Section 1
Introduction

The Silent Knight Models 5073/74 and 5063/64 Remote Satellites make up a family of entry security systems designed to control access to apartment and small commercial buildings.

1.1 User Features

- Visitor Access Operation

  Visitors locate the Tenant Code next to the name of the tenant they wish to visit. When "Enter Apt. #" (see Section 4.2.9 to change display message) is indicated by the LCD display, they enter the code on the keypad. The tenant is automatically dialed. After the visitor has spoken with the tenant, the tenant can remotely activate the doorstrike by pressing or dialing a 6 on his or her phone. The tenant may also hang up the 5073/74, before entering 6, by pressing or dialing 9.

- Tenant Access Operation

  The tenant can operate the doorstrike directly from the keypad in the lobby, by pushing #, then entering the door access code provided by the caretaker. If the code is valid the doorstrike will open. If the access code is invalid an ERROR will be indicated. If there are four consecutive errors the ALARM output will activate for 2.5 seconds to discourage tampering.

- Postal Access Operation

  Turning the postal key in the lock will automatically open the door. The mail carrier then has access to the mail boxes inside the building.

- Auxiliary Door Access Operation

  An auxiliary door may be in such places as entrances to swimming pools. The auxiliary door is programmed to be active during certain hours of the day. It may only be activated from a 5063/64 during the time that the door is enabled. The tenant must press *, then enter the door access code provided by the caretaker.

1.2   Programmable Features

- Rotary or DTMF dialing
- Audio on or off when dialing
- Ground start telephone systems
- Apartment code length 1-4 digits
- Call length 1-255 seconds
- Door open time 1-255 seconds

- Door access by code number
- 13-digit phone numbers
- 200 apartment codes standard
- Expandable to 800 codes
- Dial through PBX systems
- Selectable system messages

1.3   What's In the Box

Table 1-1 describes what you will find when you open the box of the 5073/5074 Entry System Control Panel, and the 5063/5064 Remote Satellite Units.

Table 1-1: What's in the Box

Item	P/N	5073	5074	5063	5064	Where to Find
Surface Mount Case With Control or Satellite Board inside	various	✔	✔	✔	✔	See Sections 3.3.
Wall Mount Bracket	130083	✔	✔	✔	✔	See Section 3.4.
Keys (in small envelope)		✔	✔	✔	✔	
Battery	6912	✔	✔			See Section 3.6.12.
Transformer	9220	✔	✔			See Section 3.6.2.
Transient Protector	7890	✔	✔			See Section 3.6.3.
1N5401 Diode	N/A	✔	✔			See Sections 3.6.6 and 3.6.9.
Series 5000 Installation Manual	150573	✔	✔			

1.4   About this Manual

This manual explains the installation and operation procedures for the 5000 Series System. Section 2 describes telephone company requirements and other specifications that must be met before installing the system. Section 3 provides installation instructions. The Programming sequence and operating procedures are delineated in Section 4. Section 5 describe field test procedures. Section 6 covers troubleshooting concerns.

Section 2
Telephone Requirements

This section contains information about the telephone companies' installation requirements and should be reviewed prior to system installation.

2.1   Before Connecting The Control Panel

The following information must be provided before connecting this system to the phone lines if it is requested by the telephone company.

Manufacturer	Silent Knight
Model Number	5073 & 5074
FCC Registration	AC698R-70397-MT-E
Ringer Equivalence	0.0B
Type of jack	RJ11X

This device may not be directly connected to coin telephone or party line service.

Under certain circumstances the telephone company may temporarily discontinue service and/or make changes in its facilities and services that may affect the operation of this device. However, the telephone company is required to give adequate notice in writing of such changes or interruptions.

Important Notice

Due to wide variations in telephone company exchange switching equipment, Silent Knight can no longer guarantee that the 5000 Series Apartment Entry System will function properly when used to decode the digit "6" from rotary (dial type) telephones. For those exchanges where rotary phones will not work, each apartment must have a Touch-Tone® telephone.

Section 3
Installation Instructions

This section describes the different parts of the 5000 Series Entry System circuit board.

3.1   Model 5073/74 Circuit Board

Figure 3-1 and Figure 3-2 show the printed circuit boards of the 5073 and 5074 main module. These printed circuit boards contain the switches, LCD, keypad and potentiometer and terminals required to run the main control system.

3.1.1   Keypad and LCD

The LCD is used for prompting the user and reflecting the numbers pressed on the keypad.

When the user sees that the correct data is displayed, pushing the ✳ key will enter the data into memory.
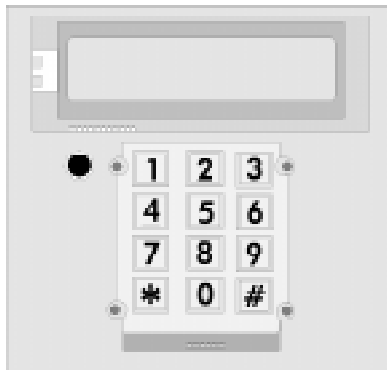

Figure 3-1: 050740 Keypad Board Assembly

3.1.2 Main Control board

The main control board contains the circuitry for charging the standby battery, dialing and controlling a maximum of four Remote Satellite Units (5063/5064).
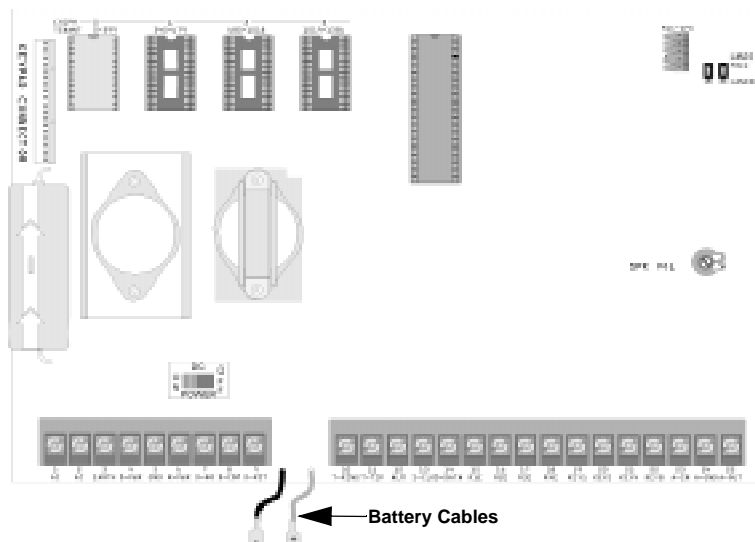

Battery Cables

Figure 3-2: 050739(Hands Free) and 050749 (Handset) Board Assembly

Table 3-1: Model 5073 and 5074 Terminal Descriptions

Terminal Number	Terminal Description	Terminal Number	Terminal Description
1	AC power	14	Serial data
2	AC power	15	5063 and 5064 terminal #1
3	Earth ground	16	5063 and 5064 terminal #2
4	Door power	17	5063 and 5064 terminal #3
5	Circuit ground	18	5063 and 5064 terminal #4
6	5063 and 5064 DC power	19	Key 1
7	N.O. door contact	20	Key 2
8	Common door contact	21	Key 4
9	Door reset switch	22	Key 8
10	Telco ring	23	Audio in
11	Telco tip	24	Audio ground
12	Ground start/Alarm output	25	Audio out
13	Serial clock		

3.2   Model 5063 and 5064 circuit board

Figure 3-3 and Figure 3-4 show the printed circuit board of the Model 5063 and 5064 Remote Modules.

3.2.1   Keypad and LEDs

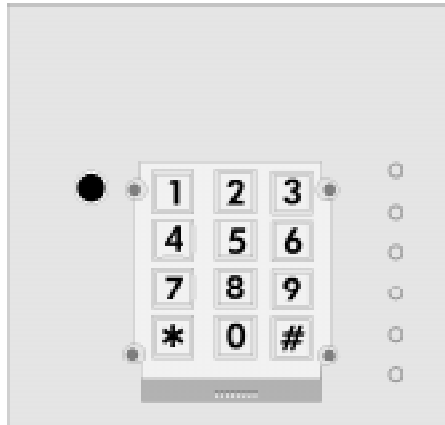The keypad is used to enter apartment and door access codes.

Figure 3-3: 050640 Keypad Board Assembly

Six LEDs are seen on the outside panel during normal operation. They provide the following prompts to a building tenant or visitor.

Enter Code Number

Time Is Up   (you have 10 seconds to enter your code before you are automatically disconnected)

Error

System In Use   (please wait)

Door Is Open

Door 2 Enabled   (if off, auxiliary door cannot be opened)

3.2.2   5063 and 5064 Main Control Board

The 5063 and 5064 main control board contains the circuitry required to interface with the 5073 and 5074 main modules. This board also contains the remote speaker volume potentiometer.
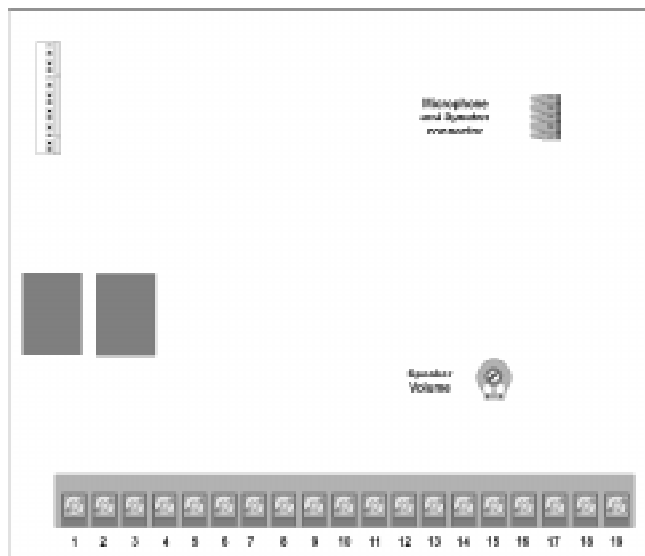

Figure 3-4: 050600 Board Assembly

Table 3-2: Model 5063 and 5064 Terminal Descriptions

Terminal Number	Terminal Description	Terminal Number	Terminal Description
1	N.O. Door Contact	11	5063/5064 Serial Clock
2	Common Door Contact	12	5063/5064 Enable
3	Door Reset Switch	13	Key 1
4	Auxiliary N.O. Contact	14	Key 2
5	Auxiliary common Contact	15	Key 4
6	Auxiliary Reset Switch	16	Key 8
7	Alarm output	17	Audio In
8	Circuit Ground	18	Audio Ground
9	5063/5064 DC Power	19	Audio Out
10	5063/5064 Serial Data		

3.3   Mounting Instructions

This section contains information necessary to properly mount the 5073, 5074, 5063 and 5064 panels.

- Avoid installing the 5073, 5074, 5063 and 5064 in a high noise environment such as a noisy lobby or outside where there is a large amount of traffic or airplane noise.

- Do Not mount the 5000 series units in locations subject to high temperatures, such as over a lobby heater.

- Be sure to seal any openings into the entry system back box that connect to the interior walls. This is to prevent water damage that could occur if warm moist air entered the back box and condensed on the board surfaces.

- The operating temperature range must be between $0°$ C and $+50°$ C ($32°$ F and $+120°$ F). With the addition of the model 5076 Heater Kit, the operating temperature range can be extended to between $-28°$ C and $+50°$ C ($-20°$ F and $+120°$ F). (See Section 3.8.1.)

Note: The 5000 Entry System is designed for use outdoors and the system circuitry will operate normally in the temperature ranges listed.

3.4   Flush Mount

Note: In order to flush mount the unit, the wall must be at least 3-1/2 inches thick.

1. Make a hole in the wall near a stud at the desired location. This hole should be 11-1/4 inches wide and 11 inches high.

2. If the studs are farther apart than the width required, attach some shims to the stud inside the wall so that the shims and the first stud are the right width.

3. Screw the back box to the stud on one side and the shims on the other. Three holes are provided in each side flange of the back box (see Figure 3-5).
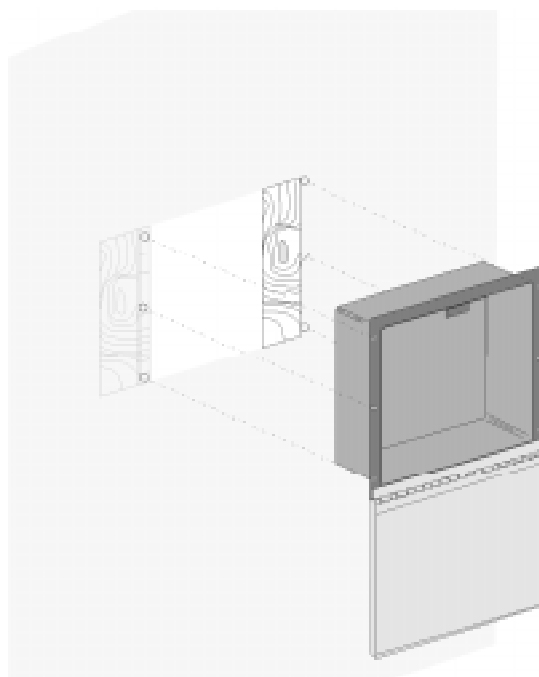

Figure 3-5: Flush Mounting

3.5   Surface Mount

1. Make a cardboard template to locate the hole positions. When mounting on interior walls, use appropriate screws and anchors in plaster. When mounting on concrete, especially where moisture is present, attach a piece of 3/4 inch plywood to the concrete surface.

2. Slide the unit into the wall adapter.

3. Mount to the wall through the 4 holes in the back of the box (see Figure 3-6).
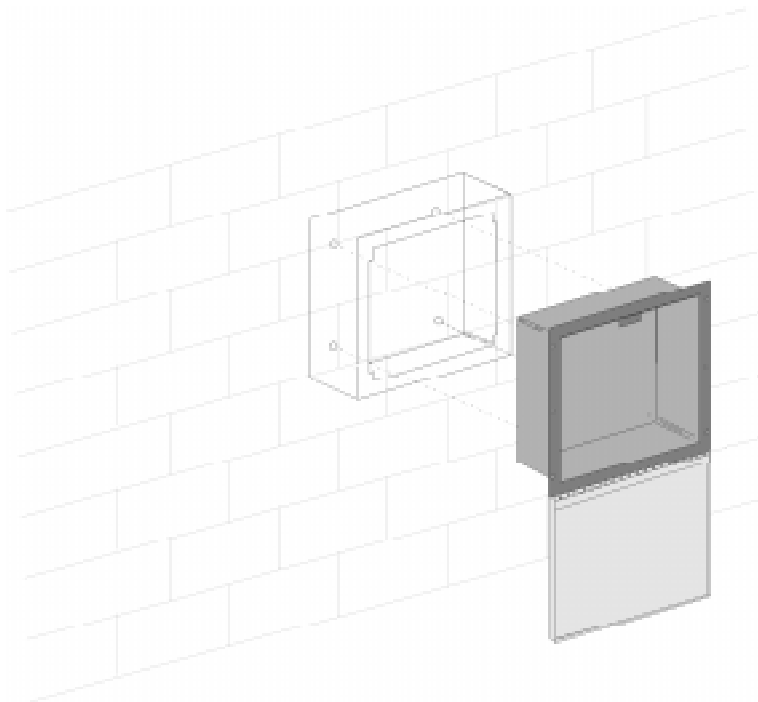
Figure 3-6: Surface Mount

3.6   5073 and 5074 Wiring Instructions

The following section contains information necessary to properly wire the Model 5000 Entry System.

3.6.1   Model 5073 and 5074 Power Requirements

The 5073 and 5074 main units are powered from a UL listed Class II, 16.5 VAC 40 VA transformer that plugs directly into a 120 VAC 60Hz wall outlet. The transformer provides power for the 5073 and 5074 main units and charging current for the 12 VDC backup battery. In the event of a power outage, the 12 VDC, 1.2 AH battery will provide enough current to run the system for a minimum of 2 hours. The actual time will depend on how much the system is used. All programmed data will be stored in EEPROM memory if AC power is lost and the backup battery becomes depleted.

3.6.2   Installing the AC Transformer

Wire the transformer (Model 9220) to terminals 1 and 2 on the 5073 and 5074 printed circuit board. Use 16-gauge or larger (14, 12, etc.) shielded wire. Ground the shield to terminal #3 on the 5073 or 5074 and to the center screw terminal on the transformer as shown in Figure 3-7. Also verify that the outlet is a non-switching circuit.
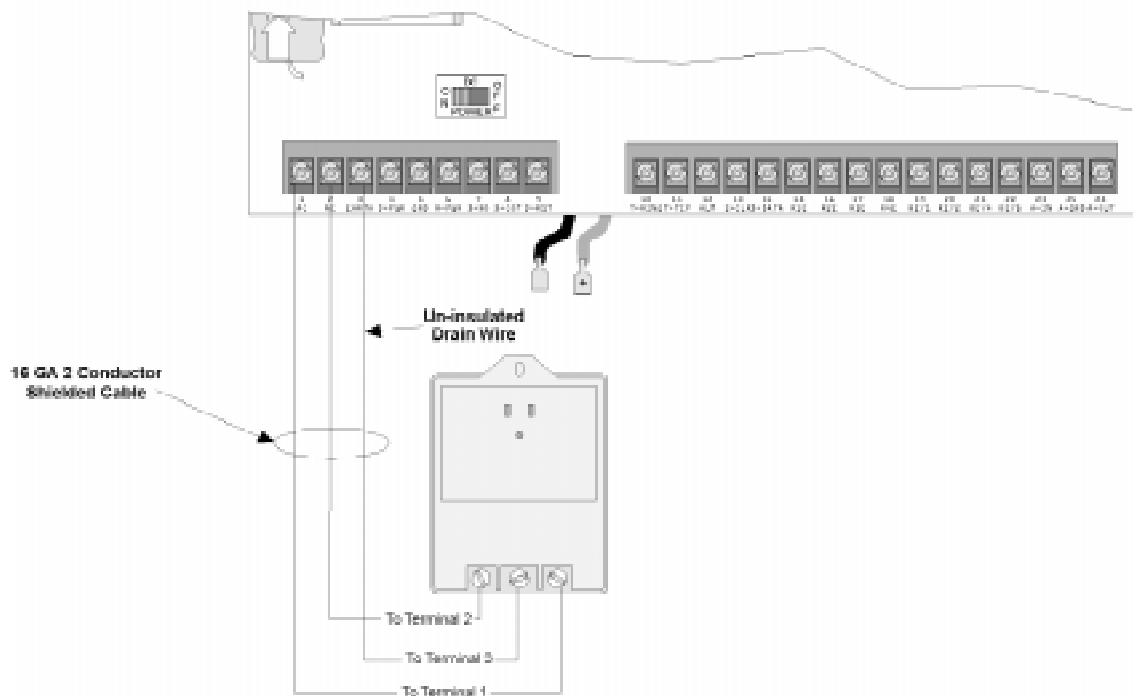

Figure 3-7: AC Transformer Wiring Diagram

For transient protection follow the instructions for installing a Model 7890 in Section 3.6.5.

3.6.3   Transient Protection For 5073/5074 Panels

The AC lines are the most common source of transient or lighting damage in electronics. The transient protection on the 5073 and 5074 control panel will only work if the panel is correctly earth grounded.

Warning: To avoid risk of electrical shock, you may wish to have a licensed electrician ground the electrical outlet.

3.6.4   How to Verify Earth Ground

To verify earth ground at the AC outlet the 5073/5074 control panel is powered from, use the following steps:

1. Measure the AC voltage between the center ground post and each side of the outlet (see A & B in Figure 3-8). You should read approximately 120 VAC at measurement point B and nominal VAC at measurement point A.
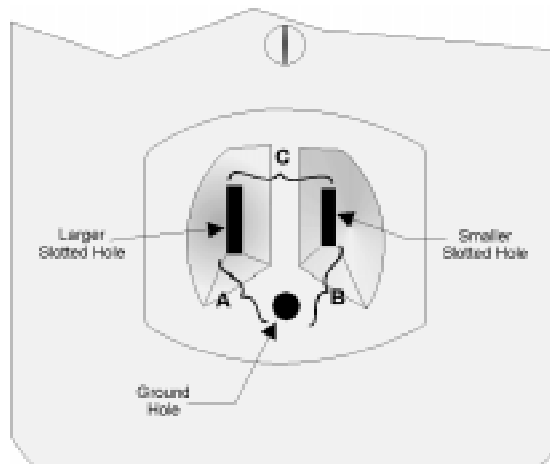

Figure 3-8: Outlet Voltage Measurement Points

2. Measure the voltage between the two slotted holes. It should be equal to the voltage reading at measurement point B. (See Figure 3-8.)

   If these voltages are not equal, the outlet does not have a proper earth ground.

3. Ground the outlet by running a wire (18 gauge or higher) to a good earth ground.

   The wire should be of equal or greater diameter to the wires used to feed the outlet. It may be necessary to have a licensed electrician ground the outlet.

3.6.5   7890 Installation Instructions

The Model 7890 Transient Protector consists of two bipolar transient suppressors with lugs at its connecting points. When properly installed with shielded two-conductor cable, it will filter AC output of the Class II transformer Model 9220. It reduces transient voltages frequently present on the power lines, which are caused by lighting and other sources, to manageable levels.

To install the 7890 Transient Protector follow these steps:

1. Turn DC power switch to the "off" position.

2. Unplug the AC transformer

3. Attach the Model 7890 Transient Protector as shown in Figure 3-9 and Figure 3-10.
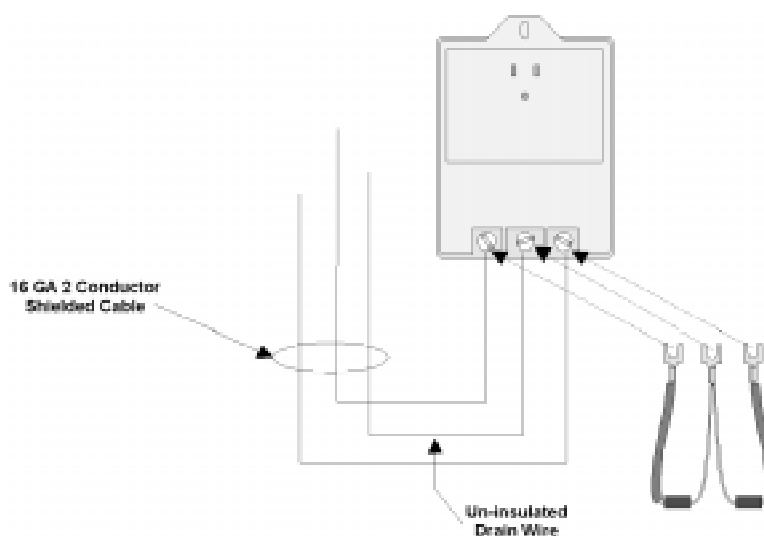

Figure 3-9: Attaching the 7890 to the 9220

4. Connect the other end of the shielded cable to the 5073/5074 Entry System terminals 1 through 3 as shown in Figure 3-10.
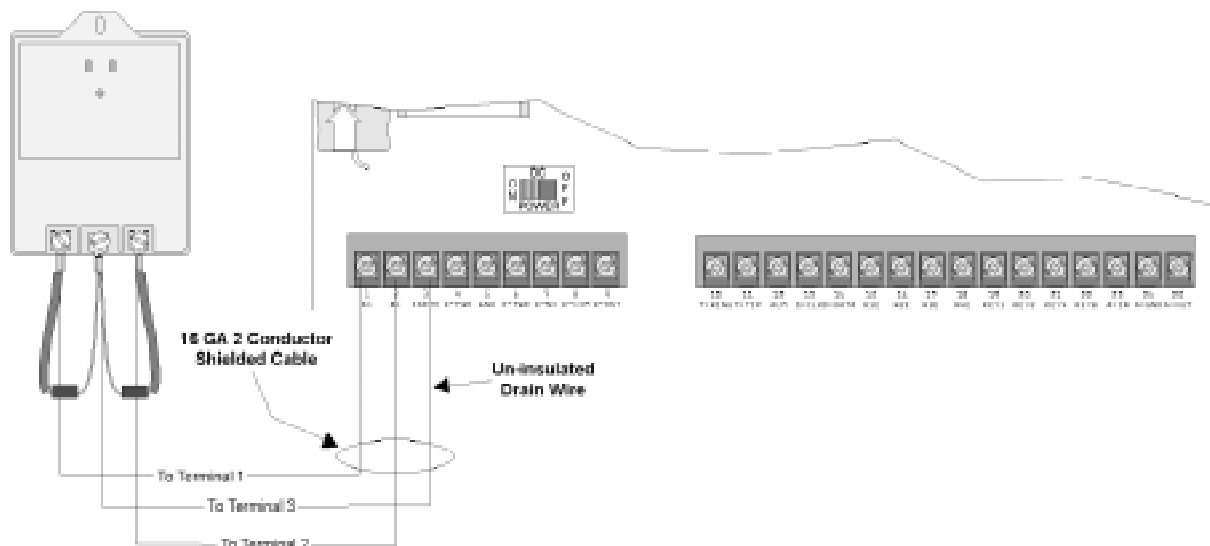

Figure 3-10: 7890 Attached to the 9220 AC transformer

3.6.6   Installing A DC Doorstrike

1. Install the electric doorstrike in the door frame according to the manufacturer's specifications.
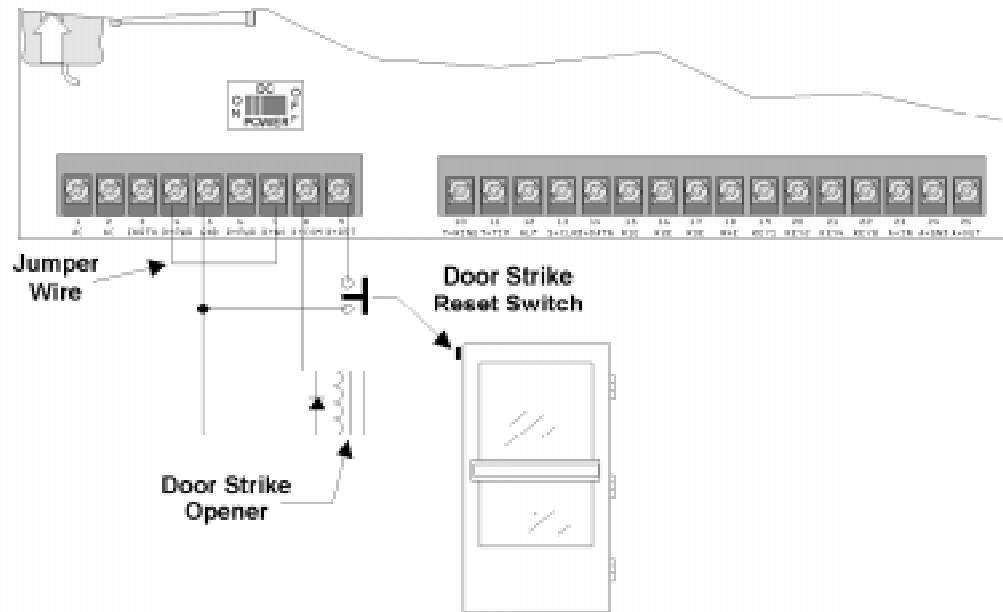

Figure 3-11: DC Doorstrike Wiring Diagram

2. For a DC power doorstrike place a jumper wire between terminals 4 and 7 (see Figure 3-11).

3. Connect the doorstrike to terminals 5 and 8 (see Figure 3-11).

Note: Only ONE doorstrike per system can be installed this way. Any additional doorstrikes must be AC-driven.

4. Install a reverse bias diode (1N5401 supplied with the 5073 and 5074 panels) across the DC doorstrike coil to suppress arcing and electrical noise. (See Figure 3-11.)

Caution: The maximum allowable current to operate a DC doorstrike is 1A. Damage to the power supply and to the battery charging circuit will occur if this is exceeded.

3.6.7   Installing an AC Doorstrike

1. Install the electric doorstrike in the door frame according to the manufacturer's specifications.
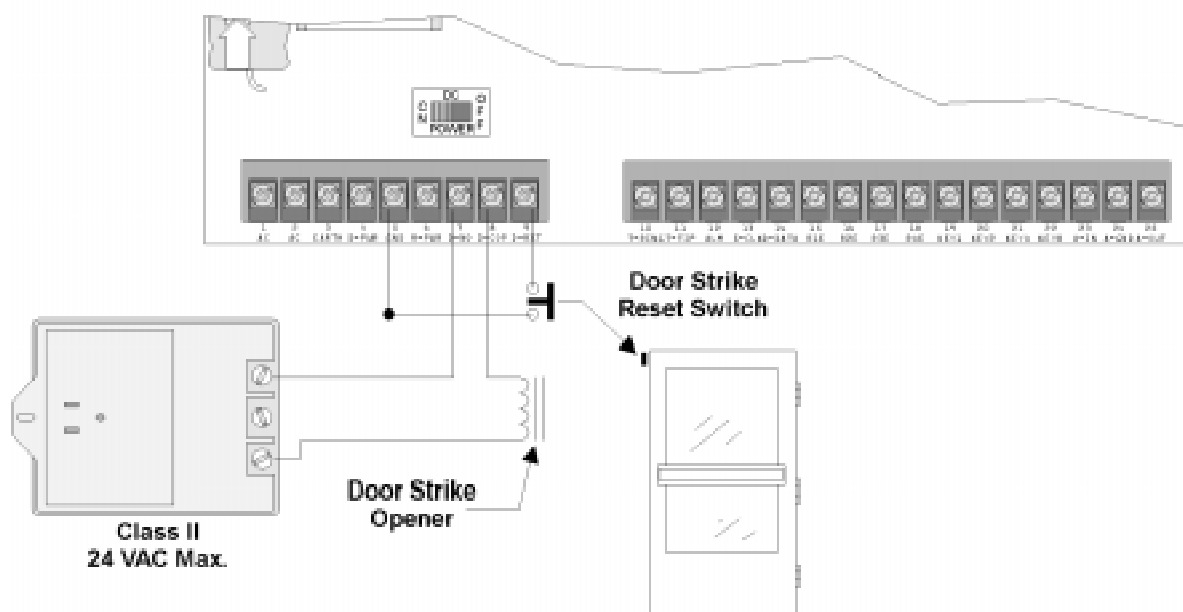

Figure 3-12: AC Doorstrike Wiring Diagram

2. Wire a transformer (24 VAC maximum) in series with the door strike opener, to terminals 7 and 8. (See Figure 3-12.)

Note: Do Not use the transformer that powers the 5073 or 5074 control panel. All AC doorstrikes must be powered by a separate AC transformer. The maximum voltage rating of the door strikes contacts is 24VAC. Do Not install a reverse bias diode across the coil.

3.6.8   Doorstrike Reset Switch

In installation sites requiring a magnetic contact to re-lock the door at the end of the programmed time ("DOOR TIME"—see section 4.2.1) use the following steps.

1. Wire the contact to terminals 5 and 9. (See Figure 3-11 and Figure 3-12.)

2. The contact must be in the open state when the magnet is next to it.

3.6.9   Installing Phone Lines

The 5000 Series Entry System requires a RJ11X or RJ11W telephone jack to be installed by the phone company. Wire the phone lines to 5073 or 5074 control panel terminals 10 and 11. (See Figure 3-13.)
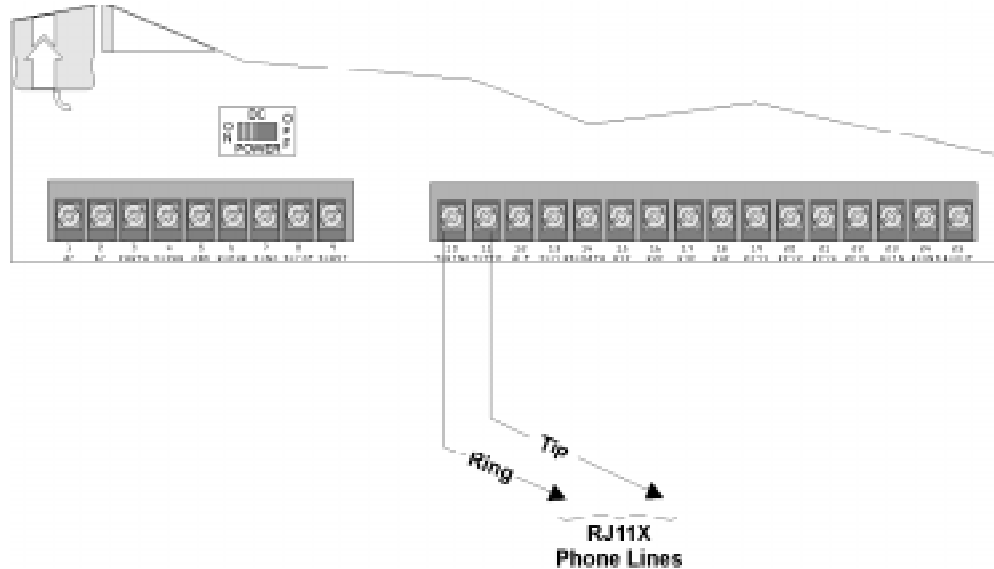

Figure 3-13: Telephone Wiring Diagram

3.6.9.1   Using Ground Start

If the phone system at the installation site is a ground start system, use a 12 VDC single pole single through (SPST) normally open relay, connected between terminal 10 (Ring) and terminal 3 (Earth Ground). (See Figure 3-14.)
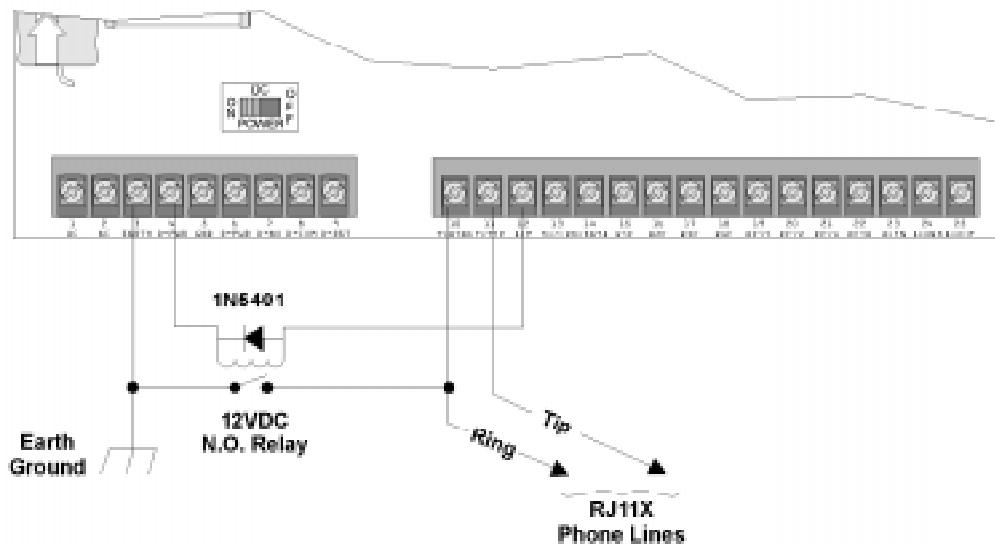
Figure 3-14: Ground Start Telephone Wiring Diagram

3.6.10 Installing a Mail Carrier Lock for the 5073 and 5074 panel.

Note: The "mail carrier lock" is optional and is supplied by the Post Office.

1. Remove the Mail Carrier Lock hole plug. (See Figure 3-15.)

Model 5074   **Mail Carrier Lock**   **Model 5073**
                        Hole Plug

Figure 3-15: Mail Carrier Lock Hole Plug Location

2. Install the lock on the 4 posts on the inside of the door. Use the the #8-32 nuts and lock washers (both supplied) to secure the mail carrier lock (see Figure 3-16).

Figure 3-16: Inside view of 5073/5074 Control Panel

3. Remove the red cap from the mail carrier lock button. (See Figure 3-16 for red cap location.)

4. Adjust the push-button switch so that the button is completely out when the mail carrier key is turned in the lock.

Note: If the mail carrier lock is not used, do not remove the red cap from the mail carrier button.
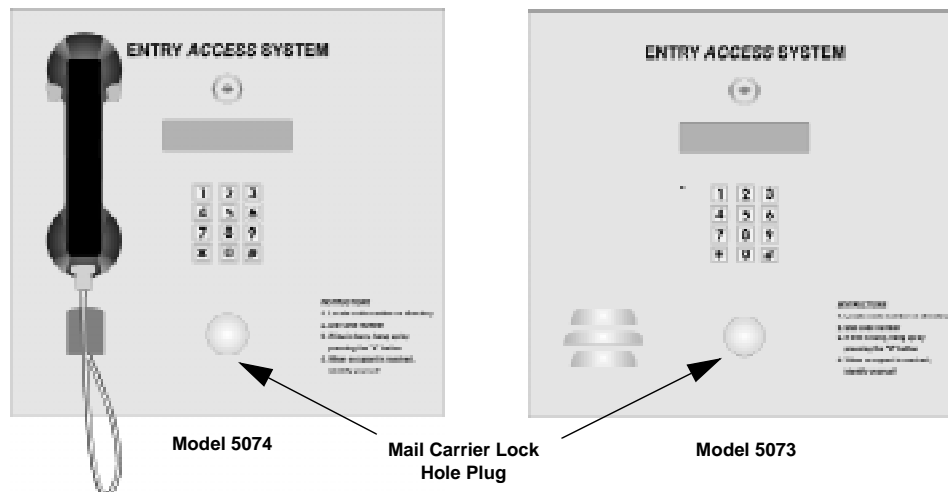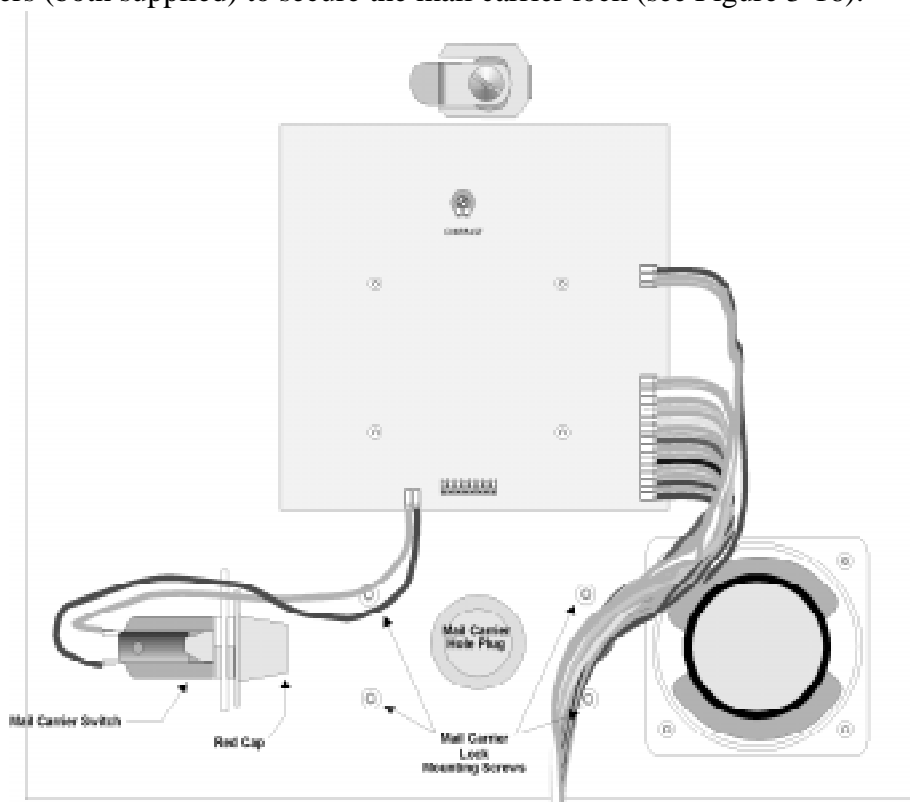
3.6.11 Installing a Sonalert/Piezo to the Alarm Output (optional)

In installation sites requiring an alarm output when the door access codes are tampered with, a sonalert/piezo (12 VDC, 100 mA maximum) can be installed to terminals 6 and 12. (See Figure 3-17.)
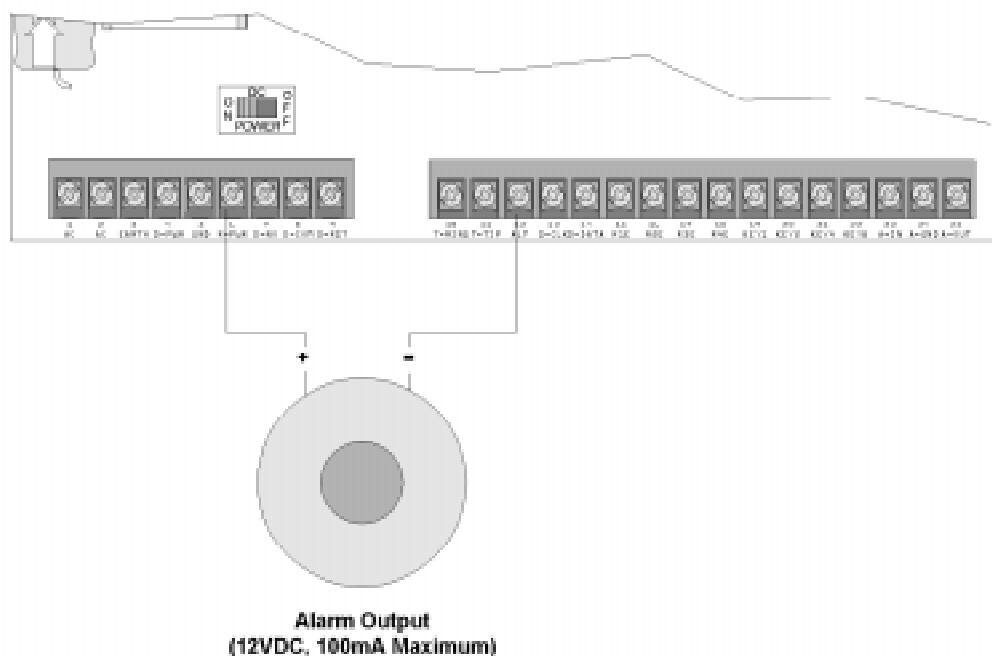
Figure 3-17: Sonalert/Piezo to 5073/5074 Control Panel Wiring Diagram

Note: 5073 and 5074 installations using a ground start telephone system CANNOT use the alarm output.

3.6.12 Connecting the Backup Battery

To connect the backup battery (Model 6912).

1. Connect the black battery cable to the minus (-) terminal of the battery. (See Figure 3-2 for battery cable location.)

2. Connect the red battery cable to the positive (+) terminal of the battery.

Note: The backup battery will charge automatically whether the DC power switch is "on" or "off", when AC power is present at the panel. If the DC power switch is off and AC power is removed, the backup battery will eventually discharge because of a small leakage current through the backup battery circuit.

3.7   5063 and 5064 Installation Instructions

This section contains information to properly install the 5063 and 5064 Remote Satellite Panels.

3.7.1   Connecting the 5063 or 5064 to the 5073 or 5074 Control Panel

1. Turn the DC power switch "off" at the 5073 or 5074 control panel.

2. Wire all connections from the 5073 or 5074 control panel to the remote satellite unit as shown in Figure 3-18 and Table 3-3.
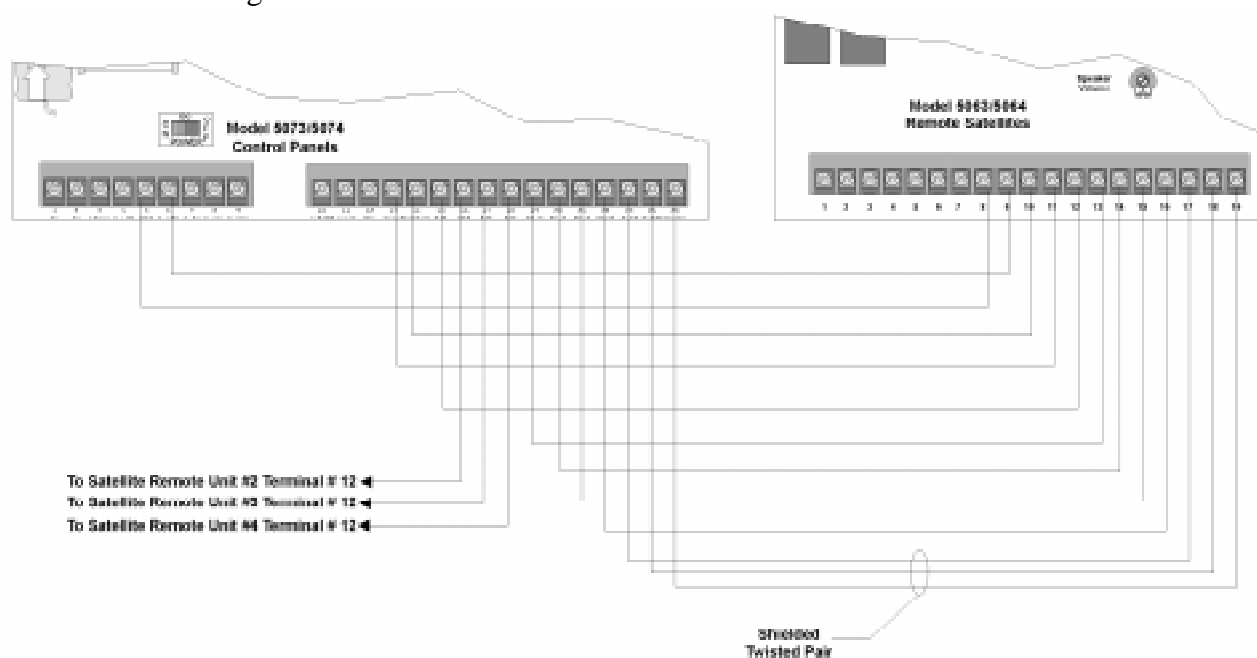
Figure 3-18: 5073 and 5074 Control Panel to Remote Satellite Wiring Diagram

Table 3-3: Model 5073/5074 to Remote Satellite Terminal connections

From 5073/5074 Terminal	To 5063/5064 Terminals	From 5073/5074 Terminal	To 5063/5064 Terminals
5	8	19	13
6	9	20	14
14	10	21	15
13	11	22	16
15	12 (Remote Unit #1)	↓**Shielded Twisted Pair**↓	
16	12 (Remote Unit #2)	23	17
17	12 (Remote Unit #3)	24	18
18	12 (Remote Unit #4)	25	19

Note: Shielded twisted pair will prevent malfunctions from static electricity and assure the best audio sound.

3.7.2   Connecting an AC Doorstrike

1. Install the electric doorstrike in the door frame according to the manufacturer's instructions.
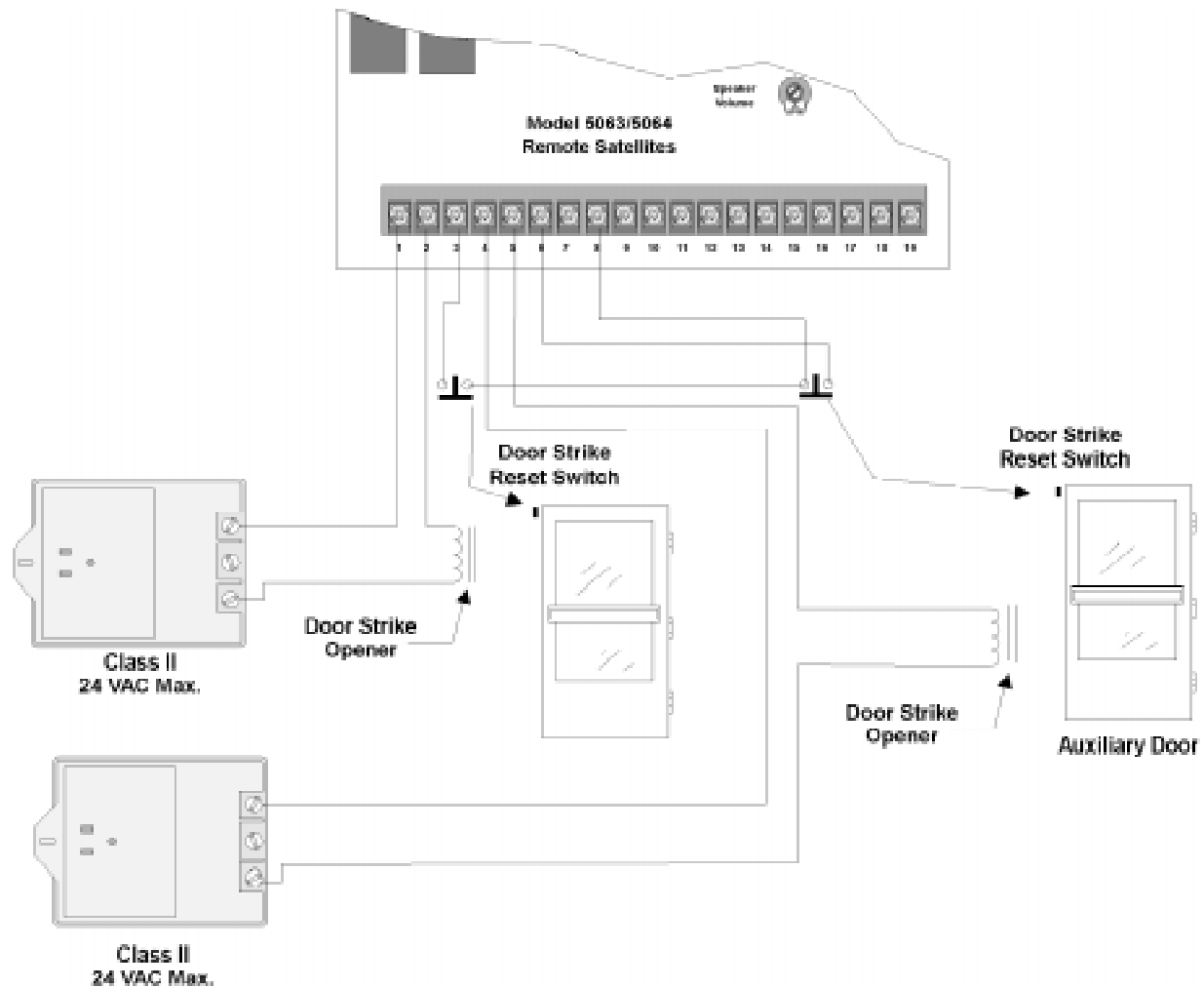
Figure 3-19: AC Doorstrike to 5063/5064 Wiring Diagram

2. Connect the doorstrike and transformer as shown in Figure 3-19. (Door contacts rated at 24VAC maximum.)

Note: No DC power is available at the model 5063 and 5064 Remote Satellites. A separate DC power supply is required to power any DC doorstrike used.

3.7.3 Installing a Mail Carrier Lock for the 5063 and 5064 panel.

Note: The "mail carrier lock" is optional and is supplied by the Post Office.

1. Remove the Mail Carrier Lock hole plug. (See Figure 3-20.)
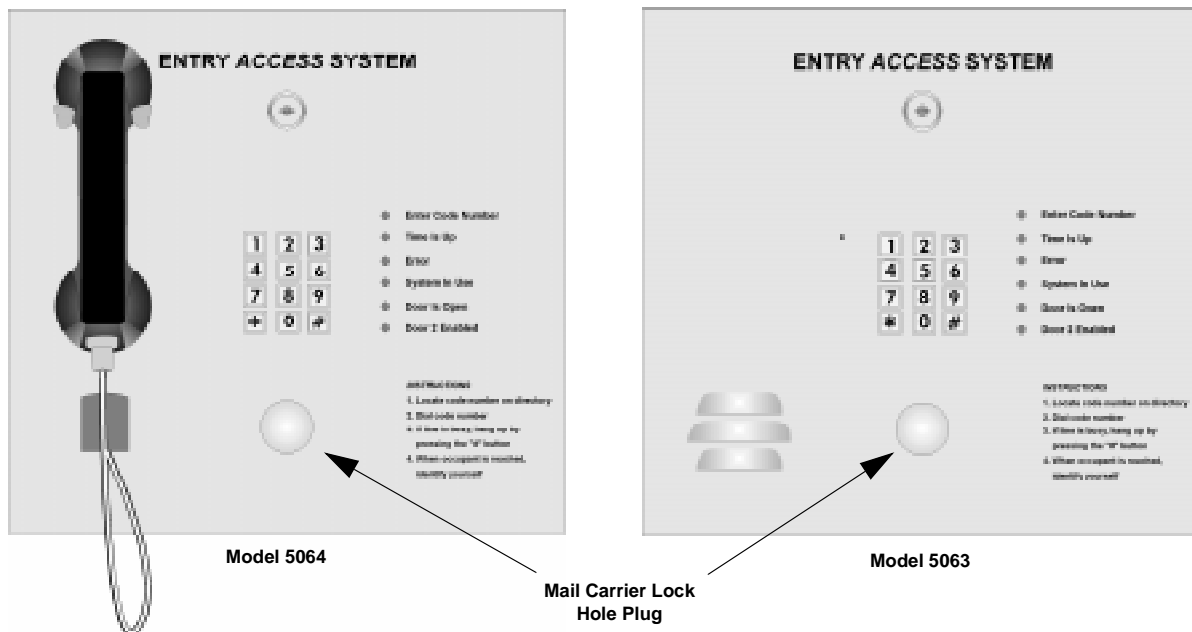
Figure 3-20: Mail Carrier Lock Hole Plug Location

2. Install the lock on the 4 posts on the inside of the door. Use the the #8-32 nuts and lock washers (both supplied) to secure the mail carrier lock. (See Figure 3-16.)

3. Remove the red cap from the mail carrier lock button. (See Figure 3-16.)

4. Adjust the bush-button switch so that the button is completely out when the mail carrier key is turned in the lock.

Note: If the mail carrier lock is not used, do not remove the red cap from the mail carrier button.

3.7.4 Installing a Sonalert/Piezo to the Alarm Output (optional)

In installation sites requiring an alarm output when the door access codes are tampered with, a sonalert/piezo (12VDC, 100mA maximum) can be installed to terminal 7 and 9. (See Figure 3-21.)
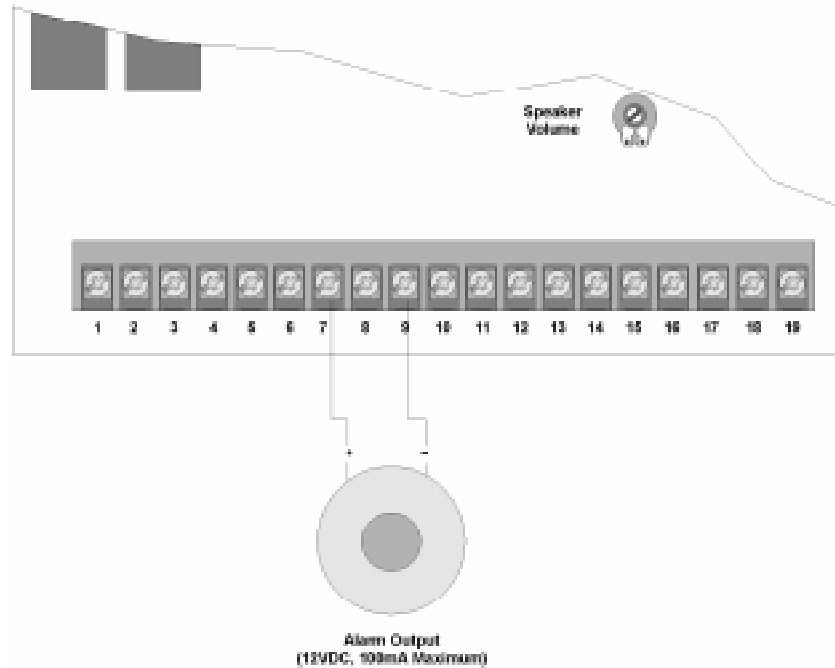
Figure 3-21: Sonalert/Piezo to 5063/5064 Remote Satellite Wiring Diagram

3.8 Model 5076 Heater Kit

The Model 5076 Heater Kit can be used with the Model 5063/5064 Remote Satellite or the 5073/5074 Control Panel. It is designed to maintain the temperature inside the cabinet above 32° F when the outside temperature is -20° F. The heater uses a self-regulating positive temperature coefficient (PTC) material for the heating element.

The heater is powered by a 16.5 VAC, 50VA Class II transformer. The heater bracket is electrically insulated from the heater element.

3.8.1 To Install the 5076 Heater

1. Remove the four #6 nuts that retain the keypad circuit board. (See Figure 3-22.)
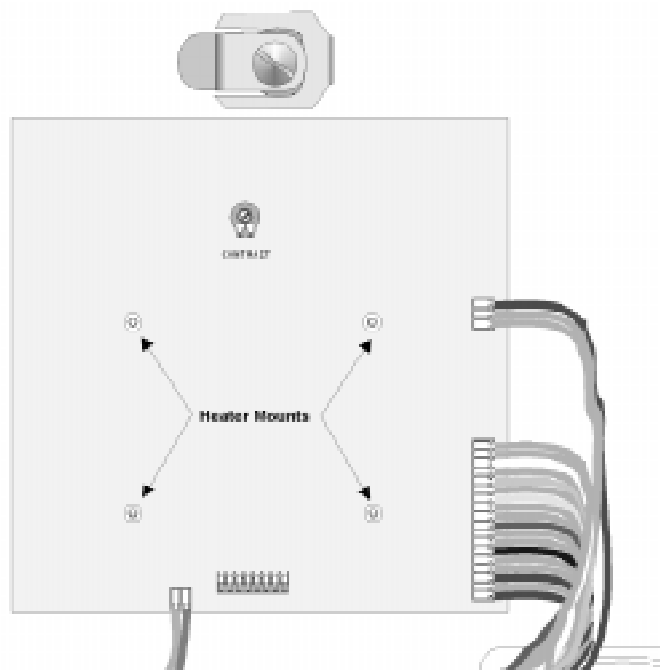
Figure 3-22: Keypad Circuit Board Retaining Nuts

2. Replace them with the threaded stand-offs.

3. Mount the 5076 on the threaded stand-offs with the #6 nuts and lock-washer provided. (See Figure 3-23.)

4. Connect the 16.5 VAC Class II transformer to the two terminals on the 5076 Heater. (See Figure 3-23.)
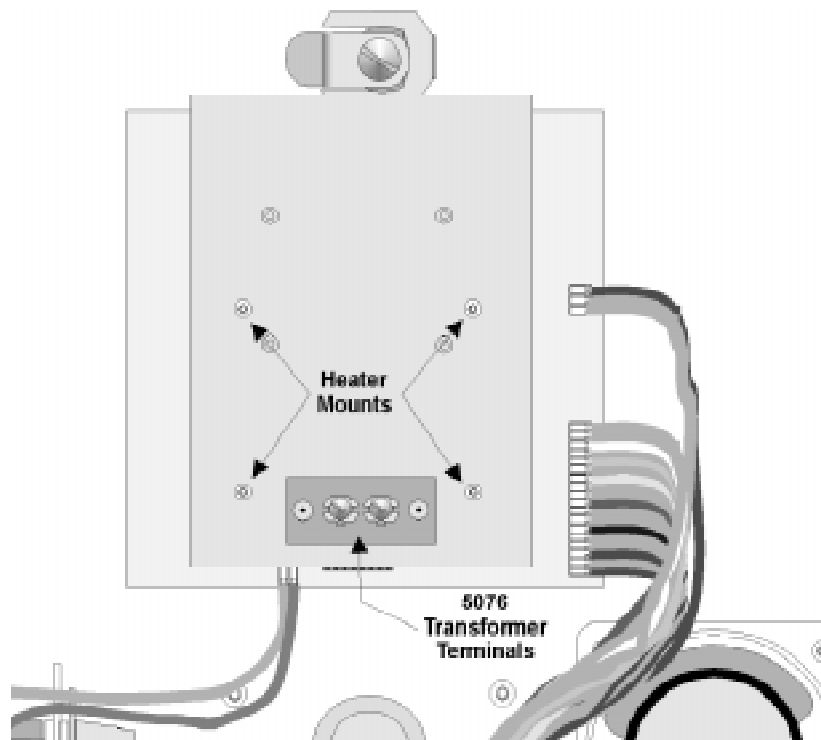
Figure 3-23: View of 5076 Mounted

3.9   Memory Expansion

The 5073 and 5074 Entry System Control Panels come shipped with EEPROM chip #0 already installed. Chip #0 has memory for up to 200 tenants. (See Figure 3-24.)
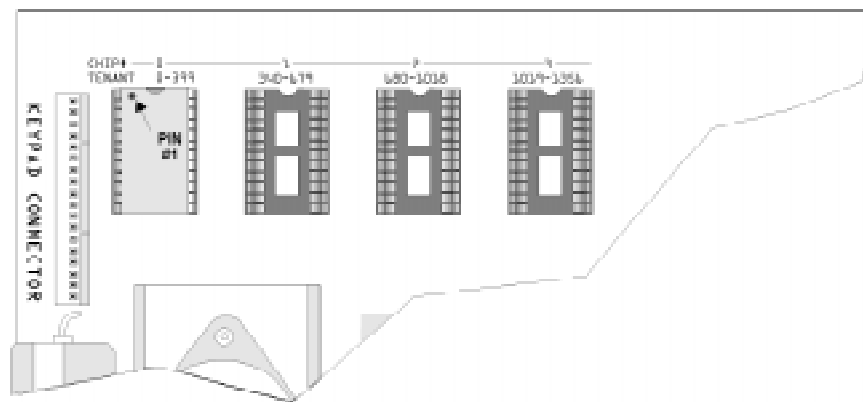
Figure 3-24: 5073/5074 Control Panel EEPROM Chip Socket Locations.

Each additional EEPROM chip expands the memory 200 apartments. Additional memory chips (P/N 005091) can be ordered from Silent Knight Customer Service at 800-328-0103.

Note: The control panel labeling at each chip location reflects the number of tenants available per chip for software revision 9370 Rev. C (and older).

3.9.1   Installing EEPROMs

1. Turn the DC power switch to the "off" position.

2. Install the next EEPROM chip into socket #1

Note: Each additional EEPROM chip must be inserted with the notched end facing towards the top of the chip socket (see Figure 3-24 for PIN #1 location). Be careful not to bend any of the legs on the EEPROM chip upon insertion. If any of the EEPROM legs become bent while inserting into the socket, remove the EEPROM chip and straighten the legs with a small pair of flat-sided pliers.

3. Repeat steps 1 and 2, moving to the next available open socket location for each additional EEPROM chip to be installed.

Section 4
Operating Modes

Operating modes are used to program tenant and time information and to select system operating features such as rotary verses TouchTone dialing, etc. Table 4-1 shows the nine different operating modes and a description of each. (See 4.2 for more information about operation modes.)

Table 4-1: Operation Modes and Descriptions

Operation Mode	Description
0	Programs "**System Options**" and "**Apartment Information**". The following information can be programmed in the "System Options": Rotary dialing (yes/no), USA rotary (yes/no), Speaker on (yes/no), Ground start (yes/no), * before 6 (yes/no), PBX number, apartment number length, Call length, Door time. The following information can be programmed in the "Apartment Information": apartment codes, door access, dial PBX, Phone number.
1	**Activate Door Relay #1**. Door relay #1 will also activate on any remote units.
2	**Activate Auxiliary Door Relay**. Used to activate auxiliary door relays at any time. Auxiliary door relays will also activate on any remote units. Only remote units have an auxiliary relay.
3	**Auxiliary Door Relay Enable**. Used to enable or disable the auxiliary door relay.
4	**Memory Clear**. Deletes all apartment information.
5	**Apartment Information Entry**. Used as a short-cut step to operation mode 0. This mode skips to the apartment information programming portion of mode 0.
6	**Time Set**. Used to set the real time clock and the auxiliary enable/disable times.
7	**Remote Type Selection**. Select the type of remote unit being used with the system. Total of four remote units can be used.
8	**System Message**. Selects the message display to visitors and tenants at the entry system. Choose either ENTER APT#, ENTER SUITE #, or ENTER UNIT #.
9	**Telephone**. Make the 5073 0r 5074 a normal telephone so it can be used to make a phone call outside the complex system.

4.1   Entering and Exiting Operating Modes

This section contains information that will help you enter, exit and change different selections will in the various operating modes.

4.1.1   To enter an operating mode:

1. Press *. The display will show **ACCESS #**.

2. Enter the number of the operating mode desired.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

If the access code is not known:

1. Turn the power switch to the "off" position.

2. Press and hold the 0 key on the keypad while turning the power switch back to the "on" position. The system will power up in the programming mode. The display will show **ACCESS # 123456** (see section 4.2.1). At this point if an new access code is entered that is less than 6 digits the following will result:

    You will not be able to access the other operating modes when you exit program mode. You will have to power the system back down, then back on again before you can enter a valid 6-digit access code.

4.1.2   To change a selection.

1. Press # to clear display.

2. Enter new data.

3. Press *.

4.1.3   To exit any operating mode.

1. Press # #.

4.2 Programming in Operating Modes

This section gives step-by-step instructions for each programming mode. It is recommended that you read through the steps once to become familiar with the procedure. Once you are familiar with the procedure you may find the **Quick Chart** easier to use. (See Section 4.3.)

4.2.1 Program Mode 0: System Options and Apartment Information

Program Mode 0 programs both the **"System Options"** and **"Apartment Information"** data.

To enter program mode 0:

1. Press * The display will show **ACCESS #**.

2. Enter 0.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *. The display will show **ACCESS # XXXXXX**. **X** = a number from 0-9.

5. Enter new 6-digit access code then *.

    If you don't wish to change the access code just press *.

6. Display shows **ROTARY**   **YES** or **NO**.
    YES = rotary dialing   NO = TouchTone dialing

7. Press **any key** other than * or # to toggle between yes or no.

8. Press *. The display shows **USA ROTARY**   **YES** or **NO.**
    YES = USA rotary standards   NO = EURO rotary standards

9. Press **any key** other than * or # to toggle between yes or no.

10. Press *. the display shows **SPEAKER ON**   **YES** or **NO.**
    YES = speaker is "on" while dialing   NO = speaker "off" during dialing

11. Press **any key** other than * or # to toggle between yes or no.

12. Press *. The display shows **GROUND START**   **YES** or **NO**.
    YES = alarm output used for ground start system   NO = alarm output used for Sonalert/
                                                       piezo output.

13. Press **any key** other than * or # to toggle between yes or no.

14. Press *. The display shows * **BEFORE 6**   **YES** or **NO**
    YES = visitor must press * before tenant can open door by pressing 6.
    NO = tenant just needs to press 6.

    This feature is used to prevent unauthorized entry to by using a TouchTone beeper to activate doorstrike.

15. Press **any key** other than * or # to toggle between yes or no.

16. Press *. The display will show **PBX #   XX.**
    X = a number from 0-9.

17. Enter the number (up-to two digits) necessary to access a PBX system.

    This is necessary for phone lines that are run through a PBX system.

18. Press *. the display shows **APT # LENGTH   X.**
    X = a number from 1-4 which is the number of digits to be used on the apartment direc-
    tory. Numbers less can be used but require that a * be pressed after the code is entered.

19. Enter 1, 2, 3, or 4 depending a the number of digits to be used on the apartment directory.

20. Press *. the display shows **CALL LENGTH   1-255.**
    This is how much time is allowed between the time the system is finished dialing and the
    time it automatically hangs-up, 1-255 seconds.

21. Enter the Call Length time.

22. Press *. The display shows **DOOR TIME   1-255.**
    The length of time (1-255 seconds) the door relay will be activated for visitor entry.

23. Enter the Door Time.

24. Press *.

*Note: You will now automatically move into the "Apartment Information" portion of pro-
         gramming.*

    The display shows **CLLL APT #   XXXX.**
    C = chip #, L = data location, X = a number from 0-9 (see Figure 4-1).

25. Enter the code that appears next to the tenant's name on the directory.

26. Press *. The display shows **DOOR ACCESS   YES** or **NO.**
    YES = keyless entry   NO = key entry

    This feature allows the tenant a keyless enter option. If programmed "yes" the tenant can
    enter the last four digits of their phone number to open the lobby door. If programed "no"
    the tenant must use a key to enter building.

27. Press **any key** other than * or # to toggle between yes or no.

28. Press *. The display shows **DIAL PBX #   YES** or **NO.**
    YES = If selected the system will dial the number programmed in "System Option" (Steps
    16. and 17.) before dialing the phone number. NO = the system will not dial PBX access
    number. This will be displayed only if a number was enabled in step 16.

29. Press **any key** other than * or # to toggle between yes or no.

30. Press *. The display will show **PHONE #   (13 digits maximum).**

31. Enter the tenants phone number (up-to 13 digits).

32. Press * to go back to step 24.   or   Press # # to exit programming mode.

4.2.2   Program Mode 1
Activate Door Relay #1

Program Mode 1 **activates door relay #1**.

To activate door relay # 1 use the following procedure:

1. Press *. The display will show **ACCESS #**.

2. Enter 1.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

    The display shows **DOOR IS OPEN**   **A.** The door relay stays active for the "door time".

4.2.3   Program Mode 2
Activate Auxiliary Door Relay

Program Mode 2 **activates the auxiliary door relay**.

To activate the auxiliary door relay:

1. Press *. The display will show **ACCESS #**.

2. Enter 2.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

    The display shows **DOOR IS OPEN**   **A**. The auxiliary door remains open for "door time".

4.2.4   Program Mode 3
Auxiliary Door Relay Enable

Program Mode 3 **enables the auxiliary door relay**.

To enable the auxiliary door relay.

1. Press *. The display will show **ACCESS #**.

2. Enter 3.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

    The display shows **ENABLED**   **or**   **DISABLED**. This feature will toggle between enabled and disabled each time steps 1 through 4 is completed.

4.2.5   Program Mode 4
        Memory Clear

Program Mode 4 **clears the control panel memory** back to factory defaults.

To clear the control panel memory:

1. Press *. The display will show **ACCESS #**.

2. Enter 4.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

    The display shows **CLR MEMORY**
    To proceed with the memory clear press *. To abort the memory clear procedure press any key other that the star.

4.2.6   Program Mode 5
        Apartment Information

Program Mode 5 is a short-cut to the **Apartment Information** portion of Program Mode 0 procedure. Program Mode 5 would be used to check or change apartment information without having to go through the "System Options" first.

To program apartment information:

1. Press *. The display will show **ACCESS #**.

2. Enter 5.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

    The display shows **CLLL APT #   XXXX.**
    C = chip #, L = data location, X = a number from 0-9 (see Figure 4-1).

5. Enter the code that appears next to the tenant's name on the directory.
    The length of this number must the equal to or less than that programmed in Section 4.2.1 steps 18. and 19. Numbers less require that a * be pressed after the code is entered.

6. Press *. The display shows **DOOR ACCESS   YES** or **NO.**
    YES = keyless entry   No = key entry

    This feature allows the tenant a keyless enter option. If programmed "yes" the tenant can enter the last four digits of their phone number to open the lobby door. If programed "no" the tenant must use a key to enter building.

7. Press **any key** other than * or # to toggle between yes or no.

8. Press *. The display shows **DIAL PBX #   YES** or **NO.**
    YES = If selected the system will dial number programmed in "System Option" (Steps 16.
    and 17.) before dialing the phone number. NO = the system will not dial PBX access num-
    ber. This will be displayed only if a number was enabled in step 16 of Section 4.2.1.

9. Press **any key** other than * or # to toggle between yes or no.

10. Press *. The display will show **PHONE #   (13 digits maximum).**

11. Enter the tenant's phone number (up-to 13 digits).

4.2.6.1   Review Apartment Information

To view apartment information:

1. Press *. The display will show **ACCESS #**.

2. Enter 5.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

    The display shows **CLLL APT #   XXXX.**
    C = chip #, L = data location, X = a number from 0-9 (see Figure 4-1).

5. Press * to step trough the memory.

    The number at the left of the display is the EEPROM chip number and the memory loca-
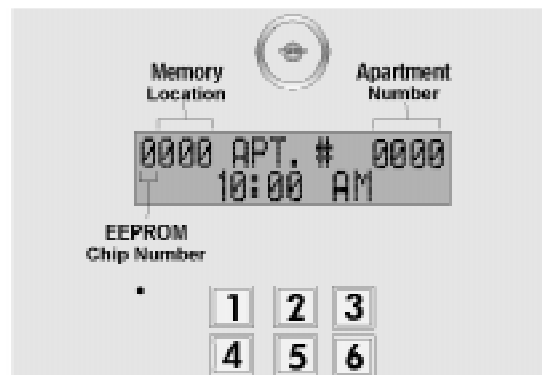   tion. (See Figure 4-1.)

Figure 4-1: Display Parts

4.2.6.2   Change Apartment Information

To change the an apartments information:

1. Press *. The display will show **ACCESS #**.

2. Enter 5.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

   The display shows **CLLL APT #   XXXX.**
   C = chip #, L = data location, X = a number from 0-9 (see Figure 4-1).

5. Press * to step trough memory to the apartment you wish to change.

6. Press #. This will clear the display.

7. Press *. This enters the "clear" information.

8. Enter the code that appears next to the tenant's name on the directory.
   The length of this number must the equal to or less than that programmed in Section 4.2.1
   steps 18. and 19. Numbers less require that a * be pressed after the code is entered.

9. Press *. The display shows **DOOR ACCESS   YES** or **NO.**
   YES = keyless entry   No = key entry

   This feature allows the tenant a keyless enter option. If programmed "yes" the tenant can
   enter the last four digits of their phone number to open the lobby door. If programed "no"
   the tenant must use a key to enter building.

10. Press **any key** other than * or # to toggle between yes or no.

11. Press *. The display shows **DIAL PBX #   YES** or **NO.**
    YES = If selected the system will dial number programmed in "System Option" (Steps 16.
    and 17.) before dialing the phone number. NO = the system will not dial PBX access num-
    ber. This will be displayed only if a number was enabled in step 16 of Section 4.2.1.

12. Press **any key** other than * or # to toggle between yes or no.

13. Press *. The display will show **PHONE #   (13 digits maximum).**

14. Enter the tenants phone number (up-to 13 digits).

4.2.7   Program Mode 6
Time Set

Program Mode 6 is used to set the **real-time clock** and the **auxiliary enable/disable times**.

To set the real-time clock and auxiliary enable/disable times:

1. Press *. The display will show **ACCESS #**.

2. Enter 6.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

   The display shows **TIME   XX:XX**.
   X = a time based on a 24 hour clock (military time).

5. Enter the correct time in military time. Example 1:00 pm in military time = 13:00.

   The display shows **ENABLED   XX:XX.**

X = a time based on a 24 hour clock (military time).

6. Enter the time you wish to enable the auxiliary door relay.

7. Press *.

   The display shows **DISABLED   XX:XX.**
   X = a time based on a 24 hour clock (military time).

8. Enter the time you wish to disable the auxiliary door relay.

9. Press *.

4.2.8   Program Mode 7
Remote Type Selection

Program Mode 7 is used to **select the type of remote device** that will be used with the system.

To Select the remote device type (total of 4 remote units) to be used:

1. Press *. The display will show **ACCESS #**.

2. Enter 7.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

   The display shows **REMOTE 1   5060/61**. Factory default remote type is 5060/61.

5. Press any digit other than * to toggle between 5063/64 and 5060/61.

6. Press * to move to **REMOTE 2.**

7. Repeat steps 5 and 6 to program the remote type for the any remaining remote units.

8. Press # # when you have completed all selections.

4.2.9   Program Mode 8
System Message

Program Mode 8 is used to select the type of displayed message that will be visible to tenants and visitors at the control panel.

To set or change the displayed message:

1. Press *. The display will show **ACCESS #**.

2. Enter 8.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

The display may show one of three messages **ENTER APT. #**, **ENTER SUITE #**, **ENTER UNIT #,** or **ENTER CODE #**.

5. Press * to scroll through all the available messages.

6. With the desired display message visible Press # #.

4.2.10 Program Mode 9
Telephone

Program Mode 9 is used to make the 5073 or 5074 control panel act as a **normal phone**.

To use the control panel as a normal phone:

1. Press *. The display will show **ACCESS #**.

2. Enter 9.

3. Enter the 6-digit access code. (Factory default is 123456.)

4. Press *.

    The display shows **PHONE #**

5. Enter the phone number you wish to call.

6. Press *.

7. Press # to hang-up.

4.3   Quick Chart

The Quick chart is to be used once your have become familiar with the programming proce-
dures discussed in Sections 4.1 and 4.2.

Table 4-2

Program Mode	Display Shows	Choices	Default	Comments
0	**ROTARY**	YES or NO	NO	Yes = rotary dialing. No = TouchTone dialing. (See Section 4.2.1 for step-by-step procedure for program mode 0.)
	USA ROTARY	YES or NO	YES	Yes = USA rotary dialing standards. No = EURO rotary dialing standards.
	SPEAKER ON	YES or NO	YES	Yes = speaker will remain "on" while dialing. No = speaker will be "off" while dialing
	GROUND START	YES or NO	NO	Yes = Ground start No = Loop start
	* BEFORE 6	YES or NO	NO	Yes = * must be dialed before 6 to gain access (see Section 4.2.1 for more information). No = no * necessary.
	PBX #	Enter the one or two digit number needed to access the PBX system.	9	
	APT # LENGTH	1, 2, 3, or 4	4	Specify the number of digits to be used in the apartment directory.
	CALL LENGTH	1-255 Seconds	30 seconds	How much time is allowed between the time the system is finished dialing and the time it automatically hang up.
	DOOR TIME	1-255 Seconds	3 seconds	The length of time the door relay will be activated for visitor entry.
	CLLL APT. #	A number up to 4 digits long. Equal to or less than APT # Length.	N/A	See Figure 4-1 for display parts description. Numbers less than APT # require that a * be pressed after the code is entered.
	DOOR ACCESS	YES or NO	YES	Gives the tenant a keyless entry option. If programmed "yes" the tenant can enter the last four digits of their phone number to open the lobby door.
	DIAL PBX	YES or NO	YES	Yes = The system will dial the number programmed for PBX access before the phone number is dialed.
	PHONE #	A number up to 13 digits.	N/A	Enter the tenant's phone number.

Table 4-2

Program Mode	Display Shows	Choices	Default	Comments
1	**DOOR IS OPEN**			See Section 4.2.2 for step-by-step procedure.
2	**DOOR IS OPEN**			See Section 4.2.3 for step-by-step procedure.
3	Toggles between **ENABLED** and **DISABLED**		Disabled	See Section 4.2.4 for step-by-step procedure.
4	**CLR MEMORY**	***** To Continue. Any other key to exit.		See Section 4.2.5 for step-by-step procedure.
5	**CLLL APT. #**	A number up to 4 digits long. Equal to APT # Length.	N/A	See Section 4.2.6 for step-by-step procedure. See Figure 4-1 for display parts description.
6	**TIME**			Sets the real-time clock and auxiliary enable /disable times. See Section 4.2.7 for step-by-step procedure.
7	**REMOTE 1**	5060/61 5063/64		There is a maximum number of four remote satellite panels per 5073/5074 Control Panel. See Section 4.2.8 for step-by-step procedure.
8	**ENTER APT. #**	ENTER APT. # ENTER SUITE # ENTER UNIT # ENTER CODE #		Changes the display message to cuteness for installation. See Section 4.2.9 for step-by-step procedure.
9	**PHONE #**	Enter number of location you wish to call then *****. Press # to hang up.		Makes the 5073/5074 Control Panel into a normal phone. See Section 4.2.10 for step-by-step procedure.

Section 5
Testing

This section contains information on how to perform field tests on both the 5073/5074 Control Panels and the 5063/5064 Remote Satellite units.

5.1   5073/5074 Field Test

This section describes the procedures to field test a 5073 and 5074 Control Panel.

5.1.1   Test the Doorstrike Operation

To test the doorstrike operation on a 5073 or 5074 control panel:

1. Press #.

    The display shows **DOOR CODE**.

2. Enter a valid door access code (last 4 digits of a phone number programmed in section 4.2.6 steps 10 and 11.)

Note: This is only valid if the Door Access feature has been selected as "yes" in Section 4.2.6.

    The display shows **DOOR IS OPEN**. Verify the door is open. The door relay will remain active for the "Door Time" (see Section 4.2.1).

5.1.2   Test the Dialing Operation

This test will require the assistance of a resident caretaker or tenant (referred to as the assistant in the following procedure).

To test the dialing operation:

1. At the message prompt (see Program Mode 8 Section 4.2.9) enter the correct code for the apartment of the assistant.

2. When the assistant answers, identify yourself. The phone will automatically hang up when the "Call Length" has expired (see Section 4.2.1). Both the tenant and the visitor will hear a short warning beep 15 seconds before the system hangs up.

3. The assistant will then press or dial 6 on the telephone (holding the key for 1 to 2 seconds on a TouchTone phone).

    The door strike will remain open for the programmed "Door Time" (see Section 4.2.1).

Note: The tenant (assistant) can disconnect the phone, before entering 6, by pressing 9.

5.2   5063/5064 Field Test

This section describes the procedures to field test 5063 and 5064 Remote Satellite Units.

5.2.1   Test the Doorstrike Operation

To test the doorstrike operation on a 5063 or 5064 control panel:

1. Press #.

2. Enter a valid door access code (last 4 digits of a phone number programmed in section 4.2.6, steps 10 and 11.)

Note: This is only valid if the Door Access feature has been selected as "yes" in Section 4.2.6.

    The **DOOR IS OPEN** LED will come on and remain on for the "Door Time" (see Section 4.2.1). Verify the door is open. The door relay will remain active for the "Door Time" (see Section 4.2.1).

5.2.2   Test the Auxiliary Doorstrike

Verify that the "Door 2 Enabled" LED is on. If the "Door 2 Enabled" LED is not on go to Section 4.2.3 and enable the auxiliary door option at the 5073/5074 Control Panel.

To test the auxiliary door relay:

1. Press *.

    The **System Busy** LED will come "on".

2. Enter any valid door access code (last 4 digits of a phone number programmed in section 4.2.6, steps 10 and 11).

Note: This is only valid if the Door Access feature has been selected as "yes" in Section 4.2.6.

    The **DOOR IS OPEN** LED will come on and remain on for the "Door Time" (see Section 4.2.1). Verify the door is open. The door relay will remain active for the "Door Time" (see Section 4.2.1).

5.2.3   Test the Dialing Operation

This test will require the assistance of a resident caretaker or tenant (referred to as the assistant in the following procedure).

To test the dialing operation:

1. Enter the correct code for the apartment of your assistant.

2. When the assistant answers, identify yourself. The phone will automatically hang up when the "Call Length" has expired (see Section 4.2.1). Both the tenant and the visitor will hear a short warning beep 15 seconds before the system hangs up.

3. The assistant will then press or dial 6 on the telephone (holding the key for 1 to 2 seconds on a TouchTone phone).

    The door strike will remain open for the programmed "Door Time" (see Section 4.2.1).

Note: The tenant (assistant) can disconnect the phone, before entering 6, by pressing 9.

Section 6
Troubleshooting

This section contains information that will help avoid problems down the road in an installation site as well as standby voltage readings and error messages.

6.1   To Avoid Problems

- Always use shielded pair for the audio connections between the 5073/5074 and 5063/5064.

- Telephones without polarity protection will operate the system 50% of the time. The telephone company will correct this problem after you contact them. Any TouchTone phones manufactured before 1975 may be affected.

- Telephone systems using a "concentrator" will not generate a large enough pulse to be decoded when using rotary telephones. If these symptoms occur call the telephone company to verify if a "concentrator" is being used.

- Do not share telephone lines when using the 5000 Entry System.

- Never install a Remote Satellite more than 400 feet away from the master unit. The resistance of the wire can cause a large voltage drop after 400 feet. (Refer to Figure 6-1 and Table 6-1.)
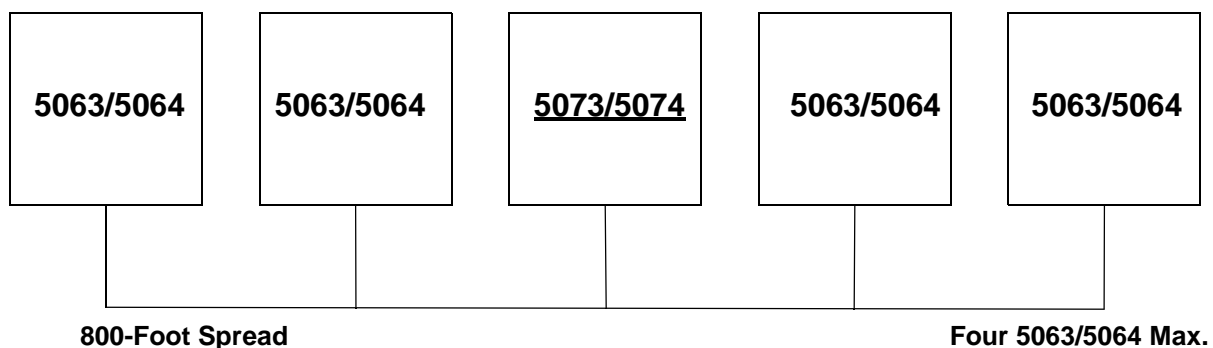
| 5063/5064 | 5063/5064 | <u>5073/5074</u> | 5063/5064 | 5063/5064 |

800-Foot Spread   **Four 5063/5064 Max.**

Figure 6-1: Block diagram of the 5000 Entry System Hub

Table 6-1: Wire Gauge to Length relationship

Wire Lengths	Wire Size
0 to 49 feet	18 gauge
50 to 200 feet	16 gauge
201 to 400 feet	14 gauge

- Never connect the remote satellite units while power is supplied to the control panel. If an attempt is made to install a satellite with "hot" wires, the equipment will be damaged.

- The 5000 Entry System will allow one control panel with four remote satellite panels in a hub configuration (see Figure 6-1). It is very important that the 5073/5074 control panel be at the center of the hub.

- All connections made between the control panel and the remote satellites must be tight. Any loose connections WILL cause problems.

- Any splice points should be soldered not crimped.

- If frequent or lengthy power outages are expected, it may be necessary to add more battery capacity. This will increase the time the system will operate without AC power.

- The 5073/5074 Control Panel must be programmed for the correct type of remote Satellite units to operate properly. (See Section 4.2.8 for programming remote satellite panels.)

Note: If software version 880915 is being used with older 5070/1 units the control panel must be powered up the first time while pressing and holding the 0 key. The The display will then show "# LINES". Press 1 on the keypad for one-line display and 2 for a two-line display. The system will then enter the normal programming mode described in Section 4.2.1.

6.2   Standby Electrical Voltages

Table 6-2 shows the correct standby voltages for the various terminals on the 5073/5074 Control Panel.

Table 6-2: 5073/5074 Standby Voltages

Between Terminals	Voltage
1 to 2	16.5 VAC
5 to 4	13.75 VDC
5 to 9	0.5 VDC
5 to 13	0 - 13.75 VDC
5 to 14	0 - 13.75 VDC
5 to 15	0.5 VDC
5 to 16	0.5 VDC
5 to 17	0.5 VDC
5 to 18	0.5 VDC
5 to 19	6.0 VDC
5 to 20	6.0 VDC
5 to 21	6.0 VDC
5 to 22	6.0 VDC
5 to 23	0.5 VDC
5 to 25	0.5 VDC

6.3   Error Messages

This section lists the possible error massages that may be seen at the 5073/5074 Control Panel. (See Table 6-3.)

Table 6-3: Error Messages and Meanings

Error Message	Meaning
# TOO BIG	When a number is entered that is larger than allowed during programming, this message will be displayed. Press # and reenter number.
MEMORY FULL	If all memory locations have been filled and more data is entered, this message will be displayed.
BAD PROM	The 5073/5074 Control Panel verifies data as it is saved in the EEPROM memory. If the data can not be verified, this message will be displayed along with the address of the bad memory location.
ERROR	This message indicates that an incorrect APT # or door code has been entered. Press # and re-enter the number.