

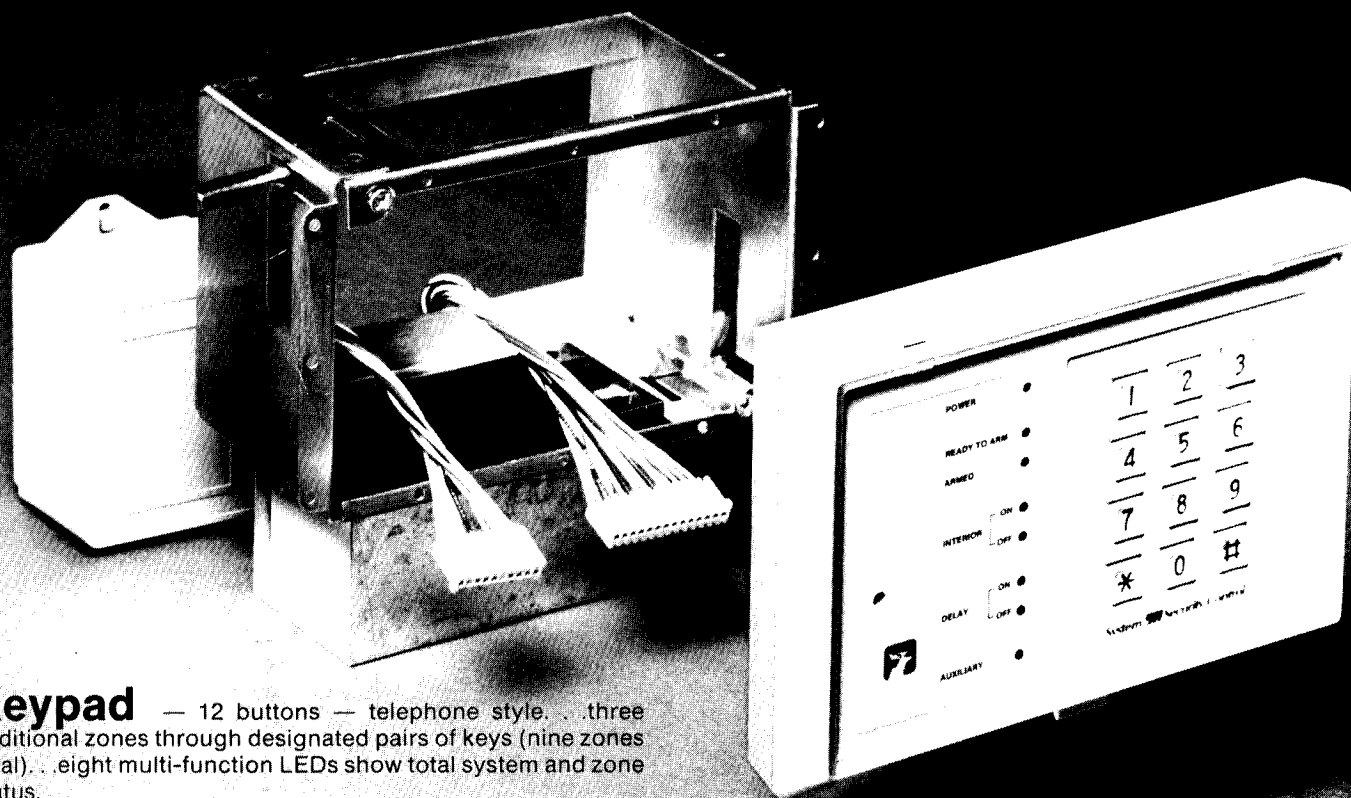
# MULTI-ZONE, WALL MOUNT SECURITY CONTROL

# System 911

# moose

**6-zone control panel** — powerful Z1100 microprocessor...EEPROM memory to maintain programming if power is disconnected...comes with standard program, ready-to-use...fully keypad programmable.

**Digital communicator** — compatible with most major receivers...features pulse or tone dialing...can dial two numbers with up to 30 digits each...no PROMs to burn.



**Keypad** — 12 buttons — telephone style...three additional zones through designated pairs of keys (nine zones total)...eight multi-function LEDs show total system and zone status.

**Power supply** — 12-volt, 1/2-amp...300mA auxiliary output.

**Battery** — 12-volt, 1.2 aH, for back-up power.

**Transformer** — 18-volt, 20 VA...U.L. listed.

**Optional back box** — unique drop-down battery holder...ideal for pre-installations or existing structures.

# System 911

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Hickory, N.C. 28603 U.S.A. • Phone (704) 322-2333  
(800) 438-8175 • Telex 802-111 • FAX (704) 324-4145



# moose products inc.

# APPLICATION

The SYSTEM 911 is a multi-zone, wall mount Security Control designed especially for apartments and condominiums. It is equally suitable for small residences or businesses where size and ease of installation are important. It features a built-in 12 VDC power supply and full featured digital communicator.

# SPECIFICATIONS

- Six end-of-line resistor supervised zones
- Three keypad-activated zones
- Four (4) user codes available
- EEPROM. . .Electrically Programmable Read Only  
Memory retains program and arm/disarm status even when power is disconnected
- Watchdog microprocessor monitoring
- Five-stage lightning/transient protection
- Built-in sounder for audible system signaling
- Eight LEDs provide total system and zone status
- Twelve button telephone-type keypad
- Plug-in wiring connectors
- Built-in 12 VDC, 1/2 Amp power supply:  
Regulated at 13.8 volts DC  
12 volt, 1.2 Ah sealed lead-acid battery  
Battery float-charged at 13.8 VDC  
18 volt, 20 VA U.L. listed class 2 transformer  
300 mA output for auxiliary devices fused @ 2.5 Amps  
Standby system current drain 200 milliamps
- One (1) "form C" 2-Amp at 24 VDC dry contact relay
- Built-in Digital Communicator:  
Compatible with all major receivers  
Transmission Speeds: slow (10 baud), fast (15, 20 baud), Radionics superfast (40 baud) without parity  
Hexidecimal reporting capabilities  
DPDT line seizure  
True dial tone detection  
Pulse or Touchtone® dialing  
Two telephone numbers: 30 digits each
- Attractive durable housing:  
Mounts to a special 3 gang metal back box (BB-900)  
Dimensions: 6.82" x 4.72" x 0.83" (173mm x 120mm x 21mm)
- Color: Bone white with gray labeling
- Operating ambient temperature range: 32 to 122 degrees F (0 to 50 degrees C)

# FEATURES

- Comes factory ready with a basic program. No programming required to install or bench test
- All functions keypad programmable
- Zones programmable for: BURGLARY, 24 hr. AUXILIARY 3, POLICE/AUXILIARY 1, MEDICAL/AUXILIARY 2, and KEYSWITCH (Only 1 tampered keyswitch zone per system)
- Burglar zone options include: INSTANT, DELAY, INTERIOR, DAY ALERT, LOCKOUT
- Two separate entrance timers available
- Programmable loop response times
- Shunt by zone from keypad
- Zone auto-shunt or auto-restore after alarm
- Retained alarm memory
- Fail-safe arming
- Digital communicator programmable for:  
Report by zone  
Two line extended reporting  
Opening and closing reports by user code  
System as well as individual zone restoral  
Alarm abort  
Delay before dialing  
Dial attempts  
24 hour automatic test reporting  
Shunted zone reporting
- Optional bell test on arming
- Auxiliary light output
- Door strike output

# ACCESSORIES

- Z1100P Programmer uploads or downloads system parameters. It features an easy to read LCD screen, rugged travel case and all cables.
- Z229 Output Expansion Module. Provides constant zone status output.
- Z239 8 Zone LED Display Plate. The Z239 is a surface mount 8 zone display plate to be used with the Z229 for displaying constant zone status.
- Z232 Ground Start Module. The Z232 provides an interface to telephone lines requiring ground start to get dial tone.
- BB-900 is a special 3 gang recessed wall box for the System 911. It features a convenient drop down battery holder.
- HW-911 Hardware Pack. Advance pre-wire kit containing the same cables and hardware standardly packed with the system.
- MPI-266 Low Battery Cutoff Module.

This document supersedes all previous information both oral and written.

CONGRATULATIONS. You are about to install one of the many fine products manufactured by Moose Products Inc. We take pride in our international reputation for product quality and proven performance. This product has been carefully inspected to comply with our rigid quality control standards before shipment to you. We request your assistance in providing us with your comments and suggestions regarding this or any product which we provide.

# INTRODUCTION

The SYSTEM 911 is a complete, self-contained security control housed in an attractive wall mountable package. It features keypad programming and NON-VOLATILE EEPROM (Electrically Erasable Programmable Read Only Memory), which maintains its data even with power disconnected. The EEPROM can be reprogrammed over and over for changing the characteristics of the system. The system comes ready-to-use with factory "DEFAULT" settings. Simply stated, the default settings are program values based on the needs of the average security system. The factory settings will provide a working system without requiring extensive programming.

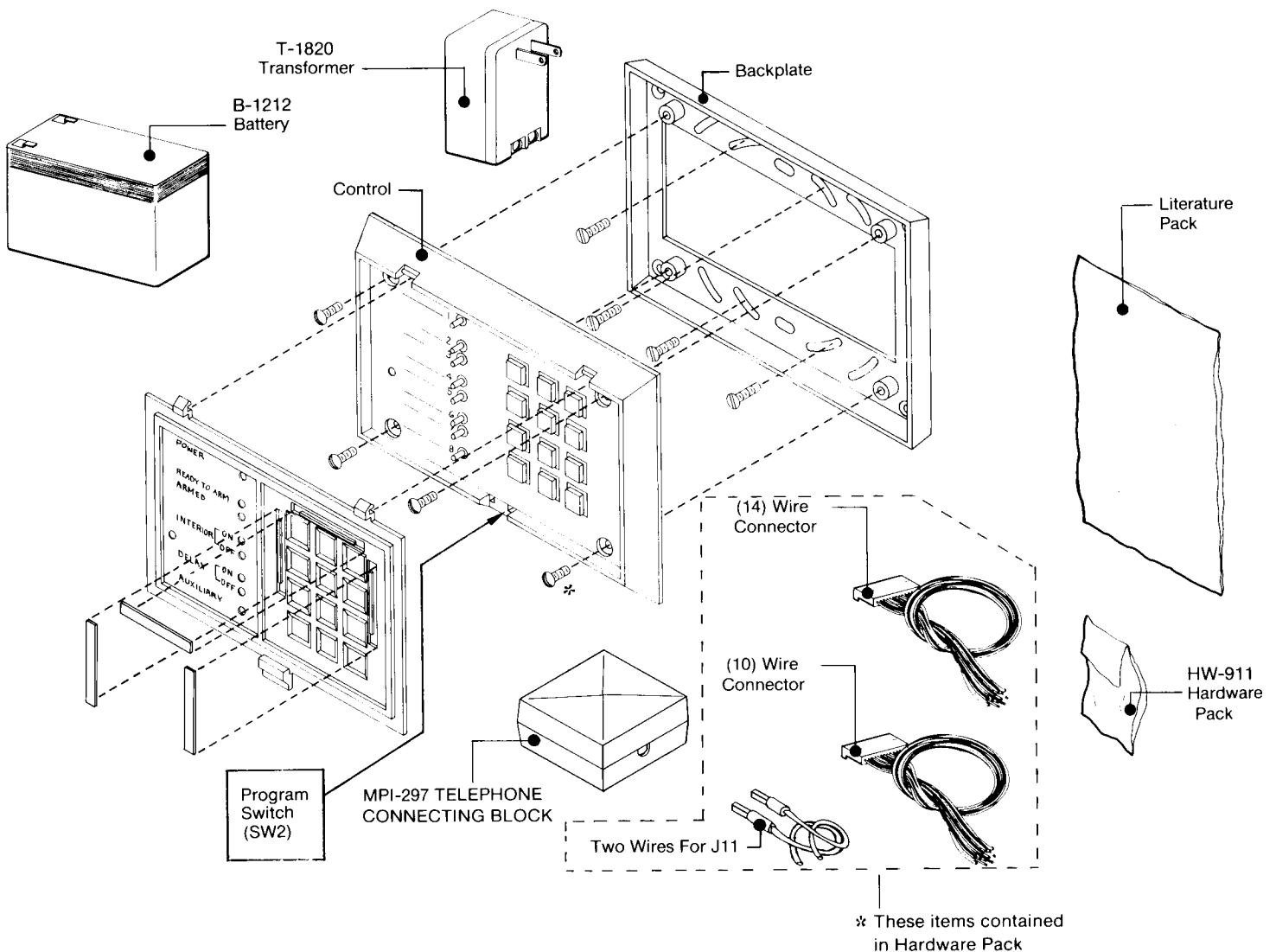
At the heart of the SYSTEM 911 is the powerful Z1100 microprocessor. A "WATCHDOG TIMER CIRCUIT" constantly monitors the microprocessor and maintains the operational integrity of the system.

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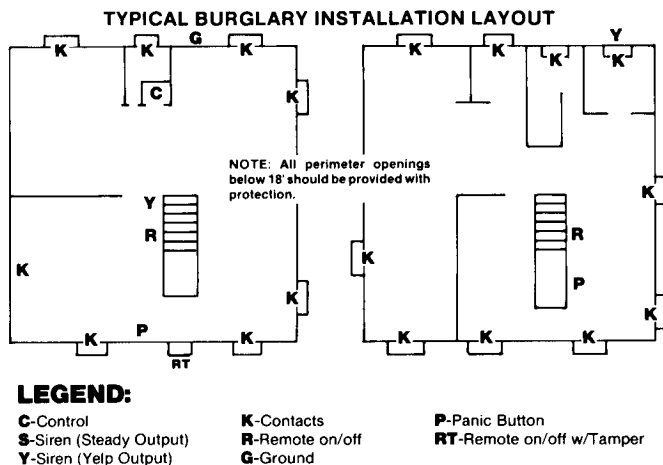
# INSTALLATION

**PARTS IDENTIFICATION AND UNPACKING.**...The SYSTEM 911 is packed in a foam lined container to protect the unit and its parts from damage during shipment. The back mounting box is packaged separately, to allow rough-in work to be completed without having to open and possibly expose the control to damage or dirt. The system parts and their numbers or names are shown below for reference. Upon unpacking, please verify that your package includes each of the following parts. If there is a discrepancy, contact your distributor or Moose Products at once.



**FIGURE 1 PARTS IDENTIFICATION**

**PLANNING.** . .Proper planning is essential in the installation of any multi-zone system. Figure 1 is a layout of a typical burglary installation. We recommend that you use this layout as a guide for developing a diagram of your installation.

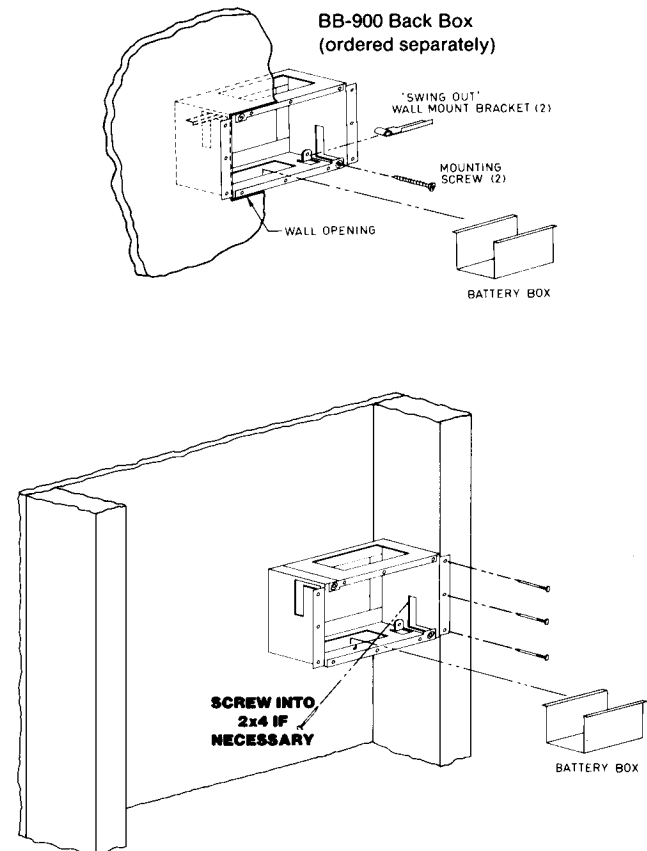


**FIGURE 2 TYPICAL INSTALLATION LAYOUT**

**SELECTING A MOUNTING LOCATION...**The control must be mounted in a secure, dry location with an ambient temperature of 32 to 122 degrees Fahrenheit (0 to +50 degrees Celsius). Since most of the control will be recessed into the wall, special precautions must be followed in selecting the mounting location. Begin by making a complete survey of the building structure. Look closely at the plumbing pipes, electrical wiring, heat & air ductwork, and other such equipment which might be concealed within the walls of the building.

Interior walls are the recommended first choice for mounting the control. The recommended height is 4 ft. 9" above the floor. Make sure that enough area is available for the control so as to avoid wall switches, boxes, and wiring. The back box (part # BB-900) requires a clear opening of 5 $\frac{5}{8}$ " width x 3 $\frac{3}{8}$ " height x 3" depth.

**NEW CONSTRUCTION...**The back box can be nailed directly to the wall framing prior to applying the wall covering. All wiring can then be roughed-in and left inside the box until final installation. To protect the box and wiring from damage by plaster, paint, etc., cover the front opening with a piece of cardboard.

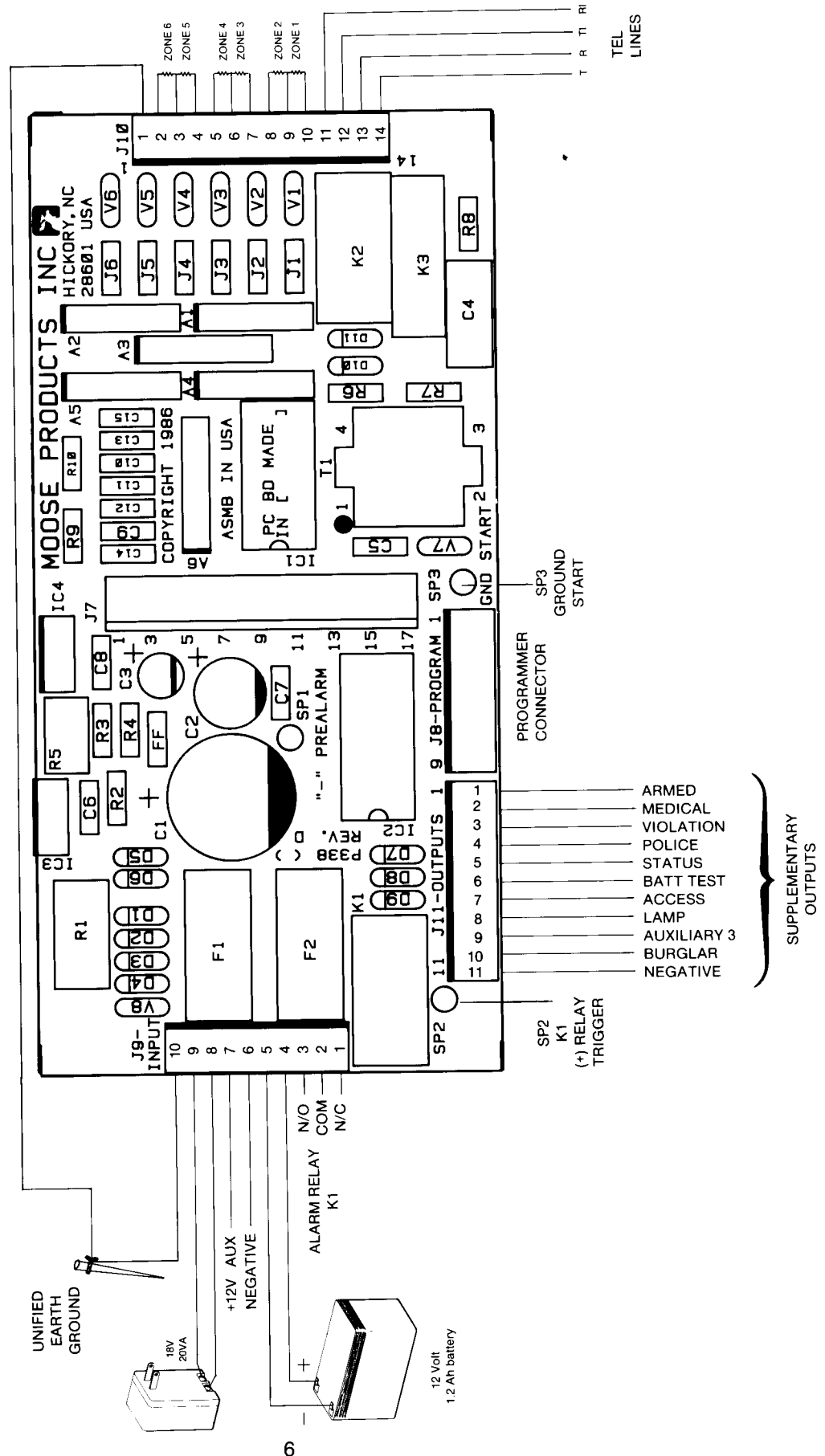


**FIGURE 3 DIAGRAM OF INSTALLED BACK BOX**

**EXISTING BUILDING INSTALLATION.** . .The back box was especially designed for installation in existing hollow walls. After selecting the appropriate mounting location, locate the mounting template (APPENDIX D) on page 34 and follow the steps printed on it to cut out the wall opening and mount the back box.

**FIGURE 4**  
**COMPONENT LAYOUT & HOOK-UP DIAGRAM**

**System 911**



## TERMINAL DESCRIPTIONS & HOOK-UPS

**GENERAL.** . . Most connections to the SYSTEM 911 are through unpluggable cable assemblies and pin-type connectors. This gives the system the capability of being pre-wired and later simply plugged-in. There are two (2) main cable assemblies included with the system. Cable assembly J9 plugs into connector J9, and cable assembly J10 plugs into connector J10 on the control. **The contacts for the Burglar and 24 hr. Auxiliary 3 Alarm Relay are available from the J9 cable assembly.** In addition, there are 10 supplementary outputs from connector J11. See "SUPPLEMENTARY OUTPUTS." Since most of the J11 outputs will not be needed, two (2) separate 8 inch wires with female pins, are provided for connections to them. A package of ten (10) additional wires can be purchased separately. Specify part # MPI-299.

**EARTH GROUND.** . . Pin 10 (green wire) of cable assembly J9, and pin 1 (white wire) of cable assembly J10 must be connected to an earth ground in order for the built-in lightning & transient protection to be effective. An ideal ground for a security system is a "UNIFIED EARTH GROUND", whereby the power line, telephone, and security system ground rods are bonded together to form a sort of grid. This type of ground eliminates a common problem during lightning strikes known as "STEP VOLTAGE BLOWOUT". Step voltage is a voltage potential between different earth ground stakes during a lightning strike, which results in a destructive current flow path through the security equipment.

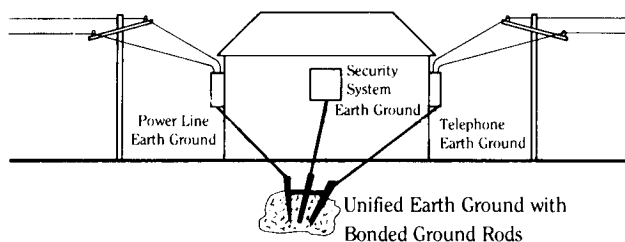


FIGURE 5 UNIFIED EARTH GROUND

Ground wires should be run the shortest and straightest path between the equipment and the ground rod. Avoid 90 degree turns as they can cause undesired inductance in the earth ground path. This inductance blocks the lightning path to earth ground causing the lightning current to run through the security equipment. Always route the ground wire as much as possible "toward" earth and "never away from" such as up walls.

### POINTS TO REMEMBER ABOUT GROUNDING

1. Use a minimum 14 gauge solid wire.
2. Keep wire runs short. No 90 degree turns.
3. Use a minimum radius of 8 inches for bends.
4. Run ground wires separate from others.
5. Use 8 foot copper clad ground rods.
6. Route toward earth and never away.
7. Never run parallel to metal without properly bonding to the metal.

**AC TRANSFORMER.** . . Pins 8 & 9 (white wires) of cable assembly J9 are the primary (AC) power inputs. The System is powered by an 18 Volt, 20 VA UL listed Class II transformer (part # T-1820). The transformer should be connected to a 120 VAC 50/60Hz 24 hour power outlet not controlled by a wall switch.

**CAUTION:** If the wires or the terminals of the transformer are shorted, an internal non-replaceable fuse will blow. Before replacing the transformer, locate the short and remove it. Always replace with the correctly rated transformer.

**AUXILIARY POWER.** . . Pin 6 (black wire) & pin 7 (red wire) of cable assembly J9 are 12 Volt DC power outputs for powering auxiliary devices such as sirens, relays, etc. A 2.5 Amp Fuse (F1) protects this output from overcurrents and shorts. Fuse F1 is tested once every 24 hours. If the fuse is bad the system will beep and the power LED will blink. Press the "\*" key to silence the beep. After Fuse replacement, Command 7 will reset the LED.

**NOTE:** Maximum combined continuous current drain from pin 7 of cable assembly J9, and pins 1-10 of connector J11 must not exceed 300 milliamps. Maximum drain under alarm conditions is 2 Amps. When replacing fuses, use the proper rating and voltage.

**STANDBY BATTERY.** . .Pin 4 (red wire) & pin 5 (black wire) of cable assembly J9 are provided with insulated, slip-on spade terminals for connecting the standby battery. A 12 Volt, 1.2 Amp hour rechargeable sealed lead acid battery (part # B-1212) is used for primary power back up and to supply large current demands under alarm conditions. The battery float charge is set for 13.8 Volts.

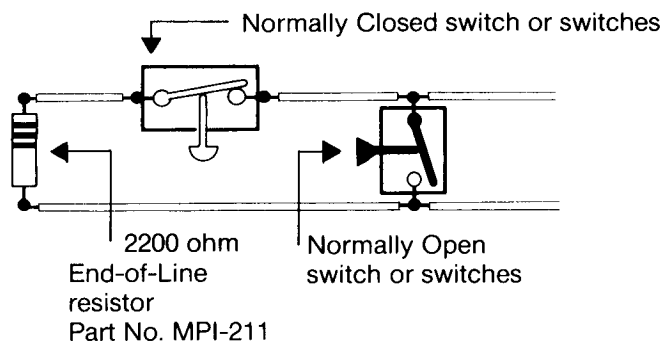
**CAUTION:** . .Power input connections from the Battery and AC transformer, should be left undone until all wiring is complete, to avoid possible damage to the electronics caused by accidental shorts.

**ALARM RELAY K1.** . .Pins 1, 2, & 3 of cable assembly J9 are the output points of Relay K1. This is a "Form C", Single Pole -Double Throw type relay that is configured to activate upon either a Burglar or 24 hr. Auxiliary 3 Alarm. This relay can also be triggered from a +12 Volts DC input applied to pin SP2. The supplementary outputs of connector J11 (discussed later), could be used as inputs to this relay through pin SP2. The K1 "ALARM" relay, or a separate general purpose relay **MUST** be used in order to switch high current loads for devices such as electronic siren drivers, horns, strobes, etc. Pin 7 of cable assembly J9 is a 24 hr. +12 Volt DC filtered output which may be switched through K1 relay to power alarm devices.

**ZONE INPUTS.** . .Pins 2-10 of cable assembly J10 are the inputs for the six (6) end-of-line (EOL) resistor supervised zones. For example, Zone 1 loop is connected to pins 9 & 10 (black & yellow wires) of cable assembly J10. Each zone loop has a separate wire input, but shares a common negative return with another zone. Since each zone is programmable, a variety of switches, contacts, and devices may be connected, depending upon the requirements of the installation. Areas or individual detection devices may be divided up among the zones so that violated detection devices may be easily identified.

**ZONE SUPERVISION.** . .The System 911 comes equipped to utilize end-of-line (EOL) resistor loop supervision. There are significant advantages gained by using the EOL resistor. First, both normally open and normally closed devices can be used in the same loop because the control panel is "looking" at a specific resistance. Figure 6 below illustrates how the operation of either switch will change the specific resistance and therefore, activate the control panel.

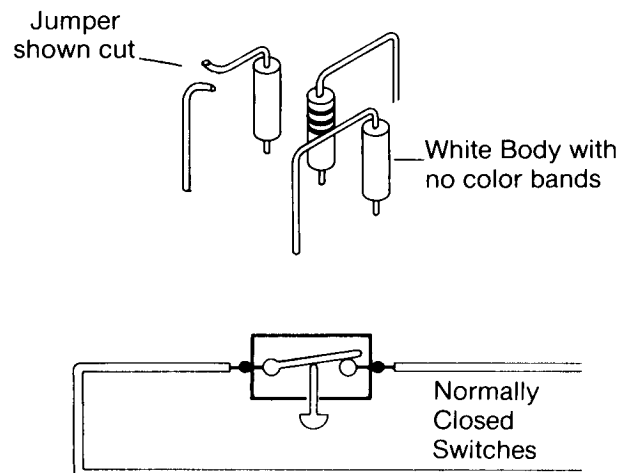
Should a potential intruder attempt to cut or short the loop, the panel will "see" a violation because the circuit resistance has been changed.



**FIGURE 6 EOL RESISTOR SUPERVISED LOOP**

If no end-of-line resistor supervision is desired, a conventional normally closed loop may be configured by cutting the corresponding zone jumper labeled J1 thru J6 on the control circuit board. These jumpers look like white resistors with no color bands.

**NOTE:** E.O.L. Resistor supervision is required if normally open devices are to be used.

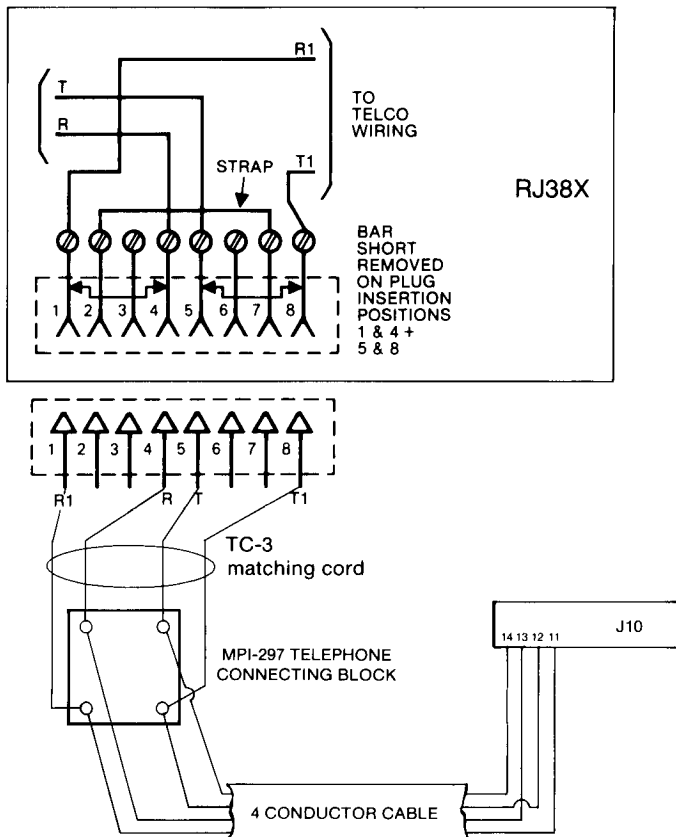


**FIGURE 7  
CONVENTIONAL NORMALLY CLOSED LOOP**



**TELEPHONE CONNECTIONS.** . . Pins 11, 12, 13, and 14 of Cable Assembly J10 are the telephone line connections. To be in compliance with FCC regulations and obtain the advantages of line seizure, a USOC RJ-31X or RJ-38X telephone jack must be ordered from the telephone company and a matching cord (part # TC-3) **MUST** be used for connecting the system to the telephone jack. Since the SYSTEM 911 will be in-wall mounted, additional considerations are needed to be able to reach and plug into the jack. Figure 8 shows the recommended hook-up.

Telephone Line	(RING)	Pin 13 (red wire) should be connected to the RING (-) side of the incoming telephone line.
	(TIP)	Pin 14 (green wire) should be connected to the TIP (+) side of the incoming line.
House Phones	(R1)	Pin 11 (gray wire) should be connected to the R1 (-) side of the house phones.
	(T1)	Pin 12 (brown wire) should be connected to the T1 (+) side of the house phones.



**FIGURE 8 TELEPHONE HOOK-UP DIAGRAM**

**TELEPHONE JACK.** . . In order to get a communicator jack installed, the telephone company will need the following information:

1. Phone number to which the communicator will be connected.
2. Jack type: USOC RJ-31x or RJ-38X.
3. Desired location of the jack.
4. FCC registration number: DLH66Y-12286-AL-E.
5. Ringer equivalence: 0.0B
6. Manufacturer: Moose Products, Inc.

Additional telephone company information may be found in Appendix C.

Line seizure means that when the communicator activates, all the house telephones will be disconnected to prevent someone from picking up and blocking the communicator from calling out.

## OTHER TERMINAL CONNECTIONS

**SP-1 PRE-ALARM OUTPUT.** . . Terminal pin SP-1 is a single, post type connector which provides a (-) negative output to remote an external entry alert or pre-alarm device. To connect to this post, a special single position connector (part # MPI-298) should be obtained. Since this output is a (-) negative, the (+) positive input to the pre-alarm device must be connected to pin 7 of cable assembly J9.

**SP-2 (+) INPUT RELAY TRIGGER.** . . Terminal pin SP-2 is a post type connector, which provides an alternate input to the coil of relay K1. The K1 relay is factory set to activate upon a burglar or 24 hr. auxiliary 3 alarm. By applying a (+) positive 12 VDC input to the SP-2 pin, relay K1 can be used for additional purposes.

**SP-3 TELEPHONE GROUND START TRIGGER.** . . Terminal SP-3 is an output trigger for activating a telephone ground start module (part # Z232.). This provides an interface to telephone lines requiring a momentary ground to obtain a dial tone.

**SUPPLEMENTARY OUTPUTS.** . .Ten (10) supplementary outputs are available from connector J11. These outputs are +12 Volt DC, current limited to 50 milliamps. Any of these outputs may be used to activate a low current "triggered" device such as an MPI-206 Relay or a JDS-108 siren driver which require less than 50 milliamps at 12 Volts DC. More than one of these outputs can be connected to the same low current trigger device. Two (2) 8 inch wires with female pins, are provided for connecting to these outputs. A package of ten (10) additional wires can be purchased separately. Specify part # MPI-299.

**CAUTION:** J-11 outputs (Pins 1-10) cannot directly drive an MPI-11 siren driver or any device that requires more than 50 milliamps (0.05 amp) of current. Damage to the control will result. Use a low current triggered relay such as an MPI-206SP, for switching high current devices.

- 1 **ARMED.** . .Output for a remote "armed" indicator.
- 2 **MEDICAL/AUX. 2.** . .Alarm output upon activation of a keypad or hardwired MEDICAL/AUX. 2 alarm.
- 3 **VIOLATION.** . .Output upon activation of any alarm. This can be used for a strobe or other auxiliary indicator. Stays active until system is reset or disarmed.
- 4 **POLICE/AUX. 1.** . .Alarm output upon activation of a keypad or hardwired POLICE/AUX. 1 alarm.
- 5 **BURGLAR ZONES READY.** . .Output for remote burglar zone ready indicator.
- 6 **BATTERY TEST.** . .Output to activate a relay for load testing the battery.
- 7 **ACCESS.** . .Provides a positive output when an access code is entered from the keypad. The amount of time this voltage output remains on, (hold) may be selected by programming a value of 001-255 seconds into Address 017.
- 8 **LAMP.** . .This timed output activates for 2 minutes when: AC power fails, a keypad digit is pressed, during entry/exit delay, and during all alarms.
- 9 **AUXILIARY 3.** . .Alarm output upon activation of a keypad or hardwired 24 hr. auxiliary 3 alarm. This output is already factory jumpered to activate the Alarm Relay K1. K1 contacts are available from Cable Assembly J9.
- 10 **BURGLAR.** . .Alarm output upon the activation of any burglar defined zone. This output is already factory jumpered to activate the Alarm Relay K1. K1 contacts are available from Cable Assembly J9.
- 11 **NEGATIVE (-).** . .Power Supply Negative

**TABLE 1 J11 OUTPUT DESCRIPTIONS**

**SIREN DRIVER HOOK-UPS.** . .Siren drivers usually draw several Amps of power under alarm conditions. There are two major types of siren drivers in use today. These types are:

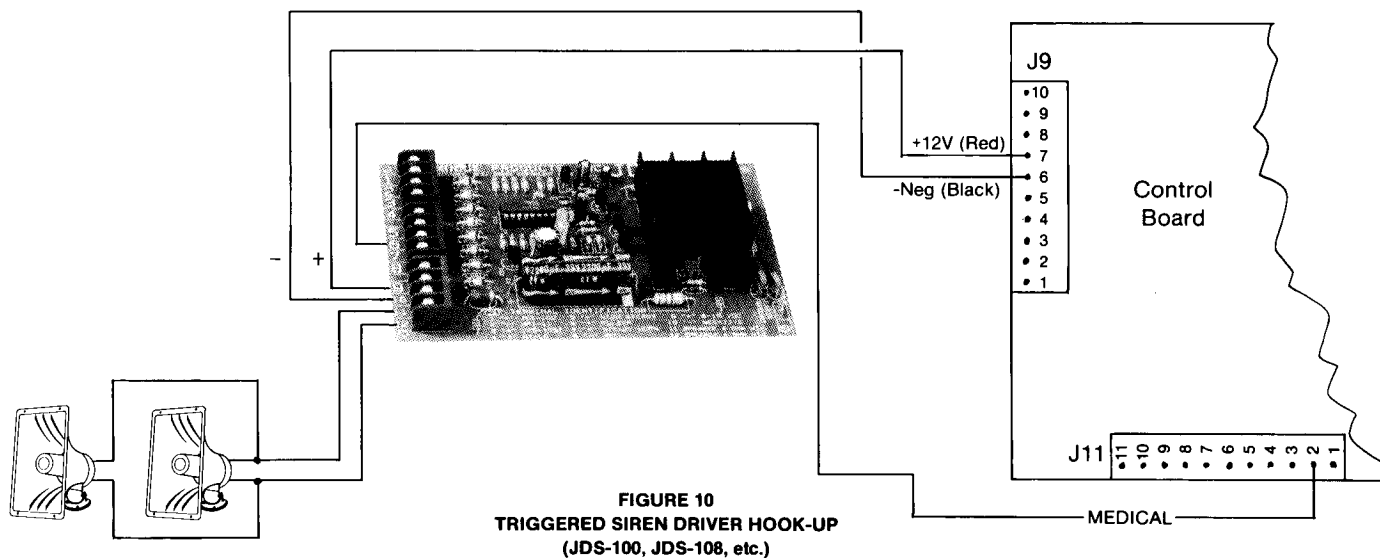
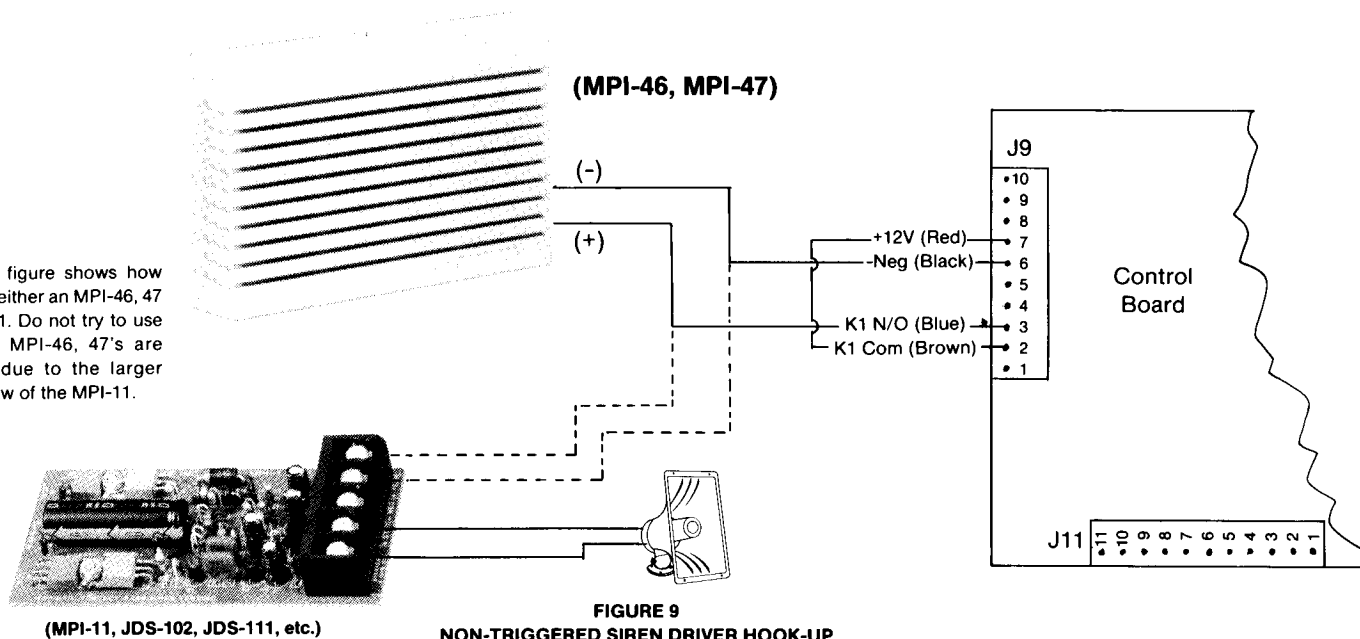
1. A non-triggerable, one or two sound siren driver such as the Moose MPI-11. All of the operating power is drawn through the "sound" selection (+ Positive) terminal.
2. A low current triggered type siren driver such as the Moose JDS-108, which draws its operating power through separate positive and negative inputs. The "sound" selection terminal, which activates the driver, draws only a small amount (milliamps) of current.

One way to determine which driver type you have is to look for a separate positive (+) voltage input terminal on the driver board. If there is a separate (+) voltage input then it's most likely a non-triggerable type.

**DIRECT (NON-TRIGGERED) SIREN HOOK-UP.** . .The System 911 has a built-in alarm relay which is activated by either a burglar or 24 hr. auxiliary 3 alarm. The contacts of Relay K1 are available from cable assembly J9, pins 1 (N/C), 2 (COMMON), & 3 (N/O). To connect a 12 VDC non-triggered siren driver, simply connect the (+) positive "sound" terminal of the driver to the (N/O) normally open side of Relay K1. Then connect the common side of the relay to the control's (+) 12 VDC auxiliary power output (J9, pin 7). Connect the (-) negative side of the driver to the control's (-) negative (J9, pin 6). The relay "switches" the +12 VDC high current demands to power the siren driver.

**TRIGGERED SIREN HOOK-UP.** . .When a triggered type siren is used, power it direct from the (+) positive and (-) negative auxiliary power outputs (J9, pins 6 & 7) of the control. Next, connect any of the J11 low current (50 milliamps maximum) outputs, to the "sound" input terminal of the siren driver. Figure 10 shows how the medical output (J11, pin 2) would be connected to a JDS-108 triggerable siren driver.

**Note:** This figure shows how to hookup either an MPI-46, 47 or a MPI-11. Do not try to use both! The MPI-46, 47's are preferred due to the larger current draw of the MPI-11.



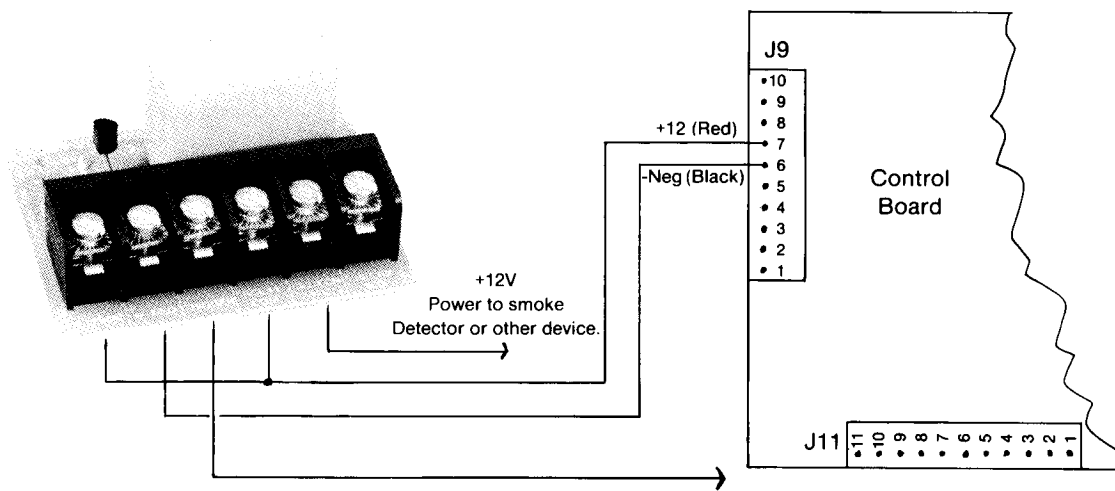
Relay requiring less than 50 milliamperes to activate.

### MPI-206SP Positive Triggering

For latching smoke detectors or motion sensors, a positive "triggering" relay such as the MPI-206SP can be connected as shown to interrupt power from a keypad command.

#### \*Method

1. If using "only" smoke detectors, connect the trigger lead to terminal 6 of J11. Command 7 or the automatic 24 hr test will activate the relay.
2. If using "Burglary" devices **Do Not Connect** the trigger lead to terminal 6. Instead, connect to terminal 7 which can be activated by any code programmed as "Access."



\*See Note on Triggering Methods

**WIRING THE ZONE LOOPS.** . .As previously stated, the system is equipped with inputs for six protective zones. It is important to know that any of the six zones can be reprogrammed, by you, to perform functions that suit your needs. You could, for example, have five interior zones and only one perimeter burglar zone if desired. Before wiring your system, study the following example which is based on the factory default programming.

**TYPICAL BUILDING EXAMPLE.** . .What follows is a brief discussion of each of the six zones as defined by the factory programmed default codes.

**ZONE 1.** . .Defined as Burglar Delay 1, with Factory Set exit time of 60 seconds and an entrance delay of 30 seconds. This will be our main entry or "front door." If the control is armed in the instant mode, this and all burglar zones will be instant.

**ZONE 2.** . .Defined as Burglar Delay 2 with an entrance time of 45 seconds, otherwise same as Zone 1. This zone will be our "garage entrance."

**ZONE 3.** . .Defined as "Interior." We've shown a motion detector on this zone. The interior may be turned off from the keypad allowing movement in the house while the system is armed.

**ZONE 4.** . .Defined as "Burglar Perimeter." If a window on a loop from an older system did not have an end-of-line resistor, add a resistor, or as in this case, cut jumper J4 to configure the loop as "normally closed" only.

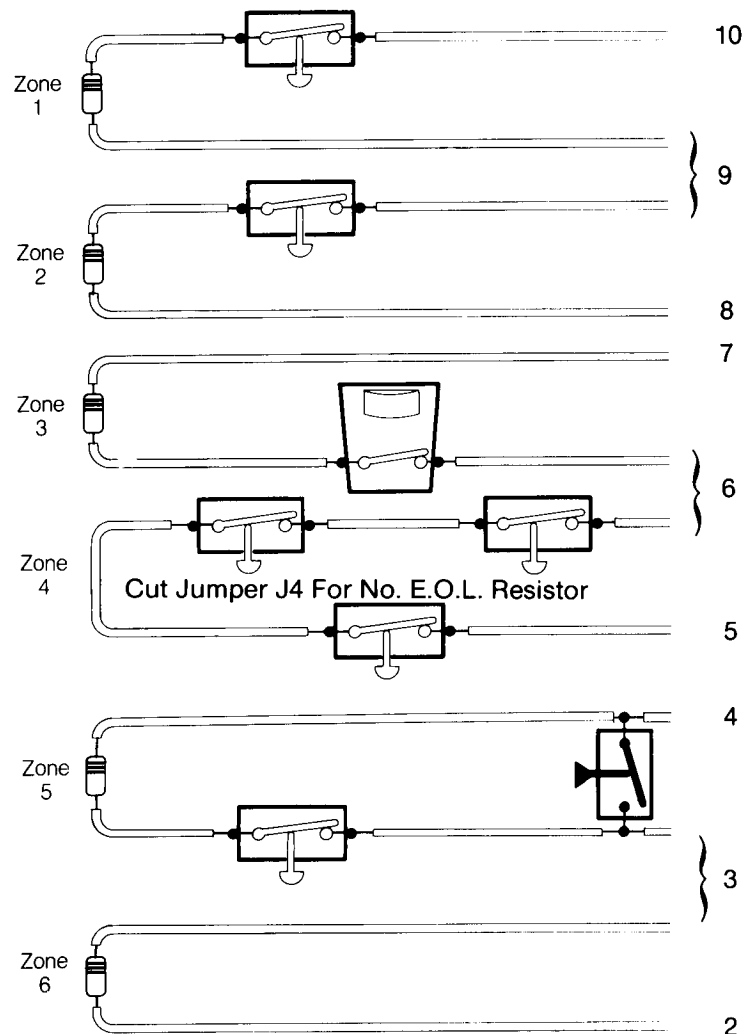
**ZONE 5.** . .Defined as "Burglar Perimeter." Note that we show N/C and N/O switches on the same loop. This can be particularly convenient when, you'd like to have several N/C magnetic switches on the same circuit with a N/O tamper switch.

**ZONE 6.** . .Defined as "Burglar Perimeter." For illustrative purposes, this building does not require another loop. To enable the control to operate normally without "seeing an open loop, we simply place an EOL resistor across the two input wires of the zone. This must be done with any unused loop(s).

## Points To Remember

1. Wiring for each of the six zones are from cable assembly J10 pins 2-10. Zone 1 connects to pins 9 & 10 (black & yellow wires). Zone 2 connects to pins 8 & 9 (blue & black wires). Notice that pin 9 (black) was used for both zone 1 & 2. Each zone loop has a separate wire input, but shares a common negative return with another zone.
2. If an end-of-line (EOL) resistor is not used for any loop, cut the white jumper for that loop and use only normally closed devices on that loop.
3. If you elect not to use a zone then close that zone with a 2200 Ohm EOL resistor (Moose Part # MPI-211) as shown in our example.
4. Many other zone use options are programmable by you. For example, factory default programming does not include any police, medical or keyswitch zones.

J10



**FIGURE 11 TYPICAL ZONE WIRING**

## SELECTED FEATURES AND PROGRAMMING OPTIONS

**GENERAL.** . .The system is shipped with factory default settings of six (6) burglary zones and three keypad activated zones. The default settings enable the system to work, "right out of the box" for initial testing. Of course, if you intend to use the built-in communicator, you will need to program at least the basic items such as the account and telephone numbers. All system options are keypad programmable to meet your installation requirements. Table 6 on page 16 lists the factory default settings.

**USER AUTHORIZATION CODES.** . .There are four user programmable authorization codes. Each code can be from 1 to 5 digits. A configuration digit assigns each code a specific level of security. Refer to Table 2 on page 21. The system allows the option of single, 2 digit, or full code arming with the full code required for disarm. In addition, Code 4 can be programmed as a temporary code with a specified number of uses.


**TIMER OPTIONS.** . .The system has many timers which can be set to provide the desired system performance. Table 3 lists the programmable range for each timer.

BURGLAR ALARM CUTOFF . . . . .	1-255 MINUTES
OR NO CUTOFF	
POLICE ALARM CUTOFF . . . . .	1-255 MINUTES
OR NO CUTOFF	
AUX. 3 ALARM CUTOFF . . . . .	1-255 MINUTES
OR NO CUTOFF	
MEDICAL ALARM CUTOFF . . . . .	1-255 MINUTES
OR NO CUTOFF	
EXIT TIME . . . . .	1-255 SECONDS
ENTRANCE DELAY 1 . . . . .	1-255 SECONDS
ENTRANCE DELAY 2 . . . . .	1-255 SECONDS
(SLOW) LOOP RESPONSE 1 . . . . .	1-255
x 40 MILLISECONDS	
(FAST) LOOP RESPONSE 2 . . . . .	1-255
x 40 MILLISECONDS	
ACCESS ON TIME . . . . .	1-255 SECONDS
COMMUNICATOR TEST TIME . . . . .	24 HOURS
COMMUNICATOR DELAY	
BEFORE DIAL . . . . .	1-255 SECONDS

**TABLE 3 TIMER RANGES**

**KEYPAD TIME RESTRICTIONS.** . .There are two time restrictions which affect the operation of the keypad. One is an eight (8) second timer and the other is a three (3) minute timer.

**EIGHT SECOND TIMER.** . .To prevent "code searching", the keypad "locks out" whenever an improper or invalid code digit is entered. The purpose of the eight second timer is to automatically reset the keypad 8 seconds after keypad entry stops. When the timer resets the keypad, a two second error tone will sound.

**NOTE:** If an incorrect or out of sequence digit is entered, the system will lockout and ignore all further entries, even a proper sequence, until the keypad is reset manually with the  key or automatically by the 8 second timer.

**THREE MINUTE TIMER.** . .The purpose of the three minute timer is to take the system out of the programming mode automatically 3 minutes after programming has ceased. The system allows 3 minutes between program steps. When the 3 minute timer runs out, a two second tone will sound and the system returns to the normal running mode.

**WATCHDOG MONITOR.** . .continuously monitors the system's microprocessor. The "watchdog" is one of the best defenses against microprocessor lockup caused by lightning and static discharges. If the microprocessor ceases to operate properly, the watchdog "resets" it by initiating a power-up sequence. Following reset, the system is restored to the same operating condition as was previously set. There are a few exceptions to the system restoration.

1. If the entry or exit alert is sounding and the entry zone is still violated, the system will shunt the violated zone and re-arm. Entry and exit time is lost.
2. If the system is in alarm and the watchdog resets the microprocessor, the alarm stops. All violated zones are auto shunted upon system re-arm.
3. If the Communicator is reporting and the watchdog resets the micro, the communicator stops and the report is lost.

**NOTE:** If a test report is programmed, the test will be sent 24 hours after the watchdog reset occurs. Out of sequence test reports SHOULD be promptly investigated.

**POWER SUPERVISION & SHUTDOWN...** The standby battery is tested once every 24 hours. If the battery voltage, is below 11.2 volts but above 7.5 volts when tested, the pre-alarm will beep and the power LED will blink. The Communicator can be programmed to transmit a low battery report at this time provided sufficient battery power is still available, however below 7.5 volts the microprocessor is shut down. To silence the beep, press the **[F]** key. To reset the blinking LED press command **[7]** and a user authorization code. An MPI-266 low battery cutoff module may be installed to protect the battery against deep discharge.

**EXIT BEEP.** . Each time the system is armed, the pre-alarm beeps once per second until the exit time expires. To totally disable the exit beep, program an odd value for Address 030 (exit time) such as 061 seconds..

**LOOP FOLLOWER.** . allows all burglar zones to be delayed automatically during entrance delay provided a delay defined zone was violated first. All zones are delayed on exit.

**PROGRAMMABLE ZONE OPTIONS.** . Any of the six (6) zones may be programmed for burglar, 24 hour auxiliary 3, police/aux. 1, medical/aux. 2. A single zone may be programmed as a momentary key zone, but only one keyswitch zone may exist per system. Table 4 lists the zone programming options. The ZONE PLANNING GUIDE, Appendix A, provides a table for assisting in zone planning.

BURGLAR	INSTANT, DELAY 1, DELAY 2, INTERIOR, PERIMETER, DAY ALERT, LOCKOUT, SLOW OR FAST LOOP RESPONSE TIME
AUXILIARY 3	SLOW OR FAST LOOP RESPONSE TIME, SHUNTABLE
POLICE/AUX 1	SLOW OR FAST LOOP RESPONSE TIME, SILENT OR AUDIBLE
MEDICAL/AUX 2	SLOW OR FAST LOOP RESPONSE TIME
KEYSWITCH	SLOW OR FAST LOOP RESPONSE TIME

**TABLE 4 PROGRAMMABLE ZONE OPTIONS**

**AUXILIARY 3.** . is a 24 hour operational zone option. When wired properly with the end-of-line resistor at the end of the loop, an alarm will be activated when the loop is shorted while a trouble will be activated if the loop opens. The alarm & trouble may be silenced by pressing the **[F]** key. To reset an auxiliary 3 alarm, press command **[1]** followed by a user authorization code. Auxiliary 3 may also be programmed as keypad shuntable.

**KEYSWITCH.** . is a definition which may be assigned to any ONE of the six (6) zones. A **momentary** keyswitch is required. It can be wired to either short or open the loop, provided the loop is end-of-line resistor supervised. To ARM or DISARM the system, turn the keyswitch to its momentary position and hold for one (1) second. The pre-alarm will beep to verify operation. The system will then change state when the key is released.

To allow the interior on/off and delay on/off modes to be changed with a keyswitch, program Address 038 with a value of 128.

**COMMUNICATOR DELAY BEFORE DIALING.** . . (Address 033) sets the time of 1-255 seconds after an alarm activation until the Communicator begins dialing. Zero (0) is the factory default value, which disables the Communicator making the control "local only". A delay allows the user time to reset the system and abort a report following an accidental alarm. All alarms except police may be aborted if the disarm code is entered before the communicator completes its call. When an alarm is aborted, the cancel report code (Address 062) if programmed will be transmitted in place of the alarm report code.

**COMMUNICATOR OPERATION & LINE SEIZURE.** . . When the Communicator is triggered, the control seizes the telephone line, disconnecting the house phones. If dial tone is detected, the dialing sequence will begin immediately. If no dial tone is detected within 10 seconds, the dialing process begins anyway.

**TELEPHONE NUMBERS.** . .There are two (2) programmable 30 digit telephone numbers. Each telephone number can be programmed for either Rotary or Touchtone® dialing. (Address 038). By programming both telephone numbers, each will backup the other if unsuccessful. When the Communicator is triggered, telephone number 1 is always attempted first.

**DIAL ATTEMPTS BEFORE SHUTDOWN.** . .allows the Communicator to be programmed (Address 041) to hangup and redial up to a maximum of 255 tries if it is unable to complete its transmission or fails to reach the central station. Each attempt will alternate between telephone numbers 1 and 2. The attempts counter is decremented each time, even if only one of the telephone numbers is programmed.

**COMMUNICATOR TRANSMISSION FORMAT.** . .is programmed separately for each of the two telephone numbers. The digital communicator can transmit 4 different formats. The formats are:

- 1 = 1400 Hz. handshake, 1900 Hz. data, 10 baud. (Ademco, Adcor, FBI, Osborne Hoffman, Silent Knight, Varitech, and Vertex slow format).
- 2 = 2300 Hz. handshake, 1800 Hz. data, 20 baud. (DCI, FBI, Franklin, Osborne Hoffman, Radionics, SESCOA, Varitech, and Vertex fast format).
- 3 = 1400 Hz. or 2300 Hz. handshake, 1800 Hz. data, 40 baud. (Radionics superfast no parity).
- 4 = 1400 Hz. handshake, 1900 Hz. data, 15 baud. (Silent Knight fast format).

**NOTE:** Many receivers offer plug-in dedicated line cards for different formats.

**COMMUNICATOR EXTENDED REPORTING.** . .is advantageous for reporting: individual alarm, restore and cancels by zone, opening/closing by user code. The report code is programmable while the extended digit is automatically added by the system.

The Communicator is capable of sending (Two-Line) extended reporting. Line 1 is the account number plus the report (alarm) code. Line 2 is the report code repeated three times, followed by the extended digit. Two-line extended is enabled in Address 038. The following example is an "alarm" triggered from zone 6 in two-line extended.

1st line	987 (account code)	3 (report code)
2nd line	333 (reporting code)	6 (extended digit)

The central station will identify this as: Account 987, code 3 (burglary) from zone 6.

The EXTENDED digits are:

OPENING/CLOSING reports USER codes 1 thru 4.  
KEYSWITCH ARM/DISARM reports digit 5.  
KEYPAD ACTIVATED ZONES reports digit 9.  
ZONES 1-6 report alarm, restore, cancel, and 24 hour auxiliary 3 trouble by zone number. Digits 1-6.

**REPORTING CODES.** . .for each zone and condition are programmable. The programmable value can be from 1 to 15. A value of "255" disables the zone or condition making it non-reporting.

**HEXIDECIMAL REPORTING.** . .codes may be programmed and transmitted to Central Station Receivers that are capable of accepting "HEX". Radionics and compatible receivers convert these codes to an "English" printout. When reporting to Radionics or compatible receivers, the zone reporting codes 1 - 6 should be programmed with a value from 1 - 6 respectively. Table 5 displays the Hexidecimal reporting codes and their representative characters.

- 11=B hexadecimal ("OPENING" reported)
- 12=C hexadecimal ("CLOSING" reported)
- 13=D hexadecimal ("CANCEL" reported)
- 14=E hexadecimal ("RESTORAL" reported)
- 15=F hexadecimal ("TROUBLE" reported)

**TABLE 5 HEXIDECIMAL REPORT CODES**

**RESTORING THE FACTORY DEFAULT SETTING.** . . . may be accomplished at any time. This action is recommended prior to final installation programming and during or after system training or anytime the program values are unknown. Returning to the factory programming will cancel any customized values but will not affect the telephone numbers. Use the following procedures to restore the factory default program settings.

**NOTE:** Previous programming will be lost.

1. Press the Program Command key **⏏**.
2. Enter the program authorization code. The factory default code is "9-8-7-6-5". The control should beep 4 times.
3. Press and hold the program switch. See Figure 1 on page 4 for the location of the hidden switch. While holding the switch, press the **⏏** key. The control should beep 2 times. Release program switch.
4. Press "0-0-9".
5. Press "2-5-5".
6. All LEDs on the Control should be on.
7. Press **⏏**.
8. Remove all power from the control.
9. Wait five to ten seconds and then reconnect the power. The System will appear blank for a moment followed by normal operation. The factory default settings are now restored.

### ALTERNATE

If the program code is unknown or is "Locked out" (see two digit arming on page 24), the following method can be used to enter the programming mode:

1. Remove all power from the control.
2. Press and hold the program switch.  
While holding the switch, reconnect the power.  
The system should beep 4 times.
3. Continue holding the program switch and press **⏏**.  
The control should beep 2 times. Release program switch.

(Now continue with steps 4 - 9 above)

**NOTE:** If the control is powered up while the Program Switch is closed (pressed and held), the System will automatically be in the program mode. Do not enter 9-9-8-7-6-5 (program code) in this instance.

FAST LOOP RESPONSE . . . . . 80 MILLISECONDS  
SLOW LOOP RESPONSE . . . . . 320 MILLISECONDS  
USER AUTHORIZATION CODE 1 . . . . . 2-4-5  
TWO DIGIT ARMING . . . . . (255) NOT SET  
USER AUTHORIZATION  
CODE 2 . . . . . NOT PROGRAMMED  
NEW EEPROM FLAG . . . . . (000) NOT SET  
USER AUTHORIZATION  
CODE 3 . . . . . NOT PROGRAMMED  
AUTHORIZATION CODE 4 USAGE COUNT . . . . . 255  
USER AUTHORIZATION  
CODE 4 . . . . . NOT PROGRAMMED  
ACCESS (DOOR STRIKE)  
OUTPUT TIME . . . . . 020 SECONDS  
PROGRAM AUTHORIZATION CODE . . . . . 9-8-7-6-5

ZONE DEFINITIONS:  
1=BURGLAR, DELAY 1, PERIMETER, SLOW . . . . . 064  
2=BURGLAR, DELAY 2, PERIMETER, SLOW . . . . . 072  
3=BURGLAR, INSTANT, INTERIOR, SLOW . . . . . 081  
4=BURGLAR, INSTANT, PERIMETER, SLOW . . . . . 065  
5=BURGLAR, INSTANT, PERIMETER, SLOW . . . . . 065  
6=BURGLAR, INSTANT, PERIMETER, SLOW . . . . . 065  
EXIT DELAY TIME . . . . . 060 SECONDS  
ENTRANCE DELAY 1 TIME . . . . . 030 SECONDS  
ENTRANCE DELAY 2 TIME . . . . . 045 SECONDS

COMMUNICATOR DELAY  
BEFORE DIAL . . . . . 000 SECONDS  
(COMMUNICATOR DISABLED)  
BURGLAR ALARM CUTOFF TIME . . . . . 015 MINUTES  
AUXILIARY 3 ALARM CUTOFF TIME . . . . . 000 NO CUTOFF  
POLICE/AUX. 1 ALARM CUTOFF TIME . . . . . 015 MINUTES  
MEDICAL/AUX. 2 ALARM  
CUTOFF TIME . . . . . 015 MINUTES  
SYSTEM CONFIGURATION . . . . . 000  
(Refer To Page 26)

INTERIOR/DELAY DISARM MODE . . . . . 000 ON/ON  
DIAL ATTEMPTS BEFORE SHUTDOWN . . . . . 008  
TELEPHONE NO. 1 TRANSMISSION FORMAT . . . . . 002  
TELEPHONE NO. 2 TRANSMISSION FORMAT . . . . . 002  
ACCOUNT CODE . . . . . 888  
KEYPAD POLICE PIEZO SOUNDER . . . . . 255 AUDIBLE  
ZONE 1 REPORT CODE . . . . . 003  
ZONE 2 REPORT CODE . . . . . 003  
ZONE 3 REPORT CODE . . . . . 003  
ZONE 4 REPORT CODE . . . . . 003  
ZONE 5 REPORT CODE . . . . . 003  
ZONE 6 REPORT CODE . . . . . 003  
KEYPAD AUX. 3 REPORT CODE . . . . . 001  
KEYPAD POLICE/AUX. 1 REPORT CODE . . . . . 002  
KEYPAD MEDICAL/AUX. 2 REPORT CODE . . . . . 255  
OPENING CODE . . . . . 255  
CLOSING CODE . . . . . 255  
CLOSING WITH SHUNTS CODE . . . . . 255  
CANCEL CODE . . . . . 255  
ZONE RESTORE CODE . . . . . 255  
AUXILIARY 3 TROUBLE CODE . . . . . 255  
LOW BATTERY CODE . . . . . 255  
COMMUNICATOR TEST CODE . . . . . 255  
TELEPHONE NO. 1 . . . . . NOT PROGRAMMED  
TELEPHONE NO. 2 . . . . . NOT PROGRAMMED

**TABLE 6 FACTORY PRE-DEFINED (DEFAULT) SETTINGS**



# OPERATING INSTRUCTIONS

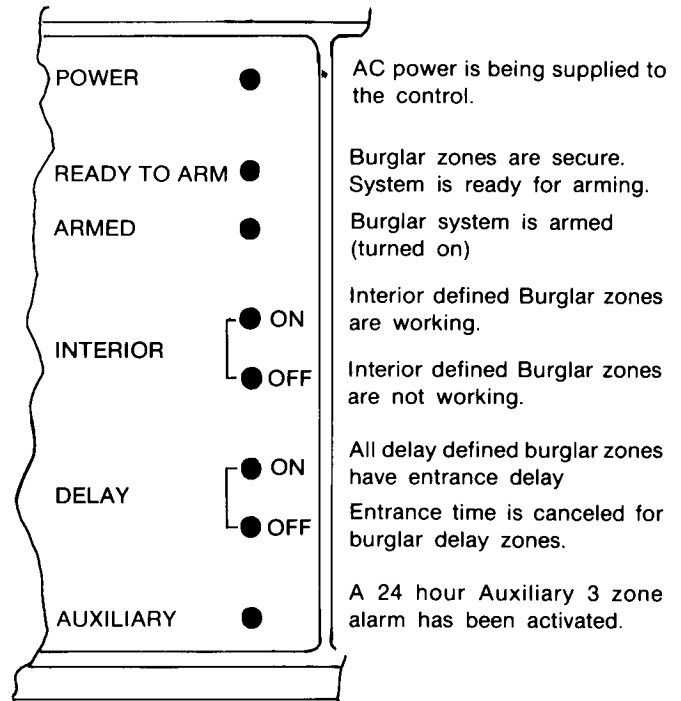
**GENERAL.** . . Assuming all wiring is in place, power can now be applied to the control. Follow along as we explain the operating and test procedures. After the system is up and running and we have explained the purpose of the LEDs and keys, read the section titled, "Programming The System 911". It explains how to change addresses to customize the system. Begin with basic addresses such as "entry time" or one of the authorization codes.

**POWER-UP.** . . Verify that ALL wiring connections to the control are complete and secure. Cable assembly J9 should be plugged into connector J9. Cable assembly J10 should be plugged into J10. Plug the AC transformer into a 24 hour 110 Volt non-switched outlet. Then connect the battery, making sure to observe the correct polarity.

The following LEDs should light.

- \* POWER
- \* READY TO ARM (Provided all zones are normal).
- \* INTERIOR ON
- \* DELAY ON

## WHAT THE LIGHTS MEAN



**DOOR CLOSED - LIGHTS STEADY**

**CONTROL COMMANDS AND DISPLAY...** The System has eight (8) LEDs which provide a readout of the system status as well as the status of the six zones. The keypad controls the system through simple but powerful "Commands". A lift up door opens to reveal a system information label, with space to describe each zone location.

The LEDs display 3 pages of information.

**PAGE 1** is the normal operating mode which displays the system status.

**PAGE 2** displays zone status including violated and shunted zones. Command [2] is used to change the LEDs to this page.

**PAGE 3** will display alarm memory to identify the zone(s) causing the most recent alarm. Command [3] is used to change the LEDs to this page.

ZONE	WHEN LAMP IS BLINKING	
●	LOW BATTERY (1)	Battery is weak or Aux. power fuse (F1) is blown.
●	ZONE SHUNTED (2)	One or more zones have been manually shunted.
●	ALARM MEMORY (4)	Burglar alarm has been triggered. Use command [3] to display alarm memory and determine which zone was violated.
●	(8)	Undefined
●	AUX 1 - POLICE (16)	Police/Aux. 1 alarm has been triggered.
●	(32)	Undefined
●	AUXILIARY 2 (64)	Medical/Aux. 2 alarm has been triggered.
●	AUXILIARY 3 TROUBLE (128)	A 24 hour Auxiliary 3 zone is in a trouble (open) condition. Use command [2] to display and identify the zone.

**DOOR OPEN - LIGHTS BLINKING**

**KEYPAD COMMANDS.** . .are a series of highly useful and easy to use functions that are activated by pressing the desired "command" button followed by a user authorization code.

With the control station door "open", note that each pushbutton is accompanied by a word that is the clue to its particular command function. In the following discussion of the commands we will use the factory default user code which is 2-4-5.



**COMMAND 1: ARM/DISARM**

Used to arm or disarm the burglar system and to reset all alarms including Police/Auxiliary 1, Medical/Auxiliary 2, and Auxiliary 3 alarms.

To Arm: Press **1** + 2-4-5

To Disarm: Press **1** + 2-4-5



**COMMAND 2: ZONE STATUS**

Used to check zone status. Steady lighted LEDs indicate, by zone number, which zones are not secure. Blinking LEDs indicate zones which are shunted. This command latches for eight seconds and can be extended by pressing any key except **\***, which cancels the command.

To Display Zone Status: Press **2** + 2-4-5



**COMMAND 3: ALARM MEMORY**

Used to determine which hardwired zone(s) caused the most recent alarm, lighted LEDs indicate which zone. This command latches for eight seconds and can be extended by pressing any key except **\*** which cancels the command.

To Display Alarm Memory: Press **3** + 2-4-5



**COMMAND 4: INTERIOR ON/OFF**

Used to bypass all "interior" defined zones prior to arming. When the control is disarmed the interior zones revert to their original condition (unless otherwise programmed). With the control station door "closed", note that LED display will alternate between "Interior On" and "Interior Off" when this command is used.

To turn Interior Off: Press **4** + 2-4-5

To turn Interior On: Press **4** + 2-4-5



**COMMAND 5: DELAY ON/OFF**

Used to turn off the **entrance** delay on zones defined as delay. All zones are then "instant" and the alarm will sound immediately if any burglar zone is violated.

**NOTE:** All burglar zones delay on exiting.

To turn delay off: Press **5** + 2-4-5

To turn delay on: Press **5** + 2-4-5



**COMMAND 6: MONITOR**

Use to day monitor door openings while system is disarmed. When the monitor is on, the keypad will beep momentarily each time a door is opened (except for shunted zones).

To turn monitor on: Press **6** + 2-4-5

To turn monitor off: Press **6** + 2-4-5



**COMMAND 7: BATTERY TEST**

Used to manually test the standby battery and to reset the blinking power LED of a low battery condition or blown fuse after the problem has been corrected.

To reset (clear): Press **7** + 2-4-5



**COMMAND 8: TEST**

Used to walk test burglar loops. When "test" is activated the keypad beeps continuously when any burglar zone is violated.

To turn test on: Press **8** + 2-4-5

To turn test off: Press **\***



**COMMAND 9: PROGRAM**

Used to enter programming modes. See programming section for further information.



**COMMAND 0: ACCESS**

Can be used to activate a door release device (electric strike). The authorization code must have a configuration digit of 2, 3, or 7. Output pin 7, of J11 provides a positive 12 volt output with this command.

To activate access: Press **0** + (user code configured for access with Command **0** ).



**COMMAND \*: RESET**

Used to clear (cancel) keypad entries and errors, silence the keypad, acknowledge auxiliary 2 and auxiliary 3 alarms, or jump out of programming mode.



**COMMAND #: SHUNT**

Used to shunt (bypass) burglar zones prior to arming. The ready light blinks when a zone is shunted. Command **2** displays the shunted zone.

To shunt a zone: Press **#** + zone number

To remove all shunts: Press **#** + 9

**NOTE:** All shunts are removed when the system is disarmed after exit time has expired. This key also has special programming uses which are described in "Programming The System 911".

**SINGLE DIGIT COMMAND FEATURE.** . .Allows commands 2 thru 8 to be activated by a single press. To enable, program a user code with a configuration digit **0** and a code of 0-0-0-0-0. See page 21.

**KEYPAD ACTIVATED ZONES.**...are available from the keypad by pressing and holding, for one second, a combination of two (2) keypad digits. The keypad zones are: POLICE/AUX. 1, MEDICAL/AUX. 2 and AUXILIARY 3. These zones are independent of the "hardwired" zones and can be activated at any time regardless of whether the system is armed. When a keypad alarm is activated, the built-in pre-alarm begins beeping and an LED lights to indicate the type of alarm activated. Police/Aux. 1 may be programmed for silent operation if desired. The Communicator can be programmed to transmit a code for each alarm type.

The combination required to activate the keypad auxiliary zone are:

Keys **2** & **3** or **1** & **3** for POLICE/AUX. 1.

When activated, the INTERIOR OFF LED blinks, the built-in pre-alarm beeps, and J11, pin 4 (police output) activates for the cutoff time (Address 036). The pre-alarm and LED may be disabled making police/aux. 1 silent, by programming Address 047.

Keys **3** & **9** for MEDICAL/AUX. 2 ALARM.

When activated, the DELAY OFF LED blinks, the built-in pre-alarm beeps, and J11, pin 2 (Medical/Aux. 2 output) activates for the cutoff time (Address 037).

Keys **1** & **7** for AUXILIARY 3 ALARM.

When activated, the AUXILIARY LED lights steady, the built-in pre-alarm beeps, and J11, pin 9 (auxiliary 3 output) activates for the cutoff time (Address 035).

Auxiliary 2 and Auxiliary 3 alarm conditions can be silenced by pressing the **4** key and may be reset using the arm/disarm code. Police/Aux. 1 alarm can only be silenced by resetting, using the arm/disarm code.

**TESTING THE SYSTEM.** . .Use the following procedure to test each zone and to become familiar with the performance of the System.

1. Violate a zone.
2. The READY LED will be off.
3. Try to arm the system with the factory user authorization code. Press **1** - 2-4-5.

**NOTE:** If you make a mistake while pressing keypad digits, press the **4** key and start over.

4. The pre-alarm sounds for 2 seconds warning that the system is not ready to be armed.

5. Use the zone status command to identify the violated zone(s). Press **2** - 2-4-5.
6. An LED will be lighted identifying the violated zone. Zone status display will remain on for eight (8) seconds.
7. Shunt the zone. Press **4** + the zone number.
8. The READY LED will be blinking as a reminder that one or more zones are shunted.
9. Press **2** - 2-4-5 to display zone status. The shunted zone LED will blink.
10. Press **4** to return to normal LED display.
11. Arm the system. Press **1** - 2-4-5.
12. The ARMED LED will be on and the READY LED will continue to blink.
13. The pre-alarm will beep until the exit time expires (60 seconds). Wait 60 seconds.
14. Now violate a zone.
15. The pre-alarm will beep rapidly and the ARMED LED (alarm memory) will blink.

**NOTE:** If the digital communicator is enabled, the alarm will be reported to the monitoring Central Station.

16. Press the **4** key to silence the pre-alarm.
17. The ARMED & READY LEDs will be blinking.
18. Disarm the system. Press **1** - 2-4-5.
19. The ARMED LED is blinking and the READY LED is dark. The previous "shunt" is cancelled.

**NOTE:** All shunted zones are cancelled (shunts removed) when the system is disarmed provided that the exit delay time has expired.

20. Press **4** to clear the blinking ARMED LED.
21. Which zone caused the alarm? Use command 3 to check. Press **3** - 2-4-5.
22. An LED will be lighted identifying the zone that caused the alarm. Alarm memory display will remain on for eight (8) seconds.

**NOTE:** The contents of alarm memory is retained until another alarm occurs or until all power is removed from the control.

23. Restore all zones to normal.
24. READY LED should be lighted.

Each of the six (6) zones should be tested using the previous procedures. In addition, Command 8 can be used periodically to walk test all devices on each of the zones. Command 8 automatically provides an audible signal when a device or zone is violated.

# PROGRAMMING THE SYSTEM 911

**GENERAL.** . .The SYSTEM 911 may be programmed either directly from the keypad or with the Z1100P EEPROM programmer. Most programming options are referred to as "Addresses", and there are 128 available addresses. This section explains how to keypad program, and describes in detail each of the programmable addresses. Instructions on using the Z1100P may be found in the Z1100P manual, part # L1116 (rev A). The System offers two different levels of programming, USER and ADDRESS. Each programming level has a different purpose. One level is for the end user (USER level), and the other level is for the installer (ADDRESS level). The end user is not required to do any type of programming to use the system, but does have the option of changing arm/disarm codes and other limited features.

## USER PROGRAMMING

Is a restricted level of PROGRAMMING that may be used only to change/set USER AUTHORIZATION codes 1 - 4, the PROGRAM AUTHORIZATION code, as well as for changing ENTRANCE DELAY times and advance the COMMUNICATOR AUTOMATIC TEST time. See Table 7. The end user is prevented from accidentally altering the remaining system configuration by a hidden installer program switch. See Address Programming on page 22.

**USER PROGRAMMING FORMAT.** . .All user programming is accomplished using the following 3 step format.

PROGRAM CODE + USER OPTION + VALUE

OPTION	DESCRIPTION	FORMAT/RANGE	VALUE
1	USER AUTHORIZATION CODE 1	CONFIGURATION # PLUS 5 DIGITS	_____
2	USER AUTHORIZATION CODE 2	CONFIGURATION # PLUS 5 DIGITS	_____
3	USER AUTHORIZATION CODE 3	CONFIGURATION # PLUS 5 DIGITS	_____
4	USER AUTHORIZATION CODE 4	CONFIGURATION # PLUS 5 DIGITS	_____
5	PROGRAM AUTHORIZATION CODE	CONFIGURATION 9 PLUS 5 DIGITS	9 _____
6	CODE 4 TEMPORARY USAGE	000-254 USAGE      255=PERMANENT	_____
7	COMMUNICATOR/BATTERY TEST ADVANCE TIME	000-024 HOURS ADVANCE UNTIL FIRST TEST	0 ____
8	ENTRANCE DELAY TIME 1	001-255 SECONDS	_____
9	ENTRANCE DELAY TIME 2	001-255 SECONDS	_____

**TABLE 7 USER PROGRAMMING OPTION GUIDE**

**PROGRAM CODE.** . .The PROGRAM code consists of the command digit 9 followed by the PROGRAM AUTHORIZATION code. The default PROGRAM AUTHORIZATION code is (9-8-7-6-5) and may be changed at any time. Once this code is changed the default code will no longer work. Entering the PROGRAM code places the System into the USER PROGRAMMING Mode.

**USER OPTION.** . .User option selects the address to be programmed. There are a total of 9 options which may be programmed by the end user.

**VALUE.** . .The user will program two different types of values into the System. These values are either six (6) digits or three (3) digits in length. The six digit values are associated with the AUTHORIZATION codes and consist of a CONFIGURATION digit PLUS a five digit AUTHORIZATION code. The three digit value is associated with the USER AUTHORIZATION code 4 USAGE count and the various time settings. If the value is less than six or three digits, then leading or trailing zeros must be inserted to complete the required six or three digit value. The method of determining values is explained under the following paragraphs.

**USER AUTHORIZATION CODES (Options 1 thru 4).** . . These codes consist of a CONFIGURATION digit plus a five (5) digit AUTHORIZATION code. The CONFIGURATION digit allows the user to assign a different level of security for each code; i.e., Arm/Disarm, Access (activate a door strike), or Duress. (See Table 2). Trailing zeros must be entered if a code of less than five (5) digits is desired.

CONFIGURATION                      FIVE (5) DIGIT  
DIGIT                      +      AUTHORIZATION CODE

- 0 Code cannot ARM, DISARM or activate ACCESS. Used with a code of "00000" to allow single digit commands 2, 3, 4, 5, 6, 7, and 8.
- 1 Code ARMS & DISARMS using command 1.
- 2 Code activates the ACCESS output J11, pin 7 using Command 0.
- 3 Code ARMS & DISARMS using command 1 and activates ACCESS output using command 0.
- 5 Code activates the ACCESS output each time the control is ARMED or DISARMED. Command 0 however, will not work with this code.
- 7 Code activates the ACCESS output each time the control is ARMED or DISARMED and also when used with the keypad command **00**.
- 9 Code ARMS & DISARMS normally, but causes the Communicator to transmit the keypad POLICE report code. (Address 057)

**TABLE 2 CONFIGURATION DIGIT VALUES**

**PROGRAM AUTHORIZATION CODE (Option 5).** . . Like the USER AUTHORIZATION codes, this code consists of a CONFIGURATION digit (always 9) plus a five (5) digit AUTHORIZATION code. The PROGRAM AUTHORIZATION code should always have five (5) digits for better security although shorter codes may be entered using trailing zeros (0).

9 + FIVE (5) DIGIT AUTHORIZATION CODE

**CODE 4 TEMPORARY USAGE COUNT (Option 6).** . . USER AUTHORIZATION code 4 is a special code which may be programmed to always function like codes 1 thru 3 or may be restricted to a given number of uses. For example, a workman could be given USER AUTHORIZATION code 4 assigned with a TEMPORARY USAGE value of 002 which would allow disarming the security system in order to make repairs and re-arming when departing. USAGE VALUE is reduced by 1 each time the code is used. Since the USAGE VALUE was 2, the workman could not return at a later date and disarm the system.

Value may be from 001 to 254 temporary uses. For permanent usage enter a value of 255.

**COMMUNICATOR/BATTERY TEST TIME ADVANCE (Option 7).** . . The Control has an automatic 24 hour test feature which is used to transmit a test signal from the digital communicator, if programmed, to a Central Monitoring Station. This feature also performs a test on the system battery. Central Stations normally want test signals sent in the early morning hours when the work load is light. Option 7 allows one to advance the time this test will occur in whole hours from the present time until the desired time. Once set, a test will occur once a day (every 24 hours) at this time. Example: It is 4pm and the test is to be at 3am. Enter a value of 011 (4pm to 3am = 11 hours) into option 7.

Value may be 000 to 024 hours.

**ENTRANCE DELAY 1 AND 2 (Option 8 and 9).** . . There are two (2) ENTRANCE time values. Either Delay 1 or Delay 2 value may be assigned to a delay defined zone. All the burglar zones automatically convert to delay (follower feature) provided first point of entry is through a delay assigned zone.

Values are in seconds and range from 001 to 255 seconds. To program ENTRANCE DELAY 1 for 30 seconds enter "030" into option 8. To program ENTRANCE DELAY 2 for 2 minutes enter "120" into option 9.

**CAUTION:** "000" must not be programmed into options 8 or 9. "000" causes infinite (unlimited) entry delay time.

## USER PROGRAMMING PROCEDURES

The Control will beep (prompt) after each step.

1. Press command **[9]** plus the PROGRAM AUTHORIZATION code **[9]** 9-8-7-6-5. 4 beeps
2. Select and enter a user option number 1 thru 9. (See Table 7). 3 beeps
3. Select a value. (See Tables 2 & 7).  
The value selected must be either 3 or 6 digits. Use leading or trailing zeros to complete the 3 or 6 digit value. Trailing zeros must be entered but are not part of the authorization codes.

3 digit value  
30 is entered as 030  
8 is entered as 008

6 digit value  
1985 is entered as 198500  
321 is entered as 321000

4. Enter selected value. 3 beeps  
The Control returns automatically to the regular running mode.

To enter additional user options, return to step 1. If a mistake is made while programming with the keypad, press the **[X]** key until the keypad beeps three times or emits a 2 second error tone, then start over.

**CAUTION:** Pressing the **[X]** key or failing to complete the value entry will result in ZEROS being automatically placed into that memory location. If this happens, erroneous operation may occur. To correct this condition, start over by reprogramming that option.

### USER PROGRAMMING EXAMPLE

USER AUTHORIZATION code 1 programmed as 3-3-6-8 to ARM and DISARM.

1. Press **[9]** 9-8-7-6-5 (4 beeps).
2. Press **[1]** for USER Option 1.
3. Press **[1]** for a CONFIGURATION digit 1.
4. Press 3-3-6-8-0. Code is now programmed.

## ADDRESS PROGRAMMING

The purpose of ADDRESS PROGRAMMING is to allow the installer to customize the System to the specific needs of the installation.

**PROGRAM SWITCH.** . . The end user is locked out of ADDRESS PROGRAMMING by a hidden program switch. This switch is located behind the small righthand square hole on the lower front edge of the control face. This square hole also serves as part of the latch for the lift up door. See Figure 1 on page 4. A small non-metallic object should be used to reach and press the hidden switch.

**ADDRESS PROGRAMMING FORMAT.** . . All ADDRESS PROGRAMMING is accomplished using the following 4 step format.

PROGRAM	OPTION	MEMORY	3 DIGIT
CODE	+	"0"	+ ADDRESS + VALUE

**PROGRAM CODE.** . . The PROGRAM CODE consists of the command digit **[9]** followed by the PROGRAM AUTHORIZATION code. Entering the PROGRAM CODE places the System into the USER PROGRAMMING mode. Option 0 must be used to reach the Address (Installer level) of programming. See below. The default PROGRAM AUTHORIZATION code (9-8-7-6-5) can be changed. Once this code is changed, the default code will no longer work.

**OPTION 0.** . . OPTION 0 instructs the System to enter the ADDRESS PROGRAMMING mode. After pressing command **[9]** and the program authorization code, press and hold the hidden program switch. (Figure 1) and then press **[0]** to enter Address Programming. Now release the program switch.

**NOTE:** If OPTION 0 is entered and the Program Switch is not closed, a two (2) second error tone will sound and the System will return to the regular running mode.

**MEMORY ADDRESS.** . .The System has 128 programmable ADDRESSES. Each ADDRESS is part of the data base which the systems uses to perform each function. The Memory Map, described in APPENDIX B, shows all 128 addresses that are programmable by the installer.

After entering the ADDRESS PROGRAMMING mode, you may step to an initial memory address location. Three (3) digits must be entered to reach this initial location. If the ADDRESS is less than three (3) digits, leading zeros must be used. Example: ADDRESS 2 = 0-0-2. From the initial address, you may advance forward only one (1) location at a time by pressing the **[FWD]** key.

Backward steps are not possible in the ADDRESS PROGRAMMING mode, nor are forward jumps of more then one (1) location at a time. If it is necessary to jump backward or move forward many steps, simply exit the program mode by pressing the **[EXIT]** key and then re-enter the program mode thereby allowing entry to begin at a new location. Remember that after entering the program code, the hidden program switch must be pressed and held while pressing the Option **[0]**.

**3 DIGIT VALUE.** . .Each ADDRESS location contains a 3 DIGIT VALUE. If a location is to be changed from its present value, three (3) digits must be entered. If the VALUE is less than three (3) digits, leading zeros must be used. Example: 5 should be entered as 0-0-5. Each Memory Address has a defined range. Refer to Address Programming Descriptions.

### ADDRESS PROGRAMMING PROCEDURES

1. Press **[0]** 9-8-7-6-5. (4 beeps)
2. Use a small thin non-metallic object to press and hold the program switch.
3. While holding the program switch closed, press **[0]** for ADDRESS PROGRAMMING mode. (3 beeps) Release the program switch.
4. Select the address of the feature to program.
5. Press the 3 digit number of the address to be programmed. (3 beeps)

For example, select ADDRESS 030 by pressing 0-3-0.

6. The keypad LED's now represent the binary number stored in the address selected in step 5. The POWER LED (1) represents the least significant binary digit, and the Auxiliary LED (8) represents the most significant binary digit. For programming convenience, each LED's binary value is shown on the inside label of the keypad.

Examples: The binary number stored in each ADDRESS can be oalculated by adding up the value of all illuminated LEDs.

( ) 1 OFF	( ) 1 OFF	(*) 1 ON
( ) 2 OFF	( ) 2 OFF	(*) 2 ON
( ) 4 OFF	( ) 4 OFF	(*) 4 ON
( ) 8 OFF	(*) 8 ON	(*) 8 ON
( ) 16 OFF	(*) 16 ON	(*) 16 ON
( ) 32 OFF	(*) 32 ON	(*) 32 ON
( ) 64 OFF	( ) 64 OFF	(*) 64 ON
( ) 128 OFF	( ) 128 OFF	(*) 128 ON
000	056	255

7. Enter a new 3 digit value. (3 beeps)  
Examples: 0-1-8 = 18  
0-0-5 = 5  
1-1-7 = 117
8. The Keypad LEDs will display the new programed value in binary.
9. Press **[FWD]** to step to the next address. (3 beeps)  
Example: If you were at ADDRESS 068, pressing **[FWD]** will take you to ADDRESS 069.

Press **[EXIT]** to jump out of ADDRESS PROGRAMMING and back to the running mode.

**NOTE:** To re-enter the ADDRESS PROGRAMMING mode you must press the PROGRAM AUTHORIZATION code and press and hold the hidden program switch then press option 0. Press **[0]** -9-8-7-6-5. Press and hold the program switch and enter 0.

**RESTORING THE FACTORY DEFAULT SETTING.** . . may be accomplished at any time. This action is recommended prior to final installation programming and during or after system training or anytime the program values are unknown. Returning to the factory programming will cancel any customized values but will not affect the telephone numbers. Use the procedure outlined on page 16, to restore the factory default program settings.

# DESCRIPTIONS OF MEMORY ADDRESSES

## 000 FAST LOOP RESPONSE TIME

Loop response is the time in milliseconds that a zone must be violated before the control recognizes it as an alarm. The slower the loop response the less likelihood of "false" alarms caused by loose connectors, poor contacts, or swingers. Each zone can be defined for fast or slow loop response. Response times are 40 milliseconds increments (steps) The fastest response is 40 milliseconds (value = 001, 1 step), slowest is 10.2 seconds (value = 255 255 steps). Program fast loop response into ADDRESS 000, slow loop response into ADDRESS 001.

Default value = 002 (80 milliseconds)

## 001 SLOW LOOP RESPONSE

Default value = 008 (320 milliseconds)

## 002 USER AUTHORIZATION CODE 1

**003** USER AUTHORIZATION codes as well as the  
**004** PROGRAM AUTHORIZATION code are stored in three addresses in a condensed (packed hex) format. Program these codes ONLY from the USER PROGRAMMING level. DO NOT attempt to use ADDRESS level for programming these codes!

## 005 TWO (2) DIGIT ARMING

If this feature is selected, Command **1** and the first digit of each code will ARM the burglar system. To disarm, the complete USER AUTHORIZATION code must be entered. Other commands also function using only the first digit of each code. To select this feature program ADDRESS 005 with a value of 000. A value of 255 disables this feature.

**NOTE:** If the first digit of any user code is the same as the first digit of the program code then selecting two-digit arming will lockout the program code. In this event the only way to enter the programming mode is to hold the program switch closed while powering up the control.

## 006 USER AUTHORIZATION CODE 2

**007** Program only from USER level PROGRAMMING.  
**008** Refer to Address 002 and page 20.

## 009 NEW EEPROM FLAG

The new EEPROM flag can be set to reload the original factory default settings. If this flag is set, the entire data base will be overwritten with the exception of the Digital Communicator telephone numbers. To set the flag and return to factory default settings, program a value of 255 into ADDRESS 009. Then remove all system Power. Wait 5-10 seconds and restore system power. When factory settings are restored, ADDRESS 009 returns to its normal value of 000.

**NOTE:** DO NOT set this flag unless a return to the original factory settings is desired. When using the handheld Programmer, be sure this address in the programmer is "000" before downloading to the control.

## 010 USER AUTHORIZATION CODE 3

**011** Program only from USER level PROGRAMMING.  
**012** Refer to Address 002 and page 20.

## 013 CODE 4 TEMPORARY USAGE COUNT

If USER AUTHORIZATION code 4 is programmed, the value in ADDRESS 013 will determine its number of valid usages. Enter a value of 001-254 usages into ADDRESS 013 for a temporary code 4. A Value of 255 = permanent use. This can be programmed from the User level, option 6.

## 014 USER AUTHORIZATION CODE 4

**015** Program only from USER level PROGRAMMING.  
**016** Refer to Address 002 and page 20.

## 017 ACCESS OUTPUT HOLD TIME

The System has the capability of activating door access devices. Connector J11 Pin 7 provides a positive voltage output whenever a USER AUTHORIZATION code with an ACCESS level configuration digit is entered from the keypad. The amount of time this voltage output remains on, (hold) may be selected by programming a value of 001 to 255 seconds into ADDRESS 017.



- 018 PROGRAM AUTHORIZATION CODE**  
**019** Program only from USER level PROGRAMMING.  
**020** Refer to Address 002 and page 20.

**021 NOT PROGRAMMED. (FOR SYSTEM USE ONLY)**

Addresses 021, 039 and 067 are reserved for storage of system status conditions by the microprocessor. When programming, it is acceptable to reset whatever value is present to "000".

**022 ZONE 1 DEFINITION**

Each zone may be individually defined for use as Burglar, 24 hour Auxiliary 3, Police/Aux. 1, Medical/Aux. 2 or Key zone. Refer to APPENDIX A for calculating the zone definition (3 digit value) for each programmable address. Enter the three (3) digit value for each zone into the corresponding address.

EXAMPLE: A value of 065 programmed into ADDRESS 022 will define Zone 1 as an Instant Burglar Zone.

Default Value: 064 (Burglar Delay 1, Perimeter, Slow Loop Response)

**023 ZONE 2 DEFINITION**

Reference Address 022.

Default value: 072 (Burglar, Entrance Delay 2, Perimeter, Slow Loop Response).

**024 ZONE 3 DEFINITION**

Reference Address 022.

Default value: 081 (Burglar, Interior Instant, Slow Loop Response)

**025 ZONE 4 DEFINITION**

Reference Address 022.

Default value: 065 (Burglar, Perimeter, Instant, Slow Loop Response)

**026 ZONE 5 DEFINITION**

Reference Address 022.

Default value: 065 (Burglar, Perimeter, Instant, Slow Loop Response)

**027 ZONE 6 DEFINITION**

Reference Address 022.

Default value: 065 (Burglar, Perimeter, Instant, Slow Loop Response)

**028 NOT USED WITH THE SYSTEM 911**

Default Value: 066

**NOTE:** This location must never be reprogrammed other than 066 or "255".

**029 NOT USED WITH THE SYSTEM 911**

Default Value: 066

**NOTE:** This location must never be reprogrammed other than 066 or "255".

**030 EXIT DELAY TIMER**

The factory default Exit Delay time is 060 seconds. A 3 digit value of 001 to 255 seconds may be programmed into ADDRESS 030. DO NOT program "000". If an odd value is used (i.e.: 59) the piezo will not beep during exit delay.

**031 ENTRANCE DELAY 1 TIMER**

Each delay defined zone may be programmed to respond to one of two (2) entrance delay timers. Entrance Delay 2 might be used for a garage door or alternate point of entry while Entrance Delay 1 is used for the front door. The factory default Entrance Delay 1 time of 030 seconds may be changed by programming a 3 digit value of 001 to 255 seconds into ADDRESS 031. DO NOT program "000".

**032 ENTRANCE DELAY 2 TIMER**

The factory default Entrance Delay 2 time is 045 seconds. A 3 digit value of 001 to 255 seconds may be programmed into ADDRESS 032. DO NOT program "000".

**033 COMMUNICATOR DELAY BEFORE DIALING**

This feature allows the user a delay time of 1 - 255 seconds in which to "ABORT" the transmission of an alarm to the Central Monitoring Station. All alarms except a "hardwired" police or keypad activated police alarm may be aborted by disarming the system prior to the expiration of the time programmed into this location. All reporting codes will have this delay time before dialing. If a CANCEL report code is programmed into ADDRESS 062, this code will automatically be sent if the alarm is aborted. The communicator is disabled, (not active) by programming a delay before dialing value of "000".

**034 BURGLAR ALARM OUTPUT CUTOFF TIME**

Each alarm output has an independent automatic cutoff timer. The factory default Burglar cutoff time of 15 minutes may be changed by programming a 3 digit value of 001 to 255 minutes into ADDRESS 034. 000 may be programmed into this address for "NO" automatic cutoff.

### **035 AUXILIARY 3 ALARM OUTPUT CUTOFF TIME**

The factory default time is set at 000 (no cutoff). This may be changed by programming a 3 digit value of 001 to 255 minutes into ADDRESS 035.

### **036 POLICE/AUX. 1 ALARM OUTPUT CUTOFF TIME**

The factory default time is 15 minutes. A 3 digit value of 001 to 255 minutes may be programmed. For "NO" automatic cutoff program a value of "000".

### **037 MEDICAL/AUX. 2 ALARM OUTPUT CUTOFF TIME**

The factory default time is 15 minutes. A 3 digit value of 001 to 255 minutes may be programmed. For "NO" automatic cutoff program a value of "000".

**038 SYSTEM CONFIGURATION.** . This is a single address that is utilized for multiple programming options. Review each option and add together the value of each selected option to determine a total value to enter into Address 038.

#### **COMMUNICATOR TWO LINE EXTENDED REPORTING**

For EXTENDED REPORTING add a "001" to the value in Address 038. In extended format, the account code and report code are reported as the 1st line of information. The 2nd line repeats the report code three times followed by an extended digit. The EXTENDED digit is fixed (non-programmable) and will identify the zone or the user that caused the transmission.

1st LINE

ACCOUNT CODE + ALARM CODE

2nd LINE

ALARM CODE (3 TIMES) + EXTENDED DIGIT

#### **COMMUNICATOR SINGLE ROUND REPORTING**

By default, the system transmits "MULTIPLE" alarms during an established telephone connection. There are however, some older types of receivers that can receive only 1 alarm (SINGLE ROUND) per established call. If a "single round only" receiver is being used, or if a single round is desired, add a "002" to the value in ADDRESS 038.

**CAUTION:** Extended reporting and single round reporting must never be used at the same time. In this condition, the System will hang up after the first line and attempt a redial. Therefore, the system will never be able to complete the two lines of transmission.

#### **PULSING BURGLAR ALARM OUTPUT**

The System may be programmed to pulse the Burglar alarm output upon alarm by adding a "004" to the value in ADDRESS 038.

#### **SIREN/BELL TEST UPON ARMING**

The System may be programmed for a 1 second burglar output test upon arming by adding a "008" to the value in ADDRESS 038.

#### **SILENT KEYPAD ON BURGLAR ALARM ACTIVATION**

For no keypad beep on burglar alarm activation add a "016" to the value in ADDRESS 038.

#### **COMMUNICATOR TELEPHONE TOUCH-TONE® DIALING**

The System is capable of dialing two (2) 30 digit telephone numbers. Both numbers are factory programmed for rotary dialing. If Touchtone service is available, either or both numbers may be programmed Touchtone. Add "032" to the value in ADDRESS 038 for Telephone #1 Touchtone dial.

Add "064" to the value in ADDRESS 038 for Telephone #2 Touchtone dial.

**NOTE:** If only 1 phone number is being dialed, program it into both phone locations and set the 1st for Touchtone and the 2nd for rotary. Even if there are two different numbers it is suggested that one be programmed Touchtone and the other rotary.

#### **KEYSWITCH CHANGE OF MODES**

If a momentary keyswitch is used with the System for arming or disarming, it may also be used to switch the Interior On or Off and the Delay On or Off modes. Mode switching will occur once per second as long as the keyswitch is turned and held. To activate this feature, add "128" to the value in ADDRESS 038.

### 039 DO NOT PROGRAM (FOR SYSTEM USE ONLY)

Refer to Address 021.

### 040 INTERIOR/DELAY DEFAULT UPON DISARMING

The System factory defaults to the Interior On and Delay On mode each time the system is disarmed. This default may be customized to suit each customers operational needs. Select and program a value into ADDRESS 040 according to the default needs of the installation.

VALUE 000 = System defaults to Interior ON and Delay ON.

VALUE 001 = System defaults to Interior OFF and Delay ON.

VALUE 002 = System defaults to Interior ON and Delay OFF.

VALUE 003 = System defaults to Interior OFF and Delay OFF.

### 041 COMMUNICATOR DIAL ATTEMPTS

This value determines the number of times the digital communicator will attempt to dial the Central Station before shutting down. Each time a number is tried, the dial attempts counter decrements by one. If only the first number is programmed and that number is not reached, the attempt counter will be decremented and the system will attempt to dial using the second number. If the second number is found not active, the attempt counter will be decremented and the system will switch back to the first number. This means that if only one number is programmed, and the desired attempts is 10 tries, then 20 must be programmed into ADDRESS 041. If two numbers are programmed and the desired attempts is 10, then 10 must be programmed into ADDRESS 041.

The default value is 008 which assumes that both telephone numbers are programmed. Enter 016 into ADDRESS 041 for 8 true attempts if only the first telephone number is programmed.

### 042 TELEPHONE NUMBER 1 DATA TRANSMISSION FORMAT

Each telephone number may be programmed with its own data transmission format as described below:

1. Ademco, Adcor, Vertex, or Silent Knight slow format. 1400 Hz Acknowledge/Kissoff, 1900 Hz Data, 10 Baud. 51/49 millisecond duty cycle. 600 millisecond inter-digit delay.
2. (Default) Acron, SESCOA, Vertex, DCI, Franklin, Radionics, fast format, 2300 Hz Acknowledge/Kissoff, 1800 Hz Data, 20 Baud. 30/20 millisecond duty cycle. 800 millisecond inter-digit delay.
3. Radionics super fast format, no parity. 2300 Hz Acknowledge/Kissoff, 1800 Hz Data, 40 Baud. 13/12 millisecond duty cycle. 400 millisecond inter-digit delay.
4. Silent Knight fast format. 1400 Hz Acknowledge/Kissoff, 1900 Hz Data, 15 Baud. 40/30 millisecond duty cycle. 560 millisecond inter-digit delay.

Default value = 002.

**NOTE:** The Communicator does not support receivers with pulsing or steady hold feature.

### 043 TELEPHONE NUMBER 2 DATA TRANSMISSION FORMAT

Refer to Address 042.

Default value = 002.

**044 COMMUNICATOR ACCOUNT CODE DIGIT 1**

The 1st digit of the Digital Communicator Account code resides in ADDRESS 044 (most significant digit), the 2nd digit in ADDRESS 045, and the 3rd digit in ADDRESS 046 (least significant digit). Each digit has a range of 000 - 015 allowing hex characters. Default value = 008.

**045 COMMUNICATOR ACCOUNT CODE DIGIT 2**

Default value = 008.

**046 COMMUNICATOR ACCOUNT CODE DIGIT 3**

Default value = 008.

**NOTE:** In programming communicator account codes, report codes, and telephone numbers, the value of 000 is translated by the system to 010.

Examples:

	ADDRESS				Account Code
	044	045	046		
	001	002	003	=	123
VALUE	008	008	008	=	888
	006	004	015	=	64F

**047 KEYPAD POLICE SILENT PIEZO**

The System is factory programmed for audible piezo (keypad beep) upon activation of Keypad Police. For silent Keypad Police program ADDRESS 047 with a value of "000".

**048 ZONE 1 REPORTING CODE**

Each zone may be programmed to report an individual report code. Valid range is 000 to 015 with the 011 to 015 being hexadecimal reporting codes. Refer to page 15. Any of the reporting zones may be disabled from reporting by programming a non-valid code of 255 into the corresponding address.

**049 ZONE 2 REPORTING CODE**

Refer to Address 048 and page 15.

**050 ZONE 3 REPORTING CODE**

Refer to Address 048 and page 15.

**051 ZONE 4 REPORTING CODE**

Refer to Address 048 and page 15.

**052 ZONE 5 REPORTING CODE**

Refer to Address 048 and page 15.

**053 ZONE 6 REPORTING CODE**

Refer to Address 048 and page 15.

**054 NOT USED WITH THE SYSTEM 911****055 NOT USED WITH THE SYSTEM 911****056 AUXILIARY 3 REPORTING CODE**

Valid reporting is (000-015). Refer to page 15. Default value = 001.

**057 POLICE/AUX. 1 REPORTING CODE**

Refer to Address 056 and page 15. Default value = 002.

**058 MEDICAL/AUX. 2 REPORTING CODE.**

Refer to Address 056 and page 15. Default value = 255 (Report Disabled).

**059 OPENING REPORT CODE**

The OPENING report code is enabled by programming a valid report code (000 - 015) into ADDRESS 059. When enabled, that code will be transmitted each time the system is disarmed. The opening report code will be sent only upon a "SYSTEM RESTORAL/EXCEPTION OPENING" by adding 16 to a valid reporting code in ADDRESS 059. An exception opening is different from a regular opening in that a code is sent "only" after disarming following an alarm activation.

Default value = 255 (Report Disabled).

**060 CLOSING REPORT CODE**

Enter a valid reporting code (000 - 015) to enable closing reporting.

Default value = 255 (Report Disabled)

**061 CLOSING WITH SHUNTS REPORT CODE**

Enter a value of (000 - 015) to enable a closing w/shunts code. Closing w/shunts report code is special in that it is sent only after arming with ONE or MORE ZONES SHUNTED.

Default value = 255 (Report Disabled).

**062 CANCEL REPORTING CODE**

The CANCEL report code is enabled by programming a valid reporting code (000-015) into ADDRESS 062. When enabled, that code will be transmitted whenever any hardwire zone alarm transmission is aborted.

Default value = 255 (Report Disabled).

**063 ZONE RESTORE REPORTING CODE**

The ZONE RESTORAL report code is enabled by programming a valid report code (000-015) into ADDRESS 063. When enabled, that code will be transmitted whenever a hardwire zone alarm triggers and the zone returns to normal (restores) while the system is still armed. Restores will be reported by zone if extended format is programmed.

Default value = 255 (Report Disabled).

**064 AUXILIARY 3 TROUBLE**

The Auxiliary 3 Trouble report code is enabled by programming a valid report code (000-015) into ADDRESS 064. When enabled, any hardwire zone defined as Auxiliary 3, will send the TROUBLE report code when the loop opens. Auxiliary 3 Trouble will report by zone if extended format is used.

Default value = 255 (Report Disabled).

**065 LOW BATTERY REPORTING CODE**

The LOW BATTERY report code is enabled by programming a valid reporting code (000-015) into ADDRESS 065. The battery is tested once every 24 hours automatically. If the battery voltage at the end of the test is less than 11.2 volts, a low battery report code will be transmitted.

Default value = 255 (Report Disabled).

**066 COMMUNICATOR 24 HOUR TEST REPORTING CODE**

The 24 HOUR TEST report code is enabled by programming a valid report code (000-015) into ADDRESS 066. When enabled, a test code will be transmitted to the Central Station once every 24 hours. User programming option 7 allows the user to advance the 24 hour test time into a time window desired by the Central Station.

Default value = 255 (Report Disabled).

**067 NOT PROGRAMMED (SYSTEM USE ONLY)**

Refer to Address 021.

**068 TELEPHONE NUMBER 1**

**TO** The digital communicator can dial two (2) thirty  
**097** (30) digit telephone numbers. A dialable digit may be any value from 000-009. If using Touchtone, a ☒ = 011 and a ☒ = 012. For a 3 second delay between dialed digits, an entry of 013 is used. The first digit of telephone 1 should be entered into ADDRESS 068 with each succeeding digit located in the next address. And so on. The address immediately following the last dialed digit must be programmed with a 255 (invalid digit) to mark the end of that telephone number.

**098 TELEPHONE NUMBER 2**

**TO** The first digit of telephone 2 begins in ADDRESS  
**127** 098. Refer to Address 068-097.

# APPENDIX A: ZONE PLANNING GUIDE

1. Plan each ZONE individually.
2. Select the ZONE TYPE from left column. Using the DEFINITION COLUMN, select characteristics for each ZONE TYPE and enter appropriate VALUE in the block under the ZONE number for which you are programming.
4. Add vertically the values selected for each ZONE and place the total value in the ZONE VALUE TOTAL block.
5. When programming the control, enter the TOTAL ZONE VALUE of each zone into the Memory Address designated under each ZONE number column.

ZONE TYPE	DEFINITION	VALUE	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
BURGLAR	INSTANT	= 1						
	ENTRY DELAY 1	= 0						
	ENTRY DELAY 2	= 8						
	PERIMETER	= 0						
	INTERIOR	= 16						
	LOCKOUT AFTER SINGLE ALARM	= 32						
	DAY ALERT	= 128						
TOTAL VALUE FOR A BURGLAR ZONE								

ZONE TYPE	DEFINITION	VALUE	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
AUXILIARY 3	24 HOUR	= 2						
	SHUNTABLE	= 10						
TOTAL FOR A 24 HR. AUXILIARY 3 ZONE								

ZONE TYPE	DEFINITION	VALUE	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
POLICE/AUX 1	Keypad AUDIBLE	= 3						
	Keypad SILENT	= 11						
TOTAL FOR A POLICE/AUX 1 ZONE								

ZONE TYPE	DEFINITION	VALUE	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
MEDICAL/AUX 2		= 4						
TOTAL FOR A MEDICAL/AUX 2 ZONE								

ZONE TYPE	DEFINITION	VALUE	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
KEYSWITCH (ONLY 1 PER SYSTEM)		= 5						
TOTAL FOR A KEYSWITCH ZONE								

ZONE TYPE	DEFINITION	VALUE	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6
LOOP RESPONSE	FAST	= 0						
	SLOW	= 64						
TOTAL FOR LOOP RESPONSE ZONE								

MEMORY ADDRESS # FOR ENTERING TOTALS	022	023	024	025	026	027
--------------------------------------	-----	-----	-----	-----	-----	-----

# APPENDIX B: SYSTEM 911 MEMORY MAP

ADDRESS	DESCRIPTION	FACTORY VALUE	NEW
000	FAST loop response. 40 milliseconds to 10.2 seconds. (40 millisecond increments)	002	----
001	SLOW loop response. Example 001 = 40 msec., 008 = 320 msec., etc.	008	----
002,003,004	USER AUTHORIZATION code 1. Program from USER LEVEL ONLY!		
005	TWO DIGIT ARMING feature. 000=Enables 255=Disables	255	----
006,007,008	USER AUTHORIZATION code 2. Program from USER LEVEL ONLY!		
009	New EEPROM FLAG. 255 = Reload factory programming.	000	----
010,011,012	USER AUTHORIZATION code 3. Program from USER LEVEL ONLY!		
013	AUTHORIZATION code 4 USAGE COUNT. 001 to 255 Usages	255	----
014,015,016	USER AUTHORIZATION code 4. Program from USER LEVEL ONLY!		
017	ACCESS (door strike) output time. 001 to 255 seconds.	020	----
018,019,020	PROGRAM AUTHORIZATION CODE. Program from USER LEVEL ONLY!		
021	SYSTEM USE ONLY - DO NOT PROGRAM! See note on page 25.	000	
022	ZONE 1 Definition.	064	----
023	ZONE 2 Definition. Refer to	072	----
024	ZONE 3 Definition. APPENDIX A	081	----
025	ZONE 4 Definition. for defining	065	----
026	ZONE 5 Definition. zone values.	065	----
027	ZONE 6 Definition.	065	----
028,029	NOT USED WITH THE SYSTEM 911		
030	EXIT Delay time. Odd value silences beep. 001 to 255 seconds.	060	----
031	ENTRANCE Delay 1 time. 001 to 255 seconds.	030	----
032	ENTRANCE Delay 2 time. 001 to 255 seconds.	045	----
033	COMMUNICATOR Delay before dial. 000 to 255 seconds. 000 = Disables	000	----
034	BURGLAR Output Cutoff time. 000 to 255 minutes. 000 = No Cutoff.	015	----
035	AUXILIARY 3 Output Cutoff time. 000 to 255 minutes. 000 = No Cutoff.	000	----
036	POLICE/Aux 1 Output Cutoff time. 000 to 255 minutes. 000 = No Cutoff.	015	----
037	MEDICAL/Aux 2 Output Cutoff time. 000 to 255 minutes. 000 = No Cutoff.	015	----
038	SYSTEM CONFIGURATION. Add values of features selected and ENTER total. Communicator Extended Reporting = 1 _____ Communicator Single Round Report = 2 _____ Pulsing Burglar Alarm Output = 4 _____ One (1) second Siren test upon arming = 8 _____ Silent Keypad Piezo on Burglar activation = 16 _____ Telephone number 1 touchtone dial = 32 _____ Telephone number 2 touchtone dial = 64 _____ Interior/Delay change with keyswitch = 128 _____ TOTAL _____	000	----
039	SYSTEM USE ONLY - DO NOT PROGRAM!	000	

040	Interior/Delay default.	000 to 003	Refer to page 27.	000	----
041	COMMUNICATOR dial attempts.	001 to 255 attempts.	DO NOT PROGRAM 000.	008	----
042	Telephone number 1 data format.	001 to 004.		002	----
043	Telephone number 2 data format.	001 to 004.		002	----
	001 = Ademco, Adcor, Vertex, Silent Knight slow. 1400 Hz Kissoff, 1900 Hz Data, 10 Baud.				
	002 = Acron, Sescoa, Vertex, DCI, Franklin, fast. 2300 Hz Kissoff, 1800 Hz Data, 20 Baud.				
	003 = Radionics super fast format, no parity. 2300 Hz Kissoff, 1800 Hz Data, 40 Baud.				
	004 = Silent Knight fast. 1400 Hz Kissoff, 1900 Hz Data, 15 Baud				
044	Account code digit 1. (MSD)	000 to 015.		008	----
045	Account code digit 2.	000 to 015.		008	----
046	Account code digit 3. (LSD)	000 to 015.		008	----
047	Keypad POLICE Piezo.	000 = Silent	255 = Audible	255	----
048	ZONE 1 Reporting code.	000 to 015.	255 = Disable Reporting	003	----
049	ZONE 2 Reporting code.	000 to 015.	255 = Disable Reporting	003	----
050	ZONE 3 Reporting code.	000 to 015.	255 = Disable Reporting	003	----
051	ZONE 4 Reporting code.	000 to 015.	255 = Disable Reporting	003	----
052	ZONE 5 Reporting code.	000 to 015.	255 = Disable Reporting	003	----
053	ZONE 6 Reporting code.	000 to 015.	255 = Disable Reporting	003	----
054,055	NOT USED WITH SYSTEM 911				
056	Keypad AUXILIARY 3 Reporting code.	000 to 015.	255 = Disable Reporting	001	----
057	Keypad POLICE/AUX 1 Reporting code.	000 to 015.	255 = Disable Reporting	002	----
058	Keypad MEDICAL/AUX 2 Reporting code.	000 to 015.	255 = Disable Reporting	255	----
059	Opening (Disarm) Reporting code. For System Restore/Exception Opening add 16 to the desired report code.	000 to 031.	255 = Disable Reporting	255	----
060	Closing (Arming) Reporting code.	000 to 015.	255 = Disable Reporting	255	----
061	Closing w/shunts Reporting code.	000 to 015.	255 = Disable Reporting	255	----
062	Cancel Reporting code.	000 to 015.	255 = Disable Reporting	255	----
063	Zone Restore Reporting code.	000 to 015.	255 = Disable Reporting	255	----
064	AUX 3 Trouble Reporting code.	000 to 015.	255 = Disable Reporting	255	----
065	Low Battery Reporting code.	000 to 015.	255 = Disable Reporting	255	----
066	Automatic 24-Hour Test code.	000 to 015.	255 = Disable Reporting	255	----
067	SYSTEM USE ONLY - DO NOT PROGRAM!			000	
Telephone NUMBER 1 (30 digits)					
		000 to 013.	255 = End of Telephone Number		
----	----	----	----	----	----
068	069	070	071	072	073
074	075	076	077	078	079
080	081	082	083	084	085
086	087	088	089	090	091
092	093	094	095	096	097
Telephone NUMBER 2 (30 digits).					
		000 to 013.	255 = End Of Telephone Number		
----	----	----	----	----	----
098	099	100	101	102	103
104	105	106	107	108	109
110	111	112	113	114	115
116	117	118	119	120	121
122	123	124	125	126	127



# APPENDIX C: FCC AND TELEPHONE CO. INFORMATION

## FCC COMPLIANCE

This equipment complies with the limits for Class B Computer Devices in accordance with the Specification of Subpart J of Part 15 of the FCC rules as of date of manufacture.

## TELEPHONE COMPANY INFORMATION

### INCIDENCE OF HARM

In the unlikely event that the SYSTEM 911 communicator should ever cause harm to the telephone network, the telephone company will notify the telephone subscriber that temporary discontinuance of service may be required; however, where prior notice is not practicable, the telephone company may temporarily 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 or she feels the disconnection is not warranted.

### CHANGES IN TELEPHONE COMPANY EQUIPMENT OR FACILITIES

The telephone company may make changes in its communications facilities, equipment, operations or procedures, where such action is reasonably required and proper in its business. Should any changes render the SYSTEM 911 communicator incompatible with the telephone company facilities, the customer shall be given adequate notice to make modifications to maintain uninterrupted service.

### NOTIFICATION REQUIREMENTS

This equipment complies with Part 68 of the FCC rules for Direct Telephone Interconnect. All connections to the telephone network must be made through standard telephone company plugs and jacks, or equivalent, in such a manner as to allow for easy and immediate disconnection of the alarm 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. Before connecting the SYSTEM 911 to the telephone network, the telephone company must be notified for the installation of an USOC RJ-31X or RJ-38X jack. The telephone company will need the following information:

1. The telephone number to which the SYSTEM 911 will be connected.
2. The FCC registration number: DLH66Y-12286-AL-E
3. The ringer equivalence number: 0.0b
4. The equipment manufacture: Moose Products, Inc.

The Ringer Equivalence Number (REN) is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN's of all devices to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area. You must notify the telephone company if the SYSTEM 911 is removed from the premises and the RJ-31X or RJ-38X is no longer needed.

### MALFUNCTION OF EQUIPMENT

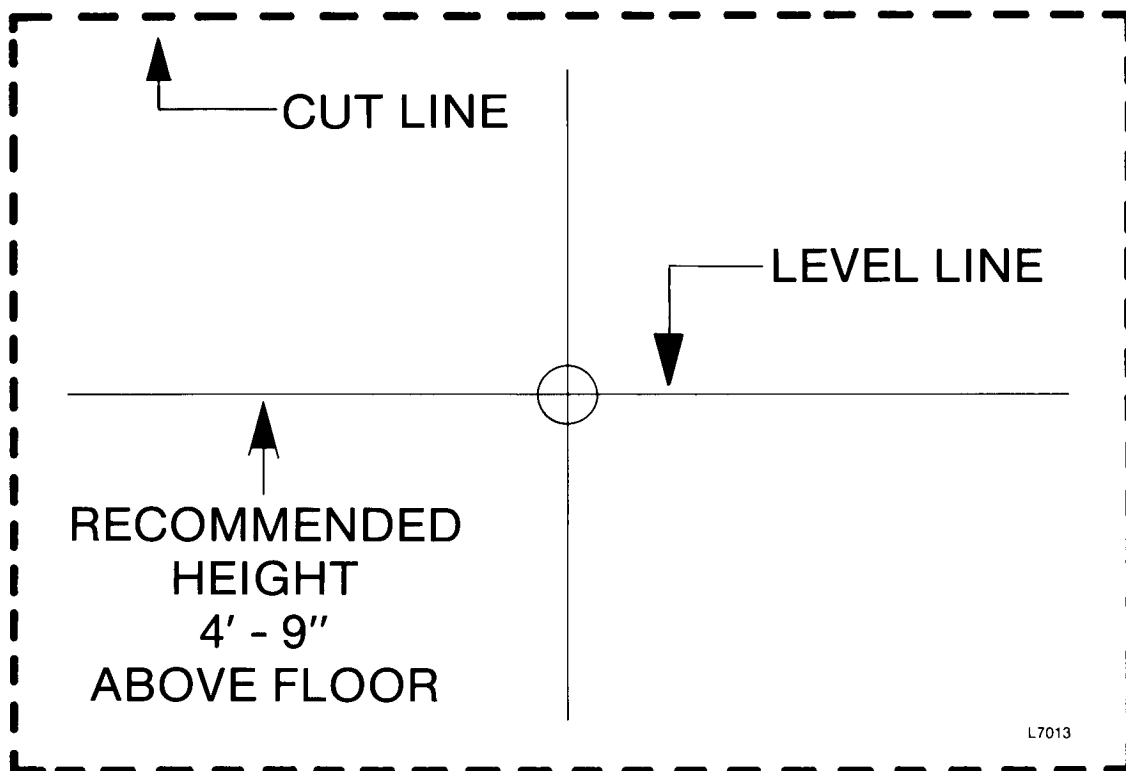
In the unlikely event that the SYSTEM 911 should ever fail to operate properly, it should be disconnected from the RJ-31X or RJ-38X jack to determine if the problem is with the telephone network or with the SYSTEM 911. If a problem is found with the communicator, leave disconnected until repaired or replaced.

The FCC prohibits customer-provided terminal equipment to be connected to party lines or to be used in conjunction with coin telephone service. Inter-connect rules may vary from state to state.

## APPENDIX D:

# BB-900 BACK BOX MOUNTING TEMPLATE

1. Use this template to mark the location of the mounting hole.
2. Use a knife or jigsaw to carefully cut along the dotted line and remove the wall material. DO NOT remove any wall material outside of the dotted line.
3. Once the hole is cut, remove the template and temporarily test fit the box.
4. Proceed with all of the wiring before permanently mounting the back box.
5. When complete, pull all wiring out through the wall opening and into the rear hole in the back box.
6. Insert the back box into the opening until the outside flanged edges are flush with the wall surface.
7. Use a screwdriver to turn the two mount screws until the metal retaining wings "swing-out" and engage the back side of the wall material.
8. Continue to tighten both screws until the box is secure.
9. The back box is now installed and you may proceed with the splicing of the buildings wiring to the cable assemblies.



# GLOSSARY OF TERMS

**Acknowledge.** Respond to an alarm condition by entering an AUTHORIZATION code.

**Authorization code.** A programmable code that is used with a Command. For example, Command 1 and an Authorization code arms/disarms the system. Authorization codes must be preceded by a Command Key.

**Command.** Instruction. Tell the system to perform a function.

**Command key.** A single keypad digit (0-9) pressed before an Authorization code.

**Configuration digit.** A programmable digit which is assigned to each User Authorization Code to instruct the system what the code may be used for, ie., arm/disarm, access, or duress.

**Default** Pre set values. The System 911 comes with default exit time, entrance times, cutoff times, zone definitions, and other features. The default program makes installation and testing quicker and easier.

**Disabled.** Turn off. Not active.

**EEPROM** A "non-volatile" memory chip which retains programmed information without backup power.

**Enabled.** Turned on. Activated.

**Enter.** To press a keypad key for entry of information.

**Address Programming.** This level of programming is used for custom designing the System.

**Fail Safe Arming.** All Burglar zones must be secure (or shunted) before the system will Arm.

**Interior Follower.** When entering thru a delay zone, the interior zones are automatically converted to delay zones.

**Loop Response Time.** The amount of time (in milliseconds) that a zone has to remain violated in order to cause an alarm.

**Program Authorization Code.** The code used with Command 9 to program features of the System.

**Prompt. Cue.** The control beeps after each programming step. These beeps are a "prompt", or instruction, to continue with the next step.

**Trouble.** A condition that is not an alarm such as an open on an Aux. 3 loop or a low battery.

**Trigger.** A low current signal less than 50 milliamps. Connector J11 outputs can be used to trigger relay K1.

**User Programming.** This level of programming is used to set Authorization codes, the Program code as well as Entrance times and the Communicator test time offset.

**Watchdog.** A circuit in the System 911 that prevents microprocessor latch up. The watchdog minimizes the harmful effects of lightning and high voltage transients.

**Zone Definitions.** How a zone responds. Zones can be burglar, 24 hr. auxiliary, police, medical, or key.

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### FCC COMPLIANCE

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 of part 15 of FCC rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

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.

## "LIMITED WARRANTY"

### Parties and Products

This warranty is extended to all purchasers of and includes products sold under the trademarks Moose or Moose Power and actually manufactured or sold by Moose Products, Inc., Hickory, N.C. 28601.

### Warranty Time Period

All products covered by this warranty are date stamped with a six (6) digit number, the first digit being the tester number, the last two the year and the remaining the day of the year involved. For the eighteen months immediately subsequent to the date stamped thereon, Moose Products will replace or repair at its option, any part that proves to be defective in materials or workmanship. The cost of parts, labor and return transportation, if necessary, are included. All other costs are the responsibility of the purchaser.

### Conditions and Exclusions

- (a) There is no other express warranty. All implied warranties and fitness for use are limited to the duration of the express warranty. Some states do not allow limitations on how long an implied warranty last, so the above limitation may not apply to you.
- (b) Moose Products, Inc. is not liable for indirect, incidental, or consequential damages in connection with the use of the products including but not limited to (a) any cost or expense of providing substitute equipment or service during periods of malfunction or non use and/or (b) any destruction to and/or loss of property or bodily injury.
- (c) Repairs by anyone other than Moose Products, Inc. and/or misuse by anyone voids all warranty.

### Other Rights

This warranty gives you specific legal rights and you may also have other rights, which may vary from state to state.

### Procedure

Should you discover that any products of Moose Products covered by this warranty is defective within the warranty time period, you should contact any Moose Products, Inc. dealer who will instruct you on the proper procedure. If for any reason you are dissatisfied with the suggested procedures, you may contact us in writing at:

Moose Products, Inc., P.O. Box 2904, Customer Service Department, Hickory, N.C. 28603