MINI-KEY

INSTALLATION INSTRUCTIONS

CHAMBERLAIN

SENTEX®

Important Notices

The Mini-Key system contains static sensitive parts: To avoid damage to the static sensitive parts, ground the unit and yourself while handling the board(s).

Incorrect installation also invalidates the system's warranty. Take the time to read these instructions very carefully before attempting to install this system.

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1 – Basic Installation Hints and Rules

GROUND THE SYSTEM AND YOURSELF THOROUGHLY: The Mini-Key system contains a number of static sensitive components that can be damaged by static discharge during installation or regular use. This type of damage is <u>not</u> covered under Sentex's warranty.

Ground the unit according to Figure 1. During the installation, ground shield wires to the ground screw as required. Also, try to discharge any static before handling the circuit boards.
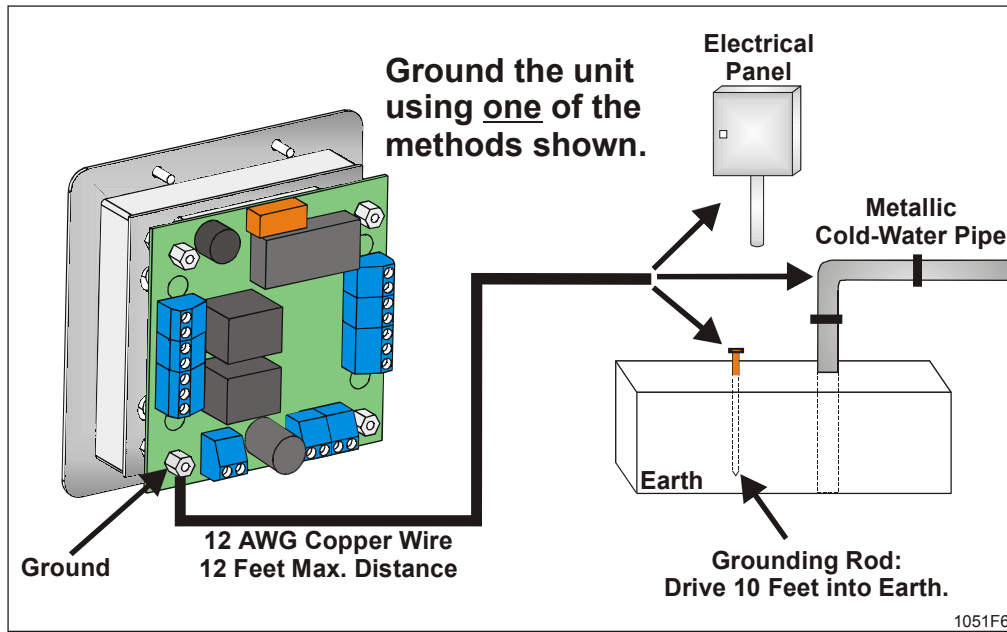

Ground the unit using <u>one</u> of the methods shown.

Electrical Panel

Metallic Cold-Water Pipe

Earth

Ground

12 AWG Copper Wire
12 Feet Max. Distance

Grounding Rod:
Drive 10 Feet into Earth.

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Figure 1: Grounding the Unit

PROVIDE POWER FROM A DEDICATED SOURCE: The outlet into which you will plug the Sentex provided transformer should each be wired to its own circuit breaker. This will prevent two problems:

1. Other equipment cannot introduce spikes, noise, surges, or dips into the power circuit that will affect the Mini-Key system.

2. The Mini-Key's operation will not be affected if any other equipment develops a short circuit across the power line.

DO NOT OVERLOAD THE TERMINAL BLOCKS: To connect wires to a terminal block, remove the "head" from the correct terminal and open the screws. Insert the wire into the correct opening in the front and tighten the screw until the wire is held snugly. Tug slightly on the wire to ensure a secure connection. After inserting all wires into the terminal block, plug it back onto the pins designated for that block.

READ THE BOARD MARKINGS CAREFULLY: The connection points are clearly marked on the boards. Before making any connection, make sure you read the board markings.
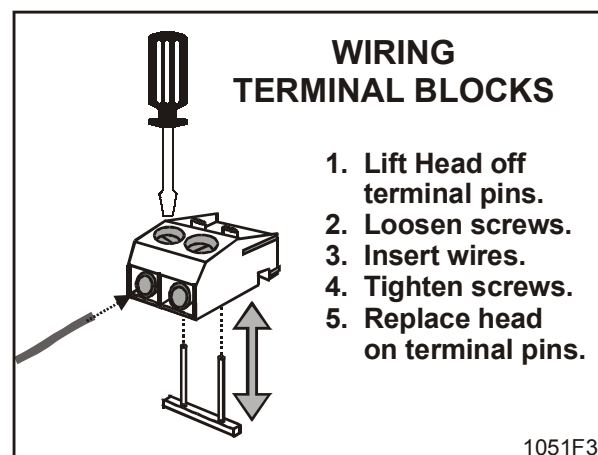

WIRING TERMINAL BLOCKS

1. Lift Head off terminal pins.
2. Loosen screws.
3. Insert wires.
4. Tighten screws.
5. Replace head on terminal pins.

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Figure 2: Wiring Terminal Blocks

2 – Mounting the Cabinet

1. Remove the four (4) screws from the Mini-Key's front panel with the provided hex tool. Carefully remove the keypad and the boards from the cabinet and set aside onto a static-free surface.

   Discharge any static that you may have built up before handling the board.

2. Use the knockout (back of enclosure) to run wires into the cabinet.

   If the installation does not allow you to run the wires through the knockout, drill a 7/8" diameter hole through the bottom of the enclosure to accommodate a 1/2" conduit. Be sure to securely connect the conduit to the unit. **Note:** Wires run through the bottom of the enclosure will be more prone to tampering or vandalism.

3. Securely mount the unit on the wall or pedestal. Mounting hardware is provided if you are using Sentex's pedestal mount post. Do not put the keypad and the circuit board back into the cabinet until all connections are made as described in the following sections.
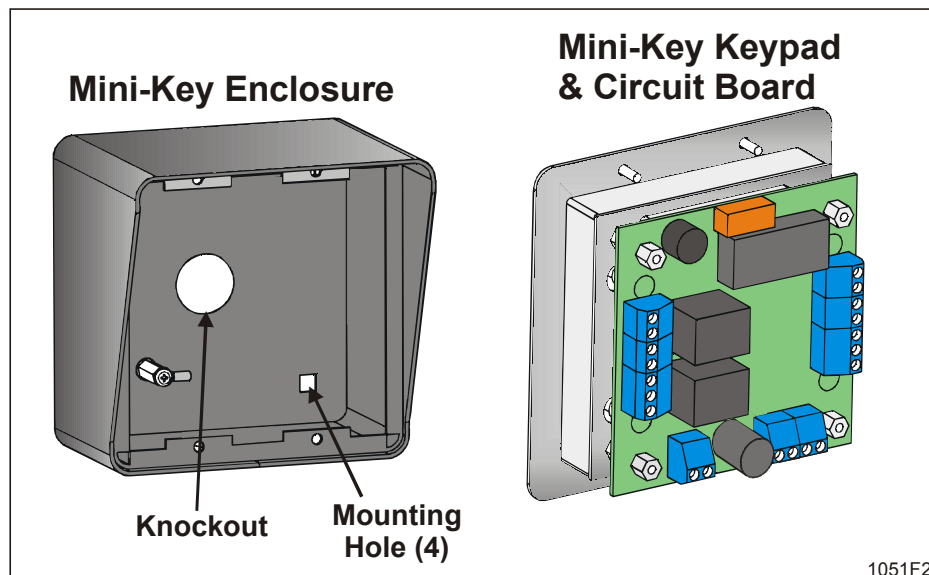
Figure 3: Mini-Key Unit

Figure 4: Mini-Key Enclosure and Keypad

3 - Wiring

SYSTEM POWER

Connect 2 conductor cable (for wire size, see Table 1 below) from TB4 at the Mini-Key unit to the 12VAC, 20 VA transformer supplied by Sentex (or 13.5 VDC power supply that you provide).

Do not connect the power to the system until all connections have been made to the system.

Please Note: If you are using a DC power supply, the Mini-Key system will not trickle charge a battery, so the DC power must be supplied by an uninterruptible power supply (UPS).
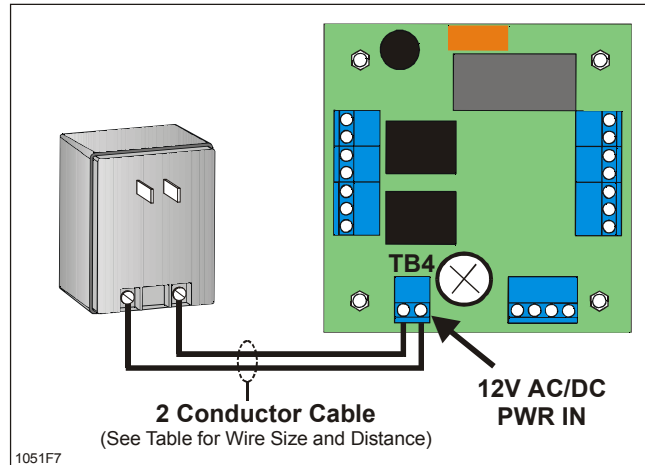

2 Conductor Cable
(See Table for Wire Size and Distance)

12V AC/DC PWR IN

Figure 5: Power Connections

DISTANCE	AC POWER WIRE SIZE	DC POWER WIRE SIZE
30' and under	18 AWG	18 AWG
30'-75'	18 AWG	18 AWG
75'-150'	14 AWG	18 AWG
150'-250'	12 AWG	16 AWG
250'-500'	10 AWG	12 AWG

Table 1: Power Wire Distance

DOOR/GATE CONTROL

Connect the 2 conductor cable from your door strike and door strike power supply or from your gate operator to the relay contacts in area TB1 as follows:
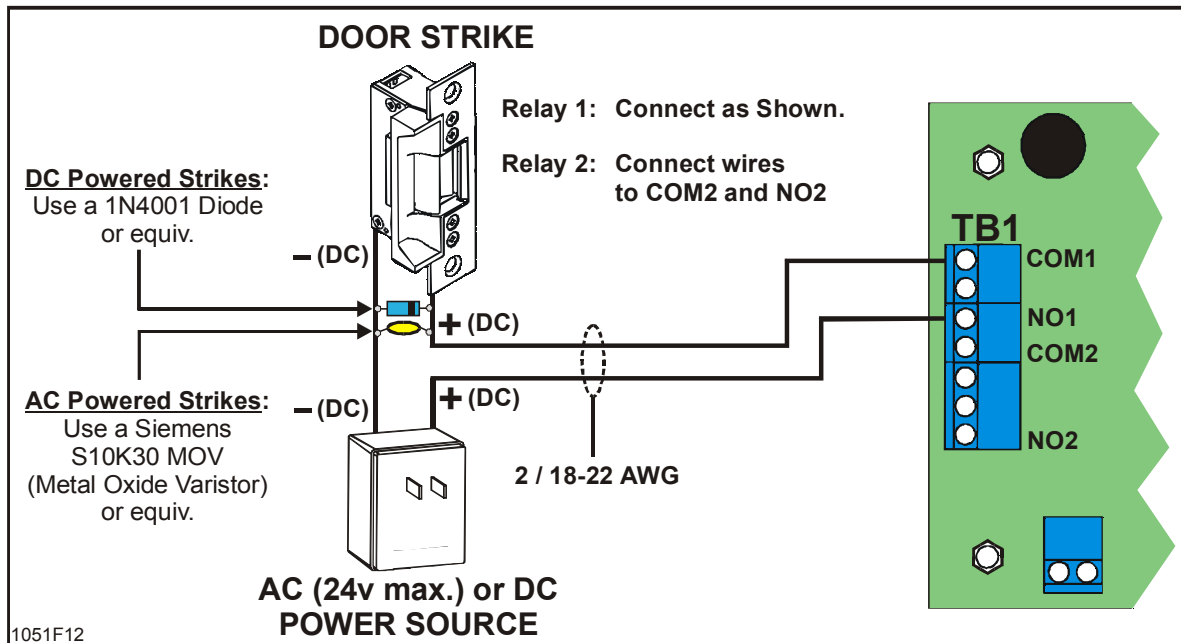
Door Strikes

DOOR STRIKE

Relay 1: Connect as Shown.

Relay 2: Connect wires to COM2 and NO2

DC Powered Strikes: Use a 1N4001 Diode or equiv.

AC Powered Strikes: Use a Siemens S10K30 MOV (Metal Oxide Varistor) or equiv.

− (DC)
+ (DC)
− (DC)
+ (DC)

2 / 18-22 AWG

TB1
COM1
NO1
COM2
NO2

AC (24v max.) or DC POWER SOURCE

Figure 6: Normally Locked Strikes

Mag Locks

MAG LOCK

Relay 1: Connect as Shown.

Relay 2: Connect wires
to COM2 and NC2

TB1
COM1
NC1

COM2
NC2

1N4001→
Diode or
equiv.

2 / 18-22 AWG

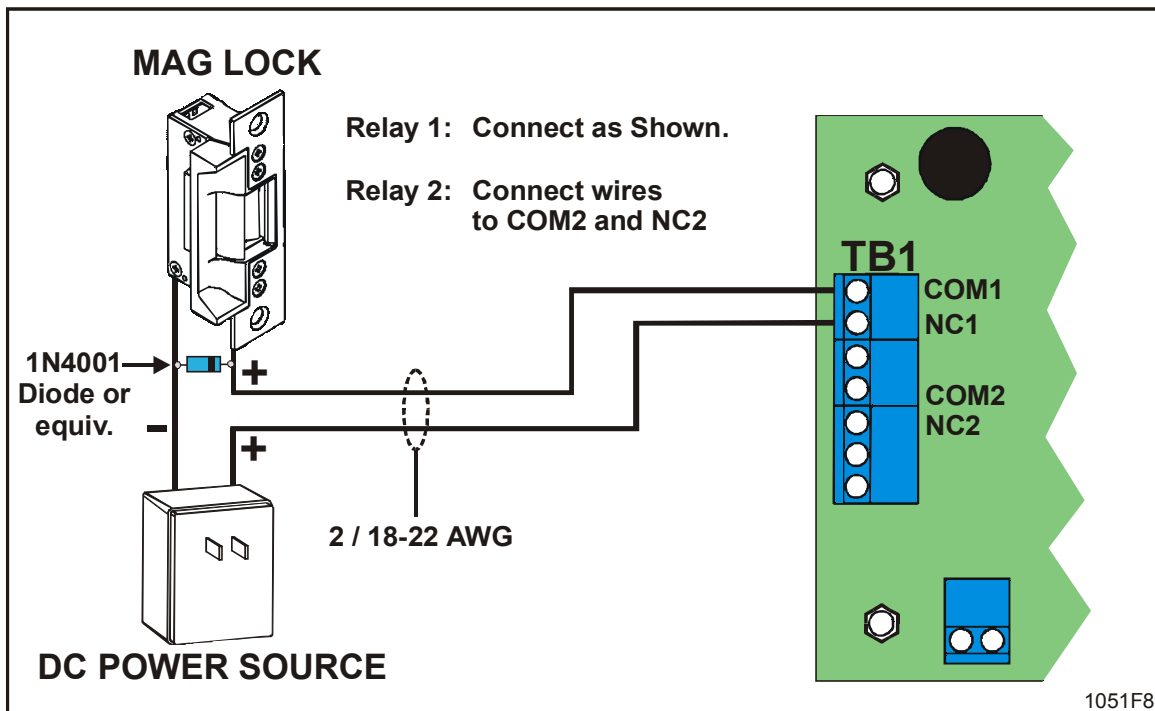**DC POWER SOURCE**

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Figure 7: Mag Locks

WARNING:	In order to prevent voltage spikes generated by magnetic lock or DC powered strikes from being induced into the system, it is strongly recommended that a 1N4001 diode be installed across the magnetic lock coil, so that the cathode of the diode (the end with the band) is connected to the positive connection of the coil and the anode is connected to the negative connection of the coil.

For Dry Contact Closure (Most Gate Operators)

Relay 1: Connect as Shown.

Relay 2: Connect wires
to COM2 and NO2

MOST GATE OPERATORS
(Dry Contact Closure)

TB1
COM1

NO1
COM2

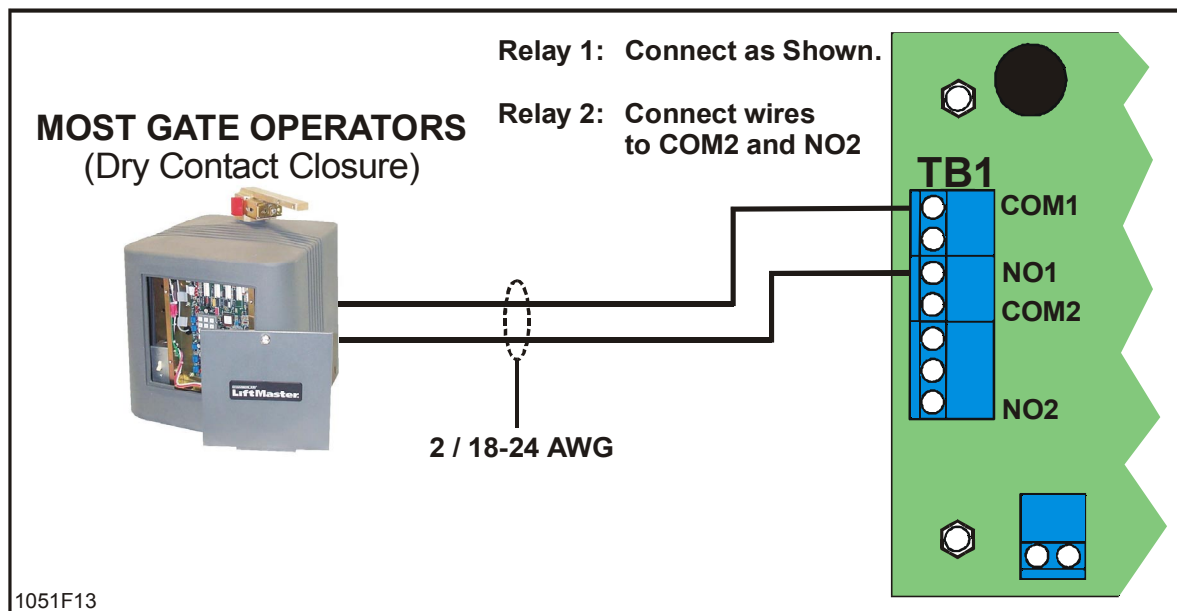NO2

LiftMaster

2 / 18-24 AWG

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Figure 8: Dry Contact Closure Connections

4 – Installing Additional Features

AUX OPEN/REQUEST FOR ACCESS
Any device (e.g., exit button or Knox box) that provides a contact closure can be hooked up to the Mini-Key unit at:

- "EXIT1" and "COM" (TB3) to activate <u>Relay 1</u>   OR
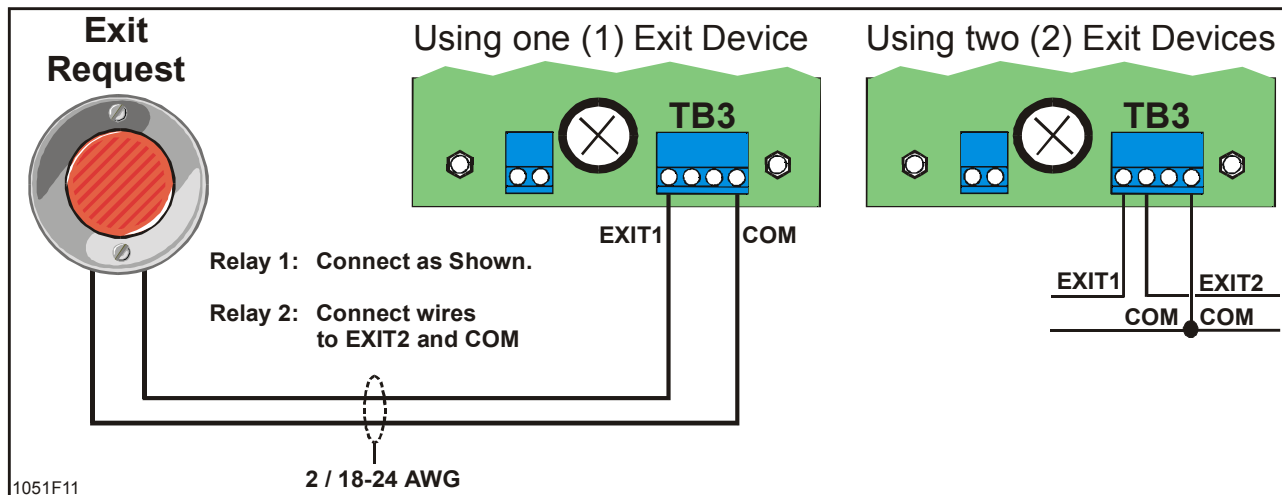
- "EXIT2" and "COM" (TB3) to activate <u>Relay 2</u>

Figure 9: Exit Request Connections

Use shielded cable and connect shield to the ground screw.
When a contact closure occurs, the system will activate the appropriate relay for the programmed period of time.

TIME CLOCK
You may install a timer or clock to the Mini-Key system to be used in conjunction with the time clock feature. This timer or clock must provide a <u>floating</u> contact closure (a floating contact closure is a contact closure that is not grounded). To install a timer or clock, refer to Figure 10.
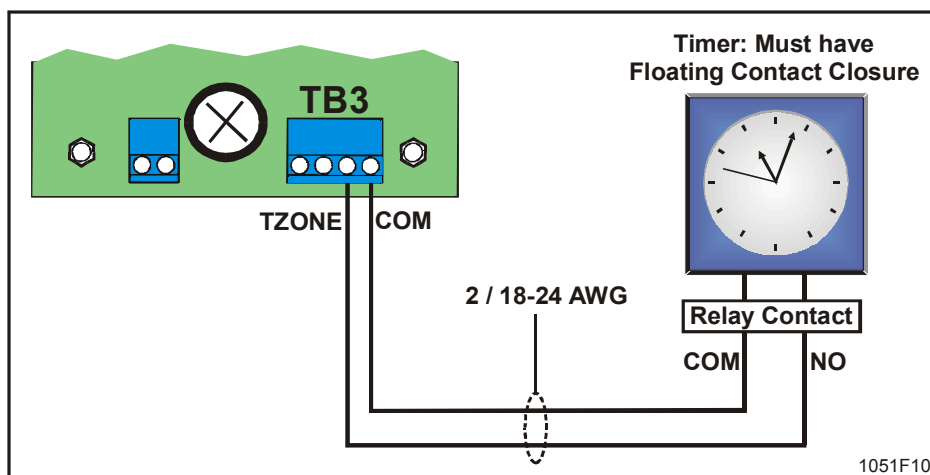

Figure 10: Installing a Timer

> **WARNING: Any clock or timer that is connected to the Mini-key system must provide a <u>floating</u> contact closure. If the clock or time does not provide a floating contact closure, there is a very strong chance that the clock will "burn-out" the circuit board, and may start a fire. Any use of these devices will also void any Sentex warranty. If your clock or timer plugs directly into an AC power source <u>and</u> it has an AC output terminal, it does not provide a floating contact closure and should not be used with the Mini-Key system.**

REMOTE KEYPAD

You may install a remote keypad to work with the Mini-Key. All information programmed into the Mini-Key will be the same information read by the remote keypad (refer to the manual titled "PROGRAMMING AND USE INSTRUCTIONS FOR THE MINI-KEY SYSTEM" for more information). **Please Note:** Run cables in metal conduit (not PVC) and ground them. Do not run power and data wires in the same conduit. **Do not connect the power to the Mini-Key system until all connections have been made.**

1. Install a remote keypad according to Figure 11.

2. Connect the shields to the ground screw on the Mini-Key.

Figure 11: Installing a Remote Keypad
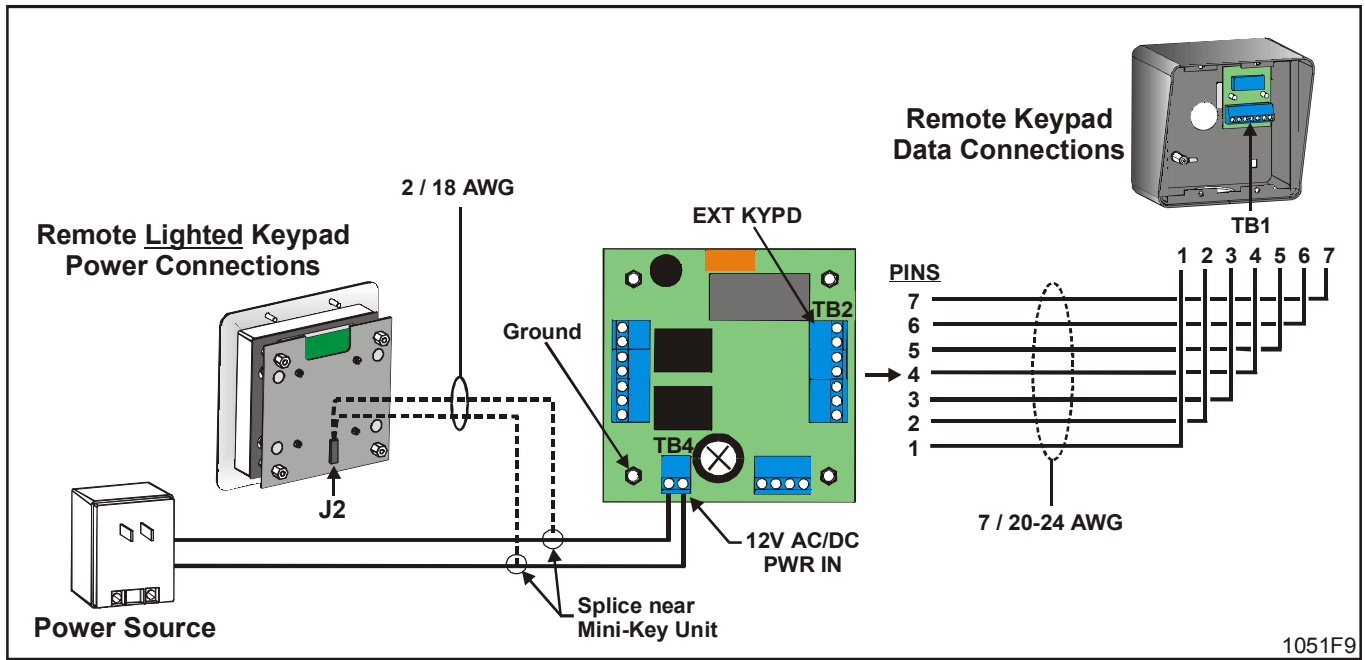
Reference: Main Processor Board

Figure 12: Mini-Key Main Processor Board
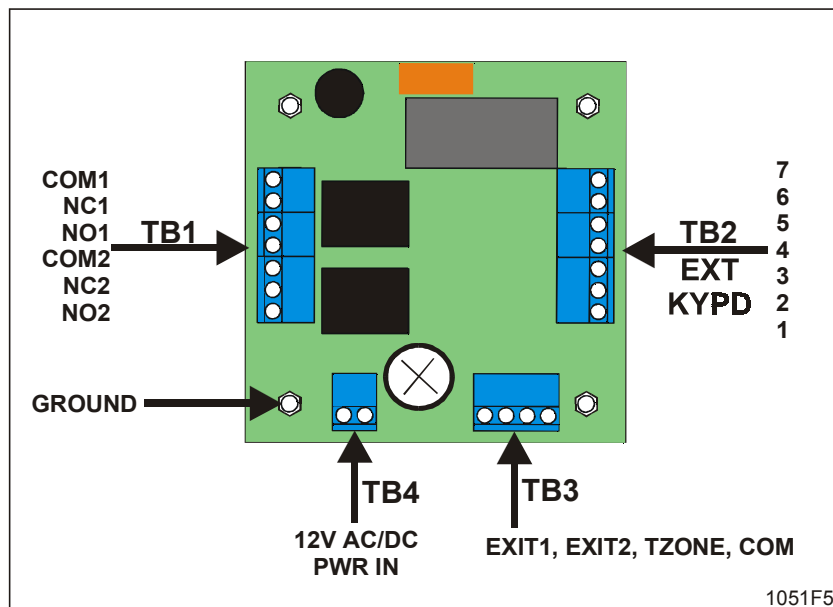
FCC Requirements

RADIO FREQUENCY

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the FCC helpful: "How to Identify and Resolve Radio-Television Interface Problems". This booklet is available from the United States Government Printing Office. Washington, D.C., 20402. Stock No. 004-000-00345-4.

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MINIKEY

PROGRAMMING GUIDE

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IMPORTANT NOTES

The system contains static sensitive components that can be damaged if it is subjected to static discharge without being properly grounded. It is important that any electronic based system is grounded properly as well as yourself when handling the board(s).

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SECTION 1
PROGRAMMING OVERVIEW

1. All programming is done through the system's main keypad including sites that utilize the remote (second) keypad.

2. Once in the programming mode, the system will remain in this mode until told to exit to the "run" mode, or until 60 seconds pass without an entry on the keypad. If the system does not emit any beeps or tones, the keypad may be blocked by the "strikes-and-out" feature. Wait 3 minutes and then try again.

   ### Enter Programming Mode

   - Press the pound key three times (###).
   - Enter the six-digit password. The default is six zeroes (000000)
   - The unit will emit two short beeps is now ready to accept programming instructions.

   ### Exit Programming Mode

   - Press the zero two times and the pound key once. (00#).

3. The MINIKEY system provides audio feedback to aid programming and operation. The following is a list of responses and their meanings:

   - 1 short beep: key was pressed
   - 2 short beeps: programming step was valid
   - 1 long beep: input was not valid
   - 2 long beeps: duplicate entry code was entered or code not available to erase. Also used in normal operation to indicate invalid entry due to timezone restrictions.
   - 3 long beeps: memory is full
   - 4 long beeps: unit has reset or is powering up
   - 5 short beeps: exited the programming mode
   - 10 short beeps: entry code is accepted and access is granted.

4. If a mistake was made in the middle of an entry, press "✱" to cancel current programming step.

SECTION 2
INITIAL SYSTEM SETUP

A. RELAY ACTIVATION TIMES

Set the amount of time the gate/relay will remain activated. The default setting is 10 seconds and the valid time range for activation is 2-255 seconds.

Format: 1 + no. of seconds + #   **Main Relay**
                2 + no. of seconds + #   **Auxiliary Relay**

Note: If this relay activates a gate operator with a momentary contact closure, set the relay activation time for a short period (for example, 2 seconds). A longer activation time might cause the gate to repeatedly open and close until the activation period has expired.

B. NUMBER OF DIGITS IN ENTRY CODES

If you decide to change the number of digits in the entry codes **_after_** the initial programming, you will need to delete all of the entry codes before changing the code length (see section 7.C). Once the change in code length has been made, the old codes will no longer be valid and cannot be erased. Default setting is for 4-digit entry codes and the valid range is 4 or 5 digits

Format   8 + number of digits (1 digit) + #

Example   8 + 5 + # (sets the number of digits in entry codes to 5)

C. STRIKES-AND-OUT

Set how many incorrect entry codes may be entered within a 3 minute period before the system deactivates for a period of 3 minutes. The "strike count" will be cleared when either a valid entry code is entered or if the keypad has not had any input for 60 seconds since the last keystroke. When the "strike count" has been reached, all keypad input will be ignored, including access to the programming mode.

Format   3 + number of incorrect codes (up to 2 digits) + #

Example   3 + 3 + # (sets strikes-and-out to 3).

Notes   Valid range is 0 to 10.
- Default setting is 5.
- To disable the strikes-and-out enter zero (0).

D. CHANGE THE PASSWORD

Ensure that the password required to enter the programming mode is known only by authorized personnel. Make sure to write down the new password so you can re-enter programming at a later date.

Format   9 + password (6 digits) + #

Example   9 + 123456 + #
                (If the unit responds with two short beeps, the number that you entered was accepted)

E. VERIFY THE PASSWORD

Verify the password entry to ensure proper setting. If the password entered is correct, two short beeps will be emitted from the system. If it is the incorrect code, the system will emit one long beep.

If the unit responds with an error tone, **do not exit programming.** The number that you entered does not match the password. Repeat steps D and E for proper password setting

Format   4 + password (6 digits) + #

SECTION 3
ENTRY CODES

The programming sequences described in this section define which entry codes can gain access. Keep track of what entry codes you have entered into the system and to whom they have been assigned. This will allow you to void a code to prevent future access to the building or complex. The MINIKEY has a capacity for 500 entry codes.

The MINIKEY system supports an input from an external time clock. This feature provides the ability to restrict certain entry codes from gaining access during a specified time. If you want an entry code to be restricted during the specified time, you will enter a "1" for the time clock code. If you do not want an entry code to be restricted, you will enter a "0" for the time clock code. Consult the installing dealer for information if this an option required but not implemented.

Entry codes are defaulted to 4 digits long and a range from 0000-9999. Valid 5 digit code range is 00000 to 99999.

A. ENTER AN ENTRY CODE

Format   5 + entry code (4 or 5 digits) + relay code (1 digit) + time clock code (1 digit) + #

Example   5 + 6666 + 1 + 0 + #
(sets code 6666 to activate relay 1 for the activation time regardless of clock input.

5 + 2543 + 3 + 1 + #
(sets code 2543 to activate both relays for the activation time and only when the time clock is activated).

Relay codes: 1 - Cycle relay 1
2 - Cycle relay 2
3 - Cycles both relays
4 - Release both relays
5 - Toggle relay 1
6 - Toggle relay 2
7 - Toggle both relays

B. ERASE A SINGLE ENTRY CODE
Utilizing this step will remove individual codes from the MINIKEY system memory.

Format   6 + entry code (4 or 5 digits) + #

Example   6 + 1234 + # (deletes entry code 1234)

C. ERASE ALL ENTRY CODES
Utilizing this step will remove all entry codes from the MINIKEY system. Only perform this step to reset the system memory to zero entry codes.

Format   7 + 101010 + #

HOW TO ORDER REPAIR PARTS

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DORVAL, QC
H9P 1H6

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TOLL-FREE: 1-800-361-3198
FAX: 514-685-5804

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**WHEN ORDERING REPAIR PARTS
PLEASE SUPPLY THE FOLLOWING INFORMATION:**

PART NUMBER   DESCRIPTION   MODEL NUMBER