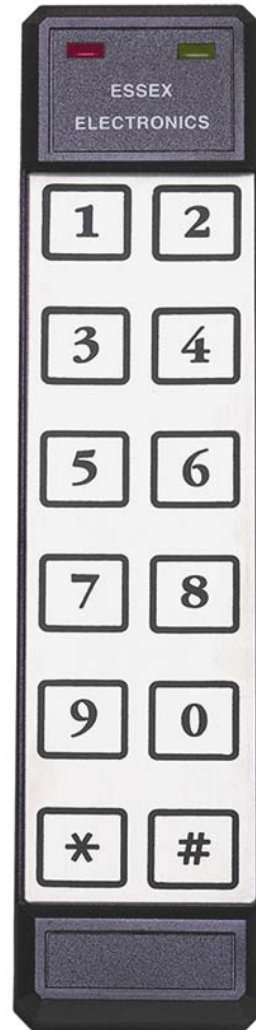# KE-350

Keyless Entry®Access Control System

Installation and Operations Manual

XE ESSEX ELECTRONICS INCORPORATED

1-800-KEYLESS keyless.com

ESSEX ELECTRONICS, INC.
KE-350

Table of Contents

Introduction

Overview

The KE-350 is a powerful yet easy to use single door, stand-alone access control system with audit trail capabilities. The KE-350 can accommodate up to 500 individual Users, each of which is assigned to one of 16 programmable User Groups. Additional features include a 32-day holiday schedule, manual or timed latching capabilities, optional use of Duress Codes and the ability to automatically adjust Daylight Savings Time.

The KE-350 contains a 24-hour nonvolatile real time clock providing valid computations through the year 2100. Fully Y2K compliant, the KE-350's time clock enables access control management through individual time zones tied to each User Group. The KE-350's time clock is also used to provide a time/date stamp for up to 750 transactions, which are logged in the KE-350's buffered audit trail. These transactions can easily be retrieved from a parallel printer connected directly to the KE-350 control module.

Input Requirements

The KE-350 accepts 12 to 24 volts AC/DC. An optional battery charging module and rechargeable Gel Cells are available to keep the system operational for up to 24 hours during a power interruption.

Output Capabilities

Three SPDT dry contact relays offer the following:

Main Relay – The main relay is intended to activate either a Fail-Safe or a Fail Secure (Non Fail-Safe) electronic locking device. It may also be configured as a dry contact relay output to control a gate operator or garage door opener. The main relay is adjustable from 1 to 99 seconds with optional timed or manual latching.

2nd Relay – Can be programmed for one of the following options:
1. External Alarm System – Shunt or Enable/Disable an existing alarm
2. Internal Alarm System – Detect Break-in, Door-ajar, Duress and Tamper
3. Auxiliary Output – Manual Control or Timed Output (1 to 99 seconds)

3rd Relay – Can be programmed for one of the following options:
1. Doorbell – Press # at the Keypad to trigger a 1 second output for a doorbell (not included)
2. CCTV or Light Controller – First key press triggers a Timed Output (1 to 99 seconds)
3. Auxiliary Output – Manual Control or Timed Output (1 to 99 seconds)

The Keypad

Essex Electronics Keypads are designed to perform reliably in even the most extreme environmental conditions. Operating temperatures can range from -40°C to +70°C (-40°F to 160°F).

The KE-350 is compatible with any one of the following Keypad styles/configurations:

Part Number	Matrix	Finish/Style	Part Number	Matrix	Finish/Style
KP-353-S	3x4	Stainless Steel	KP-352-S	2x6	Stainless Steel
KP-353-B	3x4	Brass Finish	KP-352-B	2x6	Brass Finish
KP-353-K	3x4	Black	KP-352-I	2x6	Black Illuminated
			KP-352-R	2x6	Braille

12-Pad 3x4   **Thinline 2x6**
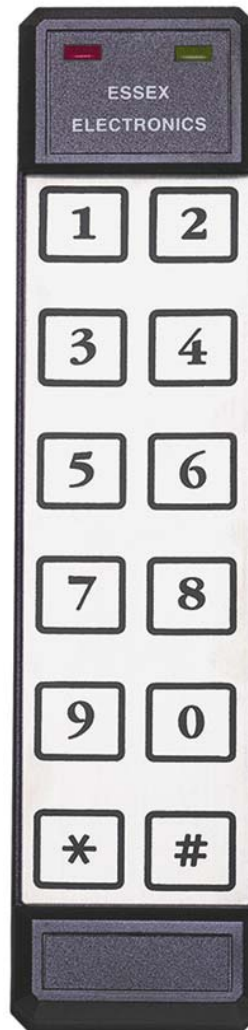
Preparing for Installation

System Components

There are four primary components and one optional component to be installed:

1. <u>The Keypad</u> should be mounted on the wall adjacent to the door. It should be on the same side as the door strike and about 4 feet above the floor.

2. <u>The Control Module</u> should be mounted inside the building near a power source. Typically the control module is hidden in a false ceiling or closet. The control module must be located in an environmentally controlled area where the temperature remains between – 40°C and +49°C (-40° F and 125° F.)
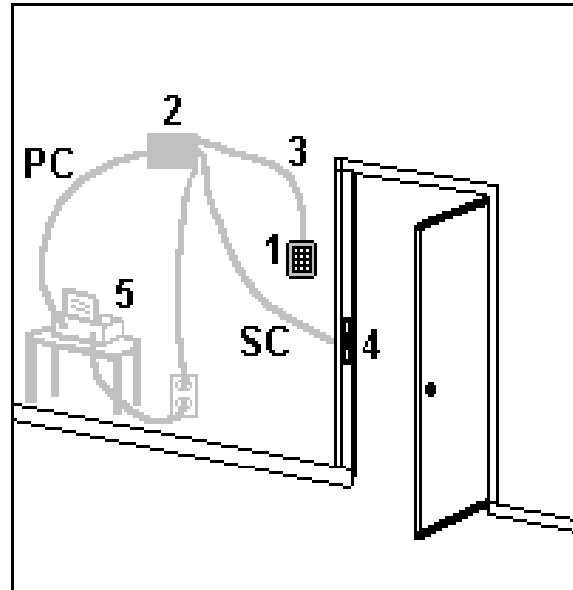
Typical Installation

3. <u>The Wiring Cable</u> connects the keypad to the control module. It is important <u>not</u> to locate the cable adjacent to any wiring that carries line voltage.

4. <u>The Electric Strike/Other Locking Device</u>(not included) connects to the KE-350's Main Relay output via a strike cable (SC). See Appendix A - Typical Wiring Diagrams

5. <u>A Parallel Printer</u> (optional) – connects directly to the KE-350. Although it is not necessary to have a "dedicated" printer, we suggest connecting a printer cable (PC) to the KE-350, which leads to a nearby parallel printer. Anytime you need to print anything from the KE-350, simply connect the printer cable to the printer.

The Installation Procedure

Required Tools

You will need the following tools:

1. Medium sized, Phillips head screwdriver
2. 1/8" standard screwdriver
3. Drill
4. 1" (25mm) drill bit
5. 1/2" (16mm) drill bit
6. 5/32" (4mm) drill bit (For 12-Pad 3x4)
7. 3/16" (6mm) drill bit (For Thinline 2x6)

Prepare the Keypad for Installation

There are different procedures for the two Keypad configurations: 12-Pad 3x4 and Thinline 2x6. Templates for mounting the Keypads are located in Appendix D.

Thinline 2x6

The Thinline 2x6 is designed for mullion mount applications. It can also be mounted on a wall, pedestal or any flat surface of at least 1 ¾" by 7". The composition of the mounting surface will determine the fastening method required:

1. Select a flat surface (1 ¾ " by 7") near the door where you wish to install the keypad.
2. Using the Thinline template (located in Appendix D), mark location of holes "A"," B" and "C".
3. Drill the large hole marked "A" using a 1" (25mm) drill bit.
4. Place the connector on the back of the keypad in the large hole to verify that the keypad mounting holes are aligned with marked holes "B" and "C". Make adjustments if necessary.
5. Drill clearance holes "B" and "C" in accordance with fastening method used.
6. Do NOT mount the keypad at this time.

12-Pad 3x4

The 3x4 keypad is designed to mount to a single gang switchbox or on a wall, pedestal or any flat surface of at least 3 ½ by 5 ¼". The composition of the mounting surface will determine the fastening method required:

1. Select a flat surface (3 ½" by 5 ¼") near the door where you wish to install the keypad.
2. Using the 12-Pad 3x4 template (located in Appendix D), mark location of holes "A", "B" and "C".
3. Drill the large hole marked "A" using a 1" (25mm) drill bit.
4. Place the connector on the back of the keypad in the large hole to verify that the keypad mounting holes are aligned with marked holes "B" and "C". Make adjustments if necessary.
5. Drill clearance holes "B" and "C" in accordance with fastening method used. Be careful when drilling hole "C" because of its' proximity to hole "A".
6. Do NOT mount the keypad at this time.

Prepare the Door Jamb for the Electric Strike

Follow these instructions only if you are using an electric strike to unlock the door. If you are using the main relay to activate a garage door, automatic gate, etc., skip this section. The new electric strike should be checked to verify compatibility with existing door hardware prior to installation.

1. Remove existing strike.
2. Follow directions included with the strike for preparing the doorjamb.
3. Do NOT mount the strike at this time.

Install the Wiring Cable

1. Drill a ½" hole in the inside wall where you want the cable to come through.
2. Pull the cable through the hole so the connector end goes to the keypad. Route it so there is minimal cable at the keypad.

Note: Supplied with the system is a 6-conductor cable designed to connect the keypad to the control module. You will also need a three-conductor cable (not included) to connect the control module to the electric strike or other locking device.

Install the Strike or Electric Locking Device

1. Using a three-conductor cable(not included), attach two wires from the control module Main Relay Output to the electric locking device. (See Appendix A for typical hookup configurations.)
2. If you are using an electric strike, attach the third wire to the strike body (i.e. mounting screw). Connect it to the EARTH GROUND screw terminal on the circuit board (See Appendix A)
3. Install the electric locking device in accordance with the instructions supplied with the device.

Mount the Keypad

Thinline 2x6
1. Attach the connector to the keypad.
2. Attach the keypad to the wall.
3. Do NOT attach the labels until the system is tested.

12-Pad 3x4
1. Attach the connector to the keypad.
2. Attach the keypad to the wall or switch box using two #6 screws.
3. Do NOT attach the labels until the system is tested.

Install the Control Module

1. Connect the Wiring Cable to Terminal Strip "A" following the color sequence shown in Appendix A.
2. The "EARTH GROUND" screw terminal on Terminal Strip "B" should be connected to a true earth ground for proper system protection.
3. Connect 12 to 24 volts to Terminal Strip "B" to screws marked "12-24V AC/DC IN".

Install other Switches

There are various options available on the KE-350 as described in the System Programming Section. Most options are built-in and can be controlled through programming. Some options, however, require the installation of either a Door Monitor switch or a Remote Bypass switch.

Door Monitor Switch
The Door Monitor requires a normally <u>closed</u> switch. This may be the switch output of a latch monitor strike, a monitor maglock or an alarm switch that senses door movement. When this switch opens, it will relock the door (anti-tailgating).
Note: If a door monitor switch is NOT used, you must have the wire between DOOR MONITOR and GROUND.
If the 2nd Relay is configured in the:

- Internal Alarm Mode, this switch will provide a *door ajar* input.

In addition, if the 3rd Relay is configured as a:

- CCTV/Light, this switch will trigger the output to turn on this device for the programmed time.

For wiring a Door Monitor Switch, refer to Appendix A.

Remote Bypass Switch
The Remote Bypass requires a normally <u>open</u> switch. This switch allows the door to be opened from a remote area such as a security station or reception desk.
For wiring a Remote Bypass Switch, refer to Appendix A.

System Programming Overview

Once the KE-350 has been installed, the system is ready for programming. Before proceeding with actual programming, we recommend you review the Suggested Initial Programming Steps, System Defaults, System Options and the System Programming Commands & Feedback. In addition, we suggest connecting a parallel printer directly to the KE-350 in order to verify programming.

Suggested Initial Programming Steps

Step #	Description	Page
1	Review System Defaults	7
2	Review System Options	8
3	Make changes in System Setup (Print to Verify)	13
4	Program the Time Clock (Print to Verify)	17
5	Program Holiday Schedule (Print to Verify)	16
6	Review Preprogrammed User Groups	19
7	Construct User Groups Worksheet	26
8	Modify User Groups as needed (Print to Verify)	20
9	Construct a list of Individual Users, Codes and User Groups	25
10	Program Individual Users (Print to Verify)	11

System Defaults

System Option	Default
Master Code	1 2 3
Door Open Time	5 seconds
Latching	OFF
Use of Duress Codes	OFF
2nd Relay	Auxiliary Controller for 5 seconds
3rd Relay	CCTV/Light for 30 seconds
Automatic Line Feed (ALF)	ON
Daylight Savings Time (DST)	ON
Time Clock Setting *	Wed 01/01/1999 00:00:00

* <u>Time Clock Setting Note</u>: In order to preserve the internal battery life of the KE-350's Time Clock, the system is shipped from the factory in a "suspended clock" mode. The Time Clock will remain suspended with the default setting until the Time Clock is properly set through system programming (page 17). Failure to set the clock may cause "Access Denied" for Individual Users and the Default Time Clock setting in the Audit Trail Date and Time stamp.

System Options

THE MASTER CODE: Knowledge of the Master Code is the highest privilege granted to a user of the KE-350 system. There is only <u>one</u> Master Code, which is used to gain access to all programming areas including System Setup (page 13). Typically only the facilities manager or security director should have access to this code. The default Master Code, "1,2,3", can be used for initial programming but should be changed to a unique 3 to 8 digit code. The Master Code is reprogrammed through system setup.

Note: ☞ If you forget the Master Code, locate the control module. Verify that the 5 dip switches are NOT <u>all</u> in the ON position. Press "PGM SW" for at least 3 seconds. You will hear a double beep at the keypad. Proceed to System Setup, Step 3 to change the Master Code (page 13).

☞Important: ☞ If you set <u>all</u> 5 dip switches in the ON position and press "PGM SW", this completely erases the memory and restores system defaults!!!)

DOOR OPEN TIME: The Door Open Time refers to the length of time the door will remain unlocked following the entry of a valid User Code. Although the default is set for 5 seconds, this setting can be changed to any value between 01 and 99 seconds. See System Setup (page 13).

LATCHING: There are three options for latching the door open or closed for extended periods of time. Latching Authorization is determined in each User Group.
1. Off – Set as the default, this prevents *any* latching at all.
2. Manual – This allows any authorized user to manually latch the door open (unlocked) or closed (locked) indefinitely. If the KE-350 is set to Manual, latching is activated by entering "1#" following entry of an authorized user code. Entering "0#" following an authorized code will deactivate latching.
3. Timed – This allows any authorized user to latch the door open until a predetermined time of day at which point the door will automatically latch closed. Entering "1#" following entry of an authorized code will activate timed latching. Entering "0#" following entry of an authorized code will deactivate timed latching.

USE OF DURESS CODES: The KE-350 can be configured to allow the use of Duress Codes. In emergency situations, users who are forced to open the door against their will can use their Duress Code to open the door as usual. In addition, if the 2nd Relay is configured to control the Internal Alarm, a duress code will also activate the alarm output. (The alarm output would typically be wired to a guard station or other monitoring service that could respond to the emergency). If used, the Duress Code is the User Code with the last digit increased by 1. For example: If your User Code is 3 3 3, your Duress Code is 3 3 4. If your User Code 5 6 9, your Duress Code is 5 6 0.

☞Important: ☞ If you wish to use the Duress Code Option, it must be set ON prior to any Individual User Programming!!!

2<u>nd</u> <u>RELAY</u>: The KE-350's 2nd Relay can be configured (page 14) as one of the following:
1. Controlling an External Alarm – The 2nd Relay can be configured to either enable/disable or shunt an existing alarm system for 01 to 99 seconds.
2. Controlling Internal Alarm Features – The 2nd Relay can be used to monitor and report events such as duress, break-in, door ajar and tamper. In order to detect these occurrences, you will need to install a door monitor switch or latch monitor switch. (See Install Other Switches section – page 6)
3. Controlling an Auxiliary Device – By default, the 2nd Relay is configured to provide a 5 second momentary output. The 2nd Relay can be programmed to provide a momentary output for 01 to 99 seconds or a manual ON/OFF output. The 2nd Relay is activated by entering "3#" following entry of an authorized User Code. Entering "2#" following entry of an authorized code will deactivate the 2nd Relay.

3<u>rd</u> <u>RELAY</u>: The KE-350's 3rd Relay can be configured (page 15) as one of the following:
1. Activate a Doorbell – The 3rd Relay can be used trigger a 1 second output to activate a doorbell (not included with the KE-350). If the 3rd Relay is programmed for a doorbell, simply entering "#" will activate the relay.
    <u>Note</u>: ☞ Do <u>not</u> precede the "#" with any other keystrokes.

2. Controller for a Closed Circuit TV (CCTV) or External Light – By default, the 3rd Relay is configured to activate at the first touch of the Keypad and remain ON for a 30 second time interval after the last keypad touch. This time interval can be adjusted from 01 to 99 seconds.

3. Controlling an Auxiliary Device – The 3rd Relay can be configured to control an auxiliary device of your choice. In this case the 3rd Relay can provide a momentary output for 01 to 99 seconds or a manual ON/OFF output. The 3rd Relay is activated by entering "5#" following entry of an authorized User Code. Entering "4#" following entry of an authorized code will deactivate the 3rd Relay.

<u>AUTOMATIC LINE FEED (ALF)</u>: When connecting a parallel printer to the KE-350, most printers require an automatic line feed to advance the printer paper to the next line. In other cases, some printers have a built-in command to automatically provide this line feed. If necessary, the printer line feed can be set ON or OFF. See System Setup (page 15).

<u>DAYLIGHT SAVINGS TIME (DST)</u>: By default, the KE-350 is configured to automatically adjust the time clock twice each year for daylight savings time. The KE-350 makes the adjustment at 2 a.m. In areas where this adjustment is not necessary, this option can be turned off. To adjust the setting for automatic Daylight Savings Time adjustment, proceed to System Setup (page 15).

System Programming Commands & Feedback

Key/Feedback	Description
✳	Enter Programming
✳ ✳	Clear/Reset or Complete and Exit Programming
#	"Enter" Key
Double Beep	Entry accepted and more data needed
Triple Beep	Completion of Programming Step
Long Steady Beep	Error

The "#" key is used as an "Enter" key. This is universal in programming and normal operation of the KE-350. The "✳ ✳" command is used to complete a programming sequence or to reset the system back to normal operation.   If you are distracted or interrupted, while in the programming mode or in normal operation, enter ✳ ✳ to reset the system back to normal operation. Depending on the level of programming, you may need to enter ✳ ✳ several times until neither LED is flashing.

Normal Operation

On the Keypad, a solid green LED indicates that the door is unlocked. A solid red LED indicates that the door is locked. Individual Users may gain access depending on the time zone authorization of the User Group they have been assigned to <u>and</u> the current time/date programmed into the KE-350's time clock.

Notes:
- When entering an Individual User Code to gain access, it must be followed by "#".
- If access is denied for a valid User Code, be sure this User's User Group has authorization for the current day of the week and time of the day. Also check the Time Clock to verify the Time, Date and Day of the Week are properly set.

User Commands

Depending on how the KE-350's System Options are configured, User Commands are used to operate Manual or Timed Latching and the 2nd and 3rd Relays. The User Commands are trailing digits entered after an authorized user code. Authorization to use these Commands depends on privileges or restrictions assigned to each User Group.
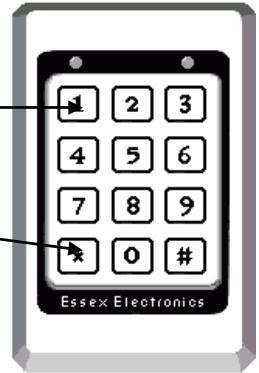1. Enter the Master Code or an Authorized User Code, followed by #
2. As the Main Relay activates, the green LED will flash for 5 seconds (with each key press). While the green LED is flashing, enter one (or more) of the following User Commands:

Latching	Relay #2	Relay #3
0 # ⇨ to Latch the Door Closed	2 # ⇨ to Turn Relay #2 OFF	4 # ⇨ to Turn Relay #3 OFF
1 # ⇨ to Latch the Door Open	3 # ⇨ to Turn Relay #2 ON	5 # ⇨ to Turn Relay #3 ON

System Programming

> ### 👤 *Programming Individual Users (Add, Modify, Delete or Temporary Users)*

Authorized users (master code holder or any user assigned to a User Group given the authorization to program users) can program users directly from the keypad. Each Individual User is assigned to one of the 16 User Groups. Review System Setup, User Groups and Set the Time Clock <u>before</u> programming individual users.

1. Enter   ✴ —— **1**

2. Enter the Master Code or an authorized user code, followed by #
    Example: ✴ 1   123 #
        This opens programming and causes ⇨

Red LED	Green LED
Slow Flash	Solid

3. Proceed to any of the following which requires programming:

Keypad Status after Step Completion

Adding a New User
a) To add a new User, enter 1#
b) Enter the User ID (1 to 499), followed by #
c) Enter the User Code/PIN (any number from 3 to 8 digits that is currently not assigned to another user), followed by #
d) Enter the desired User Group number in two digits (01 - 16), followed by #
e) To program an additional User, return to step b
f) If no more Users are to be added, enter ✴ ✴ and return to Step 3

Step	◂Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Double	Slow Flash	Fast Flash
c)	Double	Slow Flash	Fast Flash
d)	Triple	Slow Flash	Slow Flash

(Notes on Adding New Users: You should hear a triple beep after completing step d. A long steady beep indicates an error i.e. the selected User ID or User Code is already assigned to another User)

Modifying a Current User
a) To modify an existing user, enter 2#
b) Enter the User ID (1 to 499) you wish to modify, followed by #
c) To change this <u>User's Code/PIN</u>
    ⇨ Enter the New User Code, followed by #
-- or-- To change this <u>User's User Group</u>
    ⇨ Enter the New User Group number in two digits (01 - 16), followed by #
d) To modify an additional User, return to step b.
e) If no more Users are to be modified, enter ✴ ✴ and return to Step 3

Step	◂Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Double	Slow Flash	Fast Flash
c)	Triple	Slow Flash	Slow Flash

(Notes on Modifying Users: In order to change both the User Code and User Group for the same User ID, complete either part of step c then return to step b.)

Programming Individual Users (continued)   Keypad Status after Step Completion

Deleting a User by User ID
a) To delete a user by User ID, enter 3 #
b) Enter the User ID to be deleted (1 - 499), followed by #
c) To delete an additional User, return to step b
d) If no more Users are to be deleted, enter ✳ ✳ and return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Slow Flash

Deleting a User by User Code
a) To delete a user by User Code, enter 4 #
b) Enter the User Code to be deleted, followed by #
c) To delete an additional User, return to step b
d) If no more Users are to be deleted, enter ✳ ✳ and return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Slow Flash

Programming a Temporary User
a) To program a Temporary User, enter 5 #
b) Enter a Temporary User Code (3 to 8 digits), followed by #
c) Enter the number of Hours of Authorized Entry (01-99), followed by #
d) Return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Double	Slow Flash	Slow Flash
c)	Triple	Slow Flash	Solid

Deleting the Temporary User
a) To delete an active Temporary User (before it expires), enter 6#
b) Return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Triple	Slow Flash	Solid

4. 🖨 To print Individual User(s)
a) Enter 9 #
b) To print a <u>specific User</u>, enter the User ID (1 – 499, 500 for Temporary), followed by #
-- or --
To print <u>all Users</u>, enter 0 0, followed by #
c) To print another User, return to a)

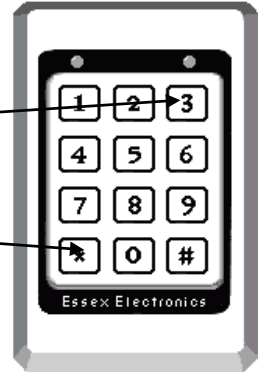| Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Solid

Notes on Printing Individual Users: For security reasons, the master code can <u>not</u> be printed.

5. Enter ✳ ✳ to complete programming sequence and reset the system to normal operation.

General Notes on Programming Individual Users: Once an authorized user completes steps 1 & 2 to open the memory, any <u>combination</u> of adding, modifying, deleting Users or programming Temporary Users can be performed without having to re-enter steps 1 & 2 each time. However, if more than 1 minute elapses between each step during programming, the system will reset and you will have to start from step 1.

🚪 *Programming System Setup*

The KE-350 System Setup can only be modified by the Master Code holder. When the system is initially setup, the default system settings should be reviewed and necessary modifications should be made <u>prior</u> to other programming.

1. Enter ✳   **3**

2. Enter the Master Code, followed by #
      Example: ✳ 3   123 #
            This opens programming and causes ⇨

Red LED	Green LED
Slow Flash	Solid

3. Proceed to one of the following options which requires programming:

Keypad Status after Step Completion

To Change the Master Code (Default: 1 2 3)
a) Enter 1#
b) Enter the New Master Code, followed by #
c) Reenter the New Master Code, followed by
d) Return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Double	Slow Flash	Fast Flash
c)	Triple	Slow Flash	Solid

(Notes on the Master Code: If you forget the Master Code, press "PGM SW" on the Control Module for 3 seconds (make sure the 5 dip switches are OFF). This will take you to Step 3 of system setup programming. See page 8 for additional information.)

Setting the Door Open Time (Default: 5 sec.)
a) Enter 2 #
b) Enter the desired Door Open Time in two digits (01 to 99 seconds) followed by #
c) Return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Fast Flash
b)	Triple	Slow Flash	Solid

Example: 2 #   1 5 # ⇨ Set a 15 second Door Open Time

Setting Latching Option (Default: OFF)
a) Enter 3 #
b) Select the desired latching method:
      <u>Off</u> ⇨ Enter 9900, followed by #
      <u>Manual</u> ⇨ Enter 9901, followed by #
      <u>Timed</u> ⇨ Enter the desired time (hour/minute) in four digits (24 hour), followed by #
c) Return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Fast Flash
b)	Triple	Slow Flash	Solid

Example: 3 #   1 7 0 0 # ⇨ Set timed latching at 5:00 p.m.

Programming System Setup (continued)   Keypad Status after Step Completion

Using Duress Codes (Default: OFF)

a) Enter 4 #
b) Enter 0 # to turn OFF use of Duress Codes
   -- or --
   Enter 1 # to turn ON use of Duress Codes
c) Return to Step 3

Step	◄Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Solid

☞Important Note: Duress Code Setup must be determined and programmed prior to User Programming!!!
You should hear a triple beep after completing step b indicating the use of duress codes has been
successfully reprogrammed. A long steady beep indicates an error (i.e. There may be individual user codes
already programmed into the system . These codes must all be deleted in order to set duress option to ON.)

Configuring 2nd Relay   (Default: Aux 5 Sec)

a) Enter 5 #
b) Select the desired configuration:
   External Alarm
   I.   Enter 1 #
   II. Enter the desired Shunt Output Time
        (01 - 99 seconds), followed by #

   Internal Alarm
   I.   Enter 2 #
   II. Enter the desired Door Ajar Time in
        two digits(01-99 seconds), followed by #

   Auxiliary Device
   I.   Enter 3 #
   II. Enter the momentary output time in two
        digits (01-99 seconds), followed by #
        -- or --
        Enter 0 0 to set the auxiliary device for Manual Operation (ON/OFF), followed by #

Step	◄Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
I.	Double	Slow Flash	Fast Flash
II.	Triple	Slow Flash	Solid
I.	Double	Slow Flash	Fast Flash
II.	Triple	Slow Flash	Solid
I.	Double	Slow Flash	Fast Flash
II.	Triple	Slow Flash	Solid

c) Return to Step 3

Examples: 5 # 1 # 1 5 # ⇨ Set External Shunt Alarm Option for 15 seconds
          5 # 2 # 1 0 # ⇨ Set Internal Alarm with a 10 second Door Ajar Time
          5 # 3 # 0 0 # ⇨ Set Auxiliary Device with Manual Operation

Programming System Setup (continued) Keypad Status after Step Completion

Configuring 3rd Relay (Default: CCTV 30 sec)

Step	◄Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash

a) Enter 6 #

b) Select the desired configuration:
   Doorbell (1 second momentary output)
   I.   Enter 1 #

Step	◄Beep	Red LED	Green LED
I.	Triple	Slow Flash	Solid

   CCTV/External Light
   I.   Enter 2 #
   II. Enter the desired ON time in two digits (01 - 99 seconds), followed by #

Step	◄Beep	Red LED	Green LED
I.	Double	Slow Flash	Fast Flash
II.	Triple	Slow Flash	Solid

   2nd Auxiliary Device
   I.   Enter 3 #
   II. Enter the desired momentary output time in two digits(01-99 seconds) followed by #
       -- or --
       Enter 0 0 to set the auxiliary device for Manual Operation (ON/OFF), followed by #

Step	◄Beep	Red LED	Green LED
I.	Double	Slow Flash	Fast Flash
II.	Triple	Slow Flash	Solid

c) Return to Step 3

Examples: 6 # 1 #   ⇨ Set Doorbell Option
        6 # 2 # 2 5 # ⇨ Set CCTV/Light with a 25 second on time
        6 # 3 # 0 5 # ⇨ Set Auxiliary Device with a 5 second Output

Automatic Line Feed "ALF" (Default: ON)

Step	◄Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Solid

a) Enter 7 #

b) Enter 0 # to turn OFF ALF
   -- or --
   Enter 1 # to turn ON ALF

c) Return to Step 3

Notes on Automatic Line Feed: The printer line feed setting should only be adjusted if you encounter printer problems (i.e. An unnecessary extra line or printing on the same line).

Daylight Savings Time "DST" (Default: ON)

Step	◄Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Solid

a) Enter 8 #

b) Enter 0 # to turn OFF Automatic DST
   -- or --
   Enter 1 # to turn ON Automatic DST

c) Return to Step 3

4. 🖨 To Print System Setup, enter 9 #

5. Enter ✳ ✳ to complete the sequence and reset the system to normal operation.

⊞ *Programming the Holiday Schedule*

The KE-350 provides a 32 day holiday schedule. Any authorized user can program up to 32 dates (month/day). Each User Group is programmed to either authorize or prevent access during these scheduled dates.
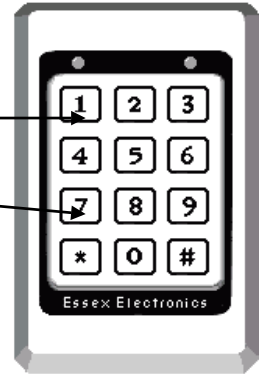
1. Enter ✳ ———— **4** ————

2. Enter the Master Code or an authorized user code, followed by #

Example: ✳ 4   123 #

This opens programming and causes ⇨

Red LED	Green LED
Slow Flash	Solid

3. Proceed to any of the following which requires programming:

Keypad Status after Step Completion

Adding a New Holiday
a) To add a new Holiday, enter 1 #
b) Enter the date (month/day) in four digits, followed by #
c) To add an additional holiday, return to step b otherwise enter ✳ ✳

Step	◄Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Slow Flash

Example: 1 # 0 1 0 1 # 0 7 0 4 # ✳ ✳ ⇨ Adds January 1st and July 4th as programmed holidays

Deleting an Existing Holiday
a) To delete a Holiday, enter 2 #
b) Enter the date (month/day) in four digits, followed by #
c) To delete an additional holiday, return to step b otherwise enter ✳ ✳

Step	◄Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Fast Flash

Example: 2 # 1 1 2 6 # ✳ ✳ ⇨ Deletes November 26th as a programmed holiday

4. 🖶 To print Holiday Schedule, enter 9 #

5. Enter ✳ ✳ to complete programming sequence and reset the system to normal operation.

🕐 *Programming the Time Clock*

Authorized users (master code holder or any user assigned to a User Group given the authorization to program users) can program the KE-350's time clock from the keypad. If the time clock requires adjustment, follow these programming instructions:
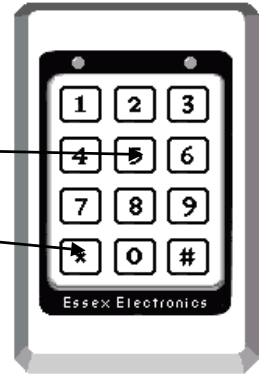
1. Enter ✳   **5**

2. Enter the Master Code or an authorized user code,
followed by #
Example: ✳ 5   123 #
This opens programming and causes ⇨

Red LED	Green LED
Slow Flash	Solid

3. Proceed to any of the following which requires programming:

Keypad Status after Step Completion

To program the time
a) Enter 1 #
b) Enter the current <u>hour</u> and current <u>minutes</u> in four digits(24 hour clock), followed by #
c) Return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Solid

Examples:1 # 1 0 0 0 #   ⇨ 10:00 a.m.
    1 # 1 5 1 5 #   ⇨ 3:15 p.m.

To program the date
a) Enter 2 #
b) Enter the current <u>month</u>, current <u>day</u> and current <u>year</u> in six digits, followed by #
c) Return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Solid

Examples: 2 # 0 2 0 5 9 9 # ⇨ February 5th, 1999
    2 # 1 1 3 0 0 2 # ⇨ November 30th , 2002

To program the Day of Week
a) Enter 3 #
b) Enter the current <u>day of week</u>, followed by #
c) Return to Step 3

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Solid

Examples: 3 # 1 # ⇨ Monday
    3 # 6 # ⇨ Saturday

4. 🖨 To Print Time/Date/Day of Week, enter 9 #

5. Enter ✳ ✳ to complete the sequence and reset the system to normal operation.

📑 *Audit Trail Setup & Printing Audit Transactions*

The KE-350 logs the last 750 audit transactions. These transactions will remain in memory even in the event of a power interruption. Any authorized user (master code or any user assigned to a User Group given the authorization to program users) can retrieve Audit Transactions from a connected printer.
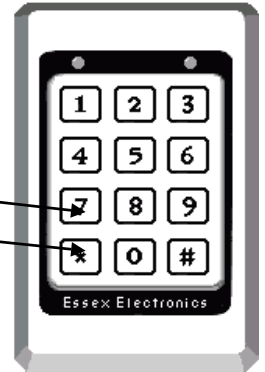
1. Enter ✳   **7**

2. Enter the Master Code or an authorized user code, followed by #

Example: ✳ 7   123 #

This opens programming and causes ⇨

Red LED	Green LED
Slow Flash	Solid

3. Set Audit Trail Printing Options

Keypad Status after Step Completion

Audit Trail Printing Options	◄Beep	Red LED	Green LED
1 # ⇨ To Print All Transaction Types	Triple	Slow Flash	Solid
2 # ⇨ To Print Critical* Transactions Only	Triple	Slow Flash	Solid
3 # ⇨ To Print User ID and User Code/PIN	Triple	Slow Flash	Solid
4 # ⇨ To Print User ID Only (No User Code)	Triple	Slow Flash	Solid

* Critical Transactions include: Tamper, Door Ajar, Duress and Break-in

4. User Selection Print Option (Default: ALL Users)

Select Audit Transactions for a Specific User	Step	◄Beep	Red LED	Green LED
a) Enter 7 #	**a)**	Double	Slow Flash	Slow Flash
b) Enter User ID (1-499, 500 for temporary), followed by #	**b)**	Triple	Slow Flash	Solid

Select Audit Transactions for ALL Users	Step	◄Beep	Red LED	Green LED
a) Enter 8 #	**a)**	Triple	Slow Flash	Solid

5. 🖨 Printing Audit Transactions

Step	◄Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Solid

a) Enter 9 #
b) Enter the Number of Transactions to print (1-750), followed by #
c) To print additional Transactions, return to a). To modify User Selection, return to Step 4.

Example: 9 # 5 0 # ⇨ Print Last 50 transactions for Users determined by User Selection

6. Enter ✷ ✷ to complete the sequence and reset the system to normal operation.

👪 *User Groups*

The KE-350 simplifies the process of programming users by providing 16 programmable User Groups. Rather than assigning authorization options (i.e. latching, user programming and time zone authorization) to each individual user, these authorizations are determined for each User Group. Individual Users are then assigned to an appropriate User Group. Although these User Groups have been preprogrammed with some typical authorization options, User Group authorizations can be modified to fit your particular needs. (See Appendix C, page 26 for a User Group Programming Worksheet)

Preprogrammed User Groups

Group	Days of Entry	Times of Entry	Latch	Temp User	Delete User	PGM User	Relay # 2	Relay # 3	Holiday Access
01	All	24 Hour	Yes	Yes	Yes	Yes	Yes	Yes	Yes
02	M,T,W,TH, F	8am - 5pm	Yes	Yes	Yes	Yes	No	No	No
03	M,T,W,TH, F	8am - 5pm	No	No	No	No	No	No	No
04	M,T,W,TH, F	11pm - 7am	No	No	No	No	No	No	No
05	Sat & Sun	24 Hour	No	No	No	No	No	No	No
06	Sat & Sun	8am - 5pm	No	No	No	No	No	No	No
07	M, W, F	8am - 5pm	No	No	No	No	No	No	No
08	T, TH	8am - 5pm	No	No	No	No	No	No	No
09									
10									
11									
12									
13									
14									
15									
16									

👤👤👤 *Modifying User Groups*
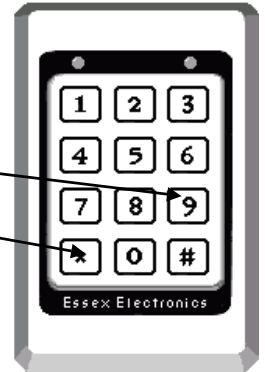
1. Enter   ✳   **9**

2. Enter the Master Code or an authorized user code,
followed by #
     Example: ✳ 9   123 #
        This opens programming and causes ⇨

Red LED	**Green LED**
Slow Flash	Solid

3. To Print authorizations for a User Group, proceed to step 6.
To Modify a Group, enter the User Group number in two digits (01-16), followed by #
     Example: 0 2 # ⇨   Select User Group 2

4. Proceed to one of the following options which requires programming:

Keypad Status after Step Completion

Time Zone Authorization – Add or Modify
a) Enter 1 #
b) Select all similar days(1⇨ Mon, 2 ⇨ Tue),
    followed by #
c) Enter start time hours and minutes in four
    digits (24 hour time), followed by #
d) Enter stop time hours and minutes in four
    digits (24 hour time), followed by #
e) To program additional days, return to step a). Otherwise return to Step 4.

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Fast Flash
b)	Double	Slow Flash	Fast Flash
c)	Double	Slow Flash	Fast Flash
d)	Triple	Slow Flash	Slow Flash

Examples: 1 # 1 5 # 0 8 3 0 # 1 7 0 0 # ⇨ Monday & Friday Start: 8:30 a.m. Stop: 5:00 p.m.
        1 # 2 # 0 0 0 0 # 0 0 0 0 # ⇨ Tuesday, 24 Hours

Time Zone Authorization – Delete
a) Enter 2 #
b) Select all days to delete (1⇨ Mon, 2 ⇨ Tue),
    followed by #
c) Return to Step 4

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Slow Flash

Examples: 2 # 1 # ⇨ Deletes Monday's Time Zone Authorization

Latching Authorization
a) Enter 3 0 # to prevent latching
    -- or--
    Enter 3 1 # to authorize latching
b) Return to Step 4

Step	◀Beep	Red LED	Green LED
a)	Triple	Slow Flash	Slow Flash

Modifying User Groups (continued)   Keypad Status after Step Completion

Program a Temporary Code Authorization

Step	◄Beep	Red LED	Green LED
a)	Triple	Slow Flash	Slow Flash

a) Enter 4 0 # to prevent Temp Code PGM
   -- or--
   Enter 4 1 # to authorize Temp Code PGM
b) Return to Step 4

Delete Users Authorization (Only Delete)

Step	◄Beep	Red LED	Green LED
a)	Triple	Slow Flash	Slow Flash

a) Enter 5 0 # to prevent Deletion of Users
   -- or--
   Enter 5 1 # to authorize Deletion of Users
b) Return to Step 4

Program Users Authorization

Step	◄Beep	Red LED	Green LED
a)	Triple	Slow Flash	Slow Flash

a) Enter 6 0 # to prevent User Programming
   -- or--
   Enter 6 1 # to authorize User Programming
b) Return to Step 4

Note on Program Users Authorization: Authorization to Program Users also provides the authorization to delete users and program temporary users.

2nd Relay Authorization

Step	◄Beep	Red LED	Green LED
a)	Triple	Slow Flash	Slow Flash

a) Enter 7 0 # to prevent 2nd Relay Operation
   -- or--
   Enter 7 1 # to authorize 2nd Relay Operation
b) Return to Step 4

3rd Relay Authorization

Step	◄Beep	Red LED	Green LED
a)	Triple	Slow Flash	Slow Flash

a) Enter 8 0 # to prevent 3rd Relay Operation
   -- or--
   Enter 8 1 # to authorize 3rd Relay Operation
b) Return to Step 4

Holiday Schedule Authorization

Step	◄Beep	Red LED	Green LED
a)	Triple	Slow Flash	Slow Flash

a) Enter 9 0 # to prevent access on holidays
   -- or--
   Enter 9 1 # to authorize access on holidays
b) Return to Step 4

5. Once all necessary changes have been made for this User Group, enter ✻ ✻

Modifying User Groups (continued)   Keypad Status after Step Completion

Step	◀Beep	Red LED	Green LED
a)	Double	Slow Flash	Slow Flash
b)	Triple	Slow Flash	Solid

6. 🖨 Printing User Group(s)
   a) Enter 9 #
   b) To print a <u>specific User Group</u>, enter the
      User Group number in two digits (01 - 16), followed by #
      -- or --
      To print <u>all User Groups</u>, enter 0 0, followed by #
   c) To print another User Group, return to a)

   Example: 9 # 0 1 # ⇨ To Print Authorizations and all Users assigned to User Group 1
            9 # 0 0 # ⇨ To Print Authorizations Only of all 16 User Groups

   Notes on Printing User Group(s): When a <u>specific</u> User Group is selected to print, group authorizations are printed followed by a list of all Individual Users currently assigned to the group. When <u>all</u> User Groups are selected to print, only group authorizations are printed.

7. To make additional changes to any User Group, return to step 3. Otherwise enter ✳ ✳ to complete the sequence and reset the system to normal operation

Appendix A

Typical Wiring Diagrams – Figure A

Typical Wiring Diagrams – Figure B

Appendix B

Individual User Programming Worksheet

User ID (1-499)	User Name	User Code/PIN (3 to 8 Digits)	User Group (01-16)
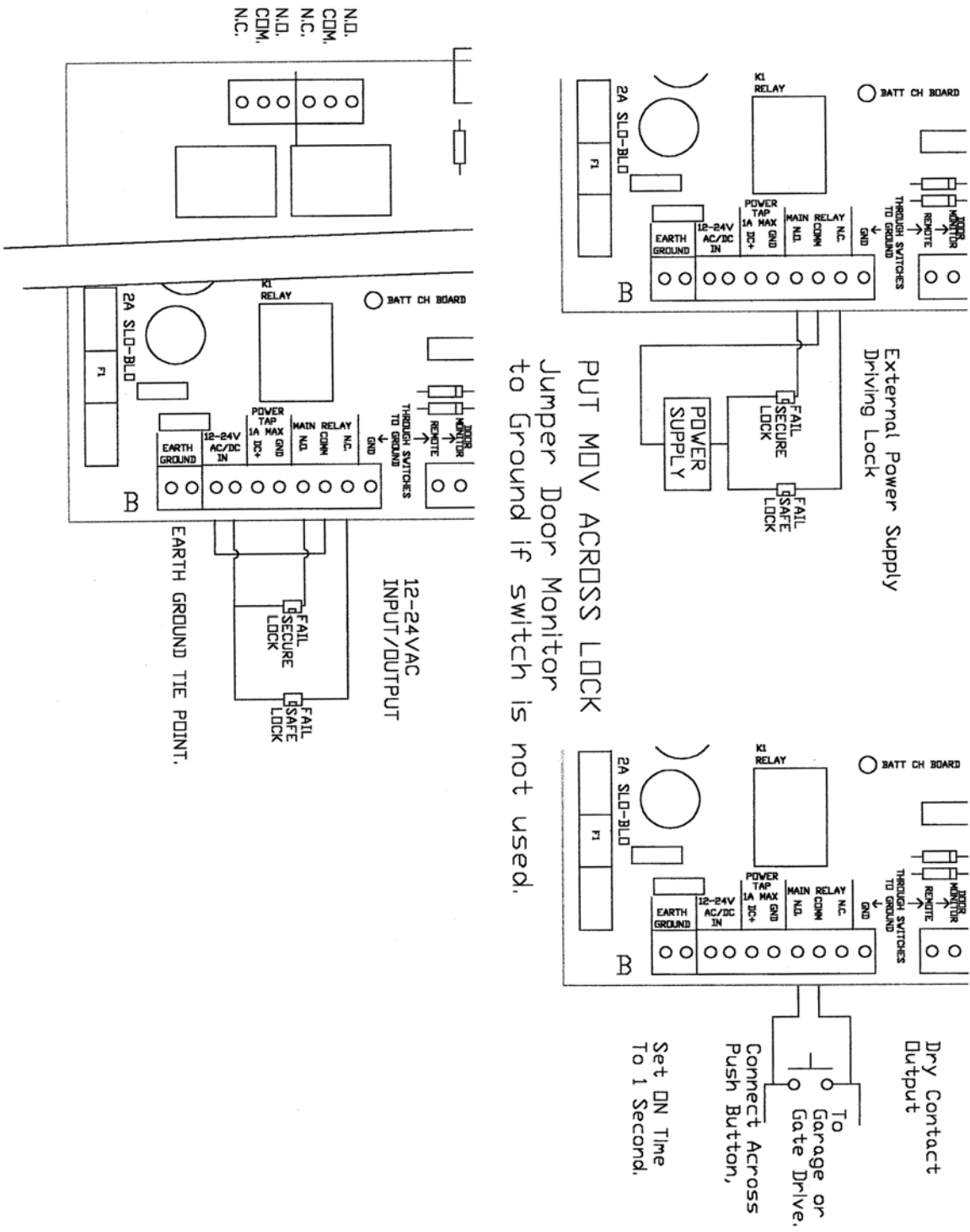
Appendix C

User Group Programming Worksheet

User Group	Days of Entry	Times of Entry	Latch	Temp User	Delete User	PGM User	Relay # 2	Relay # 3	Holiday Access
01			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
02			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
03			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
04			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
05			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
06			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
07			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
08			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
09			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
10			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
11			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
12			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
13			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
14			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
15			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No
16			❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No	❏ Yes ❏ No