the next menu.

Every user code has two programming screens. Each screen displays the physical user code number followed by the programmable entry fields.

## Screen 1

UC 01 C:12345	"USER 01"
PREV	NEXT →

Screen 1 allows a one-to-five digit passcode (UL requires a minimum of three digits for Commercial Fire UL 864), and an eight-character name to identify the user. The arrow key moves the cursor into the name field and advances one character with each entry. Refer to text editor on page 3-6. When a code is programmed from the user level, only the custom name appears. No user numbers are displayed. This way, user codes are viewed and retrieved by looking for the user name. **The user code must not begin with 0.**

After the user name is correct, press Next to complete the entry. Press Next again to proceed to Screen 2.

For multi-area applications, duplicate passcodes among all user passcodes and the installer's passcode (see Menu 14) are not allowed, regardless of the area assignments of the passcodes.

For separate area applications, do not enter duplicate passcodes among user passcodes within an area and the installer's passcode.

## Screen 2

UC 01 L:F A:1 E:1 . . . . .	
PREV	NEXT →

Screen 2 is used to assign:

- (L:) The user's authority level (See Table on page 3-14).
- (A:) The **Area Editable From** determines the area in which a user (with a high enough Authority Level) must be operational to edit the passcode and user name. For example, if Area Editable From is Area 2, a user trying to edit the passcode must be operational in Area 2 and he must attempt it from a keypad that is also operational in Area 2. All passcodes can be edited by the installer from any keypad.
- (E:) **Areas Operational On** is used in combination with the keypad's Areas of Operation to determine the areas suitable for an operation. For example, if a user operational in Areas 1, 2 & 3 enters his passcode on a keypad operational in Areas 2, 3, & 4 to perform an arming operation, the system attempts to arm Areas 2 & 3.

In multi-area applications, Area Editable From and Areas Operational On are completely independent.

In separate area applications, Area Editable From and Area Operational On are the same area and Areas Operational On is not editable.

User 1 has the default passcode "12345" with the default settings shown above. This is the only user with a default passcode. There are a total of 99 users.

# Programming The Control

LEVEL	CODE CAN BE USED TO:
0	Nothing. Code is Non-Operable
1	Operate the Access Feature ONLY (0 key followed by Code activates the output(s) assigned for this keypad).
2	Arm the control Only.
3	Arm the control – Operate the Access feature (0 key followed by Code).
4	Special Arm the control – This code can arm the control but it CANNOT disarm unless the control was armed by this code or another level 4 code.
5	Arm with Restricted Disarm. This code can Disarm ONLY during the scheduled open time +/- time window.
6	Arm with Restricted Disarm + Operate the Access feature.
7	Arm or Disarm only, no restrictions. (Most typically used configuration.)
8	Arm or Disarm + Access.
9	Arm or Disarm + Access + Activate a Duress Alarm by using this code to arm/disarm. (Duress avail. this digit only)
10 (A)	Arm or Disarm + Access + Bypass Zones.
11 (B)	Arm or Disarm + Access + Bypass + Perform a Local Test.
12 (C)	Arm or Disarm + Access + Bypass + Local Test + View Event History log.
13 (D)	Arm or Disarm + Access + Bypass + Local Test + Event History + Extend Closing
14 (E)	MASTER USER – Arm or Disarm + Access + Bypass + Local Test + Event History + Extend Closing + Program Codes within extended areas + Modify Schedules.
15 (F)	GRAND MASTER USER – Arm or Disarm + Access + Bypass + Local Test + Event History + Extend Closing + Program Codes + Set Clock + Modify Schedules.

NOTE: The ability to view status, reset silent holdup alarms, silence trouble conditions and reset smoke detectors begins with the disarm privilege.

Access output requires entering 0 before the codes.

The operations that the installer passcode can perform are listed in Chapter 2.

Any valid passcode can adjust keypad settings, perform a remote connect and perform a manual comm test.

# Programming The Control

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## Menu 5

M5: OUTPUT DEFINITIONS		
PREV	NEXT	SELECT

This menu is used to assign the programmable outputs. The control is equipped with 10 programmable, on-board outputs. Additional outputs can be obtained in groups of ten by the addition of zone concentrators. The outputs on the control circuit board are assigned to positions 1–10. The outputs on the zone concentrators are assigned to positions 11–50.

Press Select to program this menu. Press Next to proceed to the next menu.

Output 1 is typical of every output. Each output is assigned a condition (i.e. Burglar, Fire, Status, Alarm) and areas to which it should respond when the condition is active in those areas.

OUT 01 C:1 A:1 . . . . .		
PREV	NEXT	→

Select the desired output condition from the list below. Enter that digit into the C: field. To assign the output to the desired area(s), press the arrow key to move the cursor into the A: field. Then enter the number (s) of the area(s) to which the output should respond and press Store. To remove an area assignment, enter the area and press Store or enter 0 and press Store to erase all area assignments. Each output may be assigned to one or more areas so that for example, a common siren can be assigned to all areas.

<b>NOTE</b>
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**If you select access as a condition, the A: changes to K: because access is assigned by keypad rather than by area. If an output is defined for multiple areas, the output becomes active for any single area with the condition present. It does not collectively represent the condition of all areas. Some output conditions are area independent and the A: is not displayed for them.**

**Outputs 1 and 2 automatically activate the K1 and K2 on-board relays respectively.**

**The timing for all alarm outputs and universal outputs is programmed in Menu 6.**

# Programming The Control

CONDITION TABLE	OUTPUT BECOMES ACTIVE WHEN:
0 = Not Used	
1 = Burglar Alarm	A burglary defined zone or panic key has been alarmed.
2 = Fire Alarm	A fire defined zone or panic key has been alarmed.
3 = Holdup Alarm	A hold-up defined zone or panic key has been alarmed.
4 = Auxiliary Alarm	An auxiliary defined zone or panic key has been alarmed.
5 = Tamper (24-Hr. Burg.)	A tamper defined zone has been alarmed.
6 = Ready	All burglar zones within the area assignment have returned to a non-violated state (use single area).
7 = Armed	The area assigned has been armed.
8 = Violation	Any of the burglary, fire, auxiliary, or tamper defined zones or panic keys have been alarmed. This output remains active until reset with a silence alarm.
9 = Lamp	Active for 2 min. after any keypress, during entry and exit times, and during alarms. Mostly used to activate line carrier devices such as X-10®.
10 = Trouble Indicator	Active with any loop or system trouble. Stays on until the trouble condition is cleared.
11 = Audible Trouble	Same as trouble output. Deactivates when trouble condition is silenced at keypad.
12 = Chime Enabled Indicator	The chime mode is activated for the area assigned.
13 = Chime Output	Active for 2 sec when a disarmed chime always zone is violated. Pulsed twice when chime is enabled and a disarmed perimeter burglar zone is violated.
14 = Entry Time Warning	Active during entry time.
15 = Exit Alert	Active with the commencement of exit time after the area has been armed.
16 = Access	A valid passcode is entered after the 0 command. Is keypad assignable and lasts for the time programmed for the keypad's access time (See Menu 2).
17 = Universal	A universal defined zone is violated.
18 = Universal Logged	A universal logged defined zone is violated.
19 = Armed Special	The system is armed with a Level 4 user code.
20 = Fire Trouble	A fire, verified fire, or fire supervisory zone indicates a trouble condition. Stays on until the trouble condition is cleared.
21 = Closing Ringback	Active for 1 sec after the central station kissoff of the closing signal.
22 = Auto Arm Warning	Indicates that the system is about to be automatically armed. Active for 3 sec every minute on the minute for the 10 minutes leading up to an auto arm.
23 = Instant Armed	Indicates that the entry delay has been disabled and all zones are in instant mode.
24 = Armed And Exit Time Expired	Indicates that the system is armed and the exit time has expired.
25 = Fire Supervisory	A zone defined as fire supervisory is in alarm.
26 = Duress	Indicates that a duress code was used to arm or disarm the control. Use for backup reporting only.
27 = Listen-In Module Output	An alarm event is reported to the central station. The output activates only if it has been programmed for the same area as the alarm event. Remains active until the panel finishes reporting and disconnects from the central station. (See Programming Notes on page 3-34.)
28 = Not Used	

# Programming The Control

CONDITION TABLE	OUTPUT BECOMES ACTIVE WHEN:
29 = Switched Power Interrupt	Active for 5 sec when a smoke reset occurs manually or by verified fire. (Special circumstances apply for verified fire. See Zone Def. Menu 3.)
30 = Telephone Line Fault	The F2500 detects that one or both of the telephone lines has failed.
31 = Communications Failure	A communication is unsuccessful in reporting an event after the number of dial attempts.
32 = Fire Bell Trouble	The F2500 detects a fault in the fire bell circuit.
33 = Ground Start	Triggers a telco ground start circuit for 1 sec.
101-148 = Zone (1-48) Violated	Allows individual zone status output indication. (See Programming Notes on page 3-34.)
201-248 = Zone (1-48) In Alarm	Allows individual zone alarm output indication. (See Programming Notes on page 3-34.)

## NOTE

Some of the outputs listed are primarily intended for audible annunciators remote from the keypads. These include the entry and exit and chime outputs. Outputs of this type closely mirror the activity of the piezo resonator on the keypad. If the keypad output is pulsed or steady, the programmable output reflects that activity. Other outputs are intended to operate commonly used annunciation devices such as LEDs and sirens. When the use of any output is considered, the security control terminal delivering the output and the amount of current that it can provide should be compared to the requirements of the load device before operating the output. It may be necessary to activate the device through one of the on-board or separately installed auxiliary relays. The same output type may be programmed for any of the output terminals.

Output Conditions 29 – 33 are area independent.



# Programming The Control

## Menu 6

M6: GLOBAL SYS OPTIONS		
PREV	NEXT	<input type="button" value="SELECT"/>

Press Select to program this menu. Press Next to proceed to the next menu. This menu is used to program options that affect the entire system, rather than only one area.

ITEM AND DEFAULT	DESCRIPTION
1 Burg Cut-Off: 10	Time in minutes before a burglar activated output automatically deactivates. Valid range is 0-255 minutes (0 = no cut off).
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">NOTE</div> <p><b>For all cut off times, each area performs its own cut off even though all areas share the same time value setting.</b></p>	
2 Pulsing Burg: Yes	Sets the burglar output to pulse at the rate of 1 second on, 1 second off.
3 Fire Cut Off: 0	Time in minutes before a fire activated output automatically deactivates. Valid range is 0-255 minutes (0 = no cut off).
4 Pulsing Fire: No	Sets the fire output to pulse at the rate of 1 second on, 1 second off.
5 Holdup Cut-Off: 10	Valid range is 0-255 minutes (0 = no cut off).
6 Aux Cut-Off: 10	Valid range is 0-255 minutes (0 = no cut off).
7 Univ Out Time: 0	Valid range is 0-255 seconds (0 = latch). If 0 is programmed, the first violation will activate the output, a subsequent violation will deactivate it.
8 Univ Logged Out Time: 0	Valid range is 0-255 seconds (0 = latch).
9 Alarm Abort Time: 0	Time in seconds (0-255) that a user has after a Burglar Alarm activation to SILENCE the alarm and abort the Burglar Alarm event. (See Programming Notes on page 3-35.)
10 Post Alarm Abort: No	If enabled, Abort Alarm events are posted in the Event Log. (See Programming Notes on page 3-35 ).
11 AC Trouble Delay: 10	Allows an AC power fail report to be delayed from 0-255 minutes. This only applies to non-UL 864 panels.
12 Wrong Code Lock Out: 8	Sets the number of failed code entry attempts allowed before a 50 second lockout for a particular keypad. ( Range = 0 - 15; 0 = No lockout).
13 Common Areas: 1 . . . . . <b>Note: Enter only the areas common to Area 1.</b> <b>When last common area is armed, Area 1 arms if it is ready or force arms if force arming is enabled for Area 1.</b> <b>UL 864 panels should not have burglar zones in Area 1 and therefore have no use for common areas.</b>	Area 1 may automatically arm/disarm according to the condition of other common area(s). If the entry door in a vestibule or lobby application is assigned to Area 1, it may arm automatically when the last common area defined by this option is armed. Area 1 arms in AWAY mode, retaining its own exit/entry delay, and automatically disarms when any one of the other common areas is disarmed. Area 1 may have its own keypad and be disarmed by any authorized person not necessarily having access to the other area(s).
14 Sync Clock To AC: Yes	Synchronizes the internal clock with the local power company's 50 or 60 Hz for accurate time keeping. This feature should always be enabled unless the local primary AC source is unreliable.
15 KP Panic 3 Sec Hold: Yes	Requires all keypad panic keys to be pressed and held for approximately 3 seconds in order to activate an alarm condition.
16 Bell Test On Arm: No	Pulses the burglar defined output for one second upon arming.

# Programming The Control

## Menu 7

<b>M7: COMMUNICATOR OPTIONS</b>		
PREV	NEXT	<b>SELECT</b>

Press Select to program this menu. Press Next to proceed to the next menu.

This menu allows the Digital Communicator to be enabled and defines the operating formats and functionality.

ITEM AND DEFAULT	DESCRIPTION
1 Enable Comm: No	Used to enable the control digital communicator for event reporting.
2 Comm Test Time: 00:00	Sets the hour and minute in military format for the auto communicator test.
3 Days Between Tests: 1	Sets the time intervals in days for the auto communicator test (range = 0–255). If two phone lines are being used by the system, the communicator tests alternate between the two lines. A setting of 0 disables Automatic Comm Test Reporting.
4 Enable Skip Test: No	Allows the auto comm test to be skipped if any signal has been transmitted to the central station since the last auto comm test.
5 Test On Power-up: No	Causes a communicator test to initiate immediately upon system power up. Does not affect days between tests counter.
6 T1 Trans Format: 6	Transmission format to be used when the communicator dials telephone #1. (Refer to Transmission Formats table on page 3–20.)
7 T1 Trans Speed: 2	Transmission speed to be used when the communicator dials telephone #1 and a pulsed format is used. (Refer to Transmission Speeds Table on page 3–21.)
8 T1 Dial Attempts: 5	Maximum number of dial attempts (0–15) when the communicator dials telephone #1.
9 T2 Trans Format: 6	Transmission format to be used when the communicator dials telephone #2. (Refer to Transmission Formats table on page 3–20.)
10 T2 Trans Speed: 2	Transmission speed to be used when the communicator dials telephone #2 and a pulsed format is used. (Refer to Transmission Speeds Table on page 3–21.)
11 T2 Dial Attempts: 5	Maximum number of dial attempts (0–15) when the communicator dials telephone #2.
12 Time Between Calls: 5	Time delay in seconds (0–255) between each dial attempt.
13 L1 Dial Type: 0	Sets the type of dialing. (Refer to Dial Types Table on page 3–21.)
14 L1 On-hook Time: 5	Time in seconds (0–15) the phone remains on-hook (non-loaded) after the communicator seizes the phone line. Useful when the control attempts to seize an occupied telephone line.
15 L1 Dial Tone Wait: 0	Time the communicator waits for dial tone before blind dialing or hanging up. (Range 0–2 where 0=6 sec, 1=12 sec, and 2= 24 sec).
16 L1 Allow Blind Dial: Yes	Allows the communicator to blind dial on line 1 if no dial tone is detected.
17 Two Phone Lines: No	Enables the second telephone line, Telco 2.
18 L2 Dial Type: 0	Sets the type of dialing for telephone line 2. (Refer to Dial Types Table on page 3–21.)
19 L2 On-hook Time: 5	Time in seconds (0–15) the phone remains on-hook (non loaded) after the communicator seizes the phone line. Useful when the control attempts to seize an occupied telephone line.

## Programming The Control

ITEM AND DEFAULT	DESCRIPTION
20 L2 Dial Tone Wait: 0	Time the communicator waits for dial tone before blind dialing or hanging up. (Range 0-2 where 0=6 sec, and 1=12 sec, 2=24 sec).
21 L2 Allow Blind Dial: Yes	Allows the communicator to blind dial on line 2 if no dial tone is detected.

**NOTE**

**Items 17 through 21 for the second telephone line are neither valid nor required unless item 17 (Telco 2) is enabled, AR101 is installed, and a second phone line is operational. See page 1-10 for details.**

### Transmission Formats

VALUE	FORMAT AND DESCRIPTION
0	<b>Data Format</b> is "3+1 Non-Extended". The last 3 digits of the account code and the first digit of the report code are sent twice in a row for verification.
1	<b>Data Format</b> is "3+1 Two Line Extended". The last 3 digits of the account code and both digits of the report code are sent. Line 1 is the account code and the first report code digit. Line 2 is the first report code digit 3 times and the second report code digit. Each line is sent twice in a row for verification.
2	<b>Data Format</b> is "3+1 Single Line Extended". The last 3 digits of the account code and the first digit of the report code are sent. If the first digit of the report code is 'B' thru 'F', a second line with the first report code digit 3 times and the second report code digit is also sent twice in a row for verification.
3	<b>Data Format</b> is "4+2 Extended". The last 4 digits of the account code and both digits of the report code are sent twice in a row for verification.
4	<b>Data Format</b> is "SIA Level 1". All six digits of the account codes are sent. The report code is only used to determine if the event is to be sent. The reports are generated from a SIA report table. The Transmission Speed is ignored.
5	<b>Data Format</b> is "BFSK" (binary frequency shift key). The last 3 digits of the account code and both digits of the report code are sent in one packet. The Transmission Speed is ignored. A Radionics developed format.
6	<b>Data Format</b> is "Contact ID". The last 4 digits of the account code are sent. The report code is only used to determine if the event is to be sent. The reports are generated from a Contact ID report table. The Transmission Speed is ignored. An Ademco developed format.
10	<b>Data Format</b> is "3+1 Non-Extended (Parity)". The last 3 digits of the account code and the first digit of the report code are sent once with a parity checksum for verification.
11	<b>Data Format</b> is "3+1 Two Line Extended (Parity)". The last 3 digits of the account code and both digits of the report code are sent. Line 1 is the account code and the first report code digit. Line 2 is the first report code digit 3 times and the second report code digit. Each line is sent once with a parity checksum for verification.
12	<b>Data Format</b> is "3+1 Single Line Extended With Parity". The last 3 digits of the account code and the first digit of the report code are sent. If the first digit of the report code is 'B' thru 'F', then a second line with the first report code digit 3 times and the second report code digit is also sent. Both lines (if used) are sent once with a parity checksum for verification.

# Programming The Control

## Transmission Speeds

**NOTE**

When pulsed formats are used, the system only accepts 2300Hz handshakes from the receiver.

VALUE	SPEED AND DESCRIPTION
0	Fast 20 pps, 1800 hz data.
1	Slow 10 baud = 10 pps, 1900 hz data, 800 mS. inter-digit time.
2	Fast 20 baud = 20 pps, 1800 hz data, 600 mS. inter-digit time.
3	Fast 15 baud = 15 pps, 1900 hz data, variable inter-digit time.
4	Fast 20 baud = 20 pps, 1800 hz data, variable inter-digit time.
5	Superfast = 40 pps, 1800 hz data.

## Dial Types

VALUE	TYPE AND DESCRIPTION
0	USP (Pulse US) = "US Rotary" uses North American Standard (60/40) make/break ration pulses.
1	TT (Touchtone®) = Touchtone® uses industry standard DTMF tones. Touchtone® is a trademark of AT & T.
2	Foreign Pulse = "Foreign Rotary" uses 67/33 make/break ratio pulses, typical of foreign countries.

## Receiver Compatibility Table

Receivers	Transmission Format	Transmission Speeds (Pulse Reporting Only)
Ademco 685	3/1, 4/2, Contact ID	Auto, 10B, 15B, 20B
FBI CP220	3/1, 4/2, Contact ID	Auto, 10B, 15B, 20B
Osborne-Hoffman (Quick Alert)	3/1, 4/2, Contact ID, BFSK, SIA	Auto, 10B, 15B, 20B
Radionics 6000	3/1, BFSK	Auto, 10B, 15B, 20B
Radionics 6500	3/1, 4/2, BFSK	Auto, 10B, 15B, 20B
Silent Knight 9000	3/1, 4/2, SIA	Auto, 10B, 15B, 20B
Varitech V-300D	3/1, 4/2	Auto, 10B, 15B, 20B

All receivers listed functioned with the listed formats at time of testing. Modifications or programming changes may affect receiver operation. Consult manufacturer of specific receiver for setup and operation. The 3/1 formats listed have not been tested with parity bits selected and should not be programmed with parity bits selected on UL Listed systems.

# Programming The Control

## Menu 8

M8: COMM TELEPHONE #s		
PREV	NEXT	SELECT

Press Select to program this menu. Press Next to proceed to the next menu.

This menu includes entries for 1 (16 digit) long distance or prefix access number and 2 central station telephone numbers (16 digits each).

Event reporting assignments for each telephone number are programmed under the AREA REPORT CODES menu. The assignment of telephone dialing options and reporting formats are programmed under the COMMUNICATOR OPTIONS menu.

PREFIX:	(16 DIGITS) Utilized for dialing long distance access numbers or when more than 16 digits are needed for a telephone number. Programming an A as the first digit of telephone numbers 1 and 2 causes the communicator to automatically dial this prefix before it dials the telephone number.
PHONE 1:	(16 DIGITS) Telephone number for the first receiver.
PHONE 2:	(16 DIGITS) Telephone number for the second receiver.

## Dialed Digits Allowed

0-9	Numbers from 0 to 9 dial the appropriate Touchtone® or pulse digit.
A	The communicator can be instructed to dial the prefix number before dialing telephone numbers 1 or 2 by programming the first digit of the telephone number with an A. The communicator can be instructed to switch from Touchtone® dialing to Pulse or vice versa during the dialing of a telephone number by programming an A digit anywhere else within the dial string.
B	Programming a B into any digit position causes the communicator to produce a Touchtone® * tone. Useful for unique applications such as voice mail or cellular applications.
C	Programming a C into any digit position causes the communicator to produce a Touchtone® # tone.
D	Programming a D into any digit position causes a 3-second pause during dialing.
E	Programming an E into any digit position forces the communicator to pause and wait for a second dial tone.
F	An F may be programmed after the last digit of a telephone number to signify end of dialing.

# Programming The Control

## Menu 9

M9: AREA REPORT CODES		
PREV	NEXT	<input type="button" value="SELECT"/>

Press Select to program this menu. Press Next to proceed to the next menu.

Another screen then appears for choosing which area report codes to program.

AREA 1 REPORT CODES		
PREV	NEXT	<input type="button" value="SELECT"/>

Press Select to program Area 1. Press Next to proceed to the next area. Press Prev to return to the previous screen.

Each report code requires a two digit entry. The first digit sets the primary event code and the second digit sets the extended code. Each digit has a range from 0–F. If extended reporting is not required, program the second digit as a zero (0). To completely disable a report code, program both digits as zero (0). To enter codes A–F, press the # key followed by a number from 0–5. For example: #+0=A, #+1=B, #+2=C, #+3=D, #+4=E, and #+5=F. When the SIA or Contact ID format is selected, it is only necessary to program a value other than zero into the first digit position to enable that event to be reported, the correct transmitted data is automatically sent.

ITEM AND DEFAULT	DESCRIPTION
1 A1 Tel 1 Acnt No:	Account number used when dialing telephone #1 (up to 6 digits).
2 A1 Tel 2 Acnt No:	Account number used when dialing telephone #2 (up to 6 digits).
3 A1 Key A: 00	Code sent for alarms activated by panic key A.
4 A1 Key B: 00	Code sent for alarms activated by panic key B.
5 A1 Key C: 00	Code sent for alarms activated by panic key C.
6 A1 Duress: 00	Code sent for alarms activated by duress code arm or disarm.
7 A1 Kp Lockout: 00	Code sent when a keypad is locked out due to failed passcode attempts.
8 A1 Abort: 00	Code sent when an authorized user resets a burglar alarm prior to the alarm abort time expiration.
9 A1 Cancel: 00	Code sent when an authorized user resets a burglar alarm after reporting.
10 A1 Keyswitch Close: 00	Code sent when system is armed with keyswitch zone.
11 A1 Keyswitch Open: 00	Code sent when system is disarmed by keyswitch zone.
12 A1 Installer Close: 00	Code sent when system is armed by RPM or by the installer at a keypad.
13 A1 Installer Open: 00	Code sent when system is disarmed by RPM or by the installer at a keypad.
14 A1 Auto Close: 00	Code sent when armed by scheduled program.
15 A1 Auto Open: 00	Code sent when disarmed by scheduled program.
16 A1 Late Close/Open: 00	Code sent when scheduled opening or closing is late (after the time window has expired).
17 A1 Early Close/Open: 00	Code sent when scheduled opening or closing is early (before the time window has started).
18 A1 Fail Close/Open: 00	Code sent when a scheduled open or close does not occur (when the time window has expired).
19 A1 Closing Extended: 00	Code sent when the scheduled closing time is extended.
20 A1 BA Phn No: 3 *	Directs which telephone number(s) to report the intrusion alarms and restorals.

# Programming The Control

ITEM AND DEFAULT	DESCRIPTION
21 A1 FA Phn No: 3 *	Directs which telephone number(s) to report the fire alarms and restorals.
22 A1 Holdup Phn No: 3 *	Directs which telephone number(s) to report the holdup alarms and restorals.
23 A1 Aux Phn No: 3 *	Directs which telephone number(s) to report the aux alarms and restorals.
24 A1 CCM Phn No: 3 *	Directs which telephone number(s) to report the critical condition monitoring events and restorals.
25 A1 TBL/RST Phn No: 0 *	Directs which telephone number(s) to report the zone troubles and restorals.
26 A1 BYP/RST Phn No: 0 *	Directs which telephone number(s) to report the zone bypasses and restorals.
27 A1 OPN/CLS Phn No: 0 *	Directs which telephone number(s) to report the openings and closings.

\* The following table is used in the phone direction options. Each value corresponds to a telephone number and order of operation that the communicator is to follow when reporting events to the central station.

**Telephone Number Assignment Table**

0	Disables reporting of these conditions.
1	Directs reports to telephone #1 only.
2	Directs reports to telephone #2 only.
3	Directs reports to telephone #1 first with telephone #2 as backup.
4	Directs reports to telephone #2 first with telephone #1 as backup.
5	Directs reports to both telephone #1 and telephone #2.

# Programming The Control

---

## Menu 10

M10: ZONE REPORT CODES		
PREV	NEXT	SELECT

Press Select to program this menu. Press Next to proceed to the next menu.

Each zone has two programming screens for assigning the report codes. Screen 1 is used to assign the alarm and restore report codes. Screen 2 is used to assign the bypass and trouble report codes. The restore may be an alarm, trouble, or bypass restoral.

Each report code requires a two digit entry. The first digit sets the primary event code and the second digit sets the extended code. Each digit has a range from 0–F. If extended reporting is not required, program the second digit as a zero (0). To completely disable a report code, program both digits as zero (0). To enter codes A–F, press the # key followed by a number from 0–5. For example: #+0=A, #+1=B, #+2=C, #+3=D, #+4=E, and #+5=F. When the SIA or Contact ID format is selected, it is only necessary to program a value other than zero into the first digit position to enable that event to be reported, the correct transmitted data is automatically sent.

Defaults for all zones:    Screen 1 – ALM: 10 RES: E0  
                                  Screen 2 – BYP: 00 TBL: F0

Example:

### Screen 1

Z01	ALM:	RES:
-----	------	------

### Screen 2

Z01	BYP:	TBL:
-----	------	------



# Programming The Control

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## Menu 11

M11: USER REPORT CODES		
PREV	NEXT	SELECT

Press Select to program this menu. Press Next to advance to the next menu. This menu is used to program the opening and closing reports for each user code.

Each report code requires a two digit entry. The first digit sets the primary event code, and the second digit sets the extended code. Each digit has a range from 0-F. If extended reporting is not required, program the second digit as a zero (0). To completely disable a report code, program both digits as zero (0). To enter codes A-F, press the # key followed by a number from 0-5. For example: #+0=A, #+1=B, #+2=C, #+3=D, #+4=E, and #+5=F. When the SIA or Contact ID format is selected, it is only necessary to program a value other than zero into the first digit position to enable that event to be reported, the correct transmitted data is automatically sent.

The open and close report code is assigned to the user, not the area. Some users may be assigned to arm and disarm multiple areas. Any user with the authority to arm and disarm multiple areas has the same opening and closing report codes. However, the central station can differentiate between areas by the area account code.

Defaults for all users are: CLS:C0 OPN: B0

Example:

UC01	CLS:	OPN:
------	------	------

# Programming The Control

## Menu 12

M12: GLOB SYS REP CODES		
PREV	NEXT	SELECT

Press Select to program this menu. Press Next to advance to the next menu.

Each report code requires a two digit entry. The first digit sets the primary event code and the second digit sets the extended code. Each digit has a range from 0–F. If extended reporting is not required, program the second digit as a zero (0). To completely disable a report code, program both digits as zero (0). To enter codes A–F, press the # key followed by a number from 0–5. For example: #+0=A, #+1=B, #+2=C, #+3=D, #+4=E, and #+5=F. When the SIA or Contact ID format is selected, it is only necessary to program a value other than zero into the first digit position to enable that event to be reported, the correct transmitted data is automatically sent.

ITEM AND DEFAULT	DESCRIPTION
1 TRBL/RSTR PHN NO: 0	Telephone number directory for trouble/restore system reports. (See Telephone Number Assignment, page 3–24)
2 COMM TEST NOT NORM: 00	Transmitted to the central station at the comm test time–of–day in place of the comm test report when a trouble condition is present. If this report code is set to “00”, a normal comm test event is transmitted.
3 COMM TEST: 00	Transmitted to the central station at the comm test time–of–day when no trouble conditions are present. Transmitted at power–up, if Test On Power–Up is enabled (Menu 7). Implies proper operation of the communicator and the telephone line.
4 AC FAIL: 00	Notifies the central station that the control has lost the primary AC input. The delay time before this report is transmitted is located in the global system options menu (Main Menu 6 for non UL 864 systems).
5 AC RESTORE: 00	Notifies the central station that the AC primary power has been restored.
6 LOW BATT: 00 BLOWN FUSE: (See PTC)	Transmitted when the control detects a low battery. The battery fails at a voltage reading of 11.2 VDC or less.
7 BATT RESTORE: 00 BLOWN FUSE RESTORE: (See PTC)	Transmitted when the low battery condition has been restored.
8 COMM RESTORE: 00	When an event report code is unsuccessful in communicating, the fail to communicate (local trouble) displays. If a subsequent report of any type is successful, the control also reports this code.
9 MEMORY ERROR: 00	If the internal memory system check finds an unauthorized change in the value of one or more of the programming options, this code is reported.
10 LOCAL PROG BEGIN: 00	Transmitted when the programming mode is initiated at the control site.
11 LOCAL PROG END: 00	Transmitted after programming mode is terminated at the installation site. This occurs approximately 5 minutes after exiting programming mode or by holding the * key 3 seconds.
12 LOCAL PROG DENIED: 00	Transmitted when a user request for programming at the control station is followed by an invalid authorization code.
13 REM PROG END: 00	Transmitted when an RPM session has been completed normally.
14 REM PROG DENIED: 00	Transmitted when an unauthorized RPM session is attempted (i.e. improper ID code or access device).
15 REM PROG ABORTED: 00	Transmitted when an RPM session is aborted. If an event requiring a report to the central station occurs during an RPM session, the control may abort the session to report the event.

## Programming The Control

ITEM AND DEFAULT	DESCRIPTION
16 LOG NEARLY FULL: 00	Transmitted when the number of events that have not been dumped to RPM reaches 80% of the Event Log's capacity.
17 MISSING KEYPAD: 00	Transmitted when a keypad is removed or fails to respond to system polling.
18 RESTORE KEYPAD: 00	Transmitted when a missing keypad is restored to the data bus.
19 LINE 1 FAULT: 00	Transmitted when the telephone line connected to L1 fails supervision. The F2500 supervision module is required to provide detection of this type of failure.
20 LINE 1 RESTORE: 00	Transmitted when the F2500 detects that the failure of the telephone line connected to L1 has been corrected.
21 LINE 2 FAULT: 00	Transmitted when the telephone line connected to L2 fails supervision. The F2500 supervision module is required to provide detection of this type of failure.
22 LINE 2 RESTORE: 00	Transmitted when the F2500 detects that the failure of the telephone line connected to L2 has been corrected.
23 BELL LINE FAULT: 00	Transmitted when the F2500 detects a failure in the supervision of the fire bell output circuit.
24 BELL LINE RESTORE: 00	Transmitted when the F2500 detects that the failure in the fire bell output supervision has been corrected.

# Programming The Control

## Menu 13

M13: AREA SCHEDULES		
PREV	NEXT	<input type="button" value="SELECT"/>

Press Select to program this menu. Press Next to proceed to the next menu. Another screen then appears for choosing which area schedules to program.

AREA 1 SCHEDULES		
PREV	NEXT	<input type="button" value="SELECT"/>

Press Select to program Area 1. Press Next to proceed to the next menu.

### Automatic Arming And Disarming

If automatic arming is enabled, the control produces a three second audible warning signal at the appropriate keypad(s) once every minute beginning 10 minutes prior to the event. During this warning, the same keypad(s) displays a visual indication of the impending action and the amount of time remaining. This allows the user ample warning to exit or override the impending action. The time window is not used for this feature. Scheduled opening and closing and automatic arming must not be enabled at the same time. Time of auto arm may be extended by one hour (or up to midnight) using the extended closing function. Automatic Disarming occurs at the scheduled time with no warning. Auto Arming arms the control in the AWAY mode with normal exit time.

### Scheduled Manual Arming And Disarming

These items are used to set up daily schedules for authorized openings and closings. The schedule indicates when the control expects an area to be armed and disarmed. A programmable time window allows reasonable variation before and after the time set for the user to arm and disarm the control. All arming or disarming that occurs within the programmed time windows is logged locally, but is not reported. If the arming or disarming occurs outside the time window, it may be reported to the central station which responds accordingly. There is no control station warning during this window.

<b>NOTE</b>
-------------

**The Late To Close deadline may be extended by one hour, as long as that extension does not go past midnight. Engage this function by selecting the EXTEND CLOSING option.**

ITEM AND DEFAULT	DESCRIPTION	
1 A1 AUT ARM DAYS (SMTWTFS): .....	Selects the days of the week the system automatically arms. Each day of the week is selected by entering the number 1-7 corresponding to the day.	
2 A1 AUT DIS DAYS (SMTWTFS): .....	Selects the days of the week (1-7) the system automatically disarms.	
<table border="1"> <tr> <td style="text-align: center;"><b>NOTE</b></td> </tr> </table> <p><b>If items 1 and 2 are selected for a specific day of the week, items 3 and 4 must not be selected for the same day. Programming the area in this manner prevents the area from automatically arming as the scheduled open/close features and the auto-arming/disarming features conflict.</b></p>		<b>NOTE</b>
<b>NOTE</b>		
3 A1 SCH CLS DAYS (SMTWTFS): .....	Selects the days of the week (1-7) the panel expects a closing. Not to be confused with the automatic arming feature, this schedule establishes the weekly calendar and timetable for closings to be executed by an authorized user.	

# Programming The Control

ITEM AND DEFAULT	DESCRIPTION
4 A1 SCH OPN DAYS (SMTWTFS): . . . . .	Selects the days of the week (1-7) the panel expects an opening. Not to be confused with the automatic disarming feature, this schedule establishes the weekly calendar and timetable for openings to be executed by an authorized user.
5 A1 TIME WINDOW: 0	Time in minutes the scheduled opening and closing may deviate +/- from the programmed time table. Valid range = 0-255. (The time window does not extend past midnight).

<b>NOTE</b>
-------------

**The following menu items establish the timetable for the events in items 1-4. If scheduled opening and closing are enabled, the control expects the events to occur within the time parameters set (+/- the time window). If automatic arming is selected, the control arms/disarms the area on schedule. If a zone is violated at the time of the automatic arming, the control arms the area, provided force arming is enabled for the area and the zone is programmed as bypassable. If force arming is not enabled or the zone is not bypassable, the control does not arm the area.**

6 A1 CLOSE TIME SUN: 00:00	Time for automatic arming or scheduled closing on Sunday.
7 A1 CLOSE TIME MON: 00:00	Time for automatic arming or scheduled closing on Monday.
8 A1 CLOSE TIME TUE: 00:00	Time for automatic arming or scheduled closing on Tuesday.
9 A1 CLOSE TIME WED: 00:00	Time for automatic arming or scheduled closing on Wednesday.
10 A1 CLOSE TIME THU: 00:00	Time for automatic arming or scheduled closing on Thursday.
11 A1 CLOSE TIME FRI: 00:00	Time for automatic arming or scheduled closing on Friday.
12 A1 CLOSE TIME SAT: 00:00	Time for automatic arming or scheduled closing on Saturday.
13 A1 OPEN TIME SUN: 00:00	Time for automatic disarming or scheduled opening on Sunday.
14 A1 OPEN TIME MON: 00:00	Time for automatic disarming or scheduled opening on Monday.
15 A1 OPEN TIME TUE: 00:00	Time for automatic disarming or scheduled opening on Tuesday.
16 A1 OPEN TIME WED: 00:00	Time for automatic disarming or scheduled opening on Wednesday.
17 A1 OPEN TIME THU: 00:00	Time for automatic disarming or scheduled opening on Thursday.
18 A1 OPEN TIME FRI: 00:00	Time for automatic disarming or scheduled opening on Friday.
19 A1 OPEN TIME SAT: 00:00	Time for automatic disarming or scheduled opening on Saturday.

# Programming The Control

## Menu 14

M14: PROGRAMMING OPTIONS

PREV

NEXT

SELECT

Press Select to program this menu. Press NEXT to proceed to the next menu.

This section deals with the attributes of the Remote Programming Manager Software.\* Before programming the specific functions, it is important to understand the following:

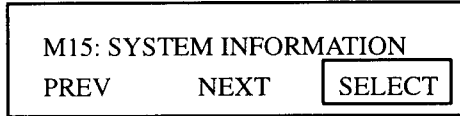
**ABORT:** During a remote programming session, the control is fully functional and can detect and annunciate alarms locally. The control aborts a session with RPM/2 to report an alarm through the digital communicator; however, it does not abort a session with RPM/2 to report any other type of event.

**DATALOCK:** As a provision of anti-takeover, the control does not permit local programming of the telephone numbers, or the restore factory defaults option to operate when an agency code has been established and programmed by the RPM/2 software. Other installer programming changes are still allowed. When the Datalock (agency code) is set, the keypad emits an error tone if any attempt is made to change a phone number or to default the control.

ITEM AND DEFAULT	DESCRIPTION
1 INSTALLER CODE: 96321	The Installer passcode is the only passcode that may program the entire Function Map. See Chapter 2 for a description of the other functions that it may perform.
2 EN. REM PROG: YES	Enables operation of the control with the RPM/2 package.
3 AUTO-ANS RING COUNT: 5	Sets the number of rings (0-15) that must occur before the panel automatically answers the telephone for operation with RPM/2. A ring count of 0 disables automatic answering, but manual connection may still be used. If Remote Prog is <b>not</b> enabled, then the auto-answer ring count is ignored and the panel never answers.
4 2 CALL BYP TIME: 0	(0-15) Time in 10 second increments for the answering machine bypass time window. This allows the remote programmer to bypass an answering machine by making two calls to the premises. The first call must ring 3 times or less and not be answered. The answering machine bypass time window starts 10 seconds after the last ring of the first call. If the first ring of the second call occurs within the answering machine bypass time window, the panel answers the second call on the first ring. Remote Programming must be enabled and Auto-Answer Ring Count must be non-zero.
5 EN. POWER UP PROG: NO	A quick way to enter program mode upon power up. Press the menu key and enter "9999" within the first 60 seconds after power up and the control enters in program mode. Consider disabling this feature for anti-takeover.
6 LOCKOUT LOCAL PROG: NO	This is provided for anti-takeover protection. If it is enabled, the installer passcode is not able to get back into program mode from a keypad. The installer passcode is still operational for other functions. Do not enable this unless an RPM account has been established for the control.

# Programming The Control

## Menu 15



This menu permits viewing of specific hardware configurations as well as the revision of software and the number of users programmed. It also displays the system voltage and system current drain.

Press Select to run this menu. Press next to proceed to the next menu.

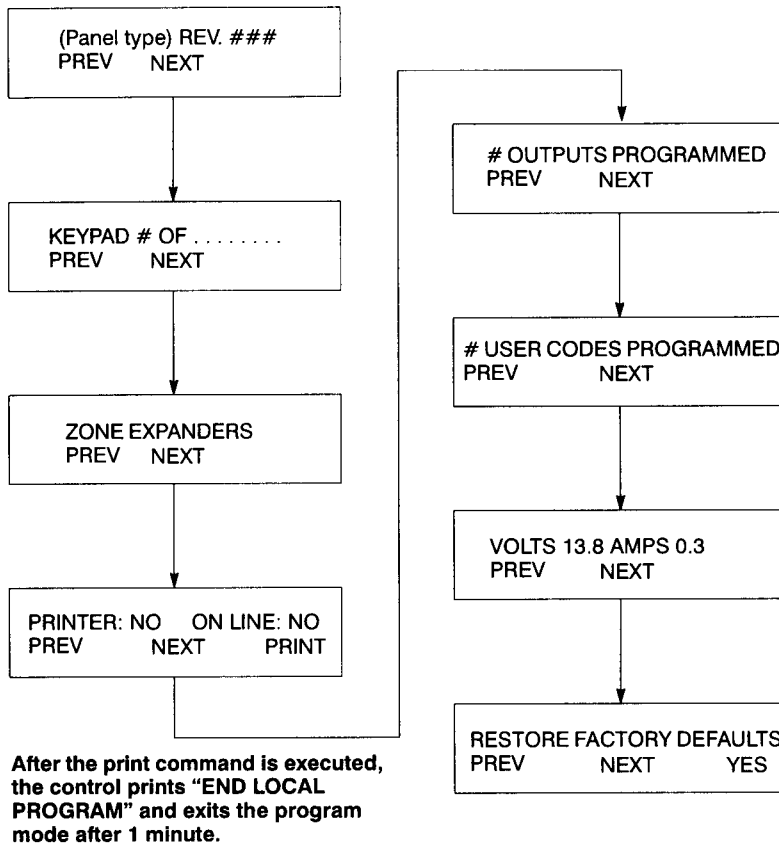


FIGURE 3-6. Menu 15 Flow Chart

## 3.9 Programming For Experienced Installers

After gaining experience with the menus, a more powerful navigation is achieved by entering the menu or individual item number (item numbers may be used when the programmer is inside the desired menu). Once the number is entered, the prompts change to allow that main programming menu, sub-menu or an item to be directly accessed. See the following example.

M1: AREA DEFINITIONS
PREV      NEXT      SELECT

From this menu, it is possible to jump directly to main programming menu M3 (Zone Definitions). Entering a 3 changes the display.

M1: AREA DEFINITIONS
CLEAR      MENU      AREA 3

In this display, the 3 shown is the entry made by the programmer. Use the soft keys below each of the prompts (CLEAR, MENU, or AREA) to move around within the menus as follows:

Remove the entry of the digit 3 and return to the previous display by pressing CLEAR. Advance to the M3 main programming menu by pressing the soft key below MENU. Enter into the area definitions menu (as shown in last sample screen) and automatically advance to Area 3 sub menu by pressing the soft key below AREA.

This menu and item jumping allows greater freedom to move within the menu hierarchy. It eliminates time consuming steps especially on existing installations where minor programming changes are required. The jumping option does not function when the display requires a YES or NO response.

### Considerations For System Programming

Many options are interdependent requiring other variables to be set before the function or feature works. Some examples of these features follow.

**When partitioning, consider the following menus and the extended fields of operation in each.**

- M1: Area Definitions
- M2: Keypad Definitions
- M3: Zone Definitions
- M4: User Code Definitions

**For central station monitoring, the following menus and their fields are involved.**

- M7: To Enable Communication And Select Format, Speed, Etc.
- M8: To Set The Phone Numbers To Dial
- M9: To Set Area Account Numbers, Type Of Reporting Split, (i.e., Single, Dual, Backup, Etc.)
- M10: To Set Zone Report Codes
- M11: To Set User Report Codes
- M12: To Set Global Report Codes



## 3.10 Programming Notes

### Note 1: Verifying or Self-Verifying Burglar Zones

Verification is only performed when the zone is armed. A Verifying or Self-Verifying Burglar zone requires verification before it can cause an alarm.

A Verifying Burglar zone causes an alarm if another armed burglar zone in the same area is violated within 40 seconds after the Verifying Zone is violated. A Verifying Burglar zone also causes an alarm if the zone itself stays violated for a full 40 seconds.

A Self-Verifying Burglar zone causes an alarm if it restores and is violated a second time within 40 seconds or if another armed burglar zone in the same area is violated within 40 seconds after the self-verifying zone is violated. A Self-Verifying Burglar zone also causes an alarm if the zone itself stays violated for a full 40 seconds.

### Note 2: Trouble Open / Short

An option in the fourth digit of the zone definitions results in a zone that causes a trouble condition on both an Open and a Short of the zone. The trouble condition type is still determined by the first digit of the zone definition.

This option is primarily intended for monitoring Fire Bell Circuits. To do this, the first digit must be set to FIRE (2) and the fourth digit must be set to **TROUBLE OPEN/SHORT** (8). When an Open or a Short is seen on the zone from the Fire Bell Circuit, a Fire Circuit Trouble condition occurs. However, when a Fire Alarm activates the fire bell, this appears as a trouble condition at the zone. Therefore, if a Fire Alarm is active in the zone's area and the zone has been programmed as above, the zone is ignored until the fire alarm is silenced to prevent a false trouble condition.

This option may also be used to monitor devices other than Fire Bell Circuits. To do this, the first digit should be changed to something other than FIRE.

Again the zone produces a trouble condition on both an Open and a Short, but now it occurs always, regardless of any alarm conditions.

A zone of this type should not be used to monitor a bell circuit other than a Fire Bell Circuit. It should not be used to monitor a dual purpose bell circuit; (i.e., a bell that is steady for fire and pulsing for burglar). It should not be used to monitor a Fire Bell Circuit if that bell may be activated by Fire Alarms in areas other than the zone's area. If any of the above rules are violated, then there are conditions when the bell circuit being monitored is activated for an alarm. That activation causes a trouble condition on the zone that is not ignored. On a pulsing alarm bell, the event log quickly fills with Zone Troubles and Restores for the zone.

### Note 3: The Listen-In Module

The Listen-In Module must be wired to the telephone lines in series with and behind the control panel. The Listen-In Module must be connected to the panel as follows. A Line-Seized indicator line must be connected from the ACTIVE output on the Listen-In Module to an assigned Listen-In Module zone on the panel. A Listen-In output line must be connected from an assigned output on the panel to the ACTIVATE input on the Listen-In Module.

The zone programmed as the Listen-In Module zone is area independent and is used by the panel to determine whether or not the Listen-In Module has seized the telephone line and has the microphone(s) active. The output programmed as the Listen-In Output may be assigned to any combination of areas. It is used by the panel to signal the Listen-In Module for activation.

The Listen-in Module may be configured in one of two modes, Instant Seize or Answer mode.

If the Listen-In Module is configured in Instant Seize mode, then when it is first signaled from the panel, it instantly seizes the phone line but does not turn on the microphones or signal the panel through the Listen-In Module zone. When the panel releases the connection to the central station and deactivates the Listen-In Output, the Listen-In Module already has the line seized and assumes the connection. At this time, the module turns on the microphones and signals the panel through the Listen-In Module zone.

If the Listen-In Module is configured in Answer mode, then after the panel has signaled it by activating and later deactivating the Listen-In Output, the Listen-In Module starts its incoming call timer. The incoming call timer starts

# Programming The Control

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when the Listen-In Output is deactivated and runs for five minutes. If a call comes in while the timer is running, then the Listen-In Module answers the call on the first ring. At that time, it signals the panel through the Listen-In Module zone that it has seized the line and the microphones are on.

When the control panel detects the Line-Seized signal from the Listen-In Module zone, it temporarily silences all alarm tones at the keypads and all alarm outputs, although the alarm output timers continue. When the Listen-In Module releases the phone line, it removes the Line-Seized signal to the panel. When the control panel detects that the Line-Seized signal has been removed, it no longer silences alarm tones at the keypads and alarm outputs. The alarm outputs are reactivated if they haven't timed-out.

Also, when the panel detects the Line-Seized signal from the Listen-In Module zone and gets an event (any event) to report to the central station, then the panel signals the Listen-In operator by momentarily seizing the phone line and producing a tone. This interrupts the Listen-in Module connection for about one second but it does not hang-up the phone line. The panel also starts a two-minute timer. It does not try to call out to the central station until either the Line-Seized signal from the Listen-In zone is removed or the two minute timer expires, whichever comes first. If the timer expires before the Line-Seized signal is removed, the panel seizes the line to dial out to the central station, disconnecting and hanging up the Listen-In module's connection.

If two phone lines are being used with the system, the Listen-In Module must be configured in the Answer mode only. Otherwise, it might seize the wrong phone line.

If an alarm is SILENCED through a keypad during a Listen-In session, it has no impact on the Listen-In operation.

If a Holdup Alarm event is reported to the central station, it is the Listen-In operator's responsibility to NOT activate the speakers on the Listen-In Module.

## Note 4: Zone Violated Output

A "Zone Violated" output is activated when its corresponding zone is violated regardless of the zone's armed state or any alarms that result. The output remains activated until the zone restores.

## Note 5: Zone In Alarm Output

A "Zone In Alarm" output is activated whenever its corresponding zone causes an alarm. The output remains activated until the alarm is silenced or, for silent holdup alarms, until the alarm is reset. Once a zone has caused an alarm, its "Zone In Alarm" output has no correlation with whether that zone is violated or not.

## Note 6: Alarm Abort Time

The **ALARM ABORT TIME** is the time that a user has after a burglar alarm activation to **SILENCE** the alarm and abort the burglar alarm event. The burglar alarm event(s) is not posted in the event log if the **SILENCE** occurs before the Burglar Alarm Abort time expires. If **POST ALARM ABORT** is enabled, then an Abort Alarm event(s) is posted in the event log. If the Burg Alarm Abort Time is zero or if the timer expires, then burglar alarm events are posted in the event log and when the **SILENCE** occurs, the Cancel Alarm event(s) is posted in the event log.

## Note 7: Powering Up While Armed

If any area is armed when the panel powers up, violations from all the burglar zones are ignored for three minutes. This allows all armed PIRs to stabilize without causing false alarms.

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# Specifications And Accessories

Chapter

4

## 4.1 Specifications And Accessories

### Control Board:

- 16 zones, each supervised with a 2200  $\Omega$  end-of-line resistor. Expandable to 48 zones.
- One zone, zone 12, is two-wire, smoke compatible.
- One zone (Z15) can be programmed for a fast loop (10 ms) response time.
- One zone (Z16) is two-wire smoke compatible.
- Three keypad activated panic keys
- Nominal current drain for board only: 100 milliamps (150 mA with low battery relay installed)
- Superior six stage lightning/transient protection
- Two general purpose Form C SPDT (5 A DC) relays
- Ten alarm and control outputs (expandable to 50)
- 24-hour battery monitoring
- Automatic system shutdown if voltage falls below 8.5 volts
- Operating temperature range inside the enclosure: 32 to 120° F ( 0 to 49° Celsius)

### Power Supply:

- Full 2.0 amp, 18 VAC, 50 VA Transformer
- 12 VDC Operation
- 1.5 amp continuous available current for burglary applications; 1.25 A for commercial fire applications
- Reverse polarity protection on battery inputs
- Float charging circuit: 13.8 VDC
- Over-current protection on outputs for keypad power, auxiliary power.

### Recommended Battery (not included):

- Rechargeable 12 VDC, 7 Ah, sealed lead acid. To meet the UL 864 minimum requirement of 24 hours standby at 450mA, two 12V, 7Ah sealed lead acid batteries or one 12 VDC, 17.2Ah sealed lead acid battery may be used (see Chapter 5).

### Transformer (U.S. only):

- T1850 UL Listed Class II plug-in, 18 VAC, 50 VA secondary, 120 volt, 60 Hz primary connected to 24-hour unswitched outlet. (See Chapter 5 for requirements for fire alarm systems.)

### Enclosure:

- 20-gauge locking metal cabinet with two keys; 14" x 14" x 3.5" (356mm x 356mm x 89mm).

### Digital Communicator:

- DTMF Touchtone® or Rotary (pulse) dialing; Rotary speed: 10pps, (60/40 or 67/33 make/break).

## Specifications And Accessories

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- Transmission formats include: SIA Level 1; BFSK and Pulse Formats (4+2, two-line extended, single line extended, Hexadecimal Reporting): Slow (10 or 15 baud) and Fast (20 or 40 baud); and Contact ID.
- Reports to most major central station receivers
- Primary phone number up to 16 digits
- Secondary phone number up to 16 digits
- Prefix for phone number up to 16 digits; special application long distance access
- Reporting capabilities: two 6-digit account codes per area; report by zone; opening and closing reports; force arm/bypass reports; restoral reports; trouble reports; cancel reporting; low battery/fuse blown; test timer; exception reporting.
- Dial type reversal: reverses dialing method (tone to pulse, pulse to tone) on an in-progress call.

### LCD Keypad

- Four-wire data bus connection.
- LCD backlighting and keypad downlighting.
- 12-button keypad with audible feedback.
- Surface mountable; mounts to any standard single or double gang electrical box.
- Two lines x 24 characters LCD display.
- 48-character available for LCD screen.
- Built-in piezo sounder.
- Area assignable.
- Addressable with DIP switches.
- Built-in English vocabulary.
- Nominal current drain: 75–200mA (depending on lamp setting).
- Up to eight keypads per system with addition of HCP 12–SULC Auxiliary Power Supply.
- Size: 6.82" x 4.72" x 0.83" (173mm x 120mm x 21mm).
- Color: bone white with gray labeling.

### Features:

- Eight partitions.
- Ready to install with a factory basic program.
- New edge card connector (zero-force insertion, easy board removal).
- Keypad programming.
- 99 user authorization codes.
- Installer programming code.
- Non-volatile memory retains arm/disarm status and programming after total power loss or board removal.
- Self-diagnostics with memory error detection.
- Hardwire zones programmable as Burglar, 24-hour Fire, 24-hour Holdup, 24-hour Auxiliary, CCM (Communicator Zone), Universal zone inputs and 24-hour Burglar (tamper), Verified Fire, Sentry Test, Verifying Burglar and Self-Verifying Burglar.
- May be programmed for keyswitch arm/disarm.
- Burglar zones may be defined as instant or delay (2 delay timers), interior, interior follower, interior night, perimeter.
- Programmable timers: Entry Delay 1, Entry Delay 2, Exit Delay, Access, Alarm Cut-off, Universal and Universal Logged.
- Optional quick loop (Zone 15=10mS).
- Invalid code station lockout (programmable option) and 3-minute programming time out.
- Siren/bell test upon arming (programmable option).
- Courtesy lamp line carrier trigger output.
- Timed access (door strike) output.
- Made in U.S.A.

## Specifications And Accessories

### Optional Accessories:

- Z2100 LCD Keypad: 48-character display with emergency, menu, and soft keys. Nominal current drain: 75–200 mA (depending on lamp setting).
- Z2200 LED Keypad: Simple arming station for smaller applications and single area operation. Ready, Armed, Trouble, and Alarm indications and three emergency keys. Nominal current drain: 25mA.
- Z2300/Z2350 Zone Concentrators: Expands the control with eight additional zones. The Z2350 also provides ten additional programmable outputs. Nominal drain: 40 mA for Z2350 and 45 mA Z2350. Maximum number of Z2300s and Z2350s per system is four.
- Z2400 Printer Interface: Allows connection of a standard parallel printer via interface. Nominal current drain: 65 mA. Power requirements: 13.8 VDC, 85 mA without printer connected.
- Z2000F Alarm Control Panel: 16 zones expandable to 48. Red can, fire kit, Z2100 LCD, and transformer.
- AR101 Auxiliary Line–Seizure Relay: Required for UL 864 Commercial Fire, the Telco 2–dialer relay enables the communicator to use two telephone lines for central station reporting.
- Z2000BO: Control board only.
- ACR505 Insertion Card Reader with Keypad: Reads magnetic stripe cards (ACC25 cards available in packs of 25). Should not be used on UL Listed Systems.
- TS–4 Power Limited Terminal Board: Interfaces with control's edge card connector.
- AR100: Low battery cut–off relay; plug–in.
- F2590 Fire Adaptor Kit: Allows conversion of control panels with software version 2.03 or higher to UL 864 Commercial Fire. Kit includes an F2500 Fire Module, a CR860 Dual Battery Harness, an AR101 Auxiliary Line Seizure Relay, and an AE912 Raucous Sounder.
- DS56 Desk Stand: 5" x 6", black plastic.
- RPM2 Software Shell for Upload/Download.
- PSM48 Software Module for Z2000 Control.
- F2600 Transformer Enclosure: Ensures that the AC plug-in transformer remains securely fixed to the AC wall outlet.
- EB1511 Auxiliary Enclosure: 15" x 11" x 4" with cam lock for wall mounting of auxiliary devices.
- TC1100 Tamper Resistant Enclosure: Extra high security cover.
- FC1100 Flush Cover: For recessed mounting of the control panel.
- EF1414: 14" x 14" red enclosure. UL listed for commercial and residential.
- E1414: 14" x 14" enclosure. UL listed for commercial and residential.
- Z217 Programming Cable: For plugging in a keypad directly at the control board for programming.
- CR860 Dual Battery Harness: Allows the connection of an additional 12 VDC, 7Ah, sealed lead acid battery to the control to meet minimum standby requirements for UL 864 (24 hours at a 450 mA.)
- CR861 Dual Battery Harness: Allows the connection of one or two 12 VDC, 7Ah, sealed lead acid batteries to the control in order to provide standby current of 1 full amp for 24 hours.
- T1850 Transformer: 18 VAC, 50 volt amp, class B transformer.
- HCP-12SUL Power Supply: Provides a 12 VDC power–limited output with a current rating of 2.0 A, continuous, while the AC primary power source is present.
- B1260 Battery: 12 volt, 7 Ah, sealed lead acid, rechargeable battery.
- MPI–206 Low Current Relay.
- MPI–268 Ground Fault Detector: Required for Listed Commercial Fire installations in Canada. Current consumption: less than 20 mA.
- AE912 Raucous Sounder: Required for UL 864 Commercial Fire installations. Current consumption: 28mA @ 12VDC.
- MA–2 Sounder. Low current (25mA), two–tone, piezo sounder (100 dB).
- JDS–108 Siren Driver: Eight–channel siren driver with low current triggers.

## Specifications And Accessories

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- MPI-30 Speaker: Thirty-watt, 8 ohm speaker for siren application.
- ESL-429CT Smoke Detector: 12-24 volt, 2-wire smoke detector with heat sensor.
- ESL-104-13 Heat Detector: 135 degree fixed temperature with rate-of-rise heat detector.
- 60051-A: CA-4 SM connector assembly keypad cable.
- Sentrol 3040 Panic Switch: "Pull" panic switch with terminals.
- Sentrol 3555 Bill Trap with Jacketed Leads.
- Sentrol 3025T Enclosure Tamper Switch.
- Sentrol 5422-W Metal Enclosure Assault Sensor.

### Output Provisions:

- Low Current Trigger Outputs: Latch type connector provides current output of 40 mA each. Ten outputs on main board, expandable to 50 with Z2350 zone concentrator.
- The maximum combined continuous current drain at Terminals 36 & 38 (Aux Power 1), 40 & 42 (Aux Power 2), 44 (Switched Smoke Power), 33 (Keypad Power 1) and 34 (Keypad Power 2) is 1.5 Amps (1.0 Amps for Commercial Fire Systems).
- Current Limits: The combined current at Terminals 36 & 38 (Aux Power 1) is limited to 1.85 Amps (CB1). The combined current at Terminals 40, 42 & 44 (Aux Power 2 & Switched Smoke Power) is limited to 1.85 Amps (CB2). The current at Terminal 33 (Keypad Power 1) is limited to 1.85 Amps (CB3). The current at Terminal 34 (Keypad Power 2) is limited to 1.85 Amps (CB4).

## 4.2 List Of Compatible Accessories

### ESL Smoke Detectors (ESL® is a registered trade name of Sentrol, Inc.)

429 AT, CRT, CST: Input Voltage: 8.5–33 VDC; Standby current: 70µA max. (Maximum of 20 detectors per zone).

445 AT, C, CR, CT, CRT, CS, CSH, CST, CSR, CSRT: Input Voltage: 8.5–44 VDC; Standby Current: 50 µA max.

449 CTE: Input Voltage: 8.5–33 VDC; Standby Current: 10mA max

449 C, CT, CRT, CST, CSRT, CSRH, CSST: Input voltage 8.5–33; Standby Current: 70µA max.

### Wheelock

34T–12R Horn: Input Voltage: 9–15.6 VDC; Rated Current: 0.125 A

EH–DL1–R Electronic Horn: Input Voltage 12/24 VDC; Input Current: (@ 12 VDC) 0.015 A/(@24 VDC) 0.017 A

EH–DL2–R– Electronic Horn: Input Voltage: 12 VDC; Input Current: 0.047 A

EH–EL1–R Electronic Horn: Input Voltage: 12/24 VDC; Input Current: (@12 VDC) 0.015 A/(@24 vdc) 0.017A

EH–EL2–R Electronic Horn: Input Voltage: 12 VDC; Input Current 0.047 A

AES–DL2–R Multi–tone Electronic Signal: Voltage: 12 VDC; Current (High): 0.050 A; Current (Low): 0.025A

AES–EL2–R Multi–tone Electronic Signal: Voltage: 12 VDC; Current (High) 0.100 A; Current (Low): 0.050 A

MIZ–12–R Mini–horn: Voltage: 12 VDC; Current: 0.010 A

MIZ–12–W Mini–horn: Voltage: 12 VDC; Current: 0.010 A

CH–BF2–R Fire Chime: Input Voltage: 12 VDC; Input Current: 0.020 A

CH–CF2–W Fire Chime: Input Voltage: 12 VDC; Input Current: 0.020 A

CH–DF2–R Fire Chime: Input Voltage: 12 VDC; Input Current: 0.020 A

46T–G4–12–R DC Vibrating Bells: Shell Size: 4 Inches; Input Voltage: 12 VDC; Input Current: 0.125 A

46T–G6–12–R DC Vibrating Bells: Shell Size: 6 Inches; Input Voltage: 12 VDC; Input Current: 0.125 A

46T–G10–12–R DC Vibrating Bells: Shell Size: 10 Inches; Input Voltage: 12 VDC; Input Current: 0.080 A

### System Sensors

1400 Photoelectric (max. 6 per zone)

1412, 1424 Ionization

1551T Ionization

1806 Ionization

1812 Ionization

1824 Ionization

2312/24T Photoelectric

2400 Photoelectric (max. 6 per zone)

2412AT Photoelectric

2412AIT Photoelectric

2424AT Photoelectric

2424AIT Photoelectric

2806 Photoelectric

2812, 2824 Photoelectric

2812TH, 2824TH Photoelectric

### ASCOA Fire Systems Smoke Detectors

Fixed Temp Heat Detector (Passive Devices): Models 503, 503A, 504, 504A, 603, 604, 623, 624, WPB503–M, WPB504, WPB504–M, A, AT, AE, AEC, AE, A, AT, A

### Compatible Devices For Auxiliary Power And Programmable Outputs

- AE 912 Raucous Sounder
- HCP12–SULC Auxiliary Power Supply



## 4.3 Digital Communicator Table For SIA And Contact ID Formats

This section cross-references many of the reporting options and equivalent codes sent by this control when transmitting in the SIA and Contact ID formats.

*Simplified example of data sent in SIA format: XXXXXX EE CCC*

Where: XXXXXX = 1 to 6 decimal digit subscriber #

EE = Event data code

CCC = Zone, sensor, or user ID

*Simplified example of data sent in Contact ID format: SSSS 18 Q XYZ AA CCC*

Where: SSSS = 4 decimal digit subscriber #

18 = Contact ID que for automation systems

Q = Event qualifier; 1 = new event or opening; 3 = new restore or closing; 6 = previously reported event

XYZ = Event code (3 decimal digits)

AA = Area number (00 for system events)

CCC = Zone, sensor, or user # (3 decimal digits)

EVENT TYPE	SIA CODE	CID CODE	EVENT SOURCE
AUX KEY FIRE ALARM	FA	1115	500 + KEYPAD (1-8)
ZONE FIRE ALARM	FA	1110	ZONE (1-48)
ZONE FIRE SUPERVISORY	FS	1200	ZONE (1-48)
ZONE HOLDUP ALARM	HA	1120	ZONE (1-48)
ZONE BURGLAR ALARM	BA	1130	ZONE (1-48)
ZONE BURGLAR TAMPER	BS	1137	ZONE (1-48)
ZONE AUXILIARY ALARM	MA	1100	ZONE (1-48)
ZONE CCM ALARM	UA	1150	ZONE (1-48)
AUX KEY HOLDUP ALARM	HA	1120	500 + KEYPAD (1-8)
AUX KEY BURGLAR ALARM	BA	1133	500 + KEYPAD (1-8)
AUX KEY AUXILIARY ALARM	MA	1100	500 + KEYPAD (1-8)
DURESS	PA	1121	USER (1-99)
ZONE FIRE TROUBLE	FT	1373	ZONE (1-48)
ZONE HOLDUP TROUBLE	HT	1370	ZONE (1 - 48)
ZONE BURGLAR TROUBLE	BT	1370	ZONE (1 - 48)

## Specifications And Accessories

EVENT TYPE	SIA CODE	CID CODE	EVENT SOURCE
ZONE AUXILIARY TROUBLE	MT	1370	ZONE (1 - 48)
ZONE OTHER TROUBLE	UT	1370	ZONE (1 - 48)
ZONE FIRE BYPASS	FB	1571	ZONE (1 - 48)
ZONE HOLDUP BYPASS	HB	1572	ZONE (1 - 48)
ZONE BURGLAR BYPASS	BB	1573	ZONE (1 - 48)
ZONE AUXILIARY BYPASS	MB	1572	ZONE (1 - 48)
ZONE OTHER BYPASS	UB	1570	ZONE (1 - 48)
ZONE FIRE ALARM RESTORE	FH	3110	ZONE (1 - 48)
ZONE FIRE SUPERVISORY RESTORE	FR	3200	ZONE (1 - 48)
ZONE HOLDUP ALARM RESTORE	HH	3120	ZONE (1 - 48)
ZONE BURGLAR ALARM RESTORE	BH	3130	ZONE (1 - 48)
ZONE BURGLAR TAMPER RESTORE	BR	3137	ZONE (1 - 48)
ZONE AUXILIARY ALARM RESTORE	MH	3100	ZONE (1 - 48)
ZONE CCM ALARM RESTORE	UH	3150	ZONE (1 - 48)
ZONE FIRE TROUBLE RESTORE	FJ	3373	ZONE (1 - 48)
ZONE HOLDUP TROUBLE RESTORE	HJ	3370	ZONE (1 - 48)
ZONE BURGLAR TROUBLE RESTORE	BJ	3370	ZONE (1 - 48)
ZONE AUXILIARY TROUBLE REST	MJ	3370	ZONE (1 - 48)
ZONE OTHER TROUBLE RESTORE	UJ	3370	ZONE (1 - 48)
ZONE FIRE BYPASS RESTORE	FU	3571	ZONE (1 - 48)
ZONE HOLDUP BYPASS RESTORE	HU	3572	ZONE (1 - 48)
ZONE BURGLAR BYPASS RESTORE	BU	3573	ZONE (1 - 48)
ZONE AUXILIARY BYPASS RESTORE	MU	3572	ZONE (1 - 48)
ZONE OTHER BYPASS RESTORE	UU	3570	ZONE (1 - 48)
KEYPAD ARM	CL	3401	USER (1 - 99)
KEYPAD PARTIAL ARM	CG	3408	USER (1 - 99)
KEYSWITCH ARM	CL	3409	600 + ZONE (1 - 48)
INSTALLER / RPM ARM	CL	3407	NO DATA
EARLY ARM	CK	3451	USER (1 - 99)
LATE ARM	CJ	3404	USER (1 - 99)
AUTO ARM	CA	3403	NO DATA
FAILED TO ARM	CI	1454	NO DATA
CLOSING EXTENDED	CE	3405	USER (1 - 99)
KEYPAD DISARM	OP	1401	USER (1 - 99)
KEYSWITCH DISARM	OP	1409	600 + ZONE (1 - 48)
INSTALLER / RPM DISARM	OP	1407	NO DATA
EARLY DISARM	OK	1451	USER (1 - 99)
LATE DISARM	OJ	1404	USER (1 - 99)
AUTO DISARM	OA	1403	NO DATA
FAILED TO DISARM	OI	1453	NO DATA
KEYPAD LOCKED-OUT	JA	1300	500 + KEYPAD (1 - 8)
KEYPAD MISSING	ET	1330	500 + KEYPAD (1 - 8)
KEYPAD MISSING RESTORE	ER	3330	500 + KEYPAD (1 - 8)
BURGLAR ALARM ABORTED	BC	1406	ZONE (1 - 48)
BURGLAR ALARM CANCELLED	BC	3406	ZONE (1 - 48)
COMM TEST NOT NORMAL	YS	1350	NO DATA

## Specifications And Accessories

EVENT TYPE	SIA CODE	CID CODE	EVENT SOURCE
AUTO-COMMUNICATOR TEST	RP	1602	NO DATA
AC FAILURE REPORTED	AT	1301	NO DATA
AC RESTORE	AR	3301	NO DATA
PANEL LOW BATTERY	YT	1302	NO DATA
PANEL BATTERY RESTORE	YR	3302	NO DATA
BLOWN FUSE	YP	1300	NO DATA
FUSE RESTORE	YQ	3300	NO DATA
COMMUNICATION RESTORE	YK	3354	NO DATA
MEMORY ERROR	YF	1303	NO DATA
BEGIN INSTALLER LOCAL PROG	LB	1306	NO DATA
END INSTALLER LOCAL PROG	LX	3306	NO DATA
LOCAL PROG DENIED	LD	0000	NO DATA
END REMOTE PROG	RS	1412	NO DATA
REMOTE PROG DENIED	RD	1413	NO DATA
REMOTE PROG ABORTED	RU	1412	NO DATA
TELCO LINE 1 FAULT	LT	1351	NO DATA
TELCO LINE 2 FAULT	LT	1352	NO DATA
BELL LINE FAULT	FT	1321	NO DATA
TELCO LINE 1 RESTORE	LR	3351	NO DATA
TELCO LINE 2 RESTORE	LR	3352	NO DATA
BELL LINE RESTORE	FJ	3321	NO DATA
EVENT LOG NEARLY FULL	JL	1623	NO DATA

## 5.1 Underwriter’s Laboratories (UL) Listing

This control is listed by Underwriters Laboratories (UL) as follows:

APPLICATION	LISTING
Household Burglary (Grade A)	UL 1023
Household Fire	UL 985
Central Station Burglary (Grade C)	UL 1610/1635
Central Station Burglary (Grade B)	UL 1610/1635
Home Health Care Signaling Equipment	UL 1637
Local Burglary (Grade A)	UL 609
Police Station Burglary Connection (Grade A)	UL 365
Control Units For Fire Protective Signaling Systems	UL 864
California State Fire Marshal	7165-0695:118

UL has established certain requirements which pertain to the installation, use, and programming of this equipment. The local Authority Having Jurisdiction (AHJ) and/or UL may have other requirements which apply to the installation of this system that are not detailed in this manual. It is the responsibility of the installing dealer to check with the AHJ and/or UL before installing this system. The following pages detail guidelines that must be followed in order to comply with the UL listings as stated above.

### UL Notes In This Manual

- Key “0” (Access) – The control has not been investigated to UL 294 Access Control System requirements.
- Bypassable 24-hour – Fire zones are programmed as non-bypassable in UL listed systems.
- Unsupervised Burglary Zones – UL does not permit the use of unsupervised zones.

### UL Notes About Program Functions

- Entrance Delay Time (1 and 2) – Maximum of 45 seconds.
- Exit Delay Time – Maximum of 60 seconds.
- Burglar Alarm Cutoff Time – Four minutes minimum for household BA/FA and 15 minutes for commercial burglar alarm and police station connected burglar alarm systems.
- Fire Cutoff Time – No automatic cutoff permitted. Shall be programmed to “0”, no cutoff.
- Holdup Cutoff Time – Four minutes maximum.
- Communicator Enable – Local or police station connected burglar alarm installations: the communicator must be enabled.
- Time Between Comm. Tests – Commercial installations: automatic test performed every 24 hours.

# UL And NFPA Requirements

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- Time Between Dial Attempts – UL certified accounts: no more than 45 seconds between attempts.
- Dial type – Shall not be programmed for foreign pulse.
- Dial Attempts Before Shutdown – Five dial attempts minimum, ten dial attempts maximum. Do not program a value of “0”.
- Opening/Closing Reports – This function shall be enabled by programming report codes.
- Low Battery Reporting – This function shall be enabled by programming a report code for Grade A Local Burglar, Grade A Police Connected, and Grade B and C Central Station Burglar installations.
- Single Digit Arming – This function shall be disabled. Passcodes shall have a minimum of three digits.
- Enable Force Arming – This function shall be disabled.
- Enable Bypassing – This function shall be disabled.
- Pulsing Burglar Alarm Output – Shall be programmed to “YES” (pulsing).
- Pulsing Fire Alarm Output – Shall be programmed to “NO” (steady).
- Burglar Loop Audible Lockout – This function shall be disabled.
- Enable Bell Test Upon Arming – This function shall be enabled for Grade A Local Central Station Connected installations.
- Enable Keypad Sounder Upon BA – The system shall have an audible alarm output upon alarm.
- Auto-arming – This function shall be disabled.
- Key A, B, or C – When programmed as “Burglar/Police” (1), the key shall be labeled with a blue shield police sticker. When programmed as “Fire” (2) the key shall be labeled with a red flame sticker. When programmed as “Medical/Emergency” (4), the key shall be labeled with a green and white cross medical sticker.
- Listen-In Modules must not be used.
- Burglar zones shall not be programmed as Verifying or Self-Verifying.

## UL Notes About The Zone Planning Guide

- Burglar Loops – Shall be defined as “Supervised, No Trouble” (0).
- Fire, Holdup, and Auxiliary Emergency Zones – Shall not be defined as bypassable.
- Special Functions/Alarms – Burglar zones shall have an audible output.
- Medical Emergency – At least one keypad shall be used as part of the system.

## 5.2 UL 864 Compliance

This Control/Communicator with a properly installed F2500 Fire Module complies with the following UL Control Unit Classifications (3.6) definitions under UL 864 Standard For Control Units For Fire Protective Signaling Systems:

- NFPA 72 – Local Protective Signaling Systems and Central Station Systems

If a Printer Interface and/or Zone Expander(s) are used with the Commercial Fire system, they must be installed within 20 feet of the control unit with all interconnections in conduit.

**NOTE**

**The fire alarm panic key is not intended to replace a manual fire alarm pull station.**

# UL And NFPA Requirements

## For UL 864 Listing Compliance, Minimum System Configurations Are:

(Refer to FIGURE 5-1 through FIGURE 5-9)

- One Z2000 Control/Communicator
- One Z2100 LCD Keypad
- One F2500 Fire Module with components
- One AR101 Telco Line Seizure Relay for Telco 2
- Two 12 VDC, 7 amp-hour sealed lead acid batteries
- One CR860 Dual Battery Harness
- One T1850, 18 VAC, 50 VA Transformer
- One F2600 Transformer Enclosure
- One AE 912 Raucous Sounder
- One UL Listed Smoke Detector (see “List of Compatible Devices,” Chapter 4 of this manual).
- One UL Listed Fire Audible Signaling Device (see “List of Compatible Devices,” Chapter 4 of this manual).

## For UL 864 Listing Compliance, Maximum System Configurations Are:

- One Z2000 Control/Communicator
- One Z2100 LCD Keypad
- One F2500 Fire Module with components
- One AR101 Telco Line Seizure Relay for Telco 2
- Two 12 VDC, 17.2 amp-hour sealed lead acid batteries
- One CR861 Dual Battery Harness
- One T1850, 18 VAC, 50 VA Transformer
- One F2600 Transformer Enclosure
- One EB1511 Auxiliary Battery Enclosure
- One AE 912 Raucous Sounder
- UL Listed peripheral devices including smoke detectors and audibles must not exceed a combined current drain of 450 mA (see “List of Compatible Devices,” Chapter 4 of this manual).

Application	Listing	Maximum Continuous Current Drain (milliamps) With 7AH Battery	Minimum Battery Standby Time In Hours	Control Stations	Smoke Detector ESL 449 Power Supervision Module ESL 204B	Auxiliary Equipment Required
Home Health Care Household Burglary	UL 1637 UL 1023	800	4	6	N/A	Amseco MSB-10G Bell
Household Fire	CSFM	450	24	6	Required	Wheelock 34T-12 Horn
Household Burglary/ Fire Combination	UL 1023/ UL 985	800	4	6	Required	Amseco MSB-10G Bell and Wheelock 34T-12 Horn
Central Station Burglary (Grade C)	UL 1610 UL 1635	450	4	2	N/A	TC1100 Tamper Resistant Enclosure
Central Station Burglary (Grade B)	UL 1610 UL 1635	450	4	2	N/A	TC1100 Tamper Resistant Enclosure and ADEMCO AB-12 Bell & Housing
Local Burglary (Grade A)	UL 609	450	4	2	N/A	TC1100 Tamper Resistant Enclosure and ADEMCO AB-12 Bell & Housing
Police Station Burglary Connection (Grade A)	UL 365	450	4	2	N/A	TC1100 Tamper Resistant Enclosure and ADEMCO AB-12 Bell & Housing
Commercial Fire	UL 864	450	24 (Requires two 7 Ah batteries)	1	Required	1 AR101 Telco Line Seizure Relay; 2 12VDC, 7 amp-hour, sealed lead acid batteries; 1 CR860 Parallel Connect Battery Harness; 1 T1850 18 VAC, 50VA Transformer; 1 F2600 Transformer Enclosure; 1 AE912 Raucous Sounder

Maximum combined continuous current drain (standby) refers to terminals 33, 34, 36, 38, 40, 42, and 44. Under alarm conditions, the combined output current drain should not exceed 1.2 amps. If two 12 VDC, 17.2 Ah batteries are connected to the control, maximum combined current drain should not exceed 1 amp continuous, 1.25 amps in alarm. CSFM requires two 7 Ah batteries.

## 5.3 F2500 Fire Module

The F2500 Fire Module is designed to provide the control with the hardware necessary to meet the requirements for a UL Listed commercial fire system per UL 864/NFPA 72 Local Protective Signaling Systems and Central Station Systems.

### F2500 Contents

- One F2500 Fire Module in snap track
- One four-pin to four-pin cable assembly (Part Number 13000255A)
- One double-ended RJ cord (Part Number 13000248A)
- One 75 Ohm, 10W end-of-line resistor (Part Number 13000247A)
- Two 3/4" aluminum hex nut stand-offs
- Two metal-core nylon screws

### Mounting And Connection Of The Fire Module

1. Before connecting the control to its external power source, remove the F2500 components from the packing material and inspect to ensure that all components are present. Using the F2500 terminal block as a brace, manipulate the F2500 circuit board back and forth in the snap track until it slides. Do not remove circuit board from snap track.
2. Replace the two factory-installed hex nuts on the mounting posts at the top of the control panel with the two 3/4" standoffs from the F2500 package.
3. Holding the F2500 circuit board so that the terminal block is to the right, slide the circuit board slightly to the right to reveal the screw hole on the left side of the snap track. Align this hole over the left stand-off and install one of the nylon screws.
4. Slide the circuit board slightly to the left to reveal the screw hole on the right side of the snap track. Align this hole over the right stand-off and install the other nylon screw to fix the snap track assembly in place. Slide the circuit board to center it in the snap track.
5. Connect the four-conductor cable assembly from Connector J1 on the F2500 to Connector J21 on the control.
6. Connect the double-ended RJ cord from jack J2 on the F2500 to jack J6 on the control. Connect the F2500 Terminal Block as shown in FIGURE 5-1.

<b>NOTE</b>
-------------

**The F2500 must be the only peripheral device connected to that particular auxiliary power output on the control.**

7. Install the 75 Ohm, 10 W end-of-line resistor on the fire audible most remote from the control panel.

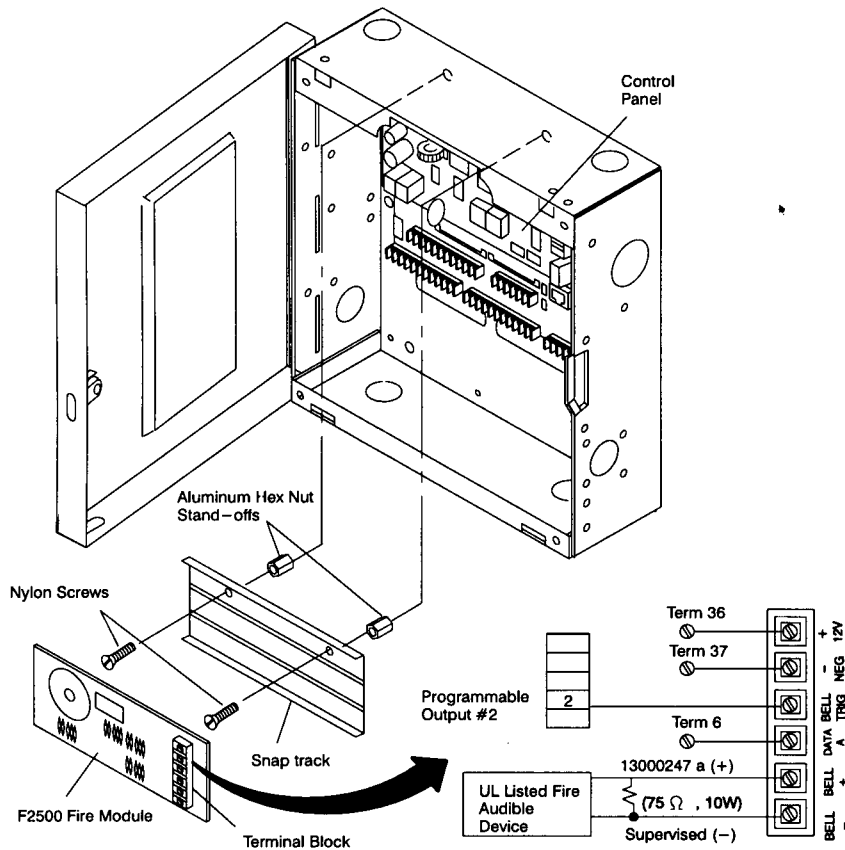


FIGURE 5-1. F2500 Assembly

## F2600 Transformer Enclosure

The transformer enclosure ensures that the AC plug-in transformer remains securely fixed to the AC wall outlet. Before installing, disconnect primary power source. Restore power only after the transformer connection has been double-checked for accuracy.

1. Mount the gang box to the wall or supporting structure.
2. Insert the gang box partition into the gang box. The partition divides the gang box into two sections. The large section contains high voltage wiring; the small section contains low voltage wiring.
3. Punch out a conduit knockout in the high voltage side of the gang box. Route the 110 VAC wiring through the knockout hole and into the gang box. Connect the isolated 110 VAC wiring to the duplex outlet.
4. Mount the duplex outlet to the cover plate and the cover plate to the gang box.
5. Punch out a conduit knockout in the low voltage side of the gang box. Route the low voltage wiring through the knockout hole and into the gang box. Connect the low voltage wiring to the transformer.
6. Plug the transformer into the bottom outlet of the duplex outlet. Secure the transformer to the duplex outlet.
7. Attach the cover to the cover plate.



# UL And NFPA Requirements

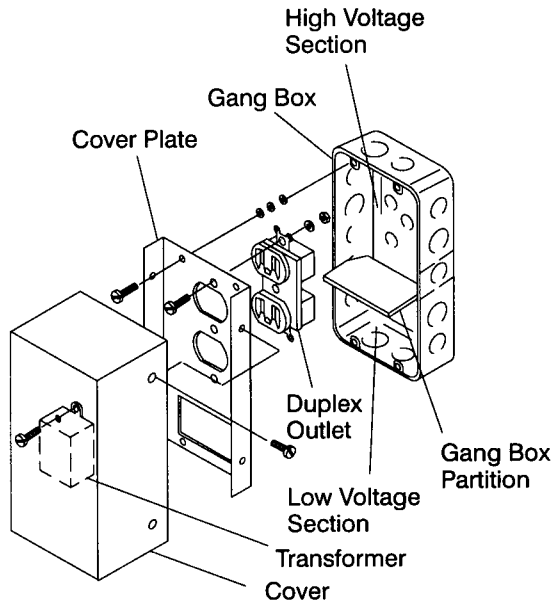


FIGURE 5-2. Transformer Enclosure

## Fire Control System Trouble Audible Installation

To use the control as a Listed fire system, the AE-912 Raucous Sounder must be installed in the same room as the LCD keypad. Connect the AE-912 to the Audible Trouble Output at TB-1, terminal #5 (see FIGURE 5-3). All output definitions must be programmed as specified for Listed fire systems (This is done by answering the question "LISTED FIRE SYSTEM?" with YES upon entering programming for the first time).

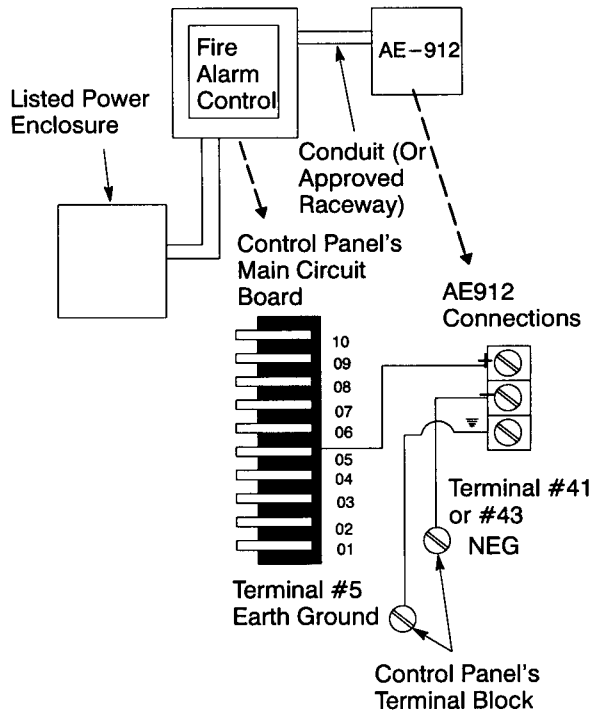


FIGURE 5-3. Connection Of The AE-912 To The Fire Alarm Control

# UL And NFPA Requirements

## Auxiliary Power Supply Installation

The total current draw allowed for a UL Listed commercial fire installation is 450 mA. The current required for the control, keypad, and the F2500 Fire Module is approximately 350 mA. This leaves around 100 mA to supply the peripheral devices. To increase the available current, an HCP-12SUL Power Supply may be added. Each HCP-12SUL supplies an additional 450 mA of current, utilizing at least one 12-amp-hour battery. See FIGURE 5-4.

The HCP-12SUL Power Supply can provide a 12 VDC power output, with a current rating of 2.0 A continuous, while the AC primary power source is present. If the primary source is lost, the HCP-12SUL electronically switches to the standby battery.

When using this power supply on a listed system, a duplex utility cover for the primary power outlet must be installed. Install conduit or another Listed raceway between all connecting junction boxes and protective enclosures as shown.

Use only the battery and transformer as recommended in the Specifications and Instructions for the power supply. See the following section for information about the connection of additional batteries.

### NOTE

**The HCP-12SUL must not be connected to a load which exceeds 2.0 A continuous demand.**

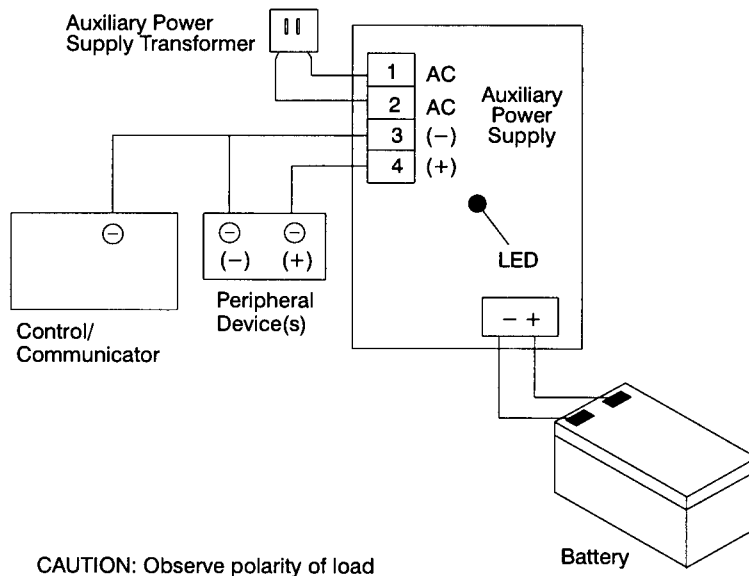


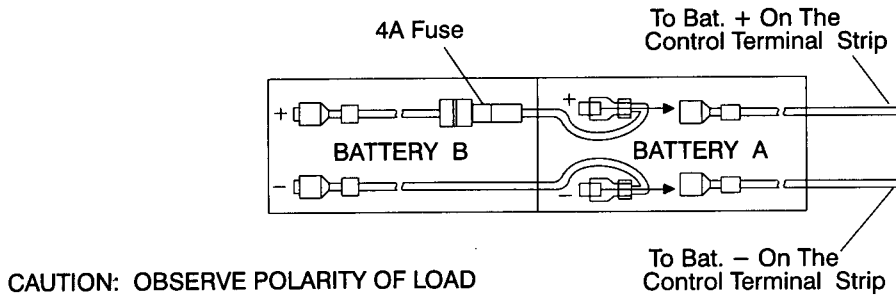
FIGURE 5-4. HCP-12SUL Installation

## Connection Of Additional Batteries

In order to meet UL864 standby current requirements of 24 hours at 450 mA, a minimum of two 12 VDC, 7Ah sealed lead acid batteries must be installed utilizing the CR860 Dual Battery Harness as shown in Figure 5-5. However, a single 12 VDC, 17.2 Ah sealed lead acid battery may be used in place of the two 7Ah batteries to obtain the same standby current using the CR861 Dual Battery Harness (see Figure 5-6).

If Battery B is shorted, the fuse on Battery B blows. The panel continues uninterrupted operation utilizing only Battery A. Perform a continuity check on the fuse periodically. If the fuse blows, replace it with a fuse of the same size and rating. When installing a new fuse, be sure to check the age and general condition of both batteries before reconnecting.

# UL And NFPA Requirements



CAUTION: OBSERVE POLARITY OF LOAD

FIGURE 5-5. Connection Of The CR860 Dual Battery Harness

To increase standby current to 24 hours at 1 full amp, two 12 VDC, 17.2Ah sealed lead acid batteries may be installed in place of the two 12VDC, 7Ah batteries. The CR861 Dual Battery Harness must be used to connect the 17.2Ah batteries to the control. The EB1511 Auxiliary Battery Enclosure is required to house the batteries. Additionally, all interconnections must be run in conduit. Install the batteries as shown in the figure below.

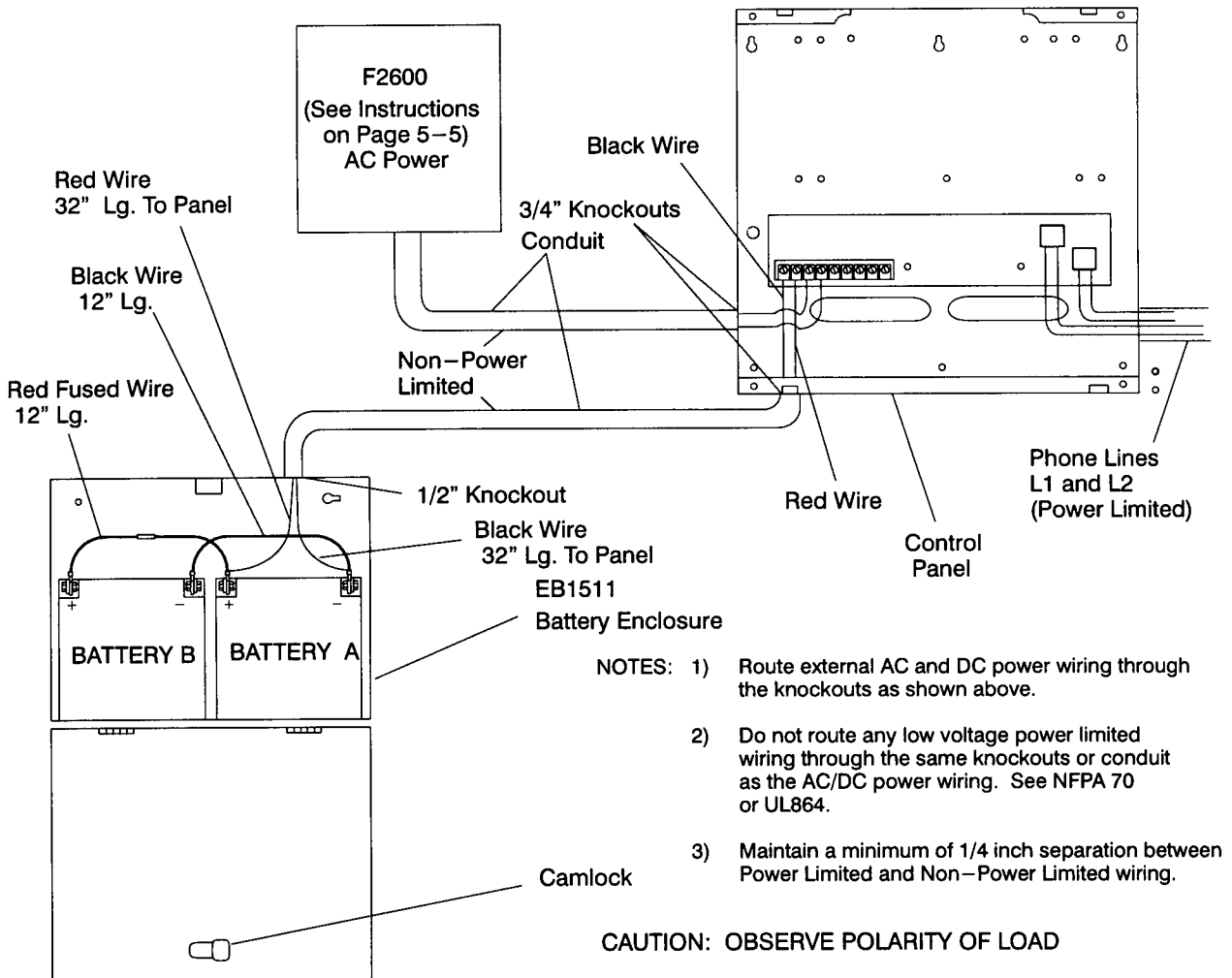


FIGURE 5-6. Connection of the CR861 Dual Battery Harness and Power Conductor Routing

# UL And NFPA Requirements

The following figure is an overview of the system power connections.

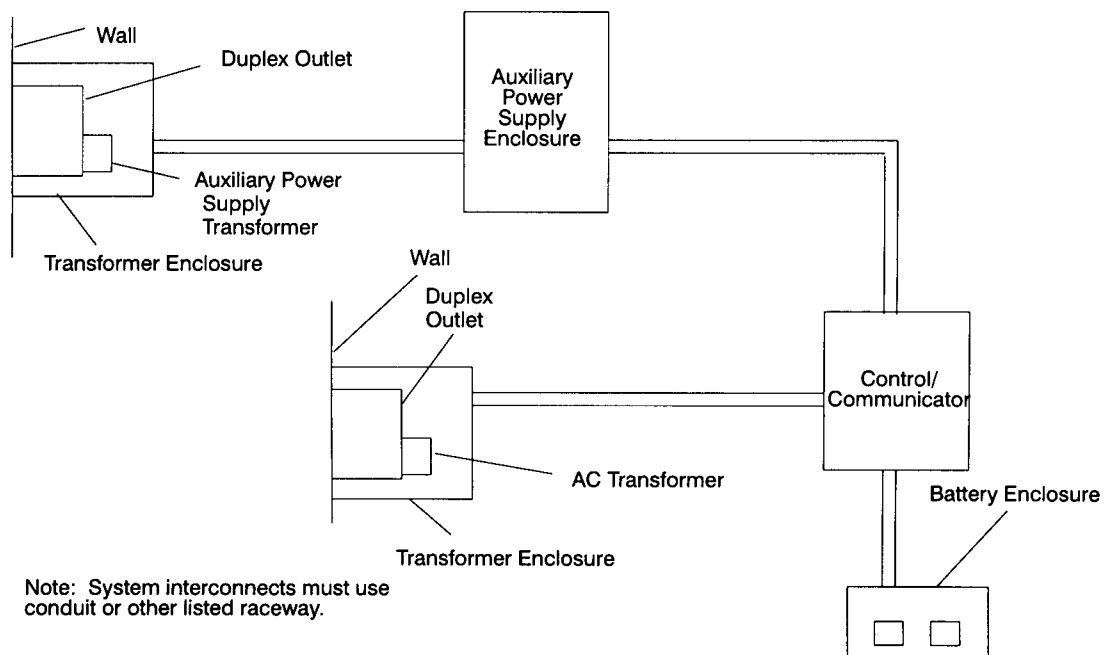


FIGURE 5-7. System Power Connections

An MPI268 Ground Fault Detector is required for Listed Commercial Fire installations in Canada. Refer to the detector's instruction sheet for hook-up and programming guidelines.

# UL And NFPA Requirements

## Installation of Zone Expanders

The following figure details installation of zone expanders using the EB1511 enclosure. Any NEMA certified enclosure may be used.

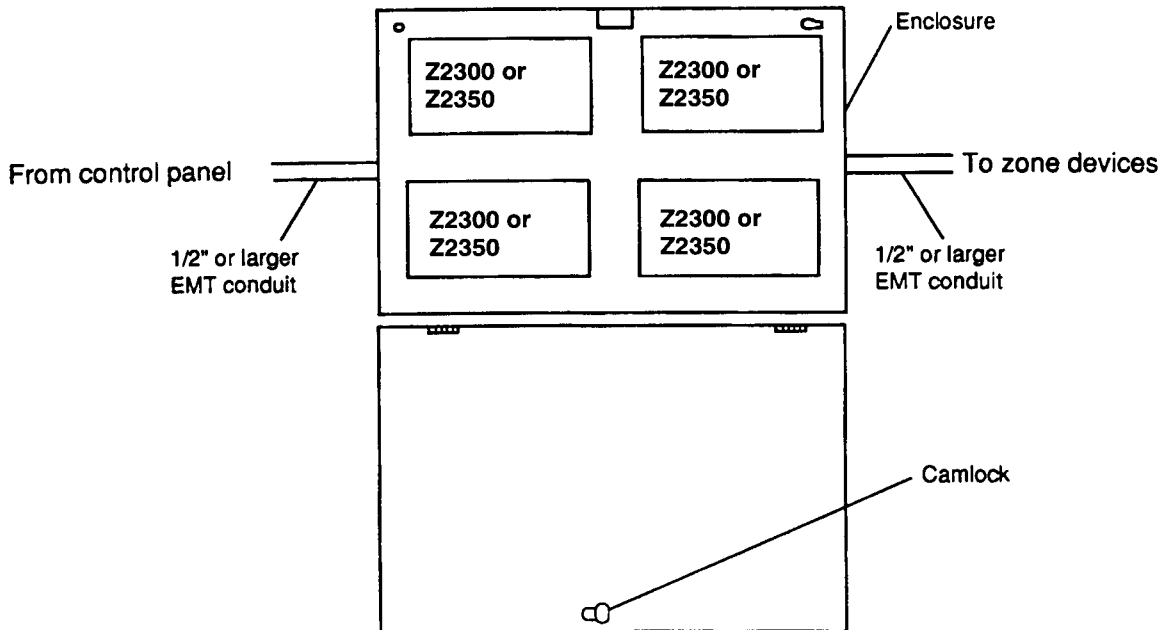


FIGURE 5-8. Installation of Zone Expander(s)

All zone expanders must be mounted using two self-tapping screws in the enclosure and the EB1511 enclosure must be mounted using self-tapping screws into wall studs (or equivalent) or using wall anchors.

### NOTE

**For all UL Listed commercial fire installations, all conductors to/from the zone expander(s) must be installed in accordance with NFPA 70 and the National Electric Code.**

**For all UL Listed burglary applications, the zone expanders must be installed within twenty feet of the control panel with all interconnections in conduit. All conductors must be run in accordance with the National Electric Code.**

**For all UL Listed commercial burglary applications, the TC1100 Tamper Cover must be used with the EF1414 or E1414 enclosure.**

## Auxiliary Line Seizure Relay Installation

The AR101 Auxiliary Line Seizure Relay, when installed as described below, physically enables the control panel to utilize two phone lines. With this relay in place, properly programming the control panel's communicator allows the panel to use both phone lines for central station reporting.

Before connecting the control to its external power source, place the auxiliary relay pins into socket K5 with the gray stripe on the back of the relay aligned with the half-moon depression at the top of the socket (see FIGURE 5-9).

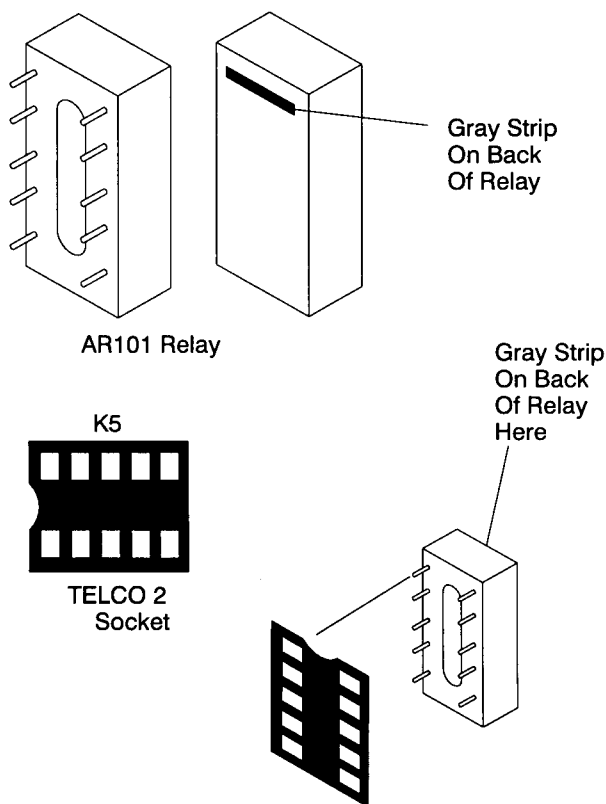


FIGURE 5-9. AR101 Installation

# UL And NFPA Requirements

## F2500 Operation

The F2500 has a bell supervision circuit utilizing an end-of-line resistor (75 Ohm, 10W). A bell silence switch is incorporated in the event of silencing the bell circuit a system trouble is displayed at the LCD keypad both audibly and visually. The audible may be silenced by pressing **DISPLAY** and entering a valid user passcode, but the visual Trouble indication remains as long as the bell is silenced.

The F2500 monitors the interface between the control panel and two independent telephone lines and detects the loss of a telephone line within 35 seconds. This loss is both audibly and visually displayed at the LCD keypad. The audible may be silenced by pressing **DISPLAY** and entering a valid user passcode. However, the visual display continues until the problem is corrected. The loss of a telephone line is communicated to the central station via the second telephone line.

The F2500 also monitors the system data bus and microprocessor core for integrity. If either shuts down or faults, the LCD keypad displays **NO COMMUNICATION FROM CONTROL PANEL** and an audible signal is emitted from the F2500 and the keypad(s). This situation requires repair of the control by a qualified technician to correct the problem.

## Programming And Restrictions

### Initial Programming

Entering the programming mode for the first time prompts the LCD keypad to display:

LISTED FIRE SYSTEM?		
QUIT	YES	NO

Entering **YES** causes the software to permanently assign certain features and attributes in the control specific to commercial fire alarm use.

### NOTE

**This is a one-time programming option prompt, viewable only upon initial entry into the programming mode.**

The system default changes are:

PROGRAM FUNCTION	FACTORY DEFAULT	UL 864 DEFAULT
Communicator Enable	0 = No	1 = Yes
Two Phone Lines	0 = No	1 = Yes
Zone Trouble/Restore Phone (Area 1 only)	0 = Don't Report	3 = Phone 1 (2 on failure)
Trouble/Restore Phone	0 = Don't Report	3 = Phone 1 (2 on failure)
Comm Test Not Norm Report Code:	00	F0
Comm Test Report Code:	00	F1
AC Fail Report Code:	00	F2
AC Restore Report Code:	00	F3
Low Battery Report Code:	00	F4
Battery Restore Code:	00	F5
Comm Restore Report Code:	00	F6
Memory Error Report Code:	00	F7

# UL And NFPA Requirements

PROGRAM FUNCTION	FACTORY DEFAULT	UL 864 DEFAULT
Missing Keypad Code:	00	F8
Restore Keypad Code:	00	F9
Line Fault 1 Report Code:	00	FA
Line Restore 1 Code:	00	FB
Line Fault 2 Report Code:	00	FC
Line Restore 2 Code:	00	FD
Bell Line Fault Code:	00	FE
Bell Line Restore Code:	00	FF

The system restrictions are:

1. All Fire, Fire Trouble, and Fire Supervisory zones are always assigned to Area 1.
2. The following outputs are permanently defined as follows:
  - Output 2 – Fire Alarm condition
  - Output 3 – Fire Supervisory condition
  - Output 4 – Fire Trouble condition
  - Output 5 – System Audible Trouble condition
  - Output 6 – Latching System Visual Trouble condition
3. All user passcodes must be at least three digits long.
4. Keypad 1 is assigned to Area 1. All other keypads are extended to Area 1.
5. All System Troubles, Fire Circuit Troubles, and Fire Supervisory Circuit Troubles are assigned to Area 1 and displayed at all keypads.
6. For compliance with DACT connection, the loss of primary AC power is not reported until seven hours after the beginning of the AC power failure.
7. To silence any audible trouble indication, a valid user passcode must be entered after **DISPLAY** is pressed. All System Troubles, Fire Circuit Troubles and Fire Supervisory Circuit Troubles may only be silenced from Keypad 1.
8. When a Fire, Fire Supervisory, or Burglar Alarm occurs, it is displayed on the top line of the Keypad 1 LCD. If more than one of these alarms occurs simultaneously, each alarm condition is displayed one at a time in two-second intervals. Fire, Fire Supervisory, and Burglar Alarms take precedence over other conditions. Other conditions are not be displayed during one of these alarms.
9. Burglar zones should not be assigned to Area 1.

To comply with UL 864/NFPA 72 Central Station Connect for a DACT unit, Menu 3 Zone Definitions must be as follows:

- Standard Fire Zone – Programmed 2001 is for connection to the fire initiating devices.
- Verified Fire Zone – Programmed 9001, is also for connection to fire initiating devices, but requires a secondary verification of the alarm within a 60 second window starting 30 seconds after the originating alarm.
- Fire Supervisory Zone – Programmed A001, is for connection to sprinkler supervisory devices.



# UL And NFPA Requirements

## Fire Alarm, Trouble And Supervisory Conditions

### Fire Alarm

If an alarm has occurred and has been silenced but a fire alarm is still activated, one of the following situations may be present.

1. A smoke detector may be latched in alarm. Resetting the smoke detector power remedies the situation.
2. A short may exist in the field wiring. A qualified technician must troubleshoot the wiring to determine the location of the short and repair it.

### Fire Circuit Trouble

This indicates a problem with a fire detection circuit. The audible can be silenced by pressing **DISPLAY** and entering a valid passcode, but the visual indication remains until the condition is corrected.

### Fire Supervisory

This indicates that a sprinkler device has been tampered with or that a problem exists with the sprinkler system. The audible indication of a fire supervisory can only be silenced by entering a valid code at the LCD keypad. The visual indication remains until the condition is corrected.

### Fire Supervisory Trouble

This indicates an open in the fire supervisory circuit.

## Local Testing

The control panel is equipped with a local test function. Enable the function by pressing the menu key on the LCD keypad until **SYSTEM TEST** is displayed.

Press the soft key beneath **SYSTEM TEST**, then enter a valid code. The following outputs become active for approximately three seconds to test the audible and visual devices:

- Burglar Alarm
- Burglar Tamper
- Audible Trouble
- Fire Supervisory
- Fire Alarm
- Auxiliary Alarm
- Failed to Comm
- Holdup Alarm
- Trouble
- Fire Trouble

The Audible System Trouble output beeps once every ten seconds during the system test. The LCD displays:

PROCEED WITH LOCAL TEST	
QUIT	UNTESTED

At the start of the local test, the following is reported to the central station and recorded in the event log:

- Bell Line Trouble
- Trouble conditions from every zone programmed as Fire, Supervised Fire, or Verified Fire
- Restore Bell Trouble

Proceed with the test by faulting each zone one at a time. As each zone is tested, the display changes to reflect the number of zones tested and those yet to be tested as:

1 ZONE TESTED	15 LEFT
QUIT	TESTED UNTESTED

## **UL And NFPA Requirements**

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Pressing the soft key beneath TESTED displays the zones that have been tested. Pressing the soft key beneath UNTESTED displays the zones that have not been tested.

During LOCAL TEST, all zones activated are recorded in the Event Log, but are not reported.

After a Fire, Verified Fire or Fire Supervisory zone is tested during LOCAL TEST, a smoke reset is automatically performed for five seconds to reset the zone.

Pressing the soft key beneath QUIT causes the simultaneous display of all the pixels of the LCD for three seconds. Then the LCD returns to the normal status display. At the end of the Local Test, Trouble Restore is reported to the central station and recorded in the event log. All smoke detectors are reset when LOCAL TEST is exited.

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