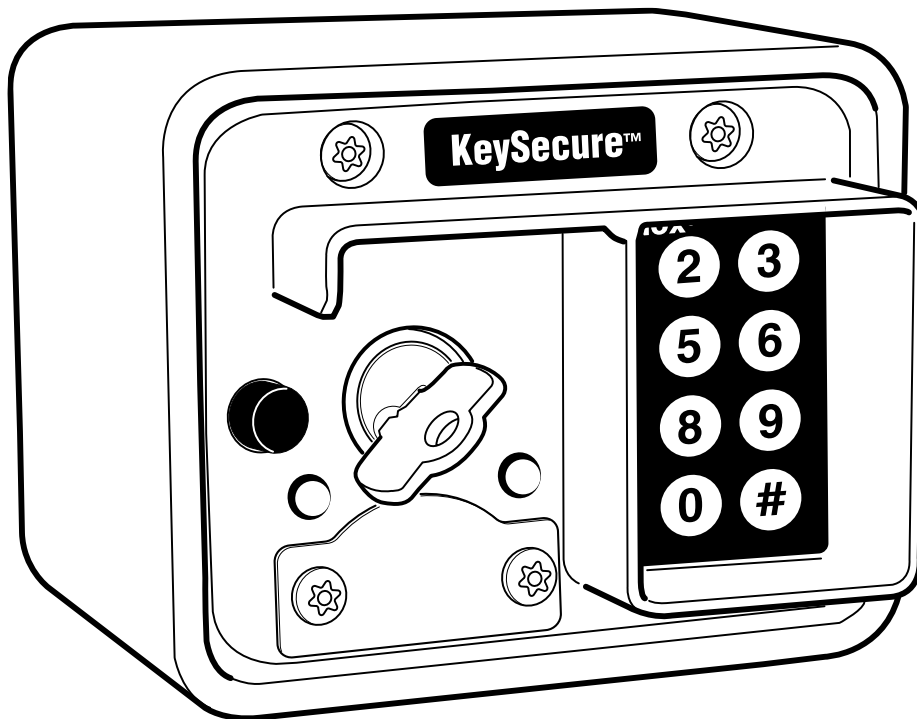


# KeySecure™

## Model 3



**- WARNING -**

This manual should be treated as a CONFIDENTIAL DOCUMENT.  
Limit access to Authorized Personnel Only.



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# KEYSECURE INSTALLATION - Model 3

## 1. Introduction

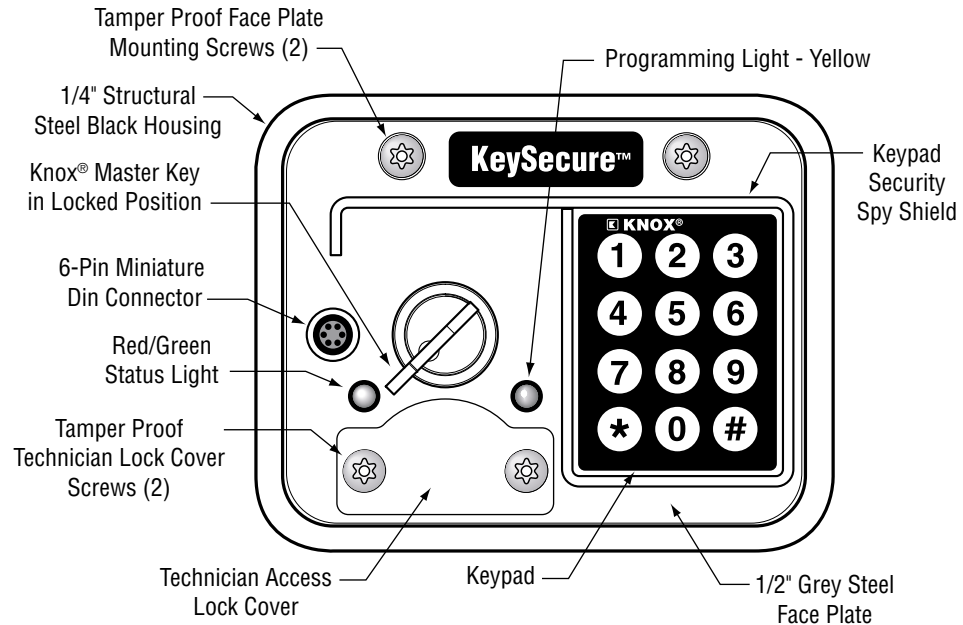


Figure 1

KeySecure™ is a straightforward, stand-alone solution to Knox® Master Key security. When responding to an alarm or emergency, users simply enter their authorized key release pin code and the Knox® Master Key is released for use.

The Knox® Master Key is locked up in a visible position providing immediate accountability. There is also an LED light indicator that displays red for an unsecured key or green for a secured key. Once secured, the Knox® Master Key is locked in place until the next pin code is entered.

KeySecure™ is manufactured with dependable Knox product quality and attention to detail. Knox quality translates into decades of solid performance, UL listed product security and single key availability with the Knox® Master Key.

Installation of KeySecure™ in a vehicle or structure requires completion of the following simple steps:

1. **Hardware Installation:** The physical mounting of the unit at a customer preferred location.

## 1. Introduction

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2. **Electrical Installation:** The connection of power and external devices to KeySecure™.
3. **Reassembling Unit:** Reconnecting face plate module to housing.
4. **Programming:** Verify factory programming of the Knox® Master Key release pin codes (where applicable) , security programming pin code, key release time and optional relay. Reprogram codes if necessary via computer installed software.
5. **PC Software:** Install PC software on PC. Minimum requirements are Windows 2000 or higher (XP) operating system. Internet Explorer version 5.0 or better is required, as well. A CD ROM and 7 mega bytes of hard disk space are needed.

## 1.1 Hardware Installation

Each KeySecure™ unit is coated with a polyester powder coat finish that is very resistant to environmental factors. The unit has a black housing with a gray face.

The KeySecure™ unit is an inherently substantial device but ***proper mounting is essential*** in order to achieve maximum security.

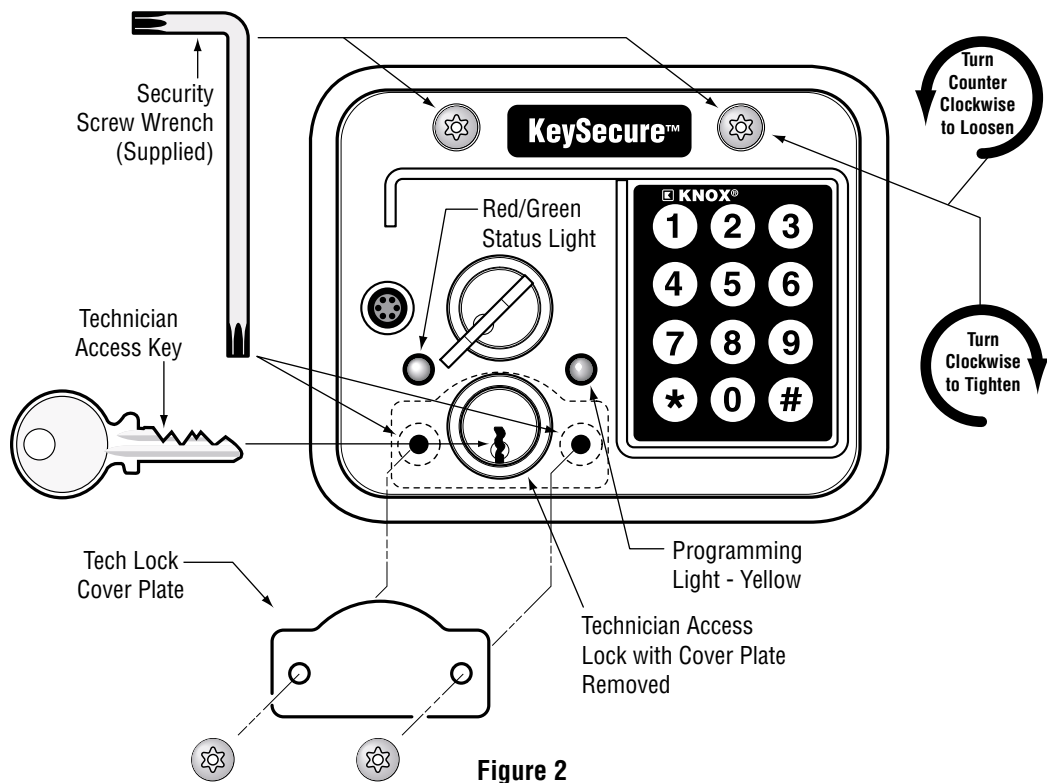


Figure 2

### 1.1.0 Disassembling KeySecure™ for Mounting or Repair

For security purposes, a Tech Key (Technician Access Key) and a special tamper proof security hex wrench are required to open the KeySecure™ unit. A labeled view of KeySecure™ is shown in Figure 2. Perform the following steps to disassemble the KeySecure™ unit.

#### A. Remove Outer Security Screws.

Identify the Tech Lock cover plate below the Knox® Master Key lock located on the left, see above. Using the security hex wrench, remove the two

## 1.1 Hardware Installation

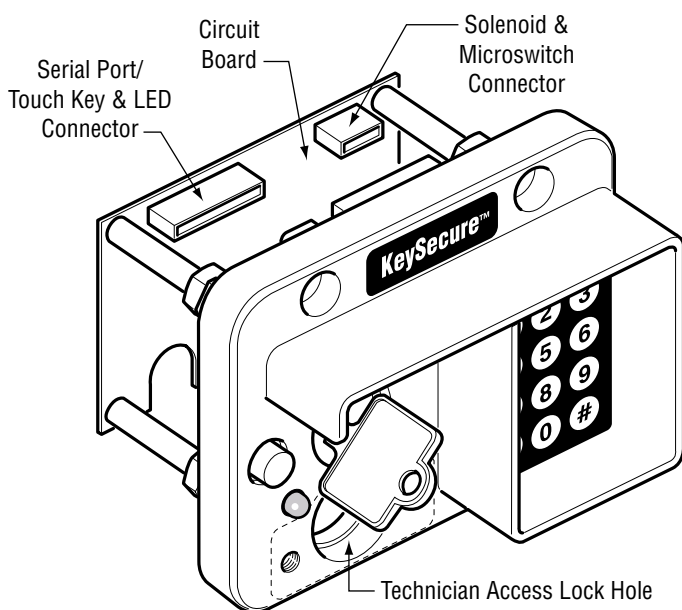
Security screws from the Tech Lock Cover by turning them counter clockwise. Take the screws out and remove the Tech Lock cover plate that protects the Tech Lock (Technician Access Lock) by discouraging tampering and preventing dirt from entering the lock. **WARNING: Do not force the screws when loosening or tightening or you will strip the screw heads.**

### B. Remove Face Plate Security Mounting Screws.

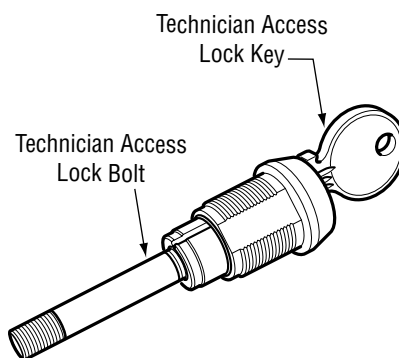
The face plate of the KeySecure™ unit is attached to it's housing at two points on the top by security screws and a third point on the bottom by the Tech Access Lock. There are two security screws located at the top of the face. Using the security hex wrench, turn the screws counter clockwise to loosen and remove.

### C. Unscrew Tech Lock.

Insert the Tech Key into the Tech Lock then turn it counter clockwise. Although it may be hard to turn at first, the Tech Lock will unscrew as it rotates with the Tech Key. Continue turning counter clockwise until the Tech Lock unscrews and is removed. The Tech Lock is attached to a bolt, which is the third and final point at which the face plate module is attached to the housing.



**Figure 3 - Face Plate Module with Technician Access Lock removed.**



## ***1.1 Hardware Installation***

---

### **D. Pull Out Face Plate Module.**

You may now pull the face plate, with the module attached, out of the housing and set it aside. Remember if there is a strobe light on top ,the strobe light wires are still attached to the terminal block. To fully disconnect you will need to loosen the screws on the terminal block with a small straight slot screw driver and pull wires out of the terminal block. See Figure 5 page 10 and Figure 6 page 12.

## 1.1 Hardware Installation

---

### 1.1.1 Mounting KeySecure™ in a Vehicle

Follow these guidelines for mounting the KeySecure™ housing on a sturdy vehicle surface such as a dashboard or interior cab wall. For best results, the unit should be mounted in an area free from moisture to prevent potential mechanical or electrical damage. **Do not mount on floor of cab. The Knox Company cannot be responsible for floor mounted KeySecure™ units.**

#### A. Bolt Housing to Surface.

Use at least four 5/16" diameter grade 5 mounting fasteners (Screen/Carriage Bolts, etc.) to bolt the back of the housing onto a wall or support bracket. 90 (KNOX# 2695) and 60 (KNOX# 2696) degree mounting brackets are available from KNOX for mounting units. If necessary, drill additional holes in the top, bottom, or sides. Check for cable and PC board interference before drilling.

#### B. Cover Visible Unused Mounting Holes.

Always cover the visible unused mounting holes with carriage bolts to seal the unit and prevent tampering. For proper security, the carriage bolts should only be installed with the smooth heads exposed.

#### C. Prevent Mounting Bolt Intrusion.

Make sure that the mounting bolts do not protrude too far inside the KeySecure™ housing so that they do not interfere with mechanical or electrical parts (3/8" maximum).

### 1.1.2 Surface Mounting KeySecure™ to an Interior Wall

The KeySecure™ unit can be surface mounted to a solid flat wall. For best results, the unit should be mounted in an area free from moisture to prevent potential mechanical or electrical damage. Tamper switches should be added when an alarm system is available. Perform the following steps to mount the KeySecure™ unit to a wall.

#### A. Align Housing to Interior Wall.

Use a small level to plumb the housing for square.



## 1.1 Hardware Installation

### B. Fasten Housing to Wall.

Use at least four 5/16" diameter grade 5 mounting fasteners (Screen/Carriage Bolts, etc.). Extend fasteners completely through the wall if possible but do not allow the mounting bolts to extend too far into the housing (3/8" maximum). The KeySecure™ unit can also be welded in place. Use a mounting method best suited to your requirements.

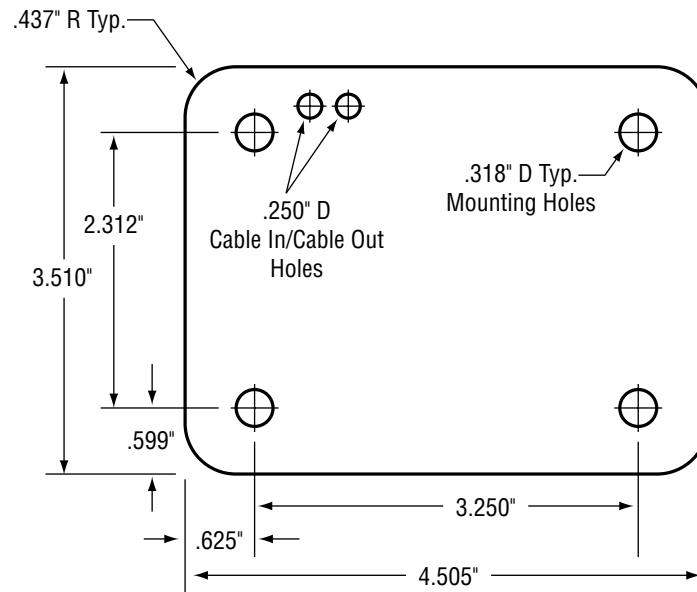


Figure 4 - Mounting Holes template.

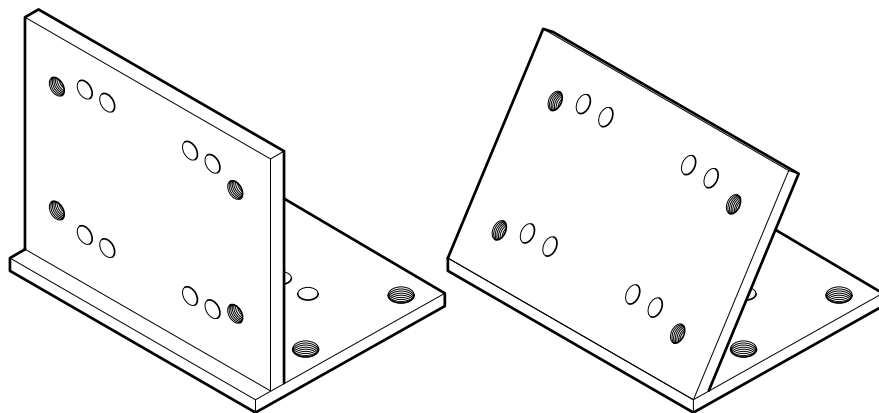


Figure 4A - Mounting Brackets

## 1.2 Electrical Installation

### 1.2.0 Power Supply Requirements

When mounting in a vehicle, it is important to note that KeySecure™ requires a 3 amp 12 volt DC power supply. The power should be fused for 3 amps, preferably filtered and connected to the vehicle power at a point where the battery power can be turned off with a vehicle power switch. It is not recommended that power be connected to KeySecure™ in such a way that the unit can never be turned off. If unit is powered 24/7 life expectancy is reduced. This is a safety factor when changing vehicle batteries and powering up allows the unit to reset. Security of the Knox® Master Key is not compromised because it cannot be removed from the unit when the power is off.

An optional 12 volt AC adapter (KNOX# 2680) is available from KNOX with quick connect pins. This adapter can power the unit when it is mounted in a wall and needs to be powered from a standard wall outlet. It is also useful for testing units on a workbench before installation in a vehicle or collecting audit trail out of a unit by taking it to the desk top PC.

### Connecting Interface Cable

#### A. Install 2 or 4 Conductor Cable.

You will need a 2 or 4 conductor (customer supplied) cable with good insulation. The wire should be multi-stranded and between 17 to 22 AWG in size.

**WARNING: Be careful when installing the cable that you do not strip the insulation off or crimp the wires when pulling it through a hole with sharp edges.**

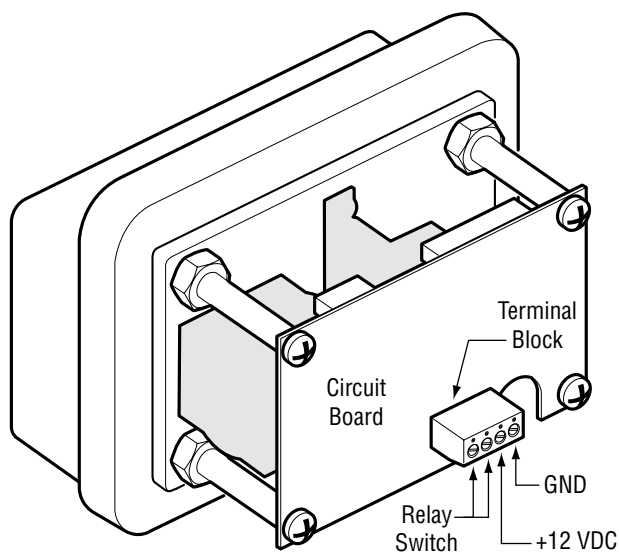


Figure 5

## 1.2 Electrical Installation

If you will not be using the optional Relay Switch for connecting to an external buzzer or strobe light, a 2 conductor cable is all you will need. Otherwise, use a 4 conductor cable to accommodate the Relay Switch. Also, seal around the cable and any of the holes on the rear of the housing with some RTV silicon to protect the unit from moisture.

### B. Connect Wires to Terminal Block.

KeySecure™ has a 4 position terminal block. Looking at the unit so that the notch for the Radio Tech Key bolt is on the right and the terminal block is on the left, position 4 is (-) Ground and position 3 is +12 volts DC power. The ground and power wires should be stripped 1/4" and tinned. Clean with flux remover and put a little silicone or Vaseline gel on ends to prevent corrosion. Insert the wires into the correct terminals and screw down with a small screwdriver. **Do not overtighten.**

When installing the KeySecure™ unit in hot installations where power is on, make sure to install the ground wire in the terminal block first. Attach the power wire second.

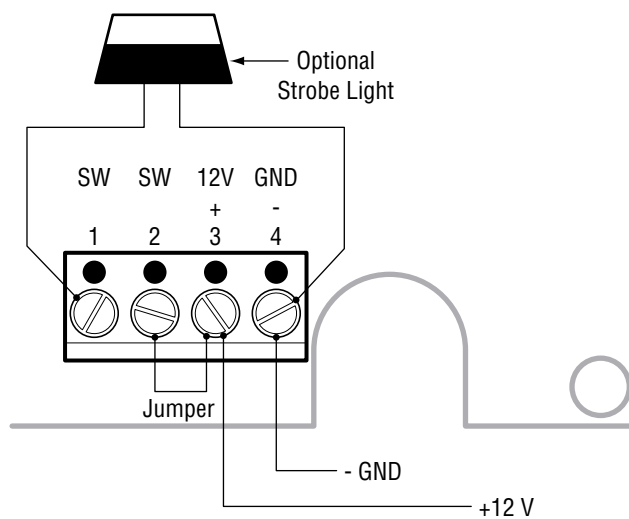


Figure 6 - Terminal Block

## 1.2 Electrical Installation

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### C. Test Power Connection.

Turn power on and check the unit's left light display. It will be a solid red or green signal (depending on the Knox® Master Key status). The keypad may also be illuminated. This confirms power is properly connected.

#### 1.2.1 Relay Circuit

KeySecure™ contains a 1 Pole Normally Open Form A contact Relay (see Figure 7). The relay is rated for 3 amps at 30 volts DC.

The Relay Switch is used to connect KeySecure™ to an external device such as a buzzer or strobe light. When connected, the light or buzzer may turn on when the Knox® Master Key is in the unlocked or unsecured position. (Depends on software configuration.) Use of the Relay Switch is optional.

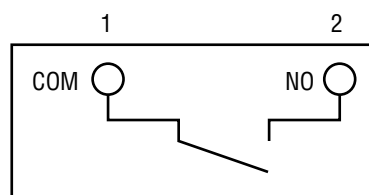


Figure 7 - Relay Connections

## 1.2 Electrical Installation

### 1.2.2 Optional Strobe Light

The Relay Switch may be used to activate an optional Strobe Light mounted to the top of the KeySecure™ housing. The wires for the Strobe Light should be connected as shown in Figure 6 (See page 12).

#### A. Connecting the Strobe Light.

The ground (-) wire for the Strobe Light is secured in terminal block position 4 along with power ground. The power wire (+) for the Strobe Light is connected to one side of the Relay Switch terminal block position 1. A wire jumper is added to terminal block position 2 and the other end of the wire goes to terminal block position 3 (See figure 6 on page 12). When the key is removed or unsecure, the Relay Switch is configured to supply +12 volts DC power to the Strobe Light.

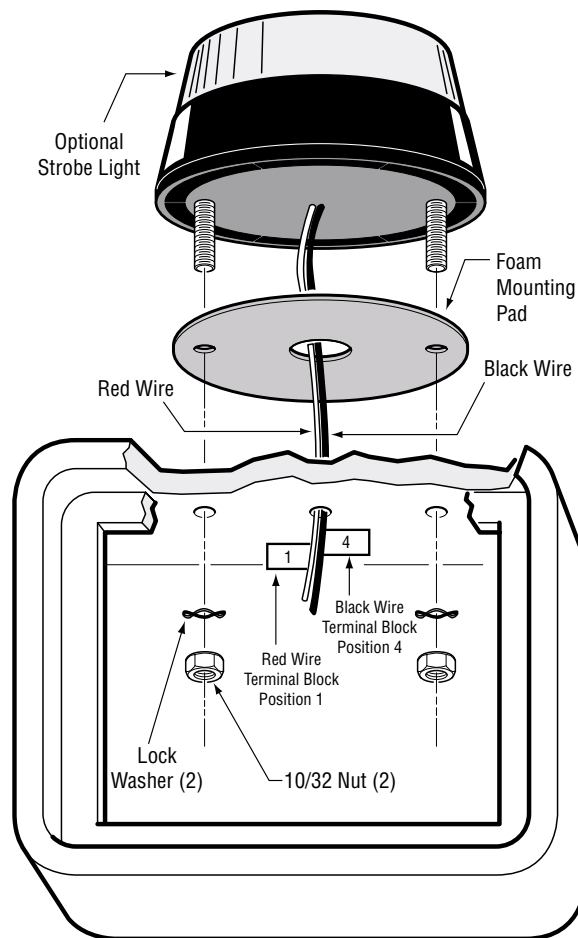


Figure 8

## **1.3 Re-Assemble Unit**

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Please refer to Figure 2 on page 5 when reassembling unit.

### **A. Place Face Plate Module into Housing**

Position the face plate module back into the KeySecure™ housing. Position wiring so that it will not be crushed or interfere with unit operation as the face plate module is reinserted into place in the housing. Secure cable with cable clamp mounted on rear inside of housing. Clamp should be positioned up, i.e. towards top of unit, to prevent interference with battery.

### **B. Attach Face Plate Module with Security Screws**

Place the two longer security screws into the screw holes at the top of the face plate module. Then turn screws clockwise with the security hex wrench. Leave the screws loose. The screws will be tightened after the tech lock bolt is in place.

### **C. Replace Tech Lock**

Replace the Tech Lock by threading the end into the nut in the inside rear of the housing. Insert the Tech Key into the Tech Lock and turn the Tech Key clockwise to tighten the Tech Lock until secured. **Do not overtighten.** Once tight, turn counter clockwise until the Tech Key can be removed. Now tighten the loose security screws at the top of the face plate module.

### **D. Re-Install Tech Lock Cover Plate**

Place the Tech Lock cover plate over the Tech Lock below the Knox® Master Key. Place the two shorter security screws into the screw holes and tighten clockwise with the security hex wrench until snug. **Do not overtighten.** Place dust cap over 6-pin miniature din connector to keep clean.

## 1.4 Software Setup

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### 1.4.0 Initial Setup

#### A. Pre-Programmed Key Release Pin Codes.

KeySecure™ may be shipped from the factory with the key release pin codes pre-programmed if requested by the customer. Factory supplied documentation contained inside a bag with the manual, lists these preassigned key release pin codes (Configuration files). Proceed to section B.

If a customer does not request that specific key release pin codes be pre-programmed into the KeySecure™, a basic configuration file will be implemented in the unit (containing a sample program pin code of **123**) at the factory. It is the customer's responsibility to configure (put in PIN codes) the KeySecure™. Proceed to section C.

#### B. Test Unit.

After installation of the KeySecure™ unit, sample test assigned pin codes to verify the codes are present and the unit is functioning properly. Type in each pin code followed by the pound key [**XX . . X #**]. Remove, replace and secure key. If the "groups" feature is active you will need to log onto the unit with a Master pin code and type in the group number (see Section 2.1.1). Test each pin in the group, then move on to the next group and confirm the pin codes in that group. Continue on until you have tested all the pin codes in all the groups or as many as you want to test.

#### C. Verify Programming Options Pin Code.

After the unit configuration is created on the PC and downloaded to the unit, verify the program options pin code by entering the code [**XX . . X #**]. Verify a solid yellow light to the right of the Knox® Master Key. This light indicates that the code is correct and KeySecure® is now in programming options mode. In options mode, you can issue an options command to change some features in the unit. Input [**\* \* #**] to exit the programming mode and the solid yellow light will turn off. Programming features are covered on pages 28 to 40 in detail.

## ***1.4 Software Setup***

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### **D. Verify Unit Audit Trail Working**

To fully test the unit, the customer should collect the Audit Trail with a PC and review the information collected. The time and date should be correct. If it is not, collect the Audit Trail out of the unit a second time. Each time the Audit Trail is collected the time and date in the KeySecure unit is reset to the PC's time and date. Verify that records are present in memory and date is correct.

It is recommended that the customer collect the Audit Trail out of each unit at least once every 3 months. This step ensures everything is working and the time and date are correct. Also, it keeps the number of collection records small so that they do not take forever to download to the PC.



## 2. KEYSECURE OPERATION - Model 3

### 2.0 Introduction

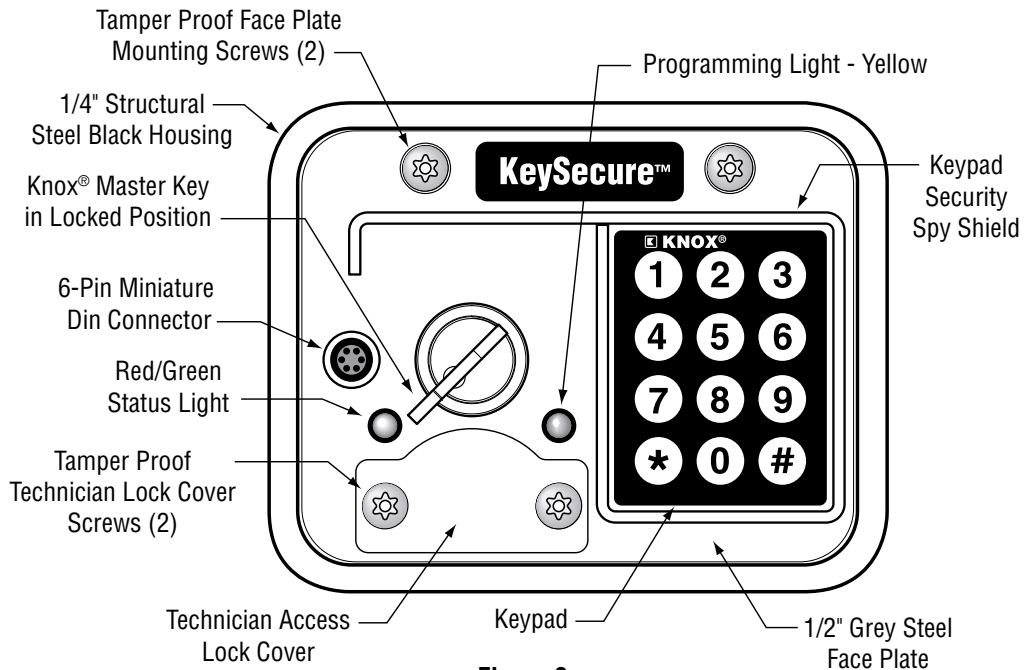


Figure 9

#### 2.0.0 What is it?

- KeySecure™ consists of a numeric keypad, 2 indicator lights, a 6-Pin miniature din connector and an electronically secured Knox® Master Key. The unit housing is constructed of 1/4" steel with a 1/2" steel face plate, plus a 1/4" hardplate. The outside dimensions of KeySecure™ are 5" W x 4" H x 4 1/2" D.
- KeySecure™ is a value-priced key retention device for securing a Knox® Master Key. It is designed as part of the Knox Rapid Entry System to provide key security in an emergency vehicle without dependence on a radio release signal from dispatch. It is offered as an alternative to the Sentralok™ System for emergency services that have restricted dispatch or have radio communication problems.
- KeySecure™ protects the Knox® Master Key and thereby enhances the overall security of the Knox Rapid Entry System. The unit employs a communicationless method for key retention and release.
- KeySecure™ is easy to install and operate. In its simplest form one need only connect 2 wires to power the unit and it is operational. Once the power source is connected, the user need only to enter a 3 to 6 digit key release pin code to release the Knox® Master Key.

## 2.0 Introduction

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### 2.0.1 How does it work?

- The KeySecure 3 can be set up in a number of different ways. Each setup has a different set of steps for releasing the Knox® Master Key. The standard KeySecure™ 3 (4Mb Knox# 2630 or 2631) can contain up to 500 key release pin codes and 14,000 audit events. The KeySecure™ 3 may be ordered with a larger memory chip (16Mb Knox# 2632 or 2633) that can support a total of 2,000 key release pin codes and 60,000 audit events. KeySecure™ 3 checks its memory of authorized key release pin codes and verifies the current pin code input. If there is a match, the lock holding the Knox® Master Key is released for a user-defined period of 3 to 20 seconds. During the release period, the authorized user may remove the key from the lock by turning it counterclockwise and pulling the key out of the lock. If the key is not turned or removed during the unlocked time, KeySecure™ automatically re-locks.
- When power is off, the Knox® Master Key cannot be released or removed. The KeySecure™ power source is the 12 volt vehicle battery. The KeySecure™ 3 contains a 3 volt lithium battery, that under nominal conditions is good for 5 to 6 years. This battery keeps the clock running in the unit and maintains other system parameters when power is off. The KeySecure™ 3 can keep an accurate time and date of when events occur because of this battery. An event is a key release, re-securing the key, audit trail collected, etc.
- The standard KeySecure™ 3 contains 500 authorized key release pin codes, a maximum of 16 groups and 1 security programming pin code. It also records up to 14,000 Audit Trail events before it starts to overwrite the oldest event. Each key release pin code is 3 to 6 digits in length. There are now three types of key release pin codes in KeySecure™ 3. The three types of key release pin codes are the Master key release pin code, the Independent key release pin code and the Dependent key release pin code.

## 2.0 Introduction

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### 2.0.2 PINs

**Master key release pin code** - used to log on/off of the unit, if the “groups” feature is active. If the “groups” feature is not active no Master key release pin code is required, reader should skip to next paragraph. The Master key release pin code preceded by a ★ is used to enable/disable groups of pin codes. It is also, by default, an Independent pin code. Once logged on to the unit, the Master pin code without a ★ will release the Knox® Master Key.

**Independent key release pin code** - single pin entry key release. This pin code can release the Knox® Master Key by itself, as long as a Master pin code has logged onto the unit. If the groups feature is not active, no Master pin code need be logged onto the unit for an Independent pin code to release the Knox® Master Key.

**Dependent key release pin code** - dual pin entry key release. A minimum of two key release pin codes must be input in order to release the Knox® Master Key. If the “groups” feature is not active no Master key release pin code is required to be logged on, only a second Dependent or Independent key release pin code is needed to release the Knox® Master Key.

- An authorized KeySecure administrator must have the one 3 to 6 digit security program pin code. At any time the system administrator may use the security program pin code to enable or disable key release pin codes, change the keypad illumination level, etc. On KeySecure 3, key release pin codes and the program pin code can not be changed or deleted from the unit keypad. Key release pin codes can only be altered at the PC with the KeySecure 3 Software. The changes are then downloaded from this software to a KeySecure 3 unit via a special communications cable that connects to the 6-PIN din connector on the unit’s face and to a notebook PC or Palm PDA.

## 2.0 Introduction

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### 2.0.3 Relay & Lights

- There is a Relay switch inside KeySecure™. The contacts can be connected to an external buzzer, cab light, dash light or other alarm device. The contacts of the Relay will close when the Knox® Master Key is unlocked or removed causing an alarm signal to activate a device. The Relay can be programmed to stay on or off when the Knox® Master Key is unsecured. It can also be programmed to toggle on and off during the unsecured key mode.
  
- The 2 lights on the front face of KeySecure™ communicate the following:
  1. Left green light solid means that power is on and the key is secure.
  2. Left green light blinks once, means that a button on the keypad is depressed.
  3. Left light changes from solid green to blinking red, indicates that the Knox® Master Key has been released for a period from 3 to 20 seconds.
  4. Left light changes to a solid red indicating that the Knox® Master Key is turned to the unlocked position and/or has been removed from the lock. The left light changes to a solid green when the Knox® Master Key is turned to the locked position.
  5. Right solid yellow light indicates that KeySecure™ is in program mode.
  6. Right five yellow light blinks is a visual signal that indicates an error has occurred, such as an incorrect key release pin code entry.
  7. Alternately blinking between left and right lights (five times) indicates an attempted key release with no valid log on or a log on with an invalid Master pin key release code was attempted.
  8. Two red/green flashes indicates, confirmation of a valid variable input. Unit now waiting for additional input to finish command.
  9. Four red/green flashes indicates acceptance and completion of command.
  10. Continuous three yellow blinks in 5 second increments indicates low battery. This condition will persist until the battery is replaced.

## 2.1 Operation

### Key in Secured Position

- You will see the Knox® Master Key secured in KeySecure™.
- The left light on the face of KeySecure™ will be solid green indicating that the Knox® Master Key is secure, power is on and the unit is ready for operation. The right yellow light will be off. The Knox® Master Key will be in the lock at an approximate 45 degree angle (As shown below).
- While secured, you will not be able to turn the Knox® Master Key.
- **WARNING:** Attempting to force the key to turn will result in breaking the key off in the lock rendering the key useless.

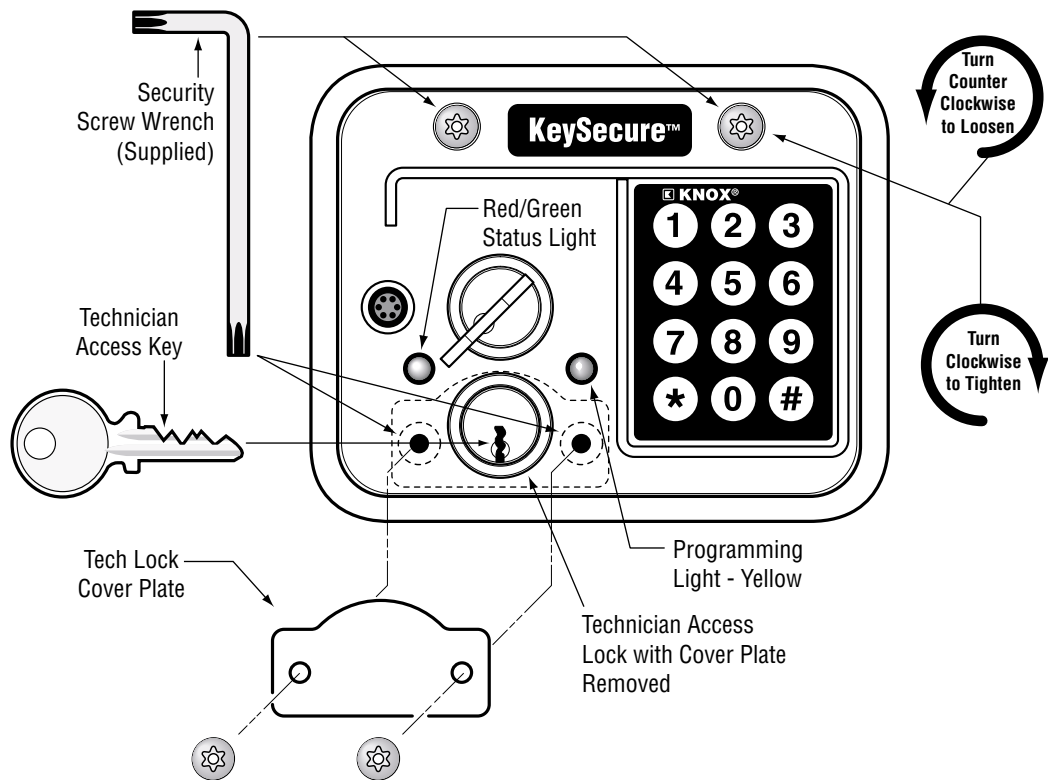


Figure 10

## 2.1 Operation

### 2.1.0 Releasing the Key (Groups Feature Off)

- Step 1** To release the Knox® Master Key, input your 3 to 6 digit key release pin code. As you enter your key release pin code, the green light to the left of the Knox® Master Key and the illuminated keypad will turn off (if illumination) as each button on the keypad is depressed. The green light and the lighted keypad will resume normal illumination, as you release each key button. This feature is visual feedback to the user for indicating key depression.
- Step 2** If you make a mistake, press pound [ # ] to clear. The right yellow light will blink five times. The user does not need to wait until the light stops blinking in order to continue. Because the firmware is interrupt driven, the keypad is constantly being scanned no matter what else is happening except for when the unit is in communications mode.
- Step 3** Once you have entered the correct key release pin code, press the pound [ # ] key (Which functions as the ENTER key) . The code you just entered is compared to the codes stored in the KeySecure™ unit. If a match is found and the key release pin code is an Independent key release pin code , the Knox® Master Key is released for the assigned period. If the pin code entered was a Dependent key release pin code, the left light will blink red/green twice. This double blink confirms a correct Dependent key release code was entered and the unit is waiting for a second key release pin code to be entered. The second Dependent or an Independent key release pin code must be entered in 120 seconds (2 minutes) and the pound [ # ] key pressed. The Knox® Master Key will then be released. If 120 second time lapses, unit returns to normal standby mode.

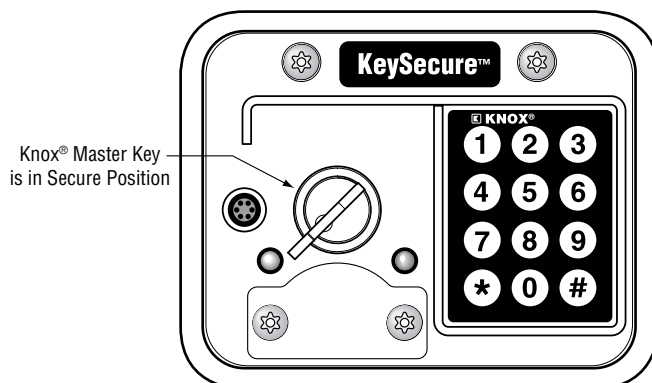


Figure 11

## 2.1 Operation

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- Step 4** During a valid release, the solid green left light will turn to a blinking red light and the keypad will be blinking as well. As long as the light is blinking red, you can turn the Knox® Master Key from the secured position to the unsecured position (counterclockwise) and remove it from KeySecure™.
- Step 5** Once the Knox® Master Key is in the unsecured position (see Figure 11), the left light changes from blinking red to a solid red. The illuminated keypad will stop blinking and return to its previous state.

If the Knox® Master Key is out of KeySecure™ or is turned to the unlocked position (see Figure 12) when the release time elapses, then the red blinking light becomes a solid red light. The keypad also becomes solid red.

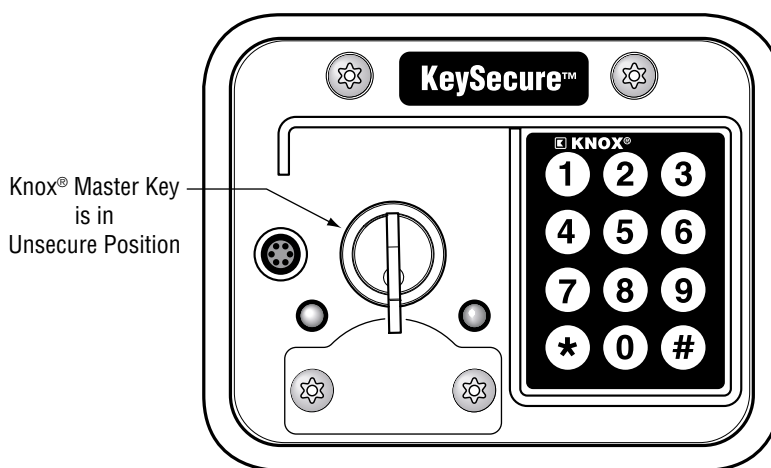


Figure 12

- Step 6** If you turn off power while the Knox® Master Key is out of KeySecure™, simply put the Knox® Master Key into the lock and turn it clockwise to the secure position. You will hear an audible click when the key is locked. It is important to note that the unit Audit Trail will show a key release, key unsecure and unit lost power with key unsecure. If the Knox® Master Key is unsecure at power up, the unit will note that as well.

## 2.1 Operation

---

### 2.1.1 Logging Onto KeySecure 3 (Groups Feature On)

If the “groups” feature has been activated for the KeySecure™ 3 unit, then the user must log onto the KeySecure™ 3 with a Master pin, before the unit will release a key. A manager or shift supervisor logs onto a unit at the start of a shift or day. If he leaves, he then logs off to prevent any Knox® Master Key releases while he is not present. It is important to note that only the users attached to the particular Master pin logged on will get a key release. Other users may be in other groups (attached to another Master pin). Those users will still be disabled from getting a Knox® Master Key release.

**Step 1** To log onto the KeySecure™ 3 unit, type in a Master key release pin code preceded by an asterisk symbol [ \* ] and followed by the pound symbol [ # ] . The Master key release pin code would look like [ \* XXXXXX#]. Where X is a digit and the pin can be 3 to 6 digits long.

**Step 2** Upon pressing the pound [ # ] key, the unit should blink the left light red/green two times. Next type in the group number for the Master pin you just entered and then press pound [ # ] . An example of a group number is [2#] for group two. If the group number exists, the left light will blink red/green four times. You are now logged onto the KeySecure™ unit. To release the Knox® Master Key follow the steps in the previous section for releasing a key without the “groups” feature active.

**Note:** If the “groups” feature is active but no Master pin is logged on, and you enter in a pin, the unit will alternately blink between left and right lights five times. It will also alternately blink between green and yellow lights five times if an invalid pin code is typed in. If you start to log onto a unit and do not complete the logon process before 20 seconds has passed, you will get 5 yellow blinks. You must repeat the logon process from the start by logging on with a valid Master pin and complete the process within 20 seconds by typing in a valid group number. If you type in a new Master pin after completing the initial log on you are automatically logged out of the old group and must now enter the correct group number for the new Master pin you just entered.



## 2.1 Operation

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### 2.1.2 Logging Off KeySecure 3 (Groups Feature On)

- Step 1** To log off the KeySecure™ 3 unit, type in the same Master key release pin code you logged on with preceded by the asterisk symbol [ \* ] and followed by the pound symbol [ # ]. The Master key release pin code would look like [ \* XXXXXX#]. Where X is a digit and the pin can be 3 to 6 digits long.
- Step 2** Upon pressing the [ #] key, the unit should blink the left light red/green four times. You are now logged off the KeySecure™ unit. To verify that you are in fact logged off of the unit and no one is logged in, type in a Master key release pin code. The unit should blink left and right, red or green (depending on Knox® Master Key secure or unsecure), and yellow 5 times. If someone was still logged onto the unit, only the right yellow light would blink 5 times.

To automatically log off of one group you need only log on to a new group. The firmware allows only one group to be logged on at a time. If you have logged on one group, you need only log on to a second new group to log out of the first old group.

**Note:** Turning off power to the unit does not automatically log the user off the unit. If a group and Master key release pin were logged onto the unit when power went off. The Master pin is still logged on when power is restored. You must log off by entering a new Master pin or type in the current Master key release pin code the same way you logged on [ \* XXXXXX#] .

## ***2.1 Operation***

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### **2.1.3 PC KeySecure 3 Software**

- The addition of an audit trail or history to KeySecure™3 increases the security of the unit but decreases the ease of use. This trade-off means that no longer can certain features be changed at the keypad, instead changes must be made at a PC and then downloaded to the units. Also the complexity is increased with the addition of types of PINS for a total of 3 PIN types. We have also introduced “groups” in order to have entire shifts (Groups) logged on and off the units.
- KeySecure™ 3 Audit Trail Collection and Unit Configuration consists of a single PC software application program, two Palm software programs to run on Palm devices and one or more communication cables. The customer may make unlimited copies /installations of the software. All documentation for the software is on the CD in either PDF format or as help screens. The customer also receives an initial configuration file for all the units as they are shipped from KNOX on the CD. The configuration file has a .ksf extension and contains serial numbers, PINs and other codes. Simply copy the .ksf file into the KeySecure 3 folder on your PC hard drive.
- A communications collection cable is supplied for collecting data from a KeySecure™3 using a laptop computer. Two communication cables are available for Palm devices. One cable has the newer Palm universal connector and the other cable has the older Palm connector.
- The KeySecure™ 3 audit trail is designed to start at the PC. At the PC, the user creates the unit configuration and PIN codes. Once the files are created, they can be downloaded to the KeySecure unit with a cable. The unit must be powered up for the download to occur. Upon request, KNOX can supply an AC adapter with quick connect pins (Knox #2680) for this purpose. Any 12 volt DC 3 amp AC adapter will work.

# **KEYSECURE PROGRAMMING - Model 3**

## **3 Programming Steps**

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### **3.0 Introduction**

The KeySecure 3 has 6 different features that may be programmed from the keypad. **The programming mode must be entered at the keypad to edit the following features:**

- Change keypad illumination level
- Toggle keypad illumination on/off
- Change relay settings
- Activate disabled key release pin code
- Deactivate enabled key release pin code
- Change key release time

The security program pin code allows the KeySecure™ administrator to enter program mode. Once you are in program mode, you can change a unit's settings listed above. The KeySecure™ system administrator should be the only person with access to the security program pin code.

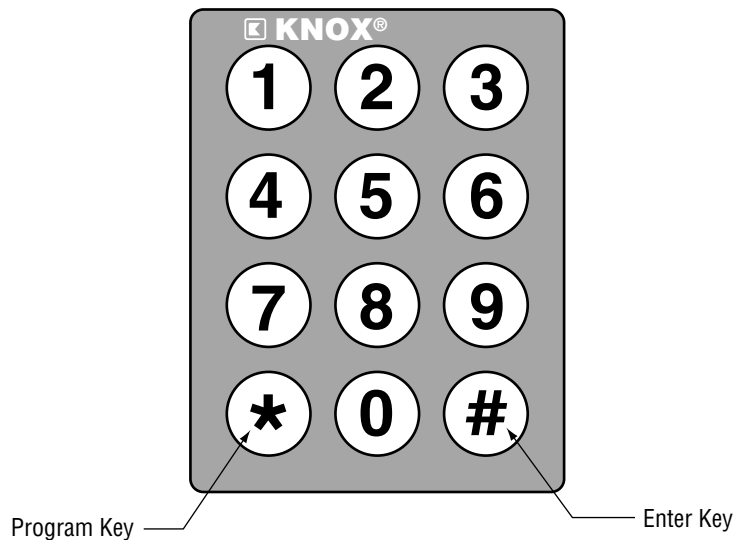


Figure 13

**The administrator performs the following steps:**

**Step 1** Use the keypad to enter program mode. **Type in the 3 to 6 digit security program pin code and press the pound [#] to enter.** If the security pin code is valid, you will see a solid yellow light. Contact the factory if the yellow light blinks 5 times indicating an invalid code.

### **3 Programming Steps**

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**Step 2** The next step is to enter a program command to tell the KeySecure™ unit which feature you wish to change. This command is a 2-digit number preceded by an asterisk **\*** . The asterisk **\*** tells the unit that it is a program command and the following **XX** digits indicate which command is required. See Appendix C at the end of the manual for a list of all the program commands.

**Enter [ \*XX #].**

**Step 3** Type in an asterisk **\*** followed by the command data such as a deactivating a key release pin code or changing key release time. Follow the data by the pound **#** to enter. You will see 5 yellow blinks if an incorrect entry is made.

**Step 4** **To exit program mode, enter [ \* \*#].** The solid yellow light will turn off, indicating the KeySecure™ unit is no longer in program mode.

These are the four basic programming steps for changing information in the KeySecure™ unit. KeySecure™ will always have only 1 security program pin code. The unit can have from 500 to 2,000 key release pin codes, depending on the size of the memory chip.

## ***3.1 Change Keypad Illumination***

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**Step 1** Type in the current security program pin code [ **X X . . . X #**] to enter program mode (**X** represents a digit 0 to 9. Pound **#** is the ENTER key for the KeySecure™ device.) The yellow light turns on solid.

**Step 2** Type in the program command [ **\* 1 1 #**] to change keypad illumination.  
**Note:** After you have entered the program command to change the illumination, the left light will flash Red/Green twice, indicating that the unit is awaiting another entry.

**Step 3** Type in the backlight illumination level from 1 to 9, (9 being the brightest.) as [ **X #**].  
**Note:** You do not need to enter the [ **\***] key before entering the intensity level. The backlight illumination will change the moment you make this entry.

**Step 4** Type in [ **\* \* #**] to exit program mode. The yellow light turns off.

**Note:** **If you make a mistake during programming mode you will see 5 yellow blinks. Simply start over at Step 2 by typing in the program command, then type in the desired illumination level. When an error occurs, you always have to restart at the program command (Step 2) so that the KeySecure™ unit knows what feature you wish to edit.**

## **3.2 Toggle Keypad Illumination**

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**Step 1** Type in the security program pin code [ **XX . . . X #**] to enter program mode. The yellow light turns on solid.

**Step 2** Type in the program command [ **\* 1 2 #**] to toggle the backlight illumination of the keypad on or off. You should see the backlight turn on or off depending on the current status of the backlight. If any errors occur during this entry, repeat this same step as long as the unit is still in programming mode.

**Step 3** Type in [ **\* \* #**] to exit program mode. The yellow light turns off.

**Note:** **If you make a mistake during programming mode you will see 5 yellow blinks. Simply start over at Step 2 by typing in the program command. When an error occurs, you always have to restart at the program command (Step 2) so that the KeySecure™ unit knows what feature you wish to edit.**

### **3.3 Change Relay Setting**

---

**Step 1** Type in the security program pin code [ **X X . . . X #** ] to enter program mode. The yellow light turns on solid.

**Step 2** Type in the program command [ **\* 2 1 #** ] to change the relay setting. The left light will flash Red/Green twice indicating the unit is awaiting another entry.

**Step 3** Type in [ **X#** ] where **X** is 1, 2, or 3

- [ **1 #** ] Relay switch closes while master key lock is released or while master key is in an unsecured position
- [ **2 #** ] Relay switch never closes. (Relay turned off)
- [ **3 #** ] Relay Switch opens and closes for a user defined amount of time during lock release and while key is in unsecured position. When this entry is made [ **3 #** ] , you will see the left LED flash Red/Green twice, indicating that it is still awaiting another entry. You will now need to enter the amount of time, in tenths of seconds, for example [ **10 #** ] for one second intervals. Range of entry on keypad will be 1 to 600, (or 1/10 of a second to 60 seconds). After the desired length of time has been entered, you will see the left LED flash Red/Green 4 times indicating the entry has been accepted. This setting is not meant to be used with self-contained strobe lights.

**Step 4** Type in [ **\* \* #** ] to exit program mode. The yellow light turns off. Release the key to verify the new settings are working.

**Note:** **If you make a mistake during programming mode you will get a blinking yellow light. Simply start over at Step 2 by typing in the program command, then type in the data. When an error occurs, you always have to restart at the program command (Step 2) so that the KeySecure™ unit knows what feature you wish to edit.**

### **3.4 Activate Key Release Pin Code**

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**Step 1** Type in security program pin code [X X . . . X #] to enter program mode. The yellow light turns on solid.

**Step 2** Type in program command [ \* 3 1 #] to activate a Knox Master Key release code.

**Step 3** Enter the release code that you wish to activate [X X . . . X #]. If any mistakes are made during the procedure, you must go back to Step 2 as long as you are still in programming mode.

**Step 4** Type in [ \* \* #] to exit program mode. The yellow light turns off. The key release pin code entered should be active.

**Note:** If you make a mistake during programming mode you will get 5 yellow blinks. Simply start over at Step 2 by typing in the program command, then type in the release code desired. When an error occurs, you always have to restart at the program command (Step 2) so that the KeySecure™ unit knows what feature you wish to edit.



### **3.5 Deactivate Key Release Pin Code**

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- Step 1** Type in the security program pin code [X X . . . X #] to enter program mode. The yellow light turns on solid.
- Step 2** Type in program command [ \* 3 2 #] to deactivate a Knox Master Key release pin code.
- Step 3** Enter the release code you wish to deactivate [X X . . . X #]. If any mistakes are made during the procedure, you must go back to Step 2, as long as you are still in programming mode.
- Step 4** Type in [ \* \* #] to exit program mode. The yellow light turns off. The key released pin code entered should now be deactivated.

**Note:** If you make a mistake during programming mode you will get 5 yellow blinks. Simply start over at Step 2 by typing in the program command, then type in the data. When an error occurs, you always have to restart at the program command (Step 2) so that the KeySecure™ unit knows what feature you wish to edit.

## **3.6 Change Key Release Time**

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- Step 1** Type in the security program pin code [ **X X . . . X #**] to enter program mode. The yellow light turns on solid.
- Step 2** Type in program command [ **\* 4 1 #**] to change master key release time.
- Step 3** Type in [ **X X. #**], where **X** can be a one or two digit release time in seconds. The number must be between 3 and 20. If you would like to edit the entry, or if a mistake has been made, you must go back to **Step 2** while you are still in programming mode.
- Step 4** Type in [ **\* \* #**] to exit program mode. The yellow light turns off. Release the key to verify the new settings are working.

**Note:** If you make a mistake during programming mode you will get 5 yellow blinks. Simply start over at Step 2 by typing in the program command, then type in the data. When an error occurs, you always have to restart at the program command (Step 2) so that the KeySecure™ unit knows what feature you wish to edit.

### **3.7.1 Appendix A - KeySecure™ 3 Electrical Information**

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Temperature Range: \_\_\_\_\_ -40° C to +80° C (-40° F to 176° F)

Power Supply Input Range: \_\_\_\_\_ 10 to 15 volts DC @ 3 amps

Current Drain (Standby): \_\_\_\_\_ 50 milliamps

Current Drain (Key Release): \_\_\_\_\_ 2.5 amps

Current Drain (Key Out): \_\_\_\_\_ 100 milliamps

Initial Power Stabilization Time: \_\_\_\_\_ 5 seconds

Absolute Max Input: \_\_\_\_\_ 20 volts DC

Relay Current Rating \_\_\_\_\_ 3 amps

### **3.7.2 Appendix B - KeySecure™ 3 Program Commands**

<b>Command</b>	<b>Description</b>
<b>*11#</b>	<b>Change Keypad Illumination level</b>
<b>*12#</b>	<b>Toggle Keypad Illumination on/off</b>
<b>*21#</b>	<b>Change Relay Setting</b>
<b>*31#</b>	<b>Activate Key Release Code</b>
<b>*32 #</b>	<b>Deactivate Key Release Code</b>
<b>*41#</b>	<b>Change Key Release Time</b>

### 3.7.3 Appendix C - Status by Light Display

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The KeySecure™ left light on the face can be red or green, and the right light is yellow only.

#### SIGNALS

**Signal 1: Green light on solid and Yellow light off.**

The Knox® Master Key is secure and everything is normal.

**Solid Green**   **Off**

**Signal 2: Red light blinking during release time and Yellow light off.**

The unit has released the key for a period of 3 to 20 seconds.

During this time, the key can be turned counter clockwise and removed.

**Blinking Red**   **Off**

**Signal 3: Red light on solid and Yellow light off.**

The key is not secured.

The key has been removed or is turned to the unlocked position.

**Solid Red**   **Off**

**Signal 4: Yellow light blinks 5 times and left light is Red or Green.**

Error has occurred.

The data input was incorrect or unrecognized.

**Red or Green**   **Blinking Yellow**

**Signal 5: Yellow light on solid and left light is Red or Green.**

Programming mode.

**Red or Green**   **Solid Yellow**

### 3.7.3 Appendix C - Status by Light Display

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**Signal 6: Blinks back and forth Yellow and Red/Green.**

Invalid Master pin input.

No Master Pin logged in and User attempted to input independent or dependent pin.

**Blinking Red or Green**  **Blinking Yellow** 

**Signal 7: Red/Green 2 or 4 Blinks and Yellow off.**

2 Red/Green Blinks log in with valid Master pin accepted.

4 Red/Green Blinks input group number correct and log in complete.

**Blinking Red/Green**  **Off** 

**Signal 8: Continuous Triple Blinking Yellow Light.**

Right Yellow light blinks continuously in sets of three every few seconds. The left light can be doing anything. The blinking indicates low battery.

**Red/Green**  **Triple Blinking Yellow** 

The green light and illuminated keypad go out each time you depress a key button on the keypad, providing a visual signal that the key is depressed. When the key button is released the green light and illuminated keypad turn back on.

## 3.7.4 Appendix D - KeySecure™ 3 Troubleshooting

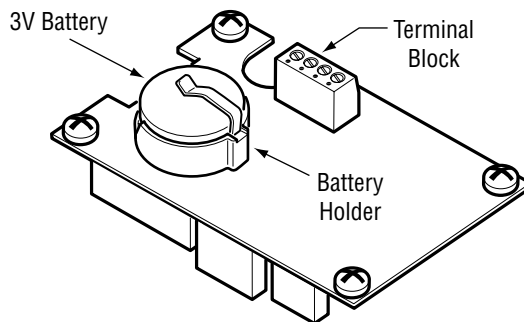
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### 3.7.4.1 Change Battery In Unit

An indication that the battery needs to be replaced in the KeySecure™3, is that the unit continuously blinks the yellow light on it's face threes times every second. Another indicator is the unit time is wrong every time the unit powers up after being off for several minutes.

The battery in the KeySecure™3 unit is responsible for keeping the clock running when power to the unit is removed. Under normal conditions the battery should last 5 to 6 years. The battery is a 3 volt 1000 MAH Lithium Coin Cell. Part numbers for the low temperature batteries are Panasonic CR2477 and Renata CR2477N. The high temperature batteries come with metal tabs (for soldering to the printed circuit board) welded to the battery can. Part Numbers for high temperature batteries are Panasonic CR2477/HB and Dantona CR2477/HB. The batteries may be obtained from KNOX, Drug Stores or Camera Stores that stock calculator, watch & camera coin cells.

To change the battery, disassemble the KeySecure™3 unit (refer to product manual). Remove power from the unit. Remove the paper insulator shield by removing the four printed circuit board mounting screws (Figure 14).



**Figure 14** - KeySecure 3 battery location.

### ***3.7.4 Appendix D - Troubleshooting***

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Use a small straight slot screw driver to slide the battery out of the battery holder. Next prep the battery holder for the new battery by inserting the screw driver under the clip on the bottom of the holder and push up. Push the top or + battery holder steel clip down. Adjusting these two clips now ensures the new battery will be held snugly in position. Next , insert the new battery into the battery holder with the plus (+) or positive side facing up, away from the printed circuit board. Reinstall the board and insulator paper shield on the face module's four mounting posts.

On units with the high temperature batteries (soldered in), the procedure for replacement of the battery is the same, except the old battery must be unsoldered from the printed circuit board. The new battery must then be soldered into position. It is recommended that the customer send the unit back to the factory for high temperature battery replacement, unless the customer is very technically proficient with electronics.

Once the battery is in it's holder and the board (with paper insulator shield) is screwed to it's posts, reapply power. Cycle power on/off three or four times. The lights and keypad should be illuminated when power applied. The Final step is to set the units clock to the correct time and date. Next perform an Audit Trail Collection making sure the time and date on the PC is correct. Collecting the Audit Trail will reset the KeySecure™3 unit's internal clock to the PC's time. Collect the Audit Trail a second time to verify the time in the unit is now correct. Finish reassembling the KeySecure™3 unit in it's housing per product manual. You are done.

## 3.7.4 Appendix D - Troubleshooting

### 3.7.4.1 Reset KeySecure 3 Unit

If power is supplied to the unit, but the keypad and front two lights are not illuminated, the unit may be lost in its own firmware program. This situation is similar to Windows locking up on your PC. In order to correct the PC, you cycle power on/off to reset the computer. The same step must be taken with the KeySecure™3 unit, however the unit's 3 volt battery keeps the microcomputer in the KeySecure™3 from ever really turning off when power is taken away. Even with power taken away and the battery taken out, the capacitors on the printed circuit board allow the microcomputer to run for several minutes. The customer must try one of the following two procedures to reset the KeySecure™3 unit.

#### On KeySecure 3 Units Shipped After 11-15-03:

To reset the KeySecure™3 remove power from the unit. Using a small screw driver, short pins 2 and 4 on the 14 pin header (marked SV1 on the printed circuit board) together for 1 second. See Figure 15. The 14 pin header is located next to the notch in the printed circuit board for the radio tech bolt. Simply place the screw driver or shunt on top off the two pins to short them together. If some other pins are shorted as well, it will not hurt anything.

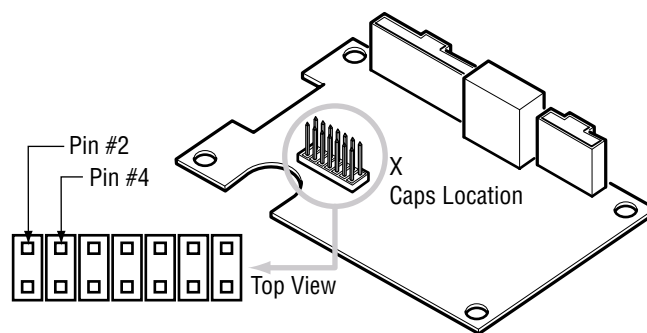


Figure 15 - KeySecure 3 14-pin header.



### ***3.7.4 Appendix D - Troubleshooting***

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#### **On KeySecure 3 Units Shipped Before 11-15-03:**

You will need to remove power from the unit and short out C3 or C4 on the board. To get to the capacitors, you will need to unscrew the 4 board mounting screws and unplug 2 of the 3 cables going to the board. To unplug the connectors use a small screw driver to push the locking latch in and the connector out of mating connector.

**Warning: Short the pins or a capacitor for only a second! Shorting either of these, also shorts the battery, which drains the battery reducing it's life-span.**



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