Security System Control

moose Z2000

Specifications, Installation and Programming Guide

System Overview

Thank you for selecting one of the many fine products manufactured by Aritech Corp., an acknowledged leader in security electronics. We take pride in our international reputation for product quality and proven performance. This product has been carefully inspected to comply with rigid quality control standards before shipment to you. You will find that with reasonable care it will provide years of reliable performance.

Proper installation and regular maintenance by the installing company accompanied by frequent testing by the user is essential to assure continuous satisfactory operation of any alarm system. It is recommended that the installing company offer a maintenance program and instruct the user with the correct procedure for using and testing the system.

The Z2000 will accommodate a variety of installation requirements ranging from the middle to large scale residential, up to complex commercial buildings. The architecture is extremely flexible and provides many powerful features. It uses a four-wire Universal Security Data Bus (USDB) for connections of keypads and other devices.

The Z2000 supports up to 24 Zones. Only the first 16 of the 24 zones require home run wiring. These are the standard zones which come as part of the main control Zones 17 through 24 are available from a remote zone concentrator on the USDB. Each concentrator expands the system by 8 zones. The Control supports 50 User Codes, 6 control stations, and may be subdivided into 3 totally separate Areas of detection (often referred to as partitions). Each Zone may be assigned to any Area. The User Codes and control stations have are assigned to a single area or to several areas through a programming option known as "Multi-Area Operation". This ability to be separated into independent "Areas" allows the central processor to be used as the control for up to 3 businesses, or simply to allow control of individual portions of a single business or large home.

Other powerful features of the system include: A 64 Event Activity Log, built-in System Voltage & Current Monitor, Remote Upload/Download, and a Local Printer Interface for on-site printing of the event log, scheduled opening & closing reports with exceptions, etc.

Note: This manual contains references to UL listings which may not have been obtained at the time of this printing. Aritech does not guarantee that such listings will be obtained on any or all of the products in this manual. Consult the Agency Approvals department at Aritech for the current status of these and other third party listings.

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Parts and Descriptions

Please take time to become familiar with the parts enclosed in the package.

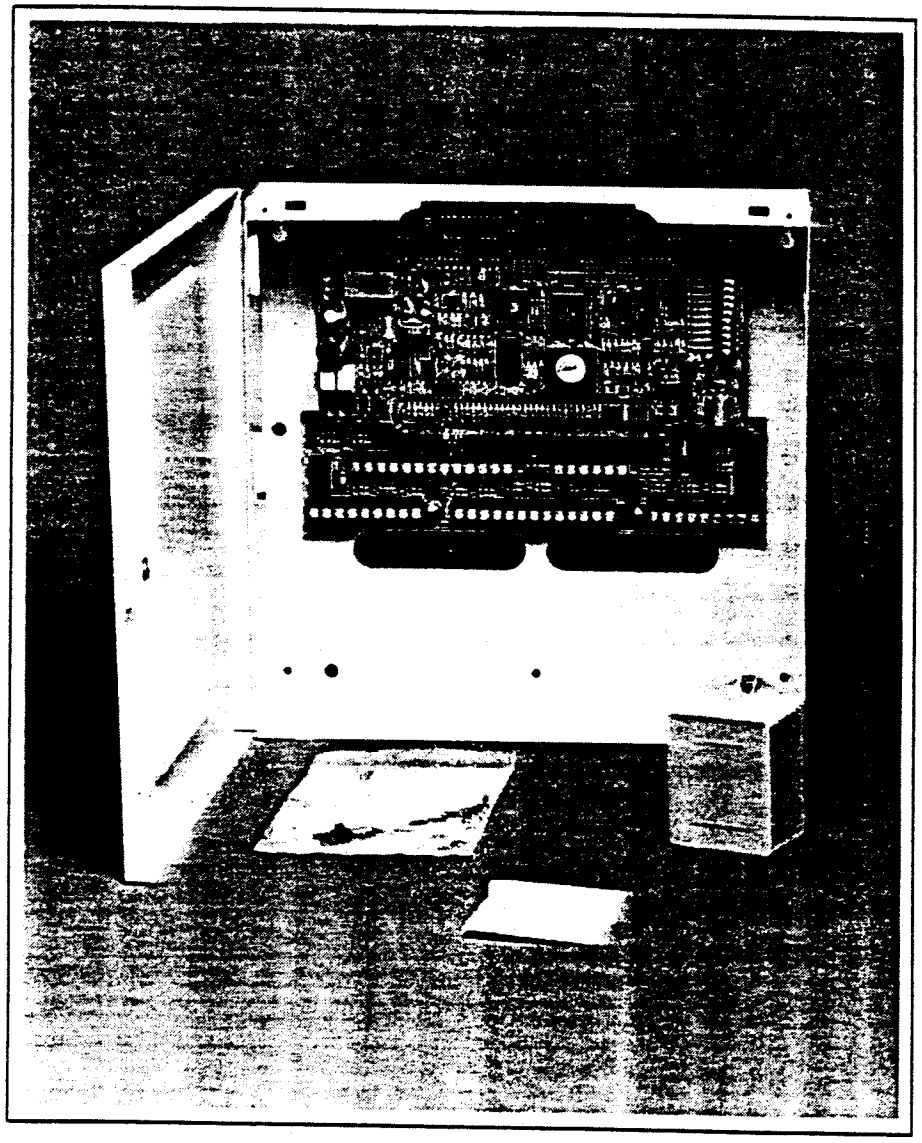


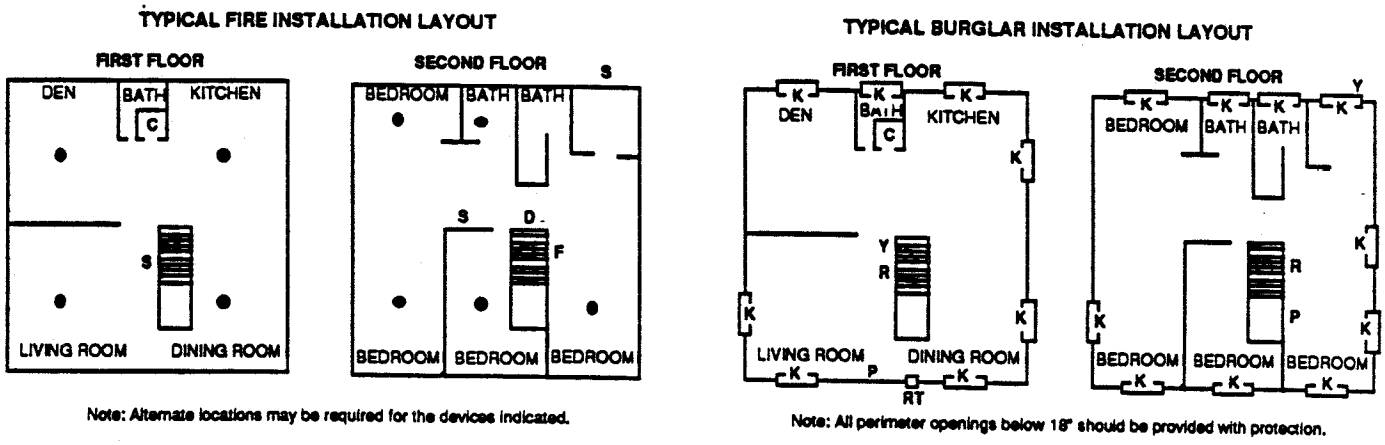
FIGURE 1 PARTS DIAGRAM

PLANNING THE INSTALLATION

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

1. Review this manual to become familiar with all control features and procedures before actually beginning the installation.
2. Perform a physical survey of the installation site. Figure 2 details a typical Fire ff and Burglar installation as a guide in planning.
3. Make a map or similar diagram of the proposed installation and discuss the installation requirements with the customer.
4. Compare the installation needs and requirements with the programmed factory settings to determine what changes if any, need to be made to accommodate this installation.
5. It is recommended that all equipment be bench tested prior to installation.

The diagrams below are for residential and commercial burglar and residential Fire systems.



LEGEND:

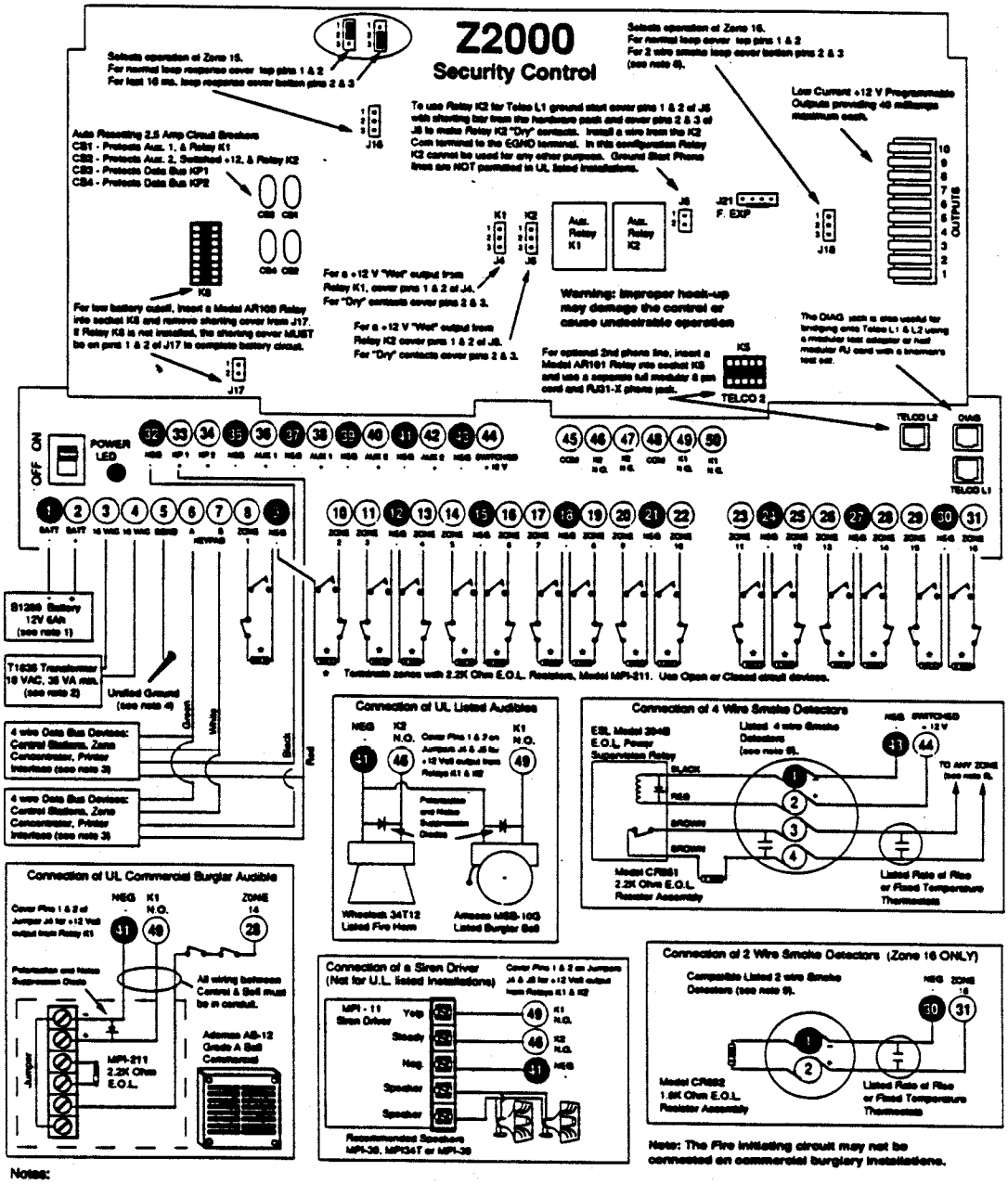
C - Control
S - Siren (Steady Output)
Y - Siren (Yelp Output)
D - Smoke Detector
● - Thermostat
F - Fire Trouble Remote
K - Contact
R - Remote On/Off
P - Panic Button
RT - Remote On/Off with Tamper

FIGURE 2 TYPICAL INSTALLATION LAYOUT

MOUNTING THE ENCLOSURE

Note : Refer to Section 5 for U.L. Listed system requirements.

1. Select a secure, dry and stable location with an ambient temperature between 32° to 122° F (0° to + 50° C) for mounting the control / communicator enclosure. The location should take the distance to the unswitched primary power outlet and grounding conductor length into consideration. It should also be centrally located for ease of running all system wiring.
2. Remove the components from the packaging and store safely until wire runs are completed.
3. Remove the control box knockouts that best suit your needs. The control box also has two large access holes on the back of the enclosure.
4. Level and mount the control box using the top center mounting hole to anchor the box while marking the other mounting holes.
5. Route all raceways (pipe, flex, molding etc.) into the control box. Pull all system wiring into the control box and secure to the appropriate terminals as discussed in this manual.



Notes:

1. Replace battery every 3 to 5 years. Use ONLY Sealed Lead Acid rated at 6.0 to 8 Ah. Two batteries may be paralleled using a model CR860 dual battery harness for longer standby time.
2. Do Not Connect to a receptacle controlled by a switch. Use ONLY UL Listed Class II Transformer.
3. Maximum number of bus devices = 6 Keypads (Z2100 or Z2200), 1 Zone Concentrator (Z2300 or Z2350), 1 Printer Interface (Z2400). Maximum distance = 1000 ft using 18 ga. wire. 22 ga. wire may be used to distances up to 200 feet from control. Distribute power to the data bus devices evenly between power terminals KP1 and KP2. At least 1 LCD keypad is required on UL listed systems.
4. For proper lightning and transient protection, connect to a unified or dedicated earth ground using 14 ga. wire, as close to control as possible.
5. Any zone may be programmed as a Fire type zone for use with listed 4 wire Smoke Detectors or Heat Thermostats.
6. Zone 16 may be used with compatible 2 wire Smoke Detectors and requires a CR852 1.8K ohm EOL resistor assembly. Jumper J-18 must be in the lower 2 pin position.
7. All wire/cable must be listed Energy Limited. Use fire marshal approved wire for California installations.
8. Diodes 1N4003 (across the Burg/Fire Bell) are for noise suppression.
9. Connect only listed compatible Fire/Smoke detectors that have a specified voltage range of 10.7 to 13.9 VDC. (Use only BRK Models 1400, 2400, & 2400TH)
10. Connect only listed compatible intrusion detectors that have a specified voltage range of 10.7 to 13.9 VDC, such as the Aritech DR-114 , DR-112, PR-361, PR-381, and PR-569 etc.
11. Alarm sounding devices must be installed so that they are clearly heard in all sleeping areas. Connect only listed compatible devices that have a voltage rating which include 10.7 -13.9 VDC (Residential), 12Vdc Commercial.
12. Maximum continuous current drain for terminals 33,34,36,38,40,42 and 44 as well as any of the latch type terminals must not exceed the specified limits set out in section 5 of this manual. The maximum combined alarm current must not exceed 1.5 amps.
13. The terminal strip has 2 jumpers installed which disable the onboard power switch.
14. The low current outputs (latch type terminals) 1 & 2 shall not be used on UL listed systems.The K1 & K2 relays shall provide the alarm output.
15. If the system is partitioned, the commercial burglar alarm audible device shall be in a protected area armed 24 hrs. a day. The corresponding initiating circuit shall be programmed as Not Bypassable.
16. The control meets the requirements for UL Grade A Local , Police Connect with Basic Line Security, Grade B Central Station. See instructions.

FCC Registration Number: A79USA- 60755-AL-E, Ringer Equivalance: 0.0B Complies with Part 68 FCC rules. Use USOC RJ31-X connector. Complies with the limits for Class B computer Devices in Accordance with the specifications of subpart J of part 15 of FCC Rules. Telephone Connection of a fire alarm signal from this system to a fire alarm headquarters or central station is permited only with the approval of the authority having jurisdiction.

Figure 3 Interconnect Drawing

WIRING THE CONTROL PANEL

EARTH GROUND CONNECTION (TERMINAL # 5)

In order for the control panel's lightning and transient protection to be effective, it is recommended that terminal # 5 be connected to an earth ground. Finding a proper ground path may affect the selection of the control mounting as mentioned in the previous section. This is because it is best to run the grounding conductor as short and as straight as possible to the ground rod or other grounding electrode.

An ideal ground selection for a security control is a " UNIFIED EARTH GROUND ", where the power service, telephone, and security control ground rods are bonded together. (This would also include any services such as CATV or SAT TV etc.) This type of ground eliminates a common problem known as " STEP VOLTAGE BLOWOUT ". Step voltage is a measurable potential between different earth ground stakes during a lightning strike or other ground current source. Step voltage often results in a destructive current flow through the security system.

POINTS TO REMEMBER WHEN GROUNDING

1. **Use a # 14 awg. grounding conductor minimum.**
2. **Keep wire runs short and avoid 90° bends.**
3. **Use an 8 inch radius min. for bends and turns.**
4. **Keep ground wires separate from other wiring.**
5. **Use 8' copper clad ground rod or meter box ground rod (Elec. Sys. Service ground. See NEC article 250-54.)**
6. **Always route towards earth, never away.**
7. **Never run parallel with metal without bonding to the metal surface.**
8. **Ground in accordance with article 250 of the NEC.**

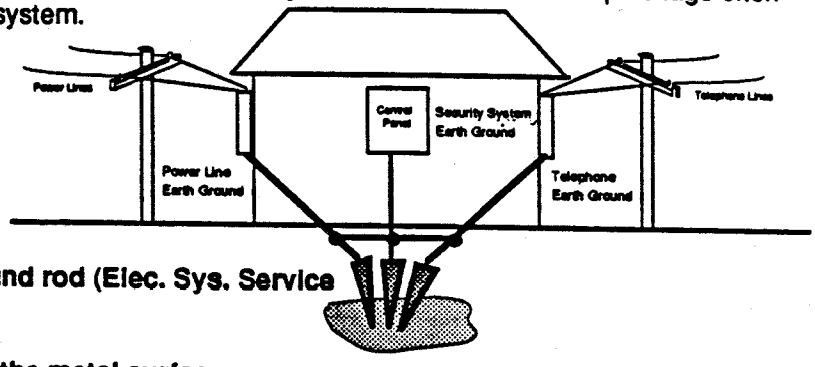


FIGURE 4 UNIFIED EARTH GROUND

AC TRANSFORMER PRIMARY POWER INPUT (TERMINALS # 3 & 4)

The control / communicator is powered by an 18 volt AC, 35 VA minimum, internally fused, U.L. listed Class II (power limited) transformer which is supplied with the control. It is important that the specified transformer be used to operate this control. Should the transformer accidentally be damaged or blown, a replacement transformer with an equal Secondary voltage rating (18 volts AC) and a 35VA rating **minimum** must be used.

CAUTION: Do not short the terminals of the transformer together. This will cause the internal fuse to blow. This transformer must be connected to a 120 VAC 24 hour power outlet not controlled by a switch other than an approved over current protection device (circuit breaker).

To prepare the control for primary power connection follow these steps:

1. Connect the screw terminals on the transformer to terminals # 3 & 4 of the control / communicator using 18 awg. wire not exceeding 50 ' in distance between the transformer and the control / communicator. Do not run the AC primary power in a multiconductor with other system circuits.

2. Do not plug the transformer in at this time. Final connection of the transformer and standby battery should be done after all other connections have been made.

STANDBY BATTERY CONNECTION (TERMINALS # 1&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 (Term. #2) . Connect the black lead to the screw terminal marked Bat. Neg. (Term. #1) . **Note: The control is designed with reverse polarity protection on the battery charging circuit ; however, prolonged improper connection of the battery to the control will result in damage.** The power should remain disconnected until all connections have been made and checked for accuracy.

Low Battery and AC Failure

The control was designed to operate with and recharge a 12 volt, 6-8 amp-hour sealed lead acid battery. The battery is the backup source for the primary power supply. The control will maintain a float charge for the battery of 13.8 VDC at 100 milliamperes (mA) . This is in addition to the continuous output that the control panel power supply maintains (1.2 amps continuous). The battery automatically takes over in the event of an AC power outage. The battery is also supervised. If the AC power fails and the battery voltage drops to 11.2 VDC, the control will annunciate a Low Battery trouble condition. The AC Fail trouble condition will annunciate visually at the control station upon power outage. The control's communicator will report the conditions if programmed. The trouble prompt for each of these conditions will be present until the condition (Low Battery or AC Fail) has been corrected. The control performs a daily test on the battery. The user may activate a manual test of the battery if desired.

Low Battery Cutoff Relay (optional)

If the battery voltage drops below 8.5 VDC (during AC power failure) the microprocessor will shut down and the control will cease to function. During this shutdown powered devices (motion detectors, smoke detectors audio or glass break detectors, and control stations may still allow function lights and L.E.D.s to operate. An optional load shed relay may be added to the control to protect the battery from deep discharge. The relay (part # AR 100) must be inserted into position K8 and jumper set J-17 must be open (pin connector removed). Once the relay has become active and has disconnected the battery, AC power must be restored in order to re-connect the battery charging circuit.

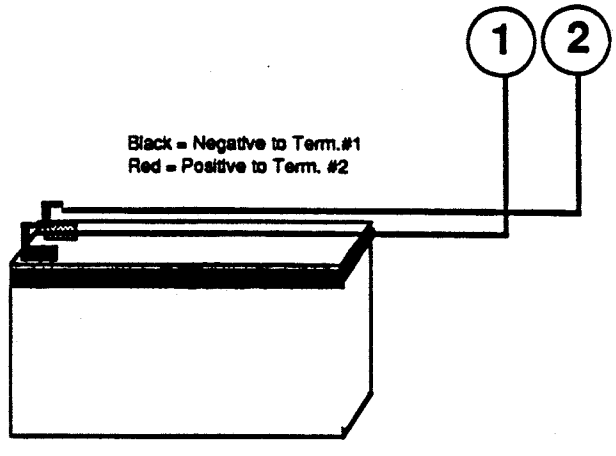


FIGURE 5 BATTERY CONNECTION

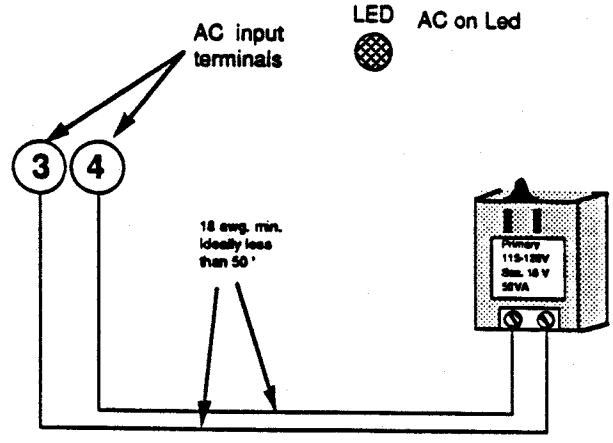


FIGURE 6 TRANSFORMER CONNECTION

Power Switch and Circuit Breakers

The control / communicator is equipped with an on-board power switch which allows the installer /service person to shut off total system power without disconnecting the battery or transformer. During installation or service, the power switch should remain off until all connections have been completed and checked for accuracy. The control is also equipped with thermal activating, self-restoring circuit breakers on all +12 VDC supply terminals. These will interrupt current flow demands in excess of 2.7 A. *(The jumpers on the terminal strip bypass the power switch as required for the hardware to meet the guidelines set by approval agencies for Fire listings.)*

DATA BUS DEVICE CONNECTIONS (TERMINALS 6 & 7)

Devices which use the 4 wire data bus are the LCD control stations, LED style 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 & #7. **The data terminals are labeled KPA and KPB. These are parallel connections and may be home run or may be branched at a field connection. For wire distances of 200' or less, the minimum recommended size conductor is 22 awg.** For wire runs exceeding 200' up to 1000 ', a minimum size of 18 awg. is recommend. **Device placement beyond 1000 ' is not recommended.** 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 +12Vdc 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 over current protection to remove power from a particular device or branch, the device(s) powered by the alternate source terminal will continue to operate. The control panel terminal strip also has a 4-pin polarized connector (J-3) which is designed to connect any of the data bus devices directly to the control via the Z-217, a 4 conductor ribbon cable. This cable may be used when setting up bench testing, programming or servicing devices. Like the concentrators the control stations must have the DIP switch set for the device to log in and identify itself to the control panel.

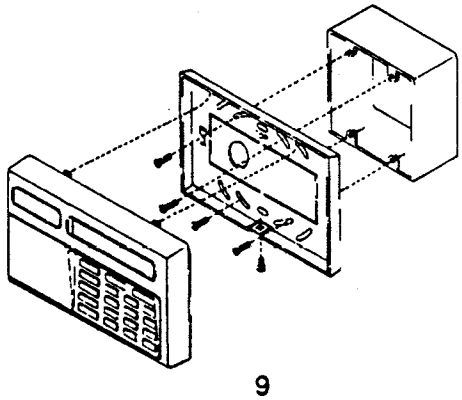
Data Bus Device I.D. Setting

The Control Stations , and the zone concentrators contain a DIP switch bank (Dual In Line Package) which allows the installer to set the identification number for the device. The valid setting for all control stations is 1-6. No more than 6 control stations are permitted on the control. No more than 1 control station may be set to a specific address setting. The valid setting for the zone concentrator is 1. No more than 1 Zone Concentrator may be connected to the control. In all devices a setting of 0 will disable the device. This may be necessary for service reasons. The printer interface is self assigning and requires no set up before operation. Refer to the label on the silk screen for the concentrators and the enclosed label for the switch settings on the LED keypad and the LCD control station. **Note : DO NOT use the label for the control stations on the concentrators. The switch alignment is different.** The addresses of the different type of devices are independent. Set the 1st device of any type as #1 the 2nd as #2 etc. **Do not** set the control station as device #1 and the zone concentrator as device #2 and so on.

Control Station Mounting

1. Select a mounting location 48-52 inches above the floor with an ambient temperature range of 32°-122°F (0° to +50° C) away from direct sunlight.
2. Run a 22 gauge (minimum, runs in excess of 200' should be 18 awg.) four conductor cable from the control to this location. (Stranded wire provides lower resistance and additional protection from breakage). The maximum resistance per wire is 10 Ohms.
3. Loosen the retaining screw (bottom edge of unit) and separate the front portion from the rear mounting plate.
4. Run the cable through the round hole in the back of the mounting plate and fasten it 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.
5. Splice the four conductor cable to the plug in connector (supplied with the operating panel). (Be sure that power is removed from the control).
6. Press the splices back through the hole and seal the hole with insulation to prevent air infiltration and dust.
7. Plug the connector into the face plate and press the its top edge in place. Press the bottom edge into position while holding in the top edge and secure by tightening the retaining screw.
8. Wire the four conductor cable to the control end and power-up when all other wiring is complete. Remove the CONTROL STATION screen protective plastic film after installation is complete.

FIGURE 7 CONTROL STATION MOUNTING



Zones 1 thru 16 (Term. # 8 - 31)

The zone wiring is connected to terminals 8 - 31. Each zone terminal is labeled Z1, Z2, Z3 . . . etc. Every 2 zones share a common negative terminal which is located between the 2 zone inputs. Example : The negative terminal for zone 1 (terminal 8) and zone 2 (terminal 10) is 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 E.O.L. resistor and other closed loop devices in the same circuit. For proper supervision the resistor must be placed so that it is electrically at the end of the line, or as the last device between the protective devices and the negative side of the 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 E.O.L. resistor. Additionally, the E.O.L. resistor must be electrically at the end of the loop. (See the diagrams below.)

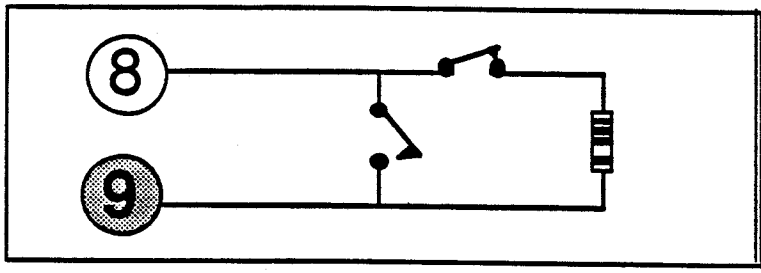


FIGURE 8 TYPICAL WIRING FOR CLASS B (E.O.L.) ZONE

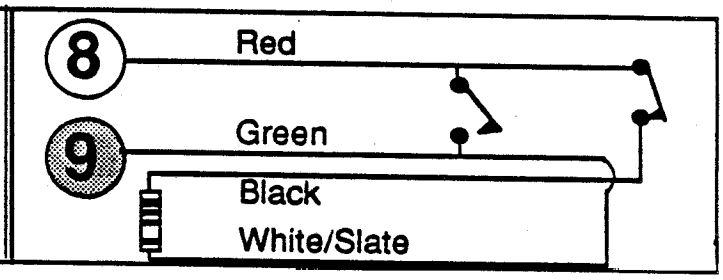


FIGURE 9 SPECIAL WIRING FOR E.O.L. CIRCUIT

It is possible to wire the protective loop in a way that will place the E.O.L. resistor inside the control panel and maintain the supervision of the circuit. This method does require wiring the protective loop with 2 additional conductors. The " special wiring " circuit is a diagram of this type of hook-up. This wiring configuration allows easy maintenance of the circuit for service or expansion without sacrificing security.

The operation of the protective loop can be checked from the screw terminals with a voltage reading. The Class B protective loop on this control panel should show approx. **6.5 VDC in a normal condition** . If the circuit is violated in an **open condition** the voltage will rise to **13.8 VDC.** If the **circuit is shorted** across the E.O.L. resistor, the voltage will be **approx. 0 VDC.**

SPECIAL ZONES (ZONES 15 & 16)

This control makes special provisions for 2 wire smoke detectors and for devices which may require pulse extenders.

Quick Loop (Zone 15 term. #29 and #30)

Zone 15 is designed with an optional feature allowing a built-in solid state circuit to extend the violation time of any violation detected on this zone. This feature eliminates the need for any field mounted accessory to achieve this function. It is most useful for fast reacting devices such as mercury and piezo type glass break detection equipment. To select this option move the J-16 jumper to the lower two pin connection. This option works **ONLY** with **CLOSED LOOP** devices. This option will extend a 10 mS violation to a 5-10 sec. violation. For " normal" Class B operation the jumper must be on the upper and center pins.

2 Wire Smoke Detector Loop (Zone 16 term. #30 and #31)

Zone 16 is designed with an optional feature which allows operation with 2 wire loop type smoke detector. If this feature is desired, move the J-18 jumper to the lower two pins. Program the zone as a fire detection loop and connect the smoke detector to zone 16. **(Note when this option is selected, a 1.8 K Ohm EOL must be used. This resistor is furnished with the panel.)** Maximum loop resistance is 1.9K Ohm. For this reason the loop wiring resistance must not exceed 100 Ohms. The maximum allowable number of 2 wire smoke detectors which may be connected to this control is 6 units. The following detectors are recommended with this control: BRK mdl. #1400, #2400, #2400TH. It is important to be consistent in the use of the same model detector throughout the protective loop. **When the 2 wire smoke detector option is used, the Zone Definition (Menu #3) for zone 16 must be a value of 2007.**

K1 & K2 RELAY HOOK UP AND OPERATION

The control /communicator provides two (2) Form C relays to activate sirens, siren drivers, and other accessories. The contacts of each relay are rated at 28 VAC/ VDC @ 5 A. **The K1 and K2 relays are already set to provide +12 VDC output upon activation.** The " Latch Type" terminal outputs 1 and 2 trigger the K1 and K2 relays internally. To activate K1, enable Output #1. **These outputs are enabled through programming** (discussed later). All outputs on the " Latch Type" terminal set are limited to 40 mA @ 13.8 VDC. The relays may be set to eliminate the +12 V output from the contacts (Dry Output) by positioning the J- 8 and J- 4 jumper sets so that the pin connector is connecting the lower and middle pins of each set. Below is a drawing of how the K1 & K2 relays are use to activate the MPI-11 siren. The programmable control outputs may also be used to activate low current triggered siren devices. (See JDS - 108 Hook-up.)

As described in the specifications the control is capable of 10 outputs expandable to 20. The " Latch Type" terminal block provides the first 10 low current outputs. The remaining outputs are provided by the zone concentrators . The concentrator is logged in to the control by setting the DIP switch set on the unit. This procedure assigns the zone concentrator to a specific address in the control data bus. This numeric assignment also designates the position of the remaining outputs which are terminated by a harness type connector which plugs on the 12 pin J1 connector (On the zone concentrator). The concentrator has the capability to provide up to 10 outputs. **The control panel will provide outputs 1 - 10. The concentrator will provide outputs 11 - 20.**

Diagram showing Hook-up of MPI-11

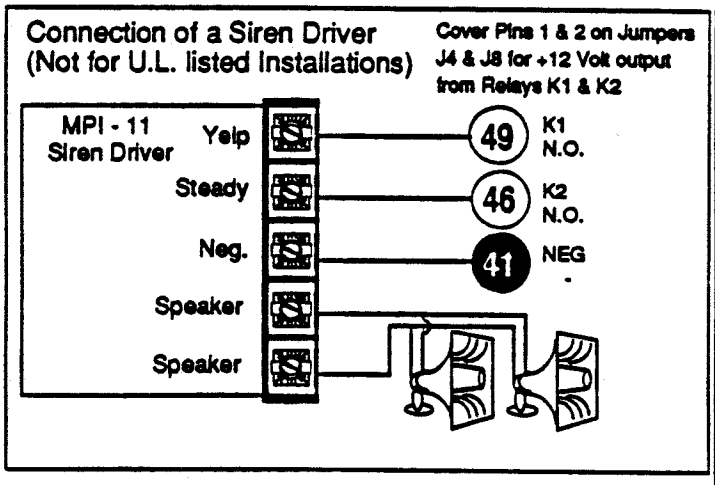


Figure 10

Diagram showing Hook-up of JDS-108

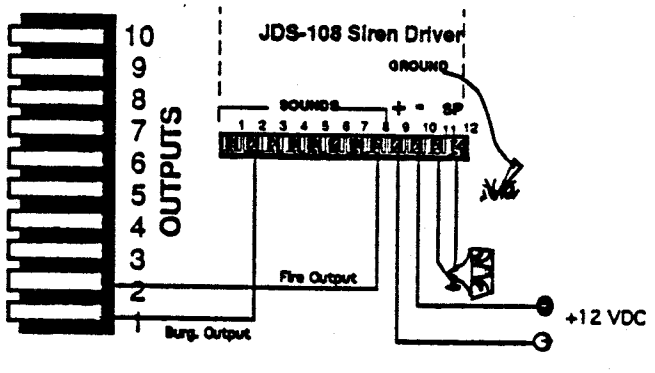


Figure 11

AUXILIARY POWER CONNECTIONS (TERM. # 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 or 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, 41 or 43. **All negative terminals on the terminal strip are at the same reference and may be used whenever a circuit ground is required.** Caution should be exercised when wiring the control to make sure that no single terminal is overloaded with the current return of multiple circuits. For this reason the installer should distribute the load devices among the supply and negative terminals evenly. No device should share the same negative terminal 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 **nor 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.

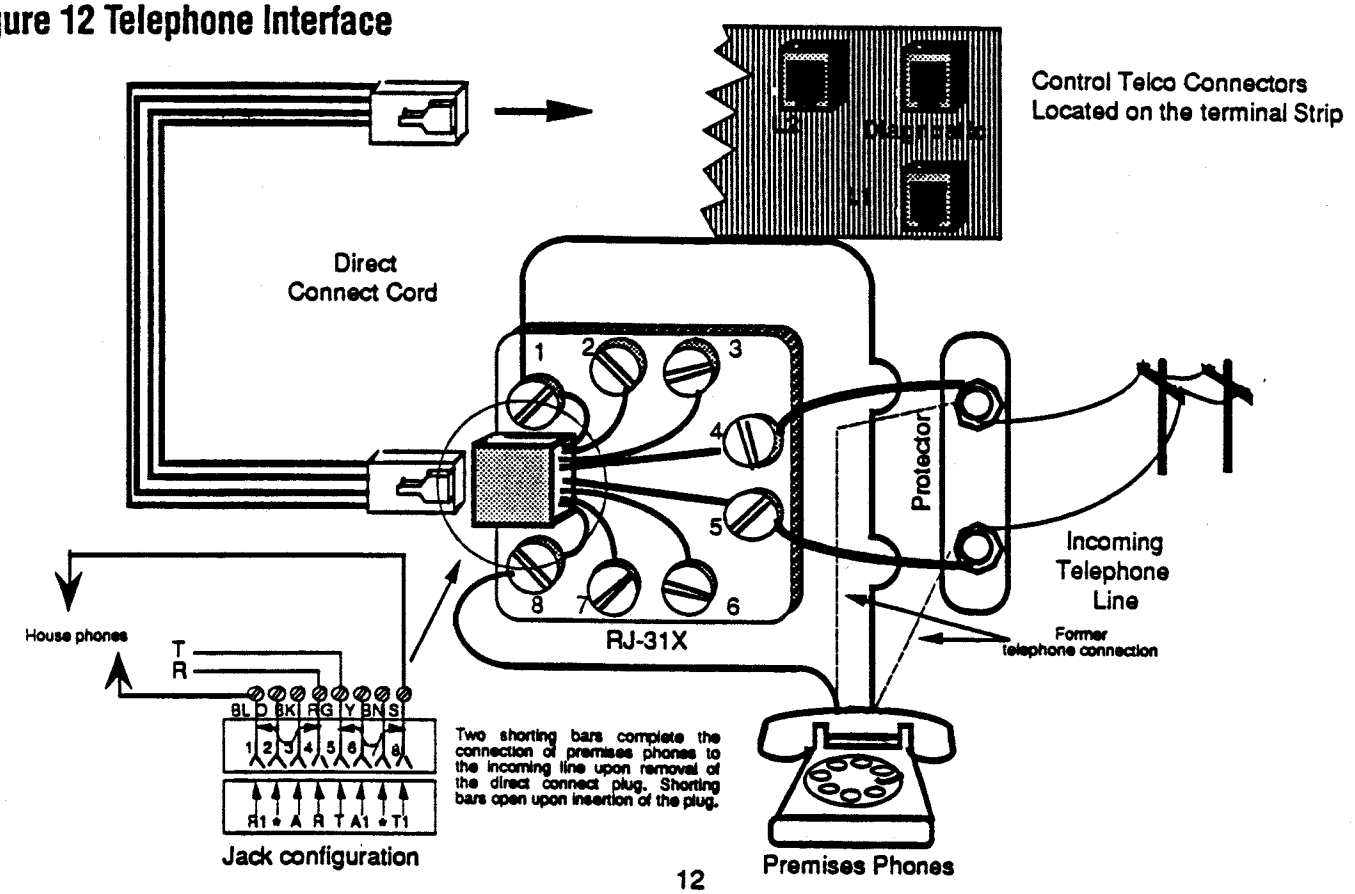
SWITCHED POWER CONNECTIONS (TERM. #44)

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.) By connecting the +12 Vdc input to terminal 44 the operating voltage may be momentarily interrupted by the user/installer from an appropriately programmed control station (operation and programming discussed in sections 2 & 3).

TELCO LINE CONNECTION (CONNECTORS L1 & L2)

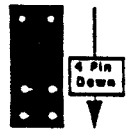
The telephone interface is connected by the use of an approved Interconnect jack such as the RJ-31X . These devices allow the subscriber to disconnect the control / communicator from the Public Switched Telephone Network in the event of harm or malfunction. The control is equipped with line seizure so that the premise telephone service is interrupted during communication to the central station or during an remote programming session. Connection to the approved jack is done with a " plug to plug " (male to male, 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 (part # AR 101) in the socket labeled K-5.

Figure 12 Telephone Interface



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-8	Same as above for K2 relay.
J-6	Selects Ground Start operation for K2 relay. To enable Insert J-8 shorting bar on pins 2 & 3, place pin connector from hardware pack on J- 6. When used for Ground Start the K2 relay must not be used for other functions. Then connect K2 common to earth ground and K2 N.O. to ring side of telco.
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	Selects low battery cutoff. **Installer must remove J-17 before installing auxiliary relay K8.** Insert relay as shown. Place shorting bar over the 2 pins to disable this feature.
J-18	Selects hardware option for zone 16. To enable 2 wire smoke detection circuit place shorting bar on Pins 1 & 2. The factory provided 1.8KΩ EOL resistor must replace the standard 2.2Ω. Additional programming required.

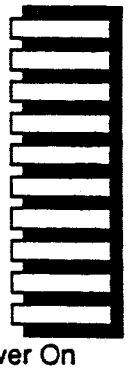


Outputs

The main control 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.

Figure 13 Programmable Outputs (latch type connector).

OUTPUTS Default



These outputs are enabled through programming (discussed in sect. 3). The outputs may be connected so that multiple outputs activate a common device. These outputs should not trigger devices that exceed the current limitations. The installer should not extend these outputs beyond the control panel box. To trigger remote devices the installer may use one of the on-board relays or an auxiliary low current relay. (Such as the MPI-206 SP)

SW-1	Control Power On Control Power Off	Up= On Down = Off
LED1	AC Power Indicator	On=Pwr On Off=Pwr Off
LED D-24	Telephone #1 Active	On = Active
LED D-28	Telephone #2 Active	On = Active

OPTIONAL RELAYS

K5	Hardware enable for telephone line # 2 (part # AR101)	Insert to enable Telco. L2.
K8	Low Battery cutoff (part # AR100)(Install 4 pin down)	Insert for Low Battery cutoff.

Note: The installer must remove the J-17 prior to installing the relay and powering the control up.

2 Operating the System

After all connections have been made and checked thoroughly, the control may be energized by connecting the AC and the Battery terminals. For best operation during bench testing, all zones should be terminated with the 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 AREA's. The factory set program is designed to assign all zones to a single AREA (#1). This is the most common mode that the system will be used. **This section of the manual will demonstrate examples of power up, arming and disarming, user menu operation and User Level Programming with the LCD and LED Control Stations.**

Powering up with the LCD Control Station.

THIS IS KEYPAD # 1	**CONTROL STATION ID #**
Z2000 **1 KEYPAD INSTALLED**	

Upon powering up the control for the first time, the above prompts will appear. While the control performs self-diagnostics and establishes contact with all control stations and devices each LCD control station should display its installed ID number (see prompt). This identification number will correspond to the DIP switch setting on the back side of the control station (discussed in section 1). Should you experience any difficulty during power up then turn the power switch off and re-check the DIP switches on the control stations. Six control stations of either the LCD or LED type may be used in any combination.

Once the zones are in a secure state, the LCD screen will display the following prompt:

SYSTEM READY TO ARM
ARM DISARM

The "ARM" or " DISARM" command will appear above the appropriate soft keys.

***NOTE:** The word **" SYSTEM"** in this example is the name given to the AREA that can be affected by this control station. The word "SYSTEM" may not actually appear. An appropriate name will be programmed in this field at the time of installation. Detailed discussion of PARTITIONS and the alpha numeric entries are discussed in the programming section of this manual. This section discusses the operations of the User Menu.

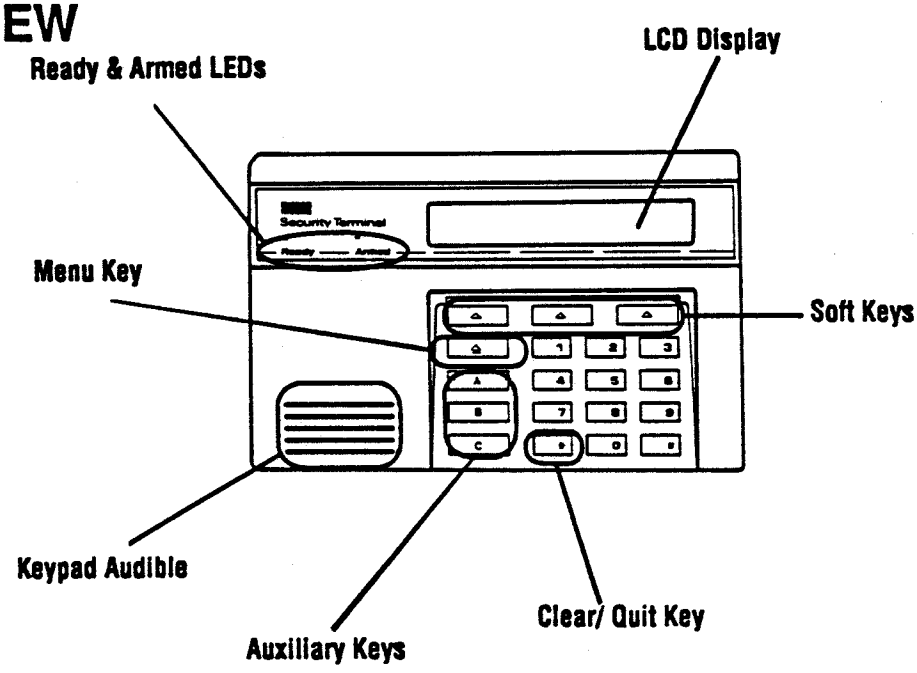
Menu Key
One of the guidance tools on the LCD Control Station is the ***Menu Key*** .(See LCD Overview on next page) When pressed, **the Menu key will cause the LCD to display a list of Control Options which will change each time the user/ installer presses this key.**

Soft keys.

The control station is equipped with three ***Soft keys***. These keys are centered below the LCD screen and point to the items that display on the screen when user operation choices exist. Each soft key corresponds to a Control option displayed immediately above the key. When an item is selected **by pressing the corresponding soft key, additional sub-options such as NEXT, CLEAR, QUIT, ENTER, RESET , CHANGE, and YES appear to further assist the user.** If no option appears above a particular soft key, then that key has no function in the displayed menu.

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. Most 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 with a brief explanation of the options the user may begin operating the system immediately. For the purposes of discussion the Installer and the End Consumer will both be considered users but have different levels of authorization.

LCD OVERVIEW



Ready & Armed LEDs — The Ready LED will illuminate when all burglary defined circuits within the AREA assigned to this control station are in a secure state. The armed LED will illuminate while the system is armed, and will flash after a burglar zone has been violated during the armed cycle.

Menu Key — The menu key allows the user to scroll through the system menus. This allows the user to have access to the system options.

Keypad Audible — The piezo resonator will activate for conditions such as entry and exit notification, alarm, trouble, chime etc.

Auxiliary Keys — When programmed, these keys can activate auxiliary condition alarms. (Panic, Fire, Emergency Etc.)

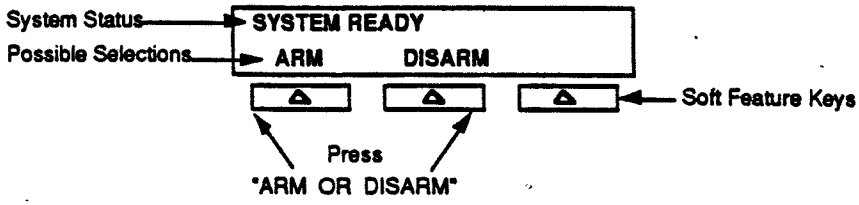
Clear/ Quit Key — The " * " key is used to reset code entry errors and to allow the user to quit out of a menu. This key can also reset the flashing alarm memory indication of the Armed LED. Pressing and holding the (*) star key for 3 seconds acts as the reset key for all system TROUBLE DISPLAYS.

Soft Keys — The soft keys allow the user to select the options appearing on the LCD screen immediately above them.

PREV — This option displays when the user may access the previous display with the soft key.

Keyboard Backlighting — The control station contains recessed leds which provide courtesy light.

System Arming / Disarming



1.) To arm or disarm the control, the user must **press** the soft key below the word **"ARM "** or **"DISARM"** displayed on the LCD screen. Upon entering the arm command the LCD will display the code entry prompt.

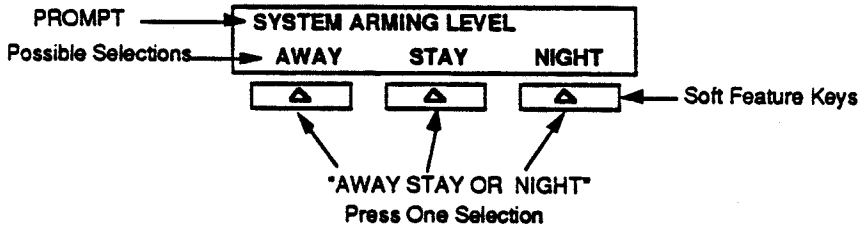
2.) Enter your **code.**

As each digit of the code is entered the LCD will display **cursor blocks and the keypad will emit beeps** which acknowledge the entry of the digit. The volume of the beeps may be increased or decreased. (See keypad options, User Level Programming in this section.)

ENTER PASSCODE ▮▮▮▮▮
CLEAR ENTER (FACTORY SET CODE = 12345)

3.) Press the soft key below the **"ENTER"** prompt. The display will advance to the next screen. If an error was made when entering the code, the soft key below the "CLEAR" prompt may be selected to return to the "ENTER PASSCODE" prompt, otherwise the LCD screen will return to the "SYSTEM READY " status screen. The "CLEAR" option must be selected before selecting "ENTER". If the code is valid the next LCD prompt to appear will be the arming level Display

4.) Select of one of the following options: **"AWAY "** , **"STAY "** or **"NIGHT ". Press the soft key** corresponding to the desired level, the user can specify whether full or partial detection is to be used and whether or not the delay zones are instant activating.

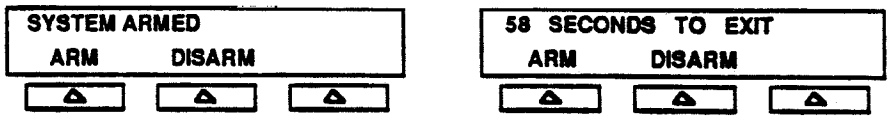


AWAY instructs the control to **completely** arm all detection devices.
STAY instructs the control to arm perimeter zones only. **Interior zones are bypassed.**
NIGHT instructs the control to arm **all perimeter and specified interior zones.**

The zone definitions which specify the operation of zones and how they will operate under each arming level is discussed in the programming section of this manual. (See Menu M3 Zone Definitions in Section 3, Programming . . .)

After pressing the soft key corresponding to the desired Arming Level, the control will arm and display the selected level followed by the exit time remaining. The exit time will count down audibly and visually, if so programmed. The exit delay sound of each control station may be turned on or off. (See Menu M2 Keypad Definitions in Section 3, Programming . . .)

1st Screen, then



The intrusion (burglary) alarm may be activated by violating any of the burglary defined zones. Zones defined as delay will allow entry time to expire prior to activation. During an alarm activation the LCD will alternate between 2 display prompts. The first screen is the intrusion screen and the second is the zone identification screen.

What To Do If The Alarm is Sounding

1st Screen, then

Press key and enter your code

1. Press the **SILENCE** key.

2. Enter your **code.**

3. Press the **ENTER** Key.

Note: **If an error is made while entering the code, press CLEAR and re-enter the code.**

4. You may **press** the soft key corresponding to **TIME** to display the time and date that the system alarmed. Press **QUIT** to exit and return to the normal mode.

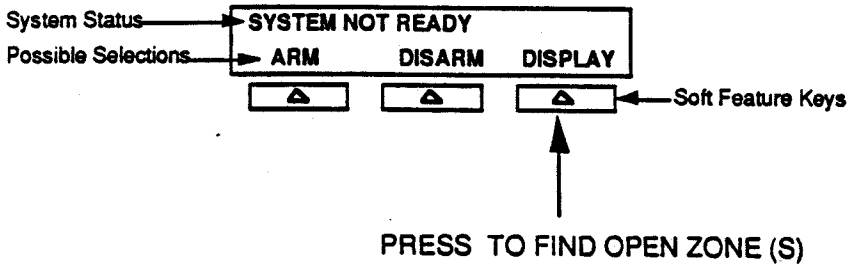
NOTE: **The customer should be advised that upon returning to the building it is discovered that an alarm has occurred, DO NOT ENTER THE BUILDING. Proceed immediately to the nearest neighbor and telephone the proper authorities for help. If the system is monitored, consult the central station for event time and activities.**

WHY DOES THE LCD SHOW AN "ARM" AND "DISARM" PROMPT WHEN THE SYSTEM IS ALREADY IN THAT STATE?

When **" Multi Area codes"** is enabled and one or more of the areas is armed while another area is disarmed (provided that the control station is assigned to all of the areas involved) the prompt will display both the Arm or Disarm prompt. When single area operation is selected and there is no need for both commands to appear simultaneously, then the Arm or Disarm prompt will appear as necessary.

System Not Ready To Arm

When one or more detection zones are open (ex: a door ,window or motion detector is open), the display will indicate .... **"SYSTEM " NOT READY.** The display will also provide the option to **DISPLAY** the name of each open zone.



next consecutive zone. When all zones have been identified, press **QUIT.**

2. Attempt to correct all zone(s) that are open by checking appropriate doors, windows, etc.

3. The system can be programmed with the option to temporarily bypass open zones permitting the rest of the system to be armed. After selecting **ARM** the display will indicate that the system is not ready and may provide the option to **FORCE** arm or **BYPASS** the open zone provided that the installer has enabled this feature.

4. Upon selecting **ARM,** the control station will prompt the user for the proper authorization code. In addition to the conditions imposed in step 3, the user code must be of a sufficient authorization level to arm in these circumstances. (User passcode Authorization is discussed in the Section 3 of this manual)

Note: Bypassing zones reduces the degree of security designed for your building. Do not instruct temporary users how to use the bypass function.

Alarm Memory— After bell cutoff time has expired for an intrusion alarm, a Quit menu will display. The menu will display the intrusion zone that has been activated and the armed LED will be blinking. This is an alarm memory indication and will be reset when the soft key corresponding to the Quit option is pressed.

Menu Scroll Key

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 can activate that function. After the desired option has been requested, the user will be 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. The display options include:

1st Menu Key Press

RESET ALARMS	VIEW STATUS	ENABLE CHIME

2nd Menu Key Press

EVENT HISTORY	SYSTEM TEST	EXTEND CLOSING

3rd Menu Key Press

SCHEDULE EVENTS	PROG OPTIONS	SMOKE RESET

A description of the purpose of each of the features in the main user menu follows:

Note: The user passcode must be of sufficient Authorization Level to perform all of the functions listed.

RESET ALARMS : This option is used to reset any type of alarm. Alarms such as 24 hour, Burglary, Fire, Silent Panic or Hold-Up activations may be reset without having to arm or disarm. A good example of the use of this feature is following an activation of a Fire alarm. The alarm may be silenced but it is usually not reset until the premises have been checked. The user passcode can reset the alarm condition **without having to disarm the system.** Another common use of this option is to reset the Silent Hold-Up alarm. This type of alarm doesn't provide any visual or audible indication and MUST be reset before it can be activated again.

VIEW STATUS : This option allows you to view the present status of each zone and area. While viewing zone status you may be permitted to bypass any zones, If the zone(s) are defined as bypassable.

Note: Bypassing burglary zones in armed areas is not permitted. You must disarm first, bypass the zone and then re-arm.

CHIME MODE : The chime mode provides an audible annunciation from the control station(s) when certain doors and windows are opened while the system is disarmed . The feature is commonly used for residential door annunciation or as customer entry notification in retail establishments. The display screen on this feature begins similar to the Status screen. Pressing the "CHANGE " option soft key will turn the chime on or off.

EVENT HISTORY: This feature permits you to display a limited number of past events from a special event memory. This memory will display events such as (Openings / Closings, Alarms, Troubles, and Access) which the user passcode is authorized to see. Along with the type of event, the log will contain information such as: Date, Time , User passcode, Zone etc. Events are stored in a first-in, first-out basis. After pressing the corresponding soft key and entering your user code you will be prompted.

" START WITH MOST RECENT ? "
QUIT YES NO

Selecting **"YES"** will begin the list of events with the most recent. Pressing " NO" will prompt the user for the date that the list should begin. "Quit " will return the display to the previous menu. When the desired Event is displayed on the screen, additional information such as user passcode name, zone name, date, and time may be viewed by using the " DISP ", " PREV." or " NEXT" prompts.

SYSTEM TEST: When selected, three test options will appear on the LCD screen, "VOLT AMPS," " WALK TEST ", and " BATTERY TEST ". The "VOLT AMPS" feature will display the current system operating voltage and current consumption. The " WALK TEST " function will display and annunciate any zones violated while in that mode. (Only the control station being operated will annunciate the tones and display. The tones cease with the restoral of the zone, however the display continues until the " **Quit** " option is selected). The " BATTERY TEST " function will display the battery voltage. (Low battery is 11.2 Volts or less.)

EXTEND CLOSING: If scheduled closings have been programmed, this permits the user to extend the closing time (system or area arming) which was established for the premises. When the user selects this option, the LCD will offer a menu of areas which the user code is authorized to operate. An authorized user may change the settings of the scheduled closing for that day. The master user code is required to permanently alter the regularly scheduled events in the Schedule Events menu option.

SCHEDULE EVENTS: Allows the master user to setup or alter the schedule for the area's opening and closing times. The schedule will be set up on a weekly (7 day) cycle. The control may be instructed to Automatically Arm and Disarm the control or Area. The control may be instructed to expect the user to Arm and Disarm within specified times in the schedule. Compliance or failure to comply will be reported to the central station provided that the installer enables the necessary report code fields. (Time is programmed in 4 digit Military time, days are selected as digits 1-7).

PROG OPTIONS: This menu allows entry into the User Programming Mode. After pressing the soft key below the Prog Options prompt, the user must enter the Master User Authorization code. (Authorization Level 14 or 15). Upon entering this code followed by the **ENTER** soft key, the screen will display:

SMOKE RESET: This option allows the user to reset the latched smoke detectors after a fire alarm has been activated and the situation has been brought under control. (When selected the smoke power will disconnect for 20 seconds.)

KEYPAD	**USER**	**SET**
OPTIONS	**CODES**	**CLOCK**

User Programming

The user programming mode may be used for changing certain features of the Security System. Among these are the ability to add, change, or delete user codes. User codes have different levels of authority. The user can not change the authority level of the codes which the installer has programmed. The User Codes which can perform User Level Programming are those which have the highest level of authority. For your protection only a Master User Code will allow access to the user programming mode. The Authority level hierarchy will be discussed in section 3. This section is limited to those features which a master user code can affect. The factory set (default) master user code (12345) has been programmed for these examples.

Entering into User Programming Mode

To enter into user programming the following steps should be used.

1. Press the menu scroll key three times to obtain menu 3.

2. Press the soft key Corresponding to **PROG. OPTIONS.** The display will read:

   ENTER PASSCODE
   CLEAR **ENTER**

   Note: Program mode exits automatically after three minutes of no key entries.

3. Enter your Master User Code and press **ENTER**. Press **CLEAR** if you accidentally enter a wrong digit. Once the proper code has been entered the LCD screen will display the following options above the soft keys:

KEYPAD OPTIONS	**USER CODES**	**SET CLOCK**

KEYPAD OPTIONS
Pressing the soft key corresponding to the keypad options will bring up the following sub-options:

ADJUST BEEPS	**ADJUST LAMP**	**VIEWING ANGLE**

ADJUST BEEPS: Allows the operator to control the volume of the control station. Upon selecting the softkey corresponding to this option, the present setting will be displayed along with the **MORE** and **LESS** options. Pressing the soft key below the More or Less Prompt will increment the numerical value until the limit is met. Range = 0 - 10 (0 = silent keypad and 10 = maximum volume). **This option will not inhibit the annunciation of trouble signals.**

ADJUST LAMP: This sub-option allows the operator to set the active and standby light brightness setting. As with the Adjust beeps option the range is incremental with the **MORE** and **LESS** commands. The standby state is when the system is dormant. Once the user makes entries at the control station or an alarm activation occurs, then the control station will become active. A brighter light may be necessary for active state while a lower light will be desired for standby (especially in bedroom applications). Range = 0 - 15. 0 = no light. 15 = maximum brightness. **This feature is available only on the 5100.**

Note: To reduce unnecessary current consumption of power by the internal light bulbs it is suggested that the control stations use only the minimum setting that allows the user to see the keys comfortably.

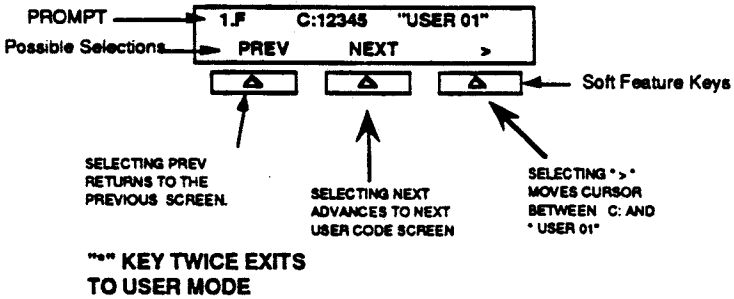
VIEWING ANGLE: As with the previously discussed options, the Viewing Angle is incremental using the **MORE** and **LESS** commands. More moves the viewing angle higher while Less lowers the angle. While this feature is helpful for customizing the control station, the installer should consider the individual customer's needs before placing the control station.

USER CODES

To program the user codes from user programming level, step 3 of Entering User Programming should precede the following:

1. Press the soft key corresponding to the **USER CODES** Option.

The screen will now display the programmed information of the first available User Code . (**Attention, Partitioning Note:** If the master code does not share the same area assignment as the user code then that user code will not be displayed.)



(1.F) is the Area / Authorization level Assignment. Area 1, Level 15 (F). The **C:** prompt is the code field. The user code is displayed here. The Arrow prompt (**>**) corresponds to the cursor (the flashing character) which shows where the present input is targeted.

2. To locate another user code, press **NEXT.**

3. To change or add this code enter the new digits. (As you enter digits the Clear and Store prompts will appear)

4. Once the desired digits have been entered, press the **STORE** soft key. The new code is now programmed.

USER NAME

1. To program the User Name press the soft key corresponding to " > ". Visually inspect the flashing cursor to assure the text insertion point is at the beginning of the user name field. (USER 01). Once the cursor is inside the " " marks, the entries will appear in the letter format discussed below. The field size is eight characters long. Abbreviate where possible.

2. Press the digit keys corresponding to the desired Letter or character as shown in the chart.

3. Once the desired entry is displayed, press the **QUIT** soft key.

The name field uses the numeric keys for alphabetical input. An entry of 2 will display "A". Pressing the 2 key again will advance to " B ". The keys correspond to the alphanumeric association on the telephone Touch-pad. 2 = "ABC", 3 = " DEF " etc. Once the desired letter appears, advance the cursor by pressing the "> " (arrow) key. On the next page is a table of the character assignment and the keys to which they correspond.

NOTE: The installer may wish to use the first two characters to identify the user code number since the LCD does not display this information.

NOTE: Other name fields for the Keypads, Areas and Zones will be discussed in section 3. Each of these fields is contained in a specific menu however the method of programming this field is the same. The (#) sign will activate a vocabulary in any of these field programming sections, but the vocabulary is descriptive of locations commonly used in residential and commercial installations and would be inappropriate for the user name field. Pressing the (#) sign once will activate the vocabulary. Pressing the (#) sign a second time will display the **INSERT / DELETE** mode which allows the operator to alter the existing entry without starting from scratch.

Note: When Quit does not appear on the menu selection, the (*) key will quit for that screen.

Deleting A User Code

1. When it is desired to delete a user code the installer or user may enter into the program options menu, enter the Master code and select the User Codes option. After arriving at the desired code with the help of the " **next** " softkey, the installer / User may enter a 0 and select "**Store** ".

Programming A Temporary Code

An optional feature of the system allows you to assign a code which is restricted in arming. This code may be assigned to a baby-sitter, maintenance person, maid, or anyone that you would like to be able to arm and disarm your system only when you authorize the code to work. This prevents you from having to give out your regular code.

After the temporary code has been used to arm the system, it will work as an arm and disarm code until the regular user code is used. At this point the temporary user code will no longer arm and disarm the system.

The same code can be re-enabled at a future time by an authorized user. It will not be necessary to re-program the actual code unless you have deleted it or just wish to change the code itself.

Using a Duress Code

The installer may enable the Duress Code feature. When this code is used to arm or disarm, the system will arm or disarm normally and send a special panic report to the central station. The central station will respond accordingly.
The installer must set all necessary parameters for the duress code to function properly. This includes setting the authorization level (section 3), enabling the duress reporting code and instructing the user on the proper use of this code.

It is very important to test the Duress Code after programming.

Set Clock

The third user program option permits the system internal clock to be set. For security reasons, only a Grand Master User Code (Authorization Level 15) or the Installer Code is allowed to access this option. This prevents the clock from being modified by multiple Master User Codes when the Area (partitioning) feature is utilized.

Each Area can be assigned its own Level 14 Master User Code for other programming purposes, while a single Grand Master User Code (level 15) controls the setting of the clock.

LED Keypad Operation

This type keypad allows you to operate the control in a very simple manner and is limited to **AWAY** level arming. The keypad can arm, disarm and view the Ready, Armed, and Trouble Status of the system or area of the system that is assigned to the keypad. This keypad may also used in a system where limited or restricted access to specific areas of the protected premises is desired. This keypad is applicable for smaller areas and installations when the advanced features are not necessary.

Before the System/Area can be armed, the Ready LED must be lit.

1. To arm or disarm, enter the user authorization code.

2. Press the (#) sign.

The control will now arm the Burglary detection system. The armed LED will now be lit and all pre-programmed entry and exit times will be in effect. Disarming is done by repeating steps 1 and 2.

Note: If a zone is violated when the arming sequence is entered, the keypad will emit a 2 second protest tone. If the Force arming feature is enabled, the user may press the (#) key a second time and the system (or area) will force arm. This bypasses the violated zone (s) and activates the other burglary detection devices assigned to the keypad.

STATUS LED: This LED will be lit when all zones assigned to this keypad are in a secure state. This indicates the control is ready to be armed.

ARMED LED: This LED will be lit when the burglary detection system assigned to this keypad is active.

ALARM LED: This LED will be lit when the burglary detection system assigned to this keypad has detected an intrusion. (See warning below.)

WARNING ! An intrusion may have been detected and the premises may be occupied by unauthorized persons. Advise the customer not to enter the premises without having consulted the responding authorities.

TROUBLE LED: This LED will be lit when the system detects a condition which warrants attention. Conditions of this type include but are not limited to AC power failure, Low Battery, Smoke Detection Circuit Trouble, Supervisory trouble on specially programmed devices, etc.

Auxiliary Panic Zones

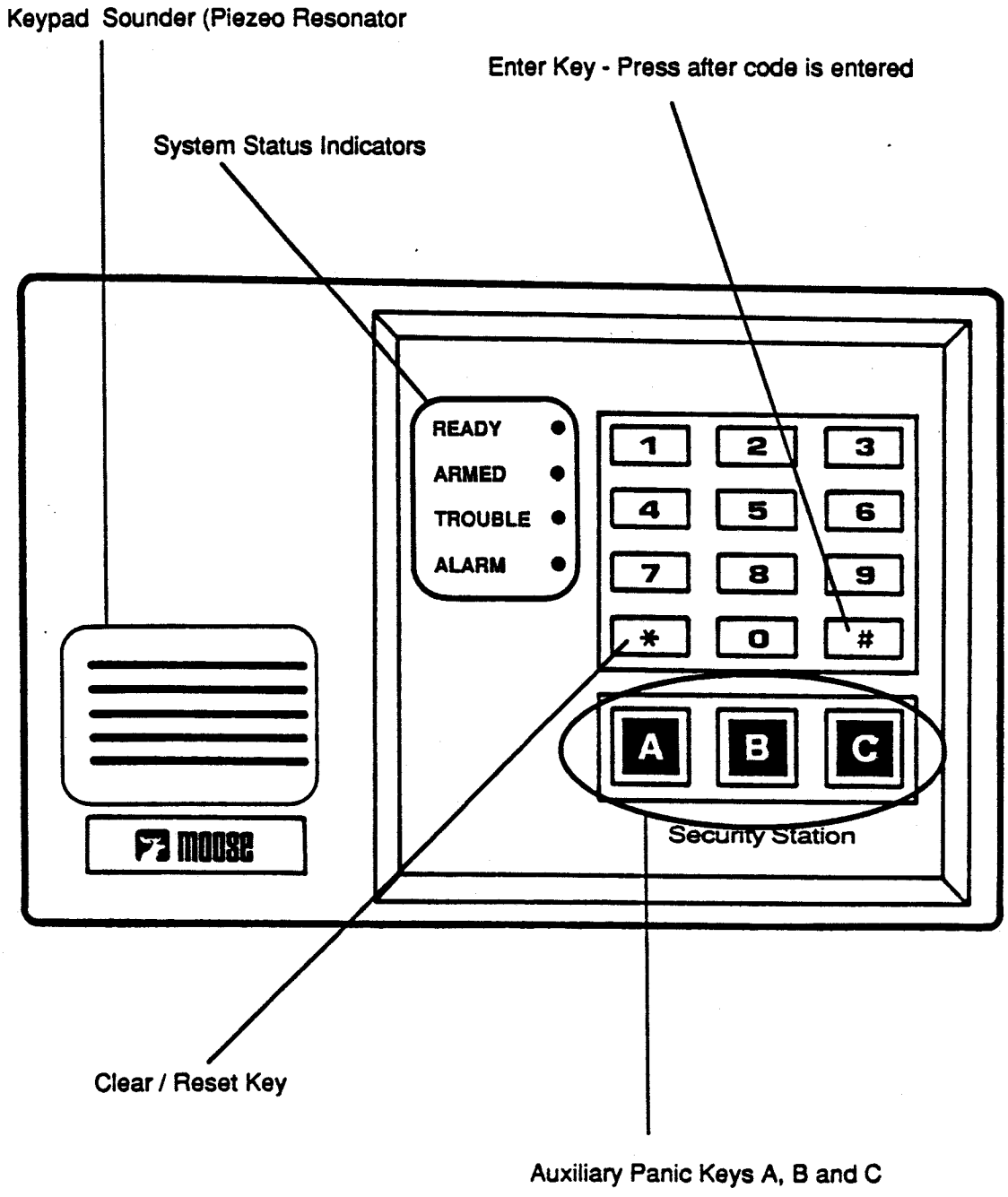
To Activate Any Enabled Auxiliary Panic Zone

1. Press Auxiliary panic key **A**, **B**, or **C** and hold for three seconds.

Note: The system may be programmed for non-indicating and/or silent Hold-Up zone operation.

To Silence And Reset Auxiliary Zones

1. Enter the user authorization code.
2. Press the (#) sign.



Programming The Control 3

Introduction

The Z2000 Control may be programmed locally from a Z2100 LCD Control Station or remotely from an IBM PC using a Hayes Smartmodem and the Remote Programming Manager " RPM " software. Local programming uses a powerful yet friendly MENU driven interface. Local Programming may be locked-out to provide Anti-Takeover protection.

Local Programming

There are two levels of programming the control locally, User Level and Installer Level.

User Level programming provides the ability to add, change, or delete user passcodes and also allows options related to the control stations to be set. A Master User Code is required to access the user programming level. User programming is explained in the OPERATION section of this manual. (See section 2 of this manual.)

Installer Level programming allows total customizing of the control's operating features. Only the Installer Code may access this level. **If the Installer Code is lost or forgotten, it will be impossible to program the control locally, as there may not be means of factory defaulting or entering the programming mode through power-up unless prearranged by the Installer.** In this event, the Remote Programming Manager "RPM" software would be the only means of programming. However, RPM can only access programming remotely if all the necessary options have been previously setup, I.e. auto-answer, control ID code, callback number (if required), and agency code (optional). To " lockout " or prevent takeover of a control by another installation company it may be desired to delete the local Installer Code intentionally after setting up the RPM options. **Anyone attempting Installer level programming should be familiar with the contents of this publication prior to programming the control panel.**

Remote Programming

Remote programming utilizes extensive error checking and safeguards for security, including data encryption, password log-on, control and agency ID codes, and optional call-back.

The " Control ID Code " is used by RPM to identify the Control (or customer) during initialization of a remote session. While it is possible for the Installer to view and/or edit this code, RPM must assign the actual ID Code to be programmed. This will be done whenever the customer is setup on the RPM database.

The "Agency Code " is used by the Control to identify the Remote Programmer during initialization of a remote session. This code is hidden from the installer for security purposes and can only be programmed into the System by the Remote Programmer. The Agency Code is used to prevent takeover of the control by another RPM computer. This code can only be deleted by the RPM or by initiating a RESTORE DEFAULTS to restore all of the defaults to the factory setting. Except for this "Agency Code", RPM is not restricted by the local Installer " lockout " or anti-takeover protection.

Remote programming requires a copy of the Remote Programming Manager software "RPM', an IBM PC, and a Hayes Smartmodem 1200 or 2400. The minimum requirements from the computer should be: 640K of RAM memory, a 10 MB Hard Disk (or larger), and MS-DOS ver. 3.2 or higher.

Area Partitioning

The Z2000 may be divided (partitioned) into 1 to 3 independent "Areas." To the customer, each area will appear 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 Control Stations may be assigned to any Area up to the maximum number available.

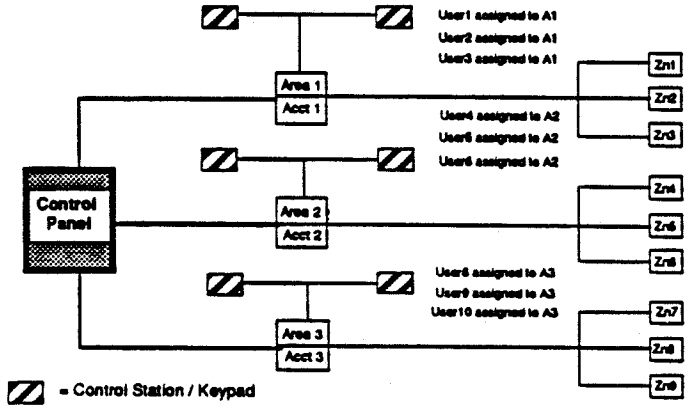
When reporting to the central station, events such as AC Power Failure, Low Battery, automatic tests, etc., are considered System Reports and will be transmitted as Area 1's account and displayed on Area 1's Control Stations.

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 shall be located so that it can be heard by all partitions.

An example of a partitioning application is a business which 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 department will be assigned an area with a number of zones, codes, and control stations. When an area experiences an alarm or other event, the adjacent system areas will not be alerted to the event since the control station 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 Control Station. 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 that he or she is assigned to. 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 is desired 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. 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.



Each area may have a separate account number at the central station and may report to two recievers 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 recievers as well. Ex. Open / Close reports may transmit to rec. A and alarm activity may transmit to rec. B.

1. Maximum Zones =24
Any number of zones may be assigned to any area in any sequence

2. Maximum Users =50
Any number of users may be assigned to any area with ability to operate other areas if desired.

3. Maximum Keypads / Control stations =8
These may be assigned to any area with ability to operate in other areas if desired.

How To Program

The following pages discuss how to enter the programming mode and to program the various features, functions, and options on the control. Due to the length of the material, we will only discuss a single area example.

To enter Installer Level Programming follow these steps.

1. Scroll through the menu options by pressing the menu key repeatedly until **PROGRAM OPTIONS** appears.

2. Press the soft key titled **PROGRAM OPTIONS**. The display will change to:

   ENTER PASSCODE
   CLEAR **ENTER**

3. Enter the Installer Code 96321 (this is the factory setting and may be changed). * To Exit Prgm

   NOTE: We recommended that the Installer Code be changed from the factory setting for security against unauthorized programming changes. Local Installer Programming may optionally be LOCKED-OUT to prevent unauthorized takeover by another security company. Refer to the section titled "ANTI-TAKEOVER, INSTALLER LOCKOUT.

4. Press the soft key titled **ENTER**. The display will change to :

   KEYPAD **PROG** **SET**
   OPTIONS **PANEL** **CLOCK**

5. Press the soft key titled **PROG PANEL** to begin Installer Control Panel programming.

The first programming menu, M1: AREA DEFINITIONS will now be displayed. **(See Exception Below)**

M1: AREA DEFINITIONS
PREV **NEXT** **SELECT**

******* EXCEPTION *******

If the control is new, or if the programming has been restored to factory defaults, there will be an additional step (question) after the PROG PANEL soft key is pressed. This additional step is required to configure the programming database (memory) of the control where the Area feature (partitioning) is to be utilized.

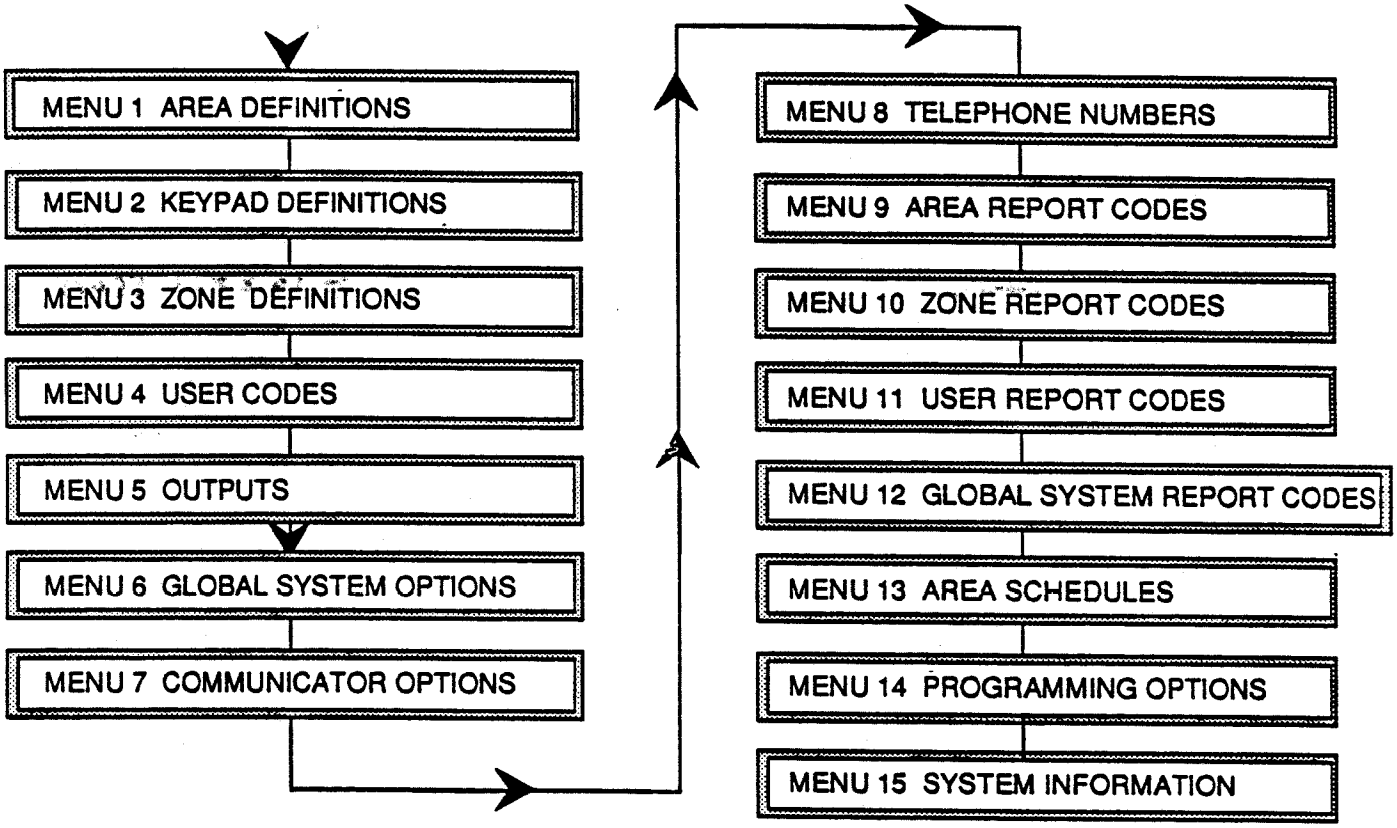
The question: **ALLOW MULTI-AREA CODES?** will be displayed.

Consider this question carefully. If the answer is **YES**, the control will be configured to allow User Codes and Keypads from one area to be assignable to operate and display information about other areas. If this is NOT the type of operation desired, answer **NO**. Typically, in a multi-department installation, it would not be desired for users from one area to be able to operate another area, therefore the answer would be **NO**. This limits the system so that the User Codes and Keypads may only be assigned to a single area. However, it might be desired to allow a person from one department to operate the security of another department, in which case the answer should be **YES**. Once this question is answered, it cannot be changed until the entire programming database is factory defaulted, thereby erasing any customized programming.

NOTE: The other two available options are for customizing options related to the control station and for setting the controls' real time clock. These options function exactly as shown in the User Programming section of this manual.

PROGRAMMING MENUS

MAIN MENU FLOW CHART



SOFT KEYS USED DURING PROGRAMMING

QUIT This key is available at the top level of all menus, and is used to exit (backup) out of the programming. In some lower levels of menus, this key is available to backup to the top level.

NEXT This is the most common key in programming and is used to step forward from one screen or menu to the next.

SELECT This key is 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 memorize (store) the data in permanent memory.

CHANGE This key is available with options which display either a Yes or No choice. With each press of this key, the currently displayed choice will be changed.

CLEAR This key is used to erase an incorrect digit entry.

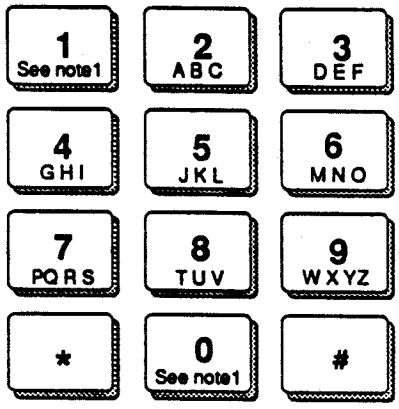
PREV This key is available from lower levels of menus and is useful for backing up one item (level) at a time.

---> Cursor control key 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.

NOTE: After becoming familiar with the Menu Structure, installers should read about the powerful "navigation" abilities and System Considerations which are explained on page 58 of this Programming section.

PROGRAMMING NAMES USING THE BUILT-IN 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 will produce an "A" character. Pressing 2 again will produce a "B", and so on. The keys and characters correspond to the alphanumeric association on a telephone touch-pad; the 2 key = A, B, & C; the 3 key = D, E, & 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 will now produce the words that correspond to each letter. Pressing the pound "#" key a 2nd time will produce soft keys for **INSERT**ing or **DELETEing** spaces or characters.



Close Quotes
Moves Right side quotation mark to the cursors position.

Word Mode/Insert Mode
Used only by installer, press # key repeatedly until normal screen appears.

KEY	CHARACTER
1	1 2 3 5 6 7 8 9 : ; < = > ?@!"#%&'()*+,-./
0	{space} ' _ ! " # $ % & ( ) * + , - . /

All other keys produce the displayed charaters.

BUILT-IN LIBRARY OF WORDS

A (2)
ALARM
AREA
ATTIC

B
BACK
BAR
BASEMENT
BATHROOM
BEDROOM
BELL

C
CAFETERIA
CARPORT
CEILING
CLOSET

D (3)
DELAY
DEN
DETECTOR
DINING
DOOR
DOWNSTAIRS
DRIVEWAY

E
EAST
ENTRANCE
EXIT
EXTERIOR

F
FAMILY
FIRE
FIRST
FLOOR
FOYER
FREEZER
FRONT

G (4)
GARAGE
GLASS
GUEST

H
HALL
HOUSE

I
INFRARED
INSIDE
INTERIOR

J (5)
JANITOR

K
KITCHEN

L
LAUNDRY
LIVING
LOBBY
LOWER

M (6)
MAIN
MASTER
MAT
MOTION
MICROWAVE

N
NORTH

O
OFFICE
OUTSIDE
OVERHEAD

P (7)
PANIC
PASSIVE
PHOTO
PIR
PLAY
POLICE
POOL
PRESSURE

R
REAR
ROOF
ROOM

S
SAFE
SECOND
SENSOR
SHOP
SIDE
SKYLIGHT
SLIDING
SMOKE
SOUTH
SPRINKLER
STORAGE
SYSTEM

T (8)
TAMPER
TRAP

U
ULTRASONIC
UPPER
UPSTAIRS
UTILITY

V
VALVE
VAULT

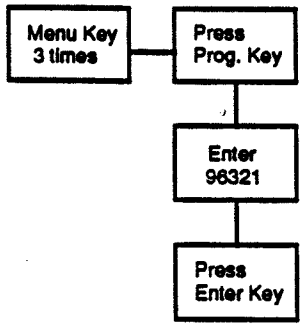
W (9)
WALL
WAREHOUSE
WATER
WEST
WINDOW

Y
YARD

Z
ZONE

( ) Indicates the key to press to begin words with that letter.
Key "0" is used to obtain a space and hyphenation characters.

ENTERING PROGRAMMING (See programming pg. 27)



MENU 1

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu, **QUIT** will exit programming. Another screen will then appear for choosing which area to program.

Press **SELECT** to program Area 1. **NEXT** will proceed to the next area. **QUIT** will exit to the top of this menu. Area 1 menu is typical of every area definition menu. Below is a list of the descriptions and factory default settings for Area 1.

ITEM		NEW VAL.	DESCRIPTION
1	A1: "Z 5000"	_____	Area Name (up to 10 characters). Refer to Programming Names on page 29 using the text editor.
2	A1: EXIT TIME = 60	___	Exit delay time in seconds for Delay and Interior follower defined Burglary zones. The valid range is 0-255.
3	A1: ENTRY 1 TIME = 20	___	Entry delay time 1.The amount of time in seconds to enter Burglary zones defined as Delay 1. The valid range is 0-255.
4	A1: ENTRY 2 TIME = 40	___	Entry delay time 2. The amount of time in seconds to enter Burglary zones defined as Delay 2. The valid range is 0-255.

⇧Application Note:
Using an entry time (1 or 2) that has been set to 0 will result in a zone with no entry time. If the exit time is a value greater than 0 then the result will be a zone which allows time for exit but not for entry.The other entry time can be used for zones which require entry time.

5	A1: KEY A DEF. = 2	___	Used to define the condition to be activated by the Panic Key A on the control stations in this area. The value is a single digit derived from the following table. Select the definition for each key and enter the corresponding digit.

Note: The control will exit program mode after 3 minutes of inactivity.

Available Value Selection		Functional Description
0	=	Key Not Defined
1	=	Burglar Alarm
2	=	Fire Alarm
3	=	Holdup Alarm
4	=	Auxiliary Alarm/ Medical Emer.

NOTE: The installer may need to consult M1 to set up audible control station output for the above conditions.

6	A1: KEY B DEF. = 3	___	Used to define the condition to be activated by the Panic Key B. See selection above.
7	A1: KEY C DEF. = 4	___	Used to define the condition to be activated by the Panic Key C. See selection .
8	A1: SIL. KP ON BURG: NO	___	Option for eliminating the Control Station piezo sounder upon a Burglar Alarm.
9	A1: SIL. KP ON HOLDUP: YES	___	Option for eliminating the Control Station piezo sounder upon a Holdup Alarm.
10	A1: REPORT LOCKOUT = 0	___	Selects the number of communicator reports allowed by each zone in this Area. Valid range 0-15.
11	A1: AUDIBLE LOCKOUT = NO		Determines if the Intrusion output should be locked out after the first alarm for this Area. Resets with disarm. (Lockout is not timed.)
12	A1: ENABLE BYPASS: YES	___	Option to enable selective bypassing of any zone that is defined as Bypassable within this area assignment.
13	A1: FORCE ARM: NO	___	Permits the area to be armed with 1 or more zones faulted. The faulted zones will be temporarily bypassed and can return to operation if their fault is corrected. Only zones which are defined as Bypassable may be force arm bypassed.
14	A1: AUTO INTER. OFF: NO	___	Automatically turns off interior defined zones at end of exit delay if user doesn't violate a delay zone after arming, i.e.: no exit occurs.

15 A1: EXCEPTION OPENING: NO ___ Restricts Opening reports upon disarming after an actual alarm ONLY. (PREVENTS REGULAR OPENING REPORTS.)

16 A1: CLOSE w/RINGBACK: NO ___ Provides an audible response at the Control Station(s) upon receipt of a Closing signal by the Alarm Central Station Receiver.

Pressing **NEXT** will advance to the next Area.**Entering the " * " key twice will exit to the user mode.**

Pressing **NEXT from the main menu display** will advance the display to the next menu. Each main menu retains sub-menus for the individual items. For example: Area Definitions contains the separate sub-menus for area 1 through 8.

NOTE: When entering values into the menu items, the installer may be able to enter values which exceed the valid range of the programmed option. It is the responsibility of the installer to assure the correct value of any entry programmed into the control.

MENU 2

```
M2: KEYPAD DEFINITIONS
PREV        NEXT        SELECT
```

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu. Another screen will then appear for choosing which keypad to program.

```
KEYPAD 1 DEFINITIONS
PREV        NEXT        SELECT
```

Press **SELECT** to program this Keypad. **NEXT** will proceed to the next Keypad. **PREV** will display the previous menu. **Entering the " * " key twice will exit to the user mode.**

Every Control Station (keypad) must be assigned a unique "data address number". The "data address" is dip switch selected at the keypad. In programming or defining each keypad, the address number must correspond with the keypad that you wish to program. Each keypad definition consists of the following options:

ITEM		NEW VALUE	DESCRIPTION
1	KP1: "KEYPAD 1"	_____	Keypad Name (up to 8 characters) displayed upon non-silent Panic Key alarms. Refer to Programming Names.
2	KP1 A:1 E:1 . . .	___ E:. . .	Two options. The first option (A:) defines which primary Area the keypad is assigned. The second option (E:) defines extended area operation and is available **ONLY if the Multi Area Codes feature was selected** upon first time entry into programming. (Include the main area assignment in the extended area field.)
3	KP1 ENABLE PANIC A: NO	___	Defines whether Panic Key A is to be enabled on this keypad.
4	KP1 ENABLE PANIC B: NO	___	Defines whether Panic Key B is to be enabled on this keypad.
5	KP1 ENABLE PANIC C: NO	___	Defines whether Panic Key C is to be enabled on this keypad.
6	KP1 SILENT EXIT TIME = NO	___	This option silences the exit alert at the control station.
7	KP1 SILENT ENTRY TIME = NO	___	This option silences the entry alert at the control station.
8	KP1 ACCESS TIME = 5	___	Amount of time in seconds for an Access output activated from this keypad. The valid range is 0-255.0= toggle, 1-255= output time in seconds. The toggle access feature allows the output to remain on once activated until it is deactivated from the control station. The access feature is activated and deactivated at the control station by entering a "0" prior to a valid passcode with sufficient authorization. The output is typically used to activate electrically operated door strikes. NOTE this control is not listed with UL as an Access control system. The access feature should not be used in UL listed installations.

Pressing **NEXT after the last item in this menu** will advance to the next Keypad.
Entering the " * " key twice will exit to the user mode.

MENU 3

```
M3: ZONE DEFINITIONS
PREV        NEXT        SELECT
```

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu, **PREV** willdisplay the previous 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). The ARROW **"->"** key moves the cursor into the name field and advances one character with each entry. The control provides a built-in text editor and dictionary for this purpose. Whenever a zone is displayed on the Control Station, ONLY the custom name will appear. There is no zone number displayed unless a number is programmed as part of the custom description. This way, if the partition feature is utilized, each partition can essentially display consecutive zones numbers i.e.: Z1 through Z? regardless of the physical zone numbers. The physical zone number is never used except by the Installer. *Refer to pp. 29 Text Editor.*

Pressing **PREV** willdisplay the previous menu. After the zone name is complete, press **NEXT** to store the name. Press **NEXT** again to proceed to screen 2.

Screen 2

```
ZN 01:  A:1  D:1100
PREV        NEXT        -->
```

Screen 2 provides two entry fields. The first field (A:) requires a single digit entry to assign the zone to an area. The second field (**D:**) requires a four digit entry to define the zone operation. The ARROW **"->"** key moves the cursor into the **D:** definition field. The 4 digit Zone Code can be created from the following tables. Enter four digits until the field is complete, then press **STORE.**

NEXT proceeds to screen 1 of the next zone. **CLEAR** erases an incorrect digit entry. **STORE** completes the entry and stores the data in memory. Entering a number from 1-24 and then pressing **ZONE** will quickly navigate (jump) 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 charts on the following page.**

Entering the " * " key twice will exit to the user mode.

IMPORTANT NOTE:

Many of the menus require assignment of attributes (zones, users, Keypads and codes) to a main area. When partitioning is desired, it is necessary to include the main area assignment in the extended assignment field. This insures proper operation of the control.

Digit 1 - Defines the Zone Type

0	Null (Disables the zone completely)
1	Burglary
2	Fire 24hr
3	Holdup 24hr
4	Auxiliary C 24hr
5	Keyswitch (Momentary Only)
6	Communicator Report 24hr (CCM)
7	Tamper (24 hr Burglary)
8	Chime (Always) Regardless of Area Chime
9	Verified Fire*
10 (A)	Supervisory (Special Fire Trouble)
11 (B)	Universal ¥ (Digit 2 selects Univ. 0 or Univ. 1)
12 - 15	Future use

***Verified Fire** Upon activation of a Verified Fire the control will remove switched smoke detector power for 20 seconds and reapply. The control will ignore the loop for an additional 40 seconds. Subsequent Fire violations within 60 sec will alarm and communicate.

¥Universal The universal zone may be used to activate a programmable output zone. It is a local reporting only zone with **no reporting capability.**

Digit 3 - Defines Bypassing (0 or 1 ONLY)

0	Not Bypassable
1	Bypassable

Any zone can be programmed as Bypassable. Fire should not be programmed as bypassable.

Digit 2 - Defines the Response

0	Perimeter Instant
1	Perimeter Delay 1
2	Perimeter Delay 2
3	Interior Instant (Bypassed when armed in stay mode)
4	Interior Follower (Entry delayed after a delay zone violation) (Bypassed when armed in Stay mode)
5	Interior Nite (Bypassed when armed in Stay & Nite mode)
0	Universal 0 (Selects Universal 0 only when digit 1= 8)
1	Universal 1 (Selects Universal 1 only when digit 1= 8)

Note: Exit time applies to all interior zones.

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	Local Day Alert on Loop Open, Alarm on Open/ Short When Armed
4	Local 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, See J-18)

Fire defined zones should always use 0 in the second digit of the definition value.

Below is a list of the factory supplied Zone Names and Definitions of the first 16 zones in the Control.

Screen 1	Screen 2	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 10"	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 24. There are no pre-set factory default values beyond zone 16. Use the chart below to record the zone layout for this system.

NOTE: The installer should assign the zones consecutively according to the desired area. This will make troubleshooting and programming easier upon system upgrades and expansions.

Zone No.	Zone Description	Area Assignment	Zone definition
ZN 01:	_____	—	----
ZN 02:	_____	—	----
ZN 03:	_____	—	----
ZN 04:	_____	—	----
ZN 05:	_____	—	----
ZN 06:	_____	—	----
ZN 07:	_____	—	----
ZN 08:	_____	—	----
ZN 09:	_____	—	----
ZN 10:	_____	—	----
ZN 11:	_____	—	----
ZN 12:	_____	—	----
ZN 13:	_____	—	----
ZN 14:	_____	—	----
ZN 15:	_____	—	----
ZN 16:	_____	—	----

MENU 4

```
M4: USER CODES
PREV        NEXT        SELECT
```

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu.

Every User Code has two programming screens. Each screen displays the physical User Code "UC" number followed by the programmable entry fields.

Screen 1

```
UC 01: C:12345  "USER 01"
PREV        NEXT        -->
```

Screen 1 allows a 1 to 5 digit passcode, and a 8 character name to identify the User. The ARROW "->" key moves the cursor into the name field and advances one character with each entry. The control provides a built-in text editor and word library for programming the names. Whenever a user code is programmed from User Level Programming, ONLY the custom name will appear. No user number are displayed. This way, user codes are viewed and retrieved by looking for the user name. The physical user number is never used except by the Installer.The user code must not begin with "0". **Entering the " * " key twice will exit to the user mode.**

After the user name is complete, press **NEXT** to complete the entry. Press **NEXT** again to proceed to screen 2.

Screen 2

```
UC 01:  L: F  A:1  E:.....
PREV        NEXT        -->
```

Screen 2 is used to assign an Authority Level (**L:**), and primary Area assignment (**A:**). An optional Extended area capability (E:) may be programmed if the Multi-Area Codes feature was selected upon initial programming. The extended area selects the code's ability to control another area other than the primary area.

Level	Code can be used to:
0	Nothing. Code is Non-Operable
1	Operate the **Access** Feature ONLY (O key followed by Code activates the output assigned for this keypad).
2	**Arm** the control Only.
3	**Arm** the control - Operate the **Access** feature (O 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). When a temporary user is expected, arm with this code prior to leaving. The control can be disarmed and re-armed by the temporary user with this code. Once a regular user enters their code, the level 4 code will no longer disarm.
5	**Arm** with **Restricted Disarm**. This code can **Disarm** ONLY between the scheduled open and close 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 **System Test**.
12 (C)	**Arm** or **Disarm** + **Access** + **Bypass** + **System Test** + View **Event History** log.
13 (D)	**Arm** or **Disarm** + **Access** + **Bypass** + **System Test** + **Event History** + Modify **Schedules**
14 (E)	MASTER USER - **Arm** or **Disarm** + **Access** + **Bypass** + **System Test** + **Event History** + **Schedule** + **Program Codes** that belong to same primary area.
15 (F)	GRAND MASTER USER - **Arm** or **Disarm** + **Access** + **Bypass** + **System Test** + **Event History** + **Schedule** + **Program Codes** + **Set Clock.**

(Note: The ability to view Status begins with the disarm privilege.)

(Note: Access output requires entering O before the code.)

MENU 4

Example of Screens

Screen 1 UC 01: C:12345 "USER 01" **Screen 2** UC 01: L: 1 A:1 E: . . . . . .
PREV NEXT PREV NEXT

User Code	User Name	Auth. Level	Area Assignment	Ext. Area Operation
User 01	_____	_	_	_____
User 02	_____	_	_	_____
User 03	_____	_	_	_____
User 04	_____	_	_	_____
User 05	_____	_	_	_____
User 06	_____	_	_	_____
User 07	_____	_	_	_____
User 08	_____	_	_	_____
User 09	_____	_	_	_____
User 10	_____	_	_	_____
User 11	_____	_	_	_____
User 12	_____	_	_	_____
User 13	_____	_	_	_____
User 14	_____	_	_	_____
User 15	_____	_	_	_____
User 16	_____	_	_	_____
User 17	_____	_	_	_____
User 18	_____	_	_	_____
User 19	_____	_	_	_____
User 20	_____	_	_	_____
User 21	_____	_	_	_____
User 22	_____	_	_	_____
User 23	_____	_	_	_____
User 24	_____	_	_	_____

User 25	_____	_	_	_____
User 26	_____	_	_	_____
User 27	_____	_	_	_____
User 28	_____	_	_	_____
User 29	_____	_	_	_____
User 30	_____	_	_	_____
User 31	_____	_	_	_____
User 32	_____	_	_	_____
User 33	_____	_	_	_____
User 34	_____	_	_	_____
User 35	_____	_	_	_____
User 36	_____	_	_	_____
User 37	_____	_	_	_____
User 38	_____	_	_	_____
User 39	_____	_	_	_____
User 40	_____	_	_	_____
User 41	_____	_	_	_____
User 42	_____	_	_	_____
User 43	_____	_	_	_____
User 44	_____	_	_	_____
User 45	_____	_	_	_____
User 46	_____	_	_	_____
User 47	_____	_	_	_____
User 48	_____	_	_	_____
User 49	_____	_	_	_____
User 50	_____	_	_	_____

MENU 5

```
M5: OUTPUTS
PREV        NEXT        SELECT
```

This menu is used to assign the programmable outputs. The control is equipped with 10 programmable, on-board outputs. If more outputs are needed, 10 additional programmable outputs can be obtained by the addition of a Z2350 Zone Concentrator. The outputs on the control circuit board are assigned to positions 1-10. The outputs on the zone concentrators are assigned to positions 11-20.

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu, **Entering the " * " key twice will exit to the user mode.**

Output 1 is typical of every output. Each output is assigned a "condition" (I.e.: Burglar, Fire, Status, Alarm, etc.) and an "area" to which it should respond when the condition is active in that area.

```
OUTPUT 1  C:_  A:.....
PREV        NEXT        SELECT
```

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 of the area(s) to which the output should respond and press **STORE**. Do 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.

NOTE: If you select ACCESS as a condition, then the **A:** will change to **K:**. This is due to the Access being assigned by keypad rather than by area.

CONDITION TABLE			OUTPUT BECOMES ACTIVE WHEN:
1	=	Burglar alarm	a burglary defined zone 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 C alarm	an auxiliary C defined zone or panic key has been alarmed.
5	=	Tamper (24 hr Burg.)	a tamper defined zone or panic key has been alarmed.
6	=	Ready	all zones within the area assignment have returned to a non-violated state.
7	=	Armed	the area assigned has been armed.
8	=	Violation	any of the Burglary, Fire, Hold-up , Auxiliary or tamper defined zones have been alarmed. This output remains active until reset at a control station by an authorized user passcode.
9	=	Lamp	This output is a courtesy lamp trigger. It will become active for 2 minutes during entry, exit or alarm times and when a control station key is pressed. This output is most widely used to activate line carrier devices (such as BSR).
10	=	Trouble Indicator	This output becomes active with any loop or system trouble.

Note: If an output is defined as Ready for multiple areas, the output will become active for any single area which has

all zones in a non-violated state. Itwill not "**and** " (collectively represent)a general system ready condition.

11	=	Audible Trouble	This output becomes active when the F2500 detects a supervision trouble in the bell output circuit .
12	=	Chime Enabled Indicator	This output becomes active when the chime mode is activated for the area assigned.
13	=	Chime Output	This output is active with any violation of a zone which is enabled for chime mode during the disarmed state. The output pulses.
14	=	Switched Power Interrupt	This output is active for 20 seconds when a valid user passcode is entered to reset the switched smoke power (See also terminal 44). (Special circumstances apply for **Verified Fire**, see Zone Def. Menu 3)
15	=	Telephone line fault	This output is active when the F2500 detects that one or both of the telephone lines has failed.
16	=	Pre-Alarm	This output is active during entry time. The area must be armed and the violation of a delayed burglary zone must occur after exit time has expired.
17	=	Exit Alert	This output becomes active with the commencement of exit time after the area has been armed.
18	=	Access	This output will become active when a valid passcode is used after the "0" command has been entered. The output is keypad assignable and last for the time programmed for access time.
19	=	Communication Failure	This output will become active after the programmed number of dial attempts for either telephone number 1 or 2 has been completed in an unsuccessful communication of a reporting event.
20	=	Universal 0	This output will become active upon the violation of a Universal 0 defined zone.
21	=	Universal 1	This output will become active upon the violation of a Universal 1 defined zone.
22	=	Special Arm	When the system is armed with the properly configured user code, this output will become active. The same code or one of the same configuration must be used to disarm this system.
23	=	Fire Trouble	This output will become active upon a supervision failure in a fire defined zone. The output will restore with the correction of the zone fault.
24	=	New Fire Trouble	This output will become active for Fire Supervisions which occur after an initial trouble has been acknowledged but before it has been restored.
25	=	Closing Ringback	This output will become active for 5 seconds after the Central Station kissoff of the Closing signal.

NOTE: Some of the outputs listed are primarily intended for audible annunciators remote from the control stations. These include the entry and exit and chime outputs. Outputs of this type will closely mirror the activity of the piezo resonator on the control station. If the control station output is pulsed or steady, the programmable output will reflect that activity. Other outputs are intended to operate commonly used annunciation devices found in the industry. These may vary from led's to sirens. When 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. If necessary, the installer may be required 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.**

Universal type outputs are used in environmental and critical condition monitoring (CCM) activations. These are conditions where the installer wishes to annunciate or report a condition which requires supervision (local or remote) but does not require the notification of authorities. Some typical situations are : pump or motor failure, Freezer or Cooler failure or Temperature Alarms, Flood Alarm or Tank Empty Alerts and Humidity Alerts.

USE THE FOLLOWING CHART TO RECORD YOUR OUTPUT SELECTION FOR THE SECURITY CONTROL

OUTPUT NO.	AREA ASSIGNMENT	OUTPUT TYPE	DEF.
01.	--------	--	1
02.	--------	--	2
03.	--------	--	3
04.	--------	--	4
05.	--------	--	5
06.	--------	--	6
07.	--------	--	7
08.	--------	--	8
09.	--------	--	9
10.	--------	--	10

NOTE : SEE PAGE 13 FOR TERMINAL POSITION.

IMPORTANT NOTE:

Many of the menus require assignment of attributes (zones, users, Keypads and codes) to a main area. When partitioning is desired, it is necessary to include the main area assignment in the extended assignment field. This insures proper operation of the control.

MENU 6

M6: GLOBAL SYS. OPTIONS
PREV NEXT SELECT

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu. **PREV** will display the previous menu. **Entering the " * " key twice will exit to the user mode.**

This menu is used to program options that affect the entire system, rather than only one area.

ITEM		DEFAULT SETTING	DESCRIPTION
1	BURG CUT-OFF TIME:	10 / _____	Time in minutes before a Burglar activated output will automatically cut-off. Valid range is 0-255 minutes {0=No Cutoff} NOTE: For all cut-off times, each area performs its own cut-off, even though they (all areas) share the same time value setting.
2	PULSING BURG:	NO/ _____	Sets the Burglar output to pulse at the rate of 1 second on, 1 second off.
3	FIRE CUT-OFF TIME:	0 / _____	Time in minutes before a Fire activated output will automatically cut-off. Valid range is 0-255 minutes {0=No Cutoff}
4	PULSING FIRE:	NO/ _____	Sets the Fire output to pulse at the rate of 1 second on, 1 second off.
5	HOLDUP CUT-OFF TIME:	10 / _____	Valid range is 0-255 minutes {0=No Cutoff}
6	AUX C CUT-OFF TIME:	10 / _____	Valid range is 0-255 minutes {0=No Cutoff}
7	ENABLE COMM ABORT:	NO/ _____	Allows a communication to be aborted if the User disarms (resets) the control prior to the receiver answering.
8	UNIV. 0 OUTPUT TIME:	0/ _____	Valid range is 0-255 seconds {0= Latch. If 0 is programmed the 1st violation will activate the output, a subsequent violation will deactivate it.}
9	UNIV. 1 OUTPUT TIME:	0/ _____	Valid range is 0-255 seconds {0= Latch}
10	COMM TEST TIME:	00:00/ _____	Sets the Hour and Minute in military format for the auto communicator test.
11	DAYS BETWEEN TESTS:	1/ _____	Sets the time intervals in days for the auto communicator test. {Range=1-255}
12	ENABLE SKIP TEST:	NO/ _____	Allows the auto test to be aborted if any signal has been transmitted since the last auto test.
13	TEST ON POWER-UP:	NO/ _____	Cause a communicator test to occur immediately upon system power up.
14	AC TROUBLE DELAY:	10/ _____	Allows an AC power fail report to be delayed from 0-255 minutes.

15	WRONG CODE LOCKOUT:	8/ _____	Sets the number of code entry attempts that may occur until a 50 second lockout.
16	COMMON AREAS:	1.	Area 1 can be automatically armed/disarmed 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 be armed automatically whenever the last common area (defined by this option) is armed. Area 1 retains its own exit/entry delay and will automatically disarm when any one of the other common areas is disarmed. Area 1 can even have its own keypad and be disarmed by any authorized person not necessarily having access to the other area(s). Note: It is important to enter only the areas which are common to area 1. The installer need not enter Area 1.
17	SYNC CLOCK TO A.C:	YES/ _____	Synchronizes the internal clock with the local power company's 60 or 50 Hz cycles for accurate time keeping. Normally, this feature should always be enabled unless the local primary AC source is unreliable.
18	KP PANIC 3 SEC HOLD:	YES/ _____	Requires all Keypad Panic Keys to be pressed and held for approx. 3 seconds in order to activate an alarm condition.
19	BELL TEST ON ARMING:	NO/ _____	Pulses the Burglar defined output for one second upon arming.

MENU 7

M7: COMMUNICATOR OPTIONS
PREV NEXT SELECT

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu.

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

	ITEM	DEFAULT SETTING/ NEW ENTRY	DESCRIPTION
1	ENABLE COMM.:	NO/___	Used to enable the Control digital communicator.
2	COMM DELAY:	0/___	Time delay in seconds (0-255) before the communicator begins dialing.
3	T1 TRANS. FORMAT =	0/___	Transmission Format to be used when the communicator dials Tel #1.
4	T1 TRANS SPEED =	0/___	Transmission Speed to be used when the communicator dials Tel #1.
5	T1 DIAL ATTEMPTS =	5/___	Max. number of dial attempts (0-15) when the communicator dials Tel #1.
6	T1 LISTEN IN =	0/___	Time in minutes (0-255) that the Listen in will be active after kissoff {0-15}
7	T2 TRANS. FORMAT =	0/___	Transmission Format to be used when the communicator dials Tel #2.
8	T2 TRANS SPEED =	0/___	Transmission Speed to be used when the communicator dials Tel #2.
9	T2 DIAL ATTEMPTS =	5/___	Max. number of dial attempts (0-15) when the communicator dials Tel #2.
10	T2 LISTEN IN =	0/___	Time in minutes (0-255) that the Listen in will be active after kissoff {0-15}
11	TWO PHONE LINES?	NO/___	Enables the 2nd telephone line Telco. L2.
12	TIME BETW. CALLS =	5/___	Time delay in seconds (0-255) between each dial attempt.
13	L1 DIAL TYPE:	0/___	Sets the type of dialing for Telephone line 1. Refer to Table for "Dial Type". Next page.
14	L1 ON-HOOK TIME =	5/___	Time in seconds (0-255) that the phone will remain on-hook (non loaded) after the communicator seizes the phone line. This feature is useful when the control attempts to seize an occupied telephone line.
15	L1 DIAL TONE WAIT =	0/___	Time that the communicator will wait for dial tone before blind dialing or hanging-up. {Range 0-2, 0=6 sec., 1=12sec., 2=24sec.}
16	L1 ALLOW BLIND DIAL:	YES/___	Allows the communicator to blind dial on line 1, if no dial tone is detected.
17	L2 DIAL TYPE:	0/___	Sets the type of dialing for Telephone line 1. Refer to Table for "Dial Type".
18	L2 ON-HOOK TIME =	5/___	Time in seconds (0-255) that the phone will remain on-hook (non loaded) after the communicator seizes the phone line. This feature is useful when the control attempts to seize an occupied telephone line.
19	L2 DIAL TONE WAIT =	5/___	Time that the communicator will wait for dial tone before blind dialing or hanging-up. {Range 0-2, 0=6 sec., 1=12, 2=24}
20	L2 ALLOW BLIND DIAL:	YES/___	Allows the communicator to blind dial on line 2, if no dial tone is detected.

NOTE: Items for the second Telephone line (L2) are not valid or required unless the optional second phone line is purchased and enabled.

TRANSMISSION FORMAT

0 3+1 Non Ext	Sends a 3 digit account code and 1 digit event code. The report is repeated (sent twice) for verification. Received at the Central Station as a one line report.
1 3+1 Two line Extended	Sends extended information using a two line report. Line 1 is a 3 digit account code and 1 digit event code. Line 2 is the event code repeated 3 times plus 1 digit which identifies the zone or cause of the event. Each line is sent twice for verification.
2 3+1 Single line Extended	Sends extended information consisting of a 3 digit account code and a 1 digit event code. Event report codes of B through F are extended in the same "single" line. Event codes programmed as 1 through 0 (A) will not be extended.
3 4+2 Extended Format	Sends extended information consisting of a 4 digit account code and a 2 digit event code. The 2 digits provide the extended information.
4 SIA Level 1 "Modem"	Security Industry "Standard" Modem format. No speed entry is required or allowed with this format.
5 BFSK	BFSK "binary frequency shift key" is a Radionics developed format. No transmission speed entry is required or allowed with this setting.
10 3+1 Non Ext	Same as format 0 but includes parity check-sum for verification instead of having to be sent twice.
11 3+1 Extended	Same as format 1 but includes parity check-sum for verification instead of having to be sent twice.
12 3+1 Single line Extended	Same as format 2 but includes parity check-sum for verification instead of having to be sent twice.

TRANSMISSION SPEEDS

0 Autobaud =	Slow 10 pps, 1900 hz data if receiver handshake is 1400hz. Fast 20 pps, 1800 hz data if receiver handshake is 2300 hz.
1 Slow 10 baud	10pps, 1900hz data, 800 ms. inter-digit time.
2 Fast 20 baud	20pps, 1800hz data, 600 ms. inter-digit time.
3 Fast 15 baud	15 pps, 1400 hz handshake, 1900 hz data, variable interdigit.
4 Fast 20 baud	20 pps, 2300 hz handshake, 1800 hz data, variable interdigit.
5 Superfast	40 pps, 1400 or 2300hz handshake, 1800hz data.

DIAL TYPES

0 USP (PULSE US)	Pulse or "Rotary" dialing using North American standard make/break ratios.
1 TT (TOUCHTONE)	Dials using industry standard DTMF tones. "Touchtone" is a trademark of AT&T.
2 FP (FOREIGN PULSE)	Pulse or "Rotary" dialing using 67/33 make/break ratio typical of Foreign countries.

RECEIVER COMPATIBILITY TABLE

RECEIVERS	FORMATS	RECEIVERS	FORMATS
Ademco 685	3/1, 4/2	Silent Knight 9000	3/1, 4/2, SIA
FBI CP220	3/1, 4/2	Varitech V-300D	3/1, 4/2
Osborne-Hoffman (QUICK ALERT)	3/1, 4/2, SIA	Linear 3000C	3/1, 4/2
Radionics 6000	3/1	(Sescoa) 3000R	

1. **Note:** The 3/1 formats listed above have not been tested with parity bits selected and should not be programmed with parity bits selected on UL listed system.
2. **Note:** All receivers listed functioned with the listed formats at the time of testing. Modifications or programming changes may affect the operation of the receiver. Consult the manufacturer of the specific receiver for set up and operation.

MENU 8

M8: TELEPHONE NUMBERS
PREV NEXT SELECT

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu, **PREV** will display the previous menu. **Entering the " * " key twice will exit to the user mode.**

This menu includes entries for 1 (16 digit) long distance or prefix access number, 2 Central Station telephone numbers (16 digits each), and 1 (16 digit) Upload/Download callback number.

The assignment of which events are reported to each telephone number is programmed by groups under the AREA REPORT CODES menu. This menu will be discussed following the Telephone Numbers Main Menu. The assignment of telephone dialing options and reporting formats are programmed under the COMMUNICATOR OPTIONS menu.

PREFIX: _____ [16 digits] This "prefix" can be utilized for dialing long distance access numbers or where more than 16 digits are needed for a telephone number. **By programming an "A"** as the first digit of tel. numbers 1, 2, or 3, the communicator will automatically dial this prefix before it dials that telephone number.

PHONE 1: _____ [16 digits] This number is the telephone number for the 1st receiver.

PHONE 2: _____ [16 digits] This number is the telephone number for the 2nd receiver.

PHONE 3: _____ [16 digits] This number is the telephone number for the computer which runs the Upload / Download program known as RPM. The call back telephone number is an optional security feature to prevent other computers with RPM capabilities from logging into this system. The authorized dealer will program the modem telephone number into the phone 3 position. When the RPM computer initiates contact the control will terminate connection and immediately call the authorized RPM computer to execute an upload / download session. A complete memory core replacement typically takes 5 minutes. There are additional software and hardware security precautions available to the dealer. These are discussed in detail within the RPM package.

DIALED DIGITS ALLOWED

0 - 9 Any number from 0 to 9 will dial the appropriate touchtone or pulse digit.

A The communicator can be instructed to dial the prefix number before dialing Tel. numbers 1, 2, or 3, by programming the first digit of the telephone number with an "A".
The communicator can be instructed to switch from TT dialing to Pulse, or visa versa, anywhere during the dialing of a telephone number by programming an "A" digit within the dial string.

B Programming a "B" into any digit position will cause the communicator to produce a Touchtone * tone. This might be useful for unique applications such as voice mail, cellular phone, or paging applications.

C Programming a "C" into any digit position will cause the communicator to produce a Touchtone # tone. This might be useful for unique applications such as voice mail, cellular phone, or paging applications.

D Programming a "D" into any digit position will cause a 3 second pause during dialing.

E Programming an "E" into any digit position will force the communicator to pause and wait for a 2nd dialtone.

F An "F" must be programmed after the last digit of each telephone number to signify end-of-dialing.

NOTE: While conventional pagers can not receive the digital data transmitted from the communicator, the telephone numbers are of sufficient length to allow pauses and touchtone digits to be programmed and sent as part of any pager telephone number.

MENU 9

M9: AREA REPORT CODES
PREV NEXT SELECT

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu, **PREV** will display the previous menu. **Entering the " * " key twice will exit to the user mode.** Another screen will then appear for choosing which Area's Report Codes to program.

AREA 1 REPORT CODES
PREV NEXT SELECT

Press **SELECT** to program Area 1. **NEXT** will proceed to the next Area. **QUIT** will exit to the top of this menu.

AREA 01 REPORT CODES {SAMPLE LIST OF AREA REPORT CODES}

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 B- F, press the "#" key followed by a number from 0 to 5. For example: #+0=A, #+1=B, #+2=C, #+3=D, #+4=E, #+5=F.

ITEM		DEFAULT SETTING/ NEW ENTRY	DESCRIPTION
1	A1 TEL 1 ACCT #:	_____	The account number used when dialing Telephone #1. {up to 6 digits}
2	A1 TEL 2 ACCT #:	_____	The account number used when dialing Telephone #2. {up to 6 digits}
3	A1 KEY A CODE:	00/__	Report transmitted for alarms activated by Panic key A.
4	A1 KEY B CODE:	00/__	Report transmitted for alarms activated by Panic key B.
5	A1 KEY C CODE:	00/__	Report transmitted for alarms activated by Panic key C.
6	A1 DURESS RPT CODE:	00/__	Report transmitted for alarms activated by Duress Code Arm or Disarm.
7	A1 KP TAMPER:	00/__	Report transmitted for alarms activated by removing the control station.
8	A1 ABORT RPT CODE:	00/__	Reports transmission when an authorized user resets an alarm after violation prior to alarm communication activation. Note: The Comm. Abort and Comm Delay Time must be programmed.
9	A1 CANCEL RPT CODE:	00/__	Reports transmission when an authorized user resets an intrusion alarm after reporting has already begun but before alarm cuttoff.
10	A1 KEYSWITCH CLS CODE:	00/__	Report code sent when system is armed with keyswitch zone.
11	A1 KEYSWITCH OPN CODE:	00/__	Report code sent when system is disarmed by Keyswitch zone.
12	A1 DN.LOAD CLS CODE:	00/__	Report code sent when system is armed by RPM.

13	A1 DN.LOAD OPN CODE:	00/__	Report code sent when system is disarmed by RPM.
14	A1 AUTO CLOSE:	00/__	Reports this code when armed by scheduled program.
15	A1 AUTO OPEN:	00/__	Reports this code when disarmed by scheduled program.
16	A1 LATE CLOSE/OPEN:	00/__	Reports this code when scheduled opening or closing is late. (Time window +/- value set by installer.)
17	A1 EARLY CLOSE/OPEN:	00/__	Reports this code when scheduled opening or closing is late. (Time window +/- value set by installer.)
18	A1 FAIL CLOSE/OPEN:	00/__	Reports this code when a scheduled open or close does not occur.
19	A1 CLOSING EXTENDED:	00/__	Reports this code when armed after authorized schedule change.
20	A1 BA PHN NO:	3/__*	Directs which telephone number(s) to report intrusion alarms and restorals.
21	A1 FA PHN NO:	3/__*	Directs which telephone number(s) to report Fire alarms and restorals.
22	A1 HOLD UP PHN NO:	3/__*	Directs which telephone number(s) to report Hold-up alarms and restorals.
23	A1 AUX C PHN NO:	3/__*	Directs which telephone number(s) to report Aux C alarms and restorals.
24	A1 CCM PHN NO:	3/__*	Directs which telephone number(s) to report the CRITICAL CONDITION MONITORING EVENTS.
25	A1 TBL / BYP PHN NO:	0/__*	Directs which telephone number(s) to report zone troubles and bypasses.
26	A1 OPN / CLS PHN NO:	0/__*	Directs which telephone number(s) to report the openings and closings.

*The table shown below 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 Tel #2 as backup if #1 fails.
4 = Directs reports to Telephone #2 first with Tel #1 as backup if #2 fails.
5 = Directs reports to BOTH. Telephone #1 followed by Telephone #2.

MENU 10

M10: ZONE REPORT CODES
PREV NEXT SELECT

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu, **PREV** will display the previous menu. **Entering the " * " key twice will exit to the user mode.**

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.

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). The enter codes B- F, press the "#" key followed by a number from 0 to 5. For example: #+0=A, #+1=B, #+2=C, #+3=D, #+4=E, #+5=F. When the SIA format is selected, it is only necessary to program a value other than zero "0" into the first digit position to enable that event to be reported. In the SIA format, the correct transmitted data is automatically sent.

ITEM	SCREEN1	SCREEN2
1.	Z01 ALM:10 RES:E0	Z01 BYP:00 TBL:00 (This value is the default for all Zones)

RECORD THE REPORTING CODES FOR THE SYSTEM ON THIS PAGE

ITEM	SCREEN1	SCREEN2	Zone Description
1.	Z01 ALM:__ RES:__	Z01 BYP:__ TBL:__	_____
2.	Z02 ALM:__ RES:__	Z02 BYP:__ TBL:__	_____
3.	Z03 ALM:__ RES:__	Z03 BYP:__ TBL:__	_____
4.	Z04 ALM:__ RES:__	Z04 BYP:__ TBL:__	_____
5.	Z05 ALM:__ RES:__	Z05 BYP:__ TBL:__	_____
6.	Z06 ALM:__ RES:__	Z06 BYP:__ TBL:__	_____
7.	Z07 ALM:__ RES:__	Z07 BYP:__ TBL:__	_____
8.	Z08 ALM:__ RES:__	Z08 BYP:__ TBL:__	_____
9.	Z09 ALM:__ RES:__	Z09 BYP:__ TBL:__	_____
10.	Z10 ALM:__ RES:__	Z10 BYP:__ TBL:__	_____
11.	Z11 ALM:__ RES:__	Z11 BYP:__ TBL:__	_____
12.	Z12 ALM:__ RES:__	Z12 BYP:__ TBL:__	_____
13.	Z13 ALM:__ RES:__	Z13 BYP:__ TBL:__	_____
14.	Z14 ALM:__ RES:__	Z14 BYP:__ TBL:__	_____
15.	Z15 ALM:__ RES:__	Z15 BYP:__ TBL:__	_____
16.	Z16 ALM:__ RES:__	Z16 BYP:__ TBL:__	_____

MENU 11

M11: USER REPORT CODES
PREV NEXT SELECT

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu, **PREV** will display the previous menu. **Entering the " * " key twice will exit to the user mode.**

This menu is used to program the opening and closing reports for each user code.

Each report code requires a **MANDATORY** 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). The enter codes B- F, press the "#" key followed by a number from 0 to 5. For example: #+0=A, #+1=B, #+2=C, #+3=D, #+4=E, #+5=F. When the SIA format is selected, it is only necessary to program a value other than zero "0" into the first digit position to enable that event to be reported. In the SIA format, 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 will have the same opening and closing report codes, however the central station can differentiate between areas by the Area Account Code.

ITEM	SCREEN	NEW VALUES	ITEM	SCREEN	NEW VALUES
UC01	CLS:C0 OPN:B0	CLS:__OPN:__	UC20	CLS:C0 OPN:B0	CLS:__OPN:__
UC02	CLS:C0 OPN:B0	CLS:__OPN:__	UC21	CLS:C0 OPN:B0	CLS:__OPN:__
UC03	CLS:C0 OPN:B0	CLS:__OPN:__	UC22	CLS:C0 OPN:B0	CLS:__OPN:__
UC04	CLS:C0 OPN:B0	CLS:__OPN:__	UC23	CLS:C0 OPN:B0	CLS:__OPN:__
UC05	CLS:C0 OPN:B0	CLS:__OPN:__	UC24	CLS:C0 OPN:B0	CLS:__OPN:__
UC06	CLS:C0 OPN:B0	CLS:__OPN:__	UC25	CLS:C0 OPN:B0	CLS:__OPN:__
UC07	CLS:C0 OPN:B0	CLS:__OPN:__	UC26	CLS:C0 OPN:B0	CLS:__OPN:__
UC08	CLS:C0 OPN:B0	CLS:__OPN:__	UC27	CLS:C0 OPN:B0	CLS:__OPN:__
UC09	CLS:C0 OPN:B0	CLS:__OPN:__	UC28	CLS:C0 OPN:B0	CLS:__OPN:__
UC10	CLS:C0 OPN:B0	CLS:__OPN:__	UC29	CLS:C0 OPN:B0	CLS:__OPN:__
UC11	CLS:C0 OPN:B0	CLS:__OPN:__	UC30	CLS:C0 OPN:B0	CLS:__OPN:__
UC12	CLS:C0 OPN:B0	CLS:__OPN:__	UC31	CLS:C0 OPN:B0	CLS:__OPN:__
UC13	CLS:C0 OPN:B0	CLS:__OPN:__	UC32	CLS:C0 OPN:B0	CLS:__OPN:__
UC14	CLS:C0 OPN:B0	CLS:__OPN:__	UC33	CLS:C0 OPN:B0	CLS:__OPN:__
UC15	CLS:C0 OPN:B0	CLS:__OPN:__	UC34	CLS:C0 OPN:B0	CLS:__OPN:__
UC16	CLS:C0 OPN:B0	CLS:__OPN:__	UC35	CLS:C0 OPN:B0	CLS:__OPN:__
UC17	CLS:C0 OPN:B0	CLS:__OPN:__	UC36	CLS:C0 OPN:B0	CLS:__OPN:__
UC18	CLS:C0 OPN:B0	CLS:__OPN:__	UC37	CLS:C0 OPN:B0	CLS:__OPN:__
UC19	CLS:C0 OPN:B0	CLS:__OPN:__	UC38	CLS:C0 OPN:B0	CLS:__OPN:__

UC39	CLS:C0 OPN:B0	CLS:__ OPN:__
UC40	CLS:C0 OPN:B0	CLS:__ OPN:__
UC41	CLS:C0 OPN:B0	CLS:__ OPN:__
UC42	CLS:C0 OPN:B0	CLS:__ OPN:__
UC43	CLS:C0 OPN:B0	CLS:__ OPN:__
UC44	CLS:C0 OPN:B0	CLS:__ OPN:__
UC45	CLS:C0 OPN:B0	CLS:__ OPN:__
UC46	CLS:C0 OPN:B0	CLS:__ OPN:__
UC47	CLS:C0 OPN:B0	CLS:__ OPN:__
UC48	CLS:C0 OPN:B0	CLS:__ OPN:__
UC49	CLS:C0 OPN:B0	CLS:__ OPN:__
UC50	CLS:C0 OPN:B0	CLS:__ OPN:__

INSTALLER NOTES:

MENU 12

M12: GLOB SYS REPORT CODES
PREV NEXT SELECT

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu, **PREV** will display the previous menu. **Entering the " * " key twice will exit to the user mode.** The system trouble and restoral directory define which telephone number is called and the order of operation for central station reporting. The value selected is from the table in main menu 9 (See note *). Each of the 2 digit entries in this menu assign a report code to the condition listed. The valid range of the report code is 00 (disabled) to FF. A 2 digit entry is required even if extended transmission or 4/2 format is not desired. To disable the extended digit in these cases, enter a "0" in the 2nd digit position. **NOTE : all defaults for this menu are "0 " or "00 ".**

1	SYS TBL & RES DIR:	T:_	TELEPHONE NUMBER DIRECTORY FOR GLOBAL SYSTEM REPORTS (See table on page 49)
2	DIALER TEST RPT CODE:	__	This report code transmits at regular intervals to the central station. The report's presence implies proper operation of the communicator and the telephone line.
3	AC LOSS RPT CODE:	__	This report notifies the central station that the subscriber's control has lost the primary AC input. The delay time before this report is transmitted is in located in the Global System Options (Main Menu 6).
4	AC RESTORAL RPT CODE:	__	This report notifies the central station that the AC primary power has been restored.
5	LOW BATTERY RPT CODE:	__	This report notifies the central station that the subscriber's control is experiencing a low battery. The battery fails at a voltage reading of 11.2 VDC or less.
6	BATTERY REST RPT CODE:	__	This report notifies the central station that the subscriber's Low Battery condition has restored to an acceptable level.
7	PRIOR COMMUNICATION FAILURE:	__	When an event report code is unsuccessful in communicating, the Fail to Communicate (Local Trouble) will display. If a subsequent report of any type is successful, the control will also report this code. This condition may also be called Communication Restoral.
8	MEMORY ERROR:	__	In the event that the internal memory system check finds an unauthorized change in the value of one or more of the programming options, the communicator will report this code.
9	LOCAL PROGRAMMING BEGIN:	__	This report code will be transmitted when the programming mode is initiated at the control site.
10	LOCAL PROGRAMMING END:	__	This code will be transmitted when programming mode is terminated at the installation site.
11	LOCAL PROGRAMMING DENIED:	__	This report code is transmitted when a user request for programming at the control station is followed by an invalid authorization code.
12	REMOTE PROGRAMMING BEGIN:	__	This report code is transmitted to the central station when the RPM computer downloads new programming to the control.

13. REMOTE PROGRAMMING END: __ This report code is transmitted to the central station when the download session has been completed.

14. REMOTE PROGRAMMING DENIED: __ This report code is transmitted to the central station when an unauthorized RPM session is attempted . (i.e. Improper ID code or access device)

15. REMOTE PROGRAMMING ABORTED: __ This report is transmitted to the central station when a RPM Download session has been aborted. If an event requiring a report to the central station occurred during an Upload / Download session, the control may abort the session to report the event.

16. DATA BUS DEVICE MISSING: __ This report code is transmitted to the central station when a control station, zone concentrator or printer interface is removed or fails to respond to system polling.

17. RESTORE BUS DEVICE: __ This report code is transmitted when the missing device is restored to the Data Bus.

18. TELCO LINE 1 FAULT : __ This report code is transmitted to the central station when the telephone line connected to L1 fails supervision. The F2500 supervision module is required to provide detection of this type of failure.

19. TELCO LINE 1 RESTORE : __ This report code is transmitted to the central station when the F2500 detects that the failure of the telephone line connected to L1 has been corrected.

20. TELCO LINE 2 FAULT : __ This report code is transmitted to the central station when the telephone line connected to L2 fails supervision. The F2500 supervision module is required to provide detection of this type of failure.

21. TELCO LINE 2 RESTORE : __ This report code is transmitted to the central station when the F2500 detects that the failure of the telephone line connected to L2 has been corrected.

22. BELL CIRCUIT FAULT : __ This report code is transmitted to the central station when the F2500 detects a failure in the supervision of the Bell Output circuit.

23. BELL CIRCUIT RESTORE : __ This report code is transmitted to the central station when the F2500 detects that the failure in the Bell Output supervision has been corrected.

MENU 13

M13: AREA SCHEDULES
PREV NEXT SELECT

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu, **PREV** will display the previous menu. **Entering the " * " key twice will exit to the user mode.**

SCHEDULED MANUAL ARMING AND DISARMING This menu is used to setup daily schedules for authorized opening and closings. The schedule will indicate 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 is also selected. Using exception reporting, (late to Open /Close along with Fail to Open/ Close) the subscriber can eliminate the expense of daily opening and closing reports by having the control Log any arming or disarming that occurs within the programmed time window. If the arming or disarming occurs "outside" of the time window, then appropriate action can be taken by the Central Station. There is no control station warning during this window. If the user fails to take the correct action there will be no local notification. The exception to this rule is when the user is a Level 5 configuration and the required disarm must occur during the window. If the user is Late to Open the system will Refuse to Disarm and the business will require the attention of a user with a higher level of authorization to disarm the system.

AUTOMATIC ARMING AND DISARMING If Automatic Arming/ Disarming is enabled, the control will produce a 3 second audible warning signal at the appropriate control station(s), once every minute beginning 10 minutes prior to the event. During this warning the same control station(s) will display 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 as necessary. The Time window is not used for this feature. **Scheduled Opening and Closing and Automatic Arming must not be enabled for the same time.**

01 A1 SCH CLS DAYS:..... { SMTWTFS } Each day of the week is selected by entering the number 1-7 corresponding to the day. Any selection including all days of the week may be entered. This entry selects the days of the week that the panel will expect a closing. This should not be confused with the automatic arming feature. This schedule establishes the weekly calendar and timetable that the closings should be executed by an authorized user.

02 A1 SCH OPN DAYS:..... This entry is the same as the 1st item (1-7). This entry selects the days of the week that the control expects to be disarmed .

The next 2 menu items selects the days of the week that the control will arm the area programmed. The first 2 items shown set up a schedule for manual arming. **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 will prevent the area from automatically arming as items 3 and 4 are intended. **Auto Arming** arms the control **ONLY** in the **AWAY** mode.

03 A1 AUT ARM DAYS:..... Entry (1-7) Selects the days of the week that the system will automatically arm itself.

04 A1 AUT DIS DAYS:..... Entry (1-7) Selects the days of the week that the system will automatically disarm itself.

The following menu items establish the timetable for the events in items 1-4. If scheduled opening and closing events are enabled the control will look for the events to occur within the time parameters set (+/- the time window). If Automatic Arming is selected, the control will arm/disarm the area on schedule (provided the system is able to arm. i.e. number of violated zones does not exceed limitations set for force arming etc.)

05 A1 TIME WINDOW: 0__ Time in minutes that the scheduled opening and closing may deviate +/- from the programmed timetable. Valid range =1 - 255.

Enter all times in military or 24hr time values.

06	A1 CLOSE TIME SUN:	00:00/____	Programmed time for automatic arming or scheduled closing on Sunday.
07	A1 CLOSE TIME MON:	00:00/____	Programmed time for automatic arming or scheduled closing on Monday.
08	A1 CLOSE TIME TUE :	00:00/____	Programmed time for automatic arming or scheduled closing on Tuesday.
09	A1 CLOSE TIME WED:	00:00/____	Programmed time for automatic arming or scheduled closing on Wednesday.
10	A1 CLOSE TIME THU:	00:00/____	Programmed time for automatic arming or scheduled closing on Thursday.
11	A1 CLOSE TIME FRI:	00:00/____	Programmed time for automatic arming or scheduled closing on Friday.
12	A1 CLOSE TIME SAT:	00:00/____	Programmed time for automatic arming or scheduled closing on Saturday.
13	A1 OPEN TIME SUN:	00:00/____	Programmed time for automatic disarming or scheduled opening on Sunday.
14	A1 OPEN TIME MON:	00:00/____	Programmed time for automatic disarming or scheduled opening on Monday.
15	A1 OPEN TIME TUE:	00:00/____	Programmed time for automatic disarming or scheduled opening on Tuesday.
16	A1 OPEN TIME WED:	00:00/____	Programmed time for automatic disarming or scheduled opening on Wednesday.
17	A1 OPEN TIME THU:	00:00/____	Programmed time for automatic disarming or scheduled opening on Thursday.
18	A1 OPEN TIME FRI:	00:00/____	Programmed time for automatic disarming or scheduled opening on Friday.
19	A1 OPEN TIME SAT:	00:00/____	Programmed time for automatic disarming or scheduled opening on Saturday.

RPM "REMOTE PROGRAMMING MANAGER SOFTWARE

The next programming section deals with the attributes of the Security of the Remote Upload / Download features of the control. 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, however, it will not abort a session with RPM in order to report an event through the digital communicator.

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 whenever an Agency Code has been established and programmed by the RPM software. Other Installer programming changes are still allowed. When the DataLock (Agency Code) has been set, the keypad will emit 6 short beeps (error tones) if any attempt is made to change a phone number or to default the control.

MENU 14

M14: PROGRAMMING OPTIONS
PREV NEXT SELECT

Press **SELECT** to program this menu. Pressing **NEXT** will proceed to the next menu. Entering the "*" key twice will exit to the run mode.

This menu includes entries to select:

ITEM		DEFAULT/NEW	FIELD	DESCRIPTION
1	INSTALLER CODE:	96321/_____	(5 digits)	Allows programming at all levels.
2	ENABLE UP/DNLOAD:	YES/___	[Y/N]	This feature enables operation of the control with the Aritech RPM package.
3	REQUIRE CALLBACK:	NO/___	[Y/N]	This option enables a high security feature in the operation of the control in conjunction with the RPM package. The control must call the pre-programmed callback number before an upload session may begin.
4	EN. AUTO ANSWER:	YES/___	[Y/N]	This option allows the control to answer the premises telephone (Telco L1) incoming calls for operation with the RPM.
5	RINGS COUNT:	5/___	[1-15]	Sets the number of rings that L1 will allow before answering if auto answer is enabled.
6	CONTROL ID CODE:(6 DIGITS)	000/Do Not Change!		This is the number set by the RPM package to identify this control.
7	2 CALL ANSW MACH BYP:	NO/___	[Y/N]	This feature allows the option of answering the 2nd incoming call on L1 in anticipation of interference by a telephone answering machine.
8	2 CALL TIMER:	0/ ___	[1-255]	The time in seconds that the control will wait for the 2nd incoming call on L1 before aborting the search for the incoming call. Time starts with the 1st ring of the 1st incoming call. Consider the telephone usage before enabling these features.
9	SEND LOG 80 % FULL:	NO/___	[Y/N]	This option allows the control to initiate contact with the RPM computer when the event log is at 80 % capacity.
10	AUTO CALL DAYS:	0/___	[1-30]	This option allows the control to check in with the RPM at regularly scheduled monthly intervals (1-30 corresponds with day of month) for updates and log entries.

11	AUTO CALL TIME:	00:00/___	[00:00-23:59]	Sets the time for Auto Call.
12	EN POWER UP PROG:	NO/___	[Y/N]	This feature is a quick way to enter program mode upon power up. Press the Menu key and enter 9999 within 60 seconds of power-up and the control will enter into program mode. CONSIDER DISABLING THIS FOR ANTI-TAKEOVER.

The next and final Menu is the **SYSTEM INFORMATION MENU.** This menu allows the installer to view the specific hardware configuration as well as the revision of software and the number of users programmed. It also displays the system voltage and system current drain.

MENU 15

M15: SYSTEM INFORMATION
PREV NEXT SELECT

01. Z2000 REV.
QUIT NEXT

02. KEYPAD # OF #
QUIT NEXT

03. ZONE EXPANDERS
QUIT NEXT

NOTE: After the print command has been executed, the control will Print "End Local Program " and exit the program mode after 1 minute has expired.

04. PRINTER: NO ON LINE
QUIT NEXT

05. # OUTPUTS PROGRAMMED
QUIT NEXT

06. # USER CODES PROGRAMMED
QUIT NEXT

07. VOLTS 13.47 AMPS .30
QUIT NEXT

08. RESTORE FACTORY DEFAULTS
QUIT NEXT YES

PREV will display the previous menu. **Entering the " * " key twice will exit to the user mode.**

IMPORTANT NOTE:

Many of the menus require assignment of attributes (zones, users, Keypads and codes) to a main area. When partitioning is desired, it is necessary to include the main area assignment in the extended assignment field. This insures proper operation of the control.

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 will 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 the installer may wish to jump directly to main programming menu M3 (Zone Definitions). By entering a 3 the display will change to display.

M1: AREA DEFINITIONS
CLEAR MENU AREA 3

In this display the 3 shown is the entry made by the programmer. Using the soft keys below each of the prompts (**CLEAR, MENU, or AREA**), the installer may:

1. Remove the entry of the digit 3 and return to the previous display by pressing **CLEAR.**
2. Advance to the M3 main programming menu by pressing the soft key below **MENU.**
3. Enter into the Area Definitions menu (the menu presently displayed) 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 inter-dependent requiring other variables to be set before the function or feature will work. Below are some examples of these features.

To enable RPM, the following options in Menu 14 are involved.

Item 2	Enable Up/Down load	must be set to	Yes
Item 4	Enable auto answer	must be set to	Yes
Item 5	Ring Count	must be set to	value greater than 0
Item 6	**Programmed by RPM software--DO NOT CHANGE**		

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 acct. #'s, 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

4 Specifications & Accessories

CONTROL BOARD:

- Sixteen (16) two wire zones each supervised with a 2200 Ohm end-of-line resistor. Expandable to 24 zones.
- Two of the 16 zones are special. Z15 can be a fast loop, (10mS), Z16 can be a 2 wire smoke loop.
- Three (3) keypad activated emergency zones.
- Nominal current drain for board only: 100 milliamps. (150 mA with low battery relay installed)
- Watchdog microprocessor monitoring circuit.
- Superior six (6) stage lightning/transient protection.
- Two general purpose form "C" SPDT (5 Amp DC) relays.
- Ten (10) alarm and control outputs (Expands to 20)
- 24 hour battery Monitoring.
- Automatic system shutdown if voltage falls below 8.5V.
- Operating temperature range inside the enclosure: 32° to 122° Fahrenheit (0° to +50° Celsius).

Power Supply:

- Full 1.5 Amp. (18V AC, 35VA Txfmr.)
- 13.8 Volts DC
- 800 mA continuous available current.
- Reverse polarity protection on battery inputs.
- Float charging circuit: 13.8VDC.
- Over Current Protection on Outputs for Keypad Power , Auxiliary Power and Switched Power.

RecommendedBattery (Not Included):

- Rechargeable 12 Volt 6AH Sealed lead acid,

Transformer :

- U.L listed class II plug-in, 18 volt AC, 35 VA secondary, 120 volt 60 Hz primary.Connected to 24 hr. unswitched outlet. (See Accessories for requirements for Fire Systems.)

Enclosure:

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

Digital Communicator:

- DTMF Touchtone ® or Rotary (pulse) dialing. Rotary speed: 10pps, (60 % break, 40 % make, foreign pulse 67% B, 33%M).
- FCC Registration number: A79USA-60755-AL-E. Ringer equivalence: 0.0B.
- Transmission formats include: SIA level 1, BFSK and Pulse formats Slow (10 or 15 baud), and fast (20 or 40 baud).
- Reports to most major central station receivers.
- Primary phone number up to 16 digits.
- Secondary phone number up to 16 digits.
- RPM Callback phone number up to 16 digits.
- Prefix for phone number up to 16 digits. Special application long distance access.
- Reporting Capabilities:
  Three 6 digit account codes, Report by zone., 2 line extended, Single line extended, 4+2 format, Hexadecimal reporting, Opening or Closings reports, Shunted zone(s) reported upon arming, Zone restore reporting, Cancel reporting, Low battery/fuse blown, Automatic test every 24 hours, Delay before dial, Dial attempts.

- New application, Dial Type Reversal (Reverses dialing method (Tone to Pulse, Pulse to Tone) on an in-progress call. Great for pager notification from pulse only networks.)

LCD Control Station (Z2100):

- Connects to 4 wire Data Bus.
- LCD back lighting
- Twelve button keypad with audible feedback.
- Surface mountable. Mounts to any standard single or double gang electrical box.
- 48 Character LCD Screen.
- Built-in piezo sounder.
- Area assignable
- Communicates with control independently, addressed by installer with DIP switches.
- Built-in English Vocabulary.
- Nominal current drain: 75- 200 mA consumption (Ready to Armed LEDs), Current depends on light setting.
- Up to 6 per system.
- Size: 6.82" x 4.72" x 0.83" (173mm x 120mm x 21mm).
- Color: Bone white with gray labeling.

FEATURES

- Truly Partitionable System, (Optional User Overlapping)
- Ready to install with a factory basic program.
- New edge card connector. (Zero force insertion, easy board removal).
- Control station programming
- Fifty (50) 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 hr Auxiliary "A" (fire *ff*), Auxiliary "B" (hold - up), Auxiliary "C" . CCM (Communicator Zone), Universal 0 & 1 and 24 Hr. Burg (tamper).
- May be programmed for keyswitch arm/disarm.
- Burglar zones may be defined as instant or delay (2 delay timers), interior (3 interior choices) or perimeter.
- Programmable Timers: Entry Delay 1, Entry Delay 2, Exit Delay, Access, Alarm Cut-off, Universal 1 & 2.
- Optional Quick loop (Zn 15 10 ms.)
- 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.

OPTIONAL ACCESSORIES

- **TC1100 Tamper Resistant Enclosure:**

- **TS4 Power Limited Terminal Board:** Interfaces with control's edge card connector.

- **Z217 Programming Cable:** For plugging in a control station directly at the control board for programming,.

- **Z2100 LCD Control Station:** 48 character display with 3 Emergency keys, Menu and Soft keys.

- **Z2200 LED Keypad:** Simple arming station for smaller applications and single area operation. Ready, Armed, Trouble, and Alarm indication and 3 Emergency keys.

- **Z2300 / Z2350 Zone Concentrators:** Expands the Z2000 from 16 to 24 Zones. Z2350 provides additional programmable outputs.

- **Z2400 Printer Interface:** Allows connection of a standard parallel printer via interface.
  Power Requirements:
  13.8VDC, 85mA without printer connected.

OUTPUT PROVISIONS

Low Current Trigger Outputs:
Latch type connector provides Current output of 40 mA each. 10 Outputs on main board, expandable to 20 with special zone concentrator. (Z2350)

High Current Outputs:
900 mA Maximum continuous combined current drain at terminals 33 &34 (Keypad Power #1 & #2), 36 & 38 (Auxiliary Power 1),40 & 42 (Auxiliary Power 2), and terminal 44 **Switched** Smoke Power).

Alarm Current Outputs:
Terminals 36 & 38 (Auxiliary Power 1),40 & 42 (Auxiliary Power 2 are fused at 3.0 A (CB1 & CB2).

Terminals 33 &34 (Keypad Power #1 & #2) is fused at 3.0A (CB 3 & CB 4).

Terminal 44 (**Switched** Smoke Power) are fused at 3.0 A.

For alarm conditions, these outputs may be used to provide high current output up to the rating of the designated fuses. It should be noted, however, that whenever the total maximum continuous combined current for the control is exceeded (2.5 A), the additional current will be drawn directly from the standby battery.

5 U.L. and N.F.P.A. Requirements

UNDERWRITERS LABORATORIES (U.L.) LISTING

The Z2000 Security Control and Keypad is Listed by Underwriters Laboratories (U.L.) as follows:

APPLICATION	LISTING
HOUSEHOLD BURGLARY (GRADE A)	U.L. 1023
HOUSEHOLD FIRE	U.L. 985
CENTRAL STATION BURGLARY (GRADE C)	U.L. 1610/1635
CENTRAL STATION BURGLARY (GRADE B)	U.L. 1610/1635
HOME HEALTH CARE SIGNALING EQUIPMENT	U.L. 1637
LOCAL BURGLARY (GRADE A)	U.L. 609
POLICE STATION BURGLARY CONNECTION (GRADE A)	U.L. 365

U.L. has established certain requirements which pertain to the installation, use, and programming of this equipment. The local Authority Having Jurisdiction (AHJ) and/or U.L. 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 U.L before installing this system. The following pages detail guidelines that must be followed in order to comply with the U.L. listings as stated above.

❑ Disallowed Parts Mentioned in this Manual

The following are parts which are referenced on pages of this manual which are **NOT U.L. LISTED AND SHALL NOT BE USED IN U.L. LISTED SYSTEMS:**

Part No.	Description
MPI-206	Relay Board
JDS-108	8 channel Siren Driver
MPI-11	2 channel Siren Driver

❑ U.L. NOTES IN THIS MANUAL

Reference	U.L. Note
Key "0" (access)	**The control has not been investigated to U.L. 294 Access Control System Requirements.**
Bypassable 24 Hour	**Fire zones are programmed as nonbypassable in U.L. Listed Systems.**
Unsupervised Burglary Zones	**U.L. Does not permit the use of Unsupervised Zones.**

❑ U.L. NOTES PER PROGRAM FUNCTIONS

Function	U.L. Listed System Requirements
Entrance Delay Time (1 & 2)	Maximum of 45 seconds.
Exit Delay Time	Maximum of 60 seconds.
Burglar Alarm Cutoff Time	4 minutes minimum for household BA/FA and 15 minutes for Commercial BA & Police Station Connect BA systems.
FIRE *ff* Cutoff Time	No automatic cutoff permitted. Shall be programmed for "0" minutes.
HOLD-UP Cutoff Time	4 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.

❑ U.L. NOTES PER PROGRAM FUNCTIONS (continued)

Function	U.L. Listed System Requirements
Time Between Dial Attempts	U.L. Certified Accounts: No more than 45 seconds between attempts.
Dial Type	Shall not be programmed for foreign Pulse.
Rings Until Auto Answer	Shall be programmed to 0" (no auto answer).
Dial Attempts Before Shutdown	5 dial attempts minimum, 10 dial attempts maximum. Do not program a value of "0".
Opening/Closing Reports	This Function shall be enabled.
Low Battery Reporting	This Function shall be enabled 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.
Enable Force Arming	This Function shall be disabled.
Force Arming	This Function shall be disabled.
BA Reports Until Lockout	This Function shall be enabled.
Pulsing Burglar Alarm Output	Shall be programmed to "1" (pulsing).
Pulsing Fire Alarm Output	Shall be programmed to "0" (steady).
Burglar Loop Audible Lockout	This Function shall be enabled.
Enable Bell Test Upon Arming	This Function shall be enabled for Grade A Local Central Station Connected installations.
Enable Fail To Communicate Warning	This Function shall be enable.
Enable O.P. Sounder Upon BA	The system shall have an audible alarm output upon alarm.
Autoarming	This function shall be disabled.
Key _____ (A , B or C)	When Medical Emergency is enabled, the definition value shall be 4 and the corresponding key shall have the Medical Emergency sticker affixed to it.

❑ U.L. NOTES PER ZONE PLANNING GUIDE

Reference	U.L. Listed System Requirements
Burglar Loops	Shall not be defined for Trouble conditions
Fire, Hold-up, and Auxiliary "C" Zones Emergency Zones	Shall not be defined as bypassable.
Special Functions-Alarms	Burglar loops shall be audible.
Medical Emergency	At least 1 keypad shall be used when this feature is enabled.

❑ U.L. NOTES TO SPECIAL FEATURES

Remote Programming is not to be enabled on UL Listed systems.
Ground Start Telephone service is not to be enabled on UL Listed systems.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) REQUIREMENTS

❑ **Smoke Detector Location**

Smoke detectors shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit including basement and excluding crawl spaces and unfinished attics. For family living units with one or more split levels (i.e., adjacent levels with less than one full story separation between levels), a smoke detector required by the above shall suffice for an adjacent lower level, including basements.

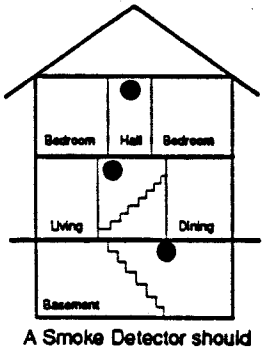
EXCEPTION: Where there is an intervening door between one level and the adjacent lower level, a smoke detector shall be installed on the lower level.

Ceiling mounted smoke alarms should be located in the center of the room or hall, not less than 4 inches from any wall. When the detector is mounted on a wall, the top of the detector should be 4 to 12 inches from the ceiling.

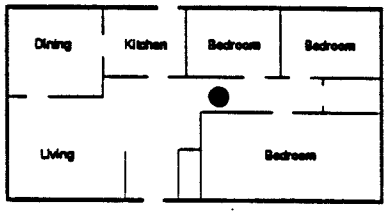
Do not install smoke alarms where normal ambient temperatures are above 100°F (37.8°C) or below 40°F (4°C).

Also, do not locate smoke detectors in front of air conditioners, heating registers, or other locations where normal air circulation will keep smoke from entering the detector.

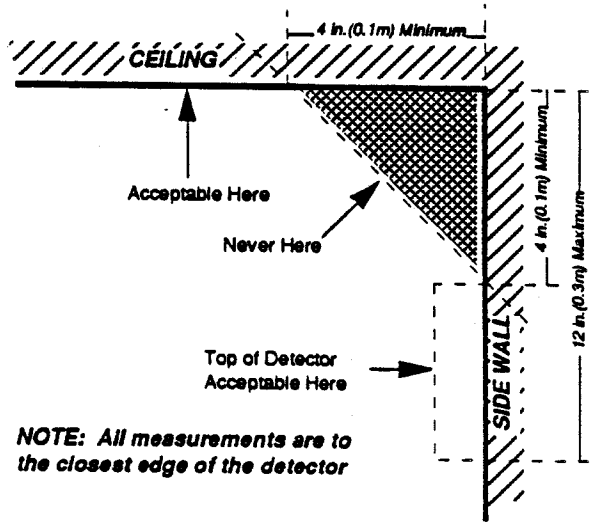
Heat from a fire rises to the ceiling, spreads out across the ceiling surface and begins to bank down from the ceiling. The corner where the ceiling and wall meet is an air space into which heat has difficulty in penetrating. In most fires, this 'dead' air space measures about 4 inches (0.1m) along the ceiling from the corner and 4 inches (0.1m) down the wall . Heat or smoke detectors should not be placed in this 'dead' air space.



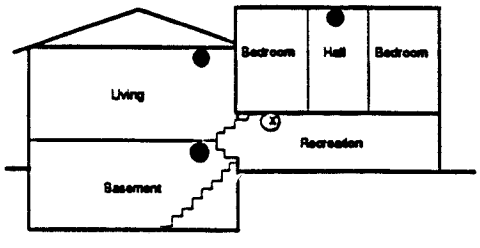
A Smoke Detector should be located on each story.



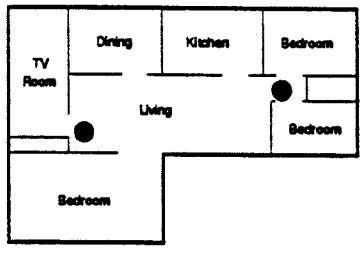
A Smoke Detector should be located between the sleeping area and the rest of the family living unit.



NOTE: All measurements are to the closest edge of the detector



● Indicates required smoke detector



Ⓢ Indicates smoke detector is optional if door is not provided between living and recreational rooms.

SMOKE DETECTOR PLACEMENT

Application	Listing	Maximum Current drain (milliamps) with a 6 Ah Battery	Min. Battery Standby Time in hours	Control stations	Smoke Detector BRK 1400, 2400 Power Supervision Module ESL 204B	Auxiliary Equipment Required
Non U.L. Listed		900	3	7	N/A	Wheelock 34T-12 horn
C.S.F.M Approved	TITLE 19	800	24	3	Required	2-12V, 4AH Batteries
Home Health Care	U.L. 1637					
Household Burglary	U.L. 1023	800	4	6	N/A	AMSECO MSB-10G Bell
Household Fire (*ff*)	U.L. 985	800	4	6	Required	Wheelock 34T-12 Horn
Household Burglary/ Fire (*ff*) Combination	U.L. 1023/ U.L. 985	800	4	6	Required	AMSECO MSB-10G Bell and Wheelock 34T-12 Horn
Central Station Burglary (Grade C)	U.L. 1610 U.L. 1635	450	4	2	N/A	
Central Station Burglary (Grade B)	U.L. 1610 U.L. 1635	450	4	2	N/A	TC1100 Tamper Resistant Enclosure and ADEMCO AB-12 Bell & Housing
Local Burglary (Grade A)	U.L. 609	450	4	2	N/A	TC1100 Tamper Resistant Enclosure and ADEMCO AB-12 Bell & Housing
Police Station Burglary Connection (Grade A)	U.L. 365	450	4	2	N/A	TC1100 Tamper Resistant Enclosure and ADEMCO AB-12 Bell & Housing

Maximum combined Constant current drain (standby) refers to terminals 33, 34, 36, 38,40, 42, & 44 Under Alarm conditions, the combined output current drain should not exceed 1.2 Amps.

CONFIGURATIONS AND CURRENT DRAIN PROVISIONS for UL LISTED SYSTEMS.

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FCC COMPLIANCE

Part 68 Notification

The Z2000 Control complies with Part 68 of the Federal Communications Commission (FCC) rules. All connections to the telephone network must be made through standard telephone company plugs and jacks, RJ31-X or equivalent, in such a manner as to allow for easy and immediate disconnection of the equipment. If the connecting cord is unplugged from the jack there shall be no interference to the telephone equipment still connected to the telephone network.

The FCC registration number and Ringer Equivalence Number (REN) can be found printed on the wiring connection label located inside the control box enclosure. If requested, provide this information to your telephone company. The REN is useful to determine the quantity of devices that may be connected to your telephone line and still have all of those devices ring when your number is called. In most, but not all areas, the sum of the RENs of all devices should not exceed five (5.0).

In the unlikely event that the equipment should ever fail to operate properly, it should be disconnected from the telephone jack to determine if the problem is with the telephone network or with the equipment. If a problem is found with the equipment, leave disconnected until it is repaired or replaced.

In the unlikely event that the equipment should ever cause harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify you in advance. However, if advance notice isn't practical, the Telephone Company may temporary discontinue service. In the case of temporary discontinuance, the telephone company shall promptly notify the telephone subscriber who will be given the opportunity to correct the situation. The customer also has the right to bring a complaint to the FCC if he feels the disconnection is not warranted.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be given advance notice so as to give you and opportunity to maintain uninterrupted service.

You should notify the Telephone Company if this equipment is removed from the premises and the telephone jack is no longer needed.

The FCC prohibits this equipment to be connected to party lines or to be used in conjunction with coin operated telephone service.

Part 15 Notification

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

1. Reorient the TV or radio antenna.
2. Relocate or move the alarm control away from the receiver.
3. Plug the transformer for the alarm control into a different outlet so that the receiver and the alarm are on different branch circuits.
4. If necessary, the user should consult the alarm dealer or an experienced radio/television technician for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful: "How To Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402 stock #004-000-00345-4.

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