Radio Key[®] RK-65K RK-65KS with RK100M instructions

STAND ALONE PROXIMITY ACCESS CONTROL SYSTEM

with DYNASCAN® TECHNOLOGY*



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Operating Guide Rev. C

A Division of Soundcraft, Inc. 20301 Nordhoff Street Chatsworth, CA 91311 Phone: 818-882-0020 • Fax: 818-882-7052 Website: www.securakey.com 817027 E-mail: mail@securakey.com

*U.S. Patent #6317027

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Radio Key[®] RK-65K/RK-65KS Operating Guide

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INTRODUCTION

The Radio Key[®] RK-65K is a programmable single-door access control system which controls access for up to 65,000 users. It can control an electric strike, magnetic lock, or gate operator, and has an additional programmable input which may be set as a remote open input or as an LED/Beeper control for use with the Wiegand output. A Wiegand output is also provided to allow for later upgrading to an on line system. Information on using the RK-65K as a Wiegand reader is contained on page 18 The major components are shown in Figures 1 and 2.

The Radio Key[®] RK-65K Access Control Unit contains the CPU, memory, access relay, and an internal reader. It has a beeper, and a bi-color LED indicator. An RK-HHP Handheld Programmer or an RK-PD1 Program Deck (not included), is used to add or delete transponders, to set the operating mode, to program the password and latch timer. The Radio Key[®] RK-65K is compatible with the Secura Key SecuRelay[™], an intelligent relay module used to eliminate the possibility of break-in by attacking the access control unit.

The current version of this product also replaces the RK100M. The RK100M reads randomly encoded tags and supports only 100 users. To convert this unit to RK100M mode, follow the instructions on Page 21.



Figure 1 - Radio Key® RK-65K & RK-65KS Units

NOTE: All references to RK-65K also apply to the RK-65KS.



Figure 2 - Programming Deck (RK-PD1) & Hand-Held Programmer (RK-HHP)

NOTE: Programming sequences are the same using RK-PD1 or RK-HHP

ORDERING TRANSPONDERS

The Radio Key[®] RK-65K works with Secura Key RKCM-02 molded (clamshell) cards, RKCI-02 ISO-standard cards and RKKT-02 key ring tags. Card Format 303 and Format 201 can be used.

When you order Format 303 transponders for a new project you will be assigned a new Facility Code and your transponders will begin with ID number 1. As you need additional cards or tags you can order the same Facility Code, specifying the starting number, which will be one digit higher than your highest existing transponder.

If you use Format 201, these are shipped from stock and you may receive cards or tags with a different Facility Code than you originally programmed into the reader. The RK-65K can learn up to 10 different Facility Codes. If it becomes necessary to mix transponders with more than one Facility Code in the same reader, be sure that the transponder ID numbers are not duplicated.

NOTE: RKxx-01 cards or keytags will not work for the RK65K. The LED will flash amber to let you know it is the wrong type of card.

PROGRAMMING RADIO KEY® RK-65K

When the RK-65K is first powered up, the LED will be flashing Red and Green. Present a card to the unit to set the Facility Code and the flashing will end in approximately 10 seconds.

Radio Key Transponders (Key tags and cards) are pre-encoded and engraved at the factory with a Facility (Site) Code and an individual card ID number.

You must teach the RK-65K which Facility Code or Codes (up to 10) it should recognize. You must also enroll the card ID numbers that will be Valid. The Radio Key® cards and tags are sequentially numbered, so you can validate a block of transponders.

Be sure to make a record of each person who is issued a transponder along with the ID number of their card or tag.

PROGRAMMING RADIO KEY® 100M

Radio Key[®] Transponders (Key Tags and Cards) are pre-encoded and engraved at the factory with unique Transponder ID numbers. Because these numbers are unique, Facility Codes (Site Codes) are not required.

Transponder ID Numbers are not pre-programmed into the Radio Key[®] 100M; you must add them to the system as described below.

Radio Key[®] 100M allows you to assign a Transponder to each **User ID Number** (1 - 100) for programming purposes. The User ID Number is associated with the individual person using the transponder.

Be sure to record the User ID Number, the Transponder ID Number and the user's name, and keep this information in a secure place. A blank User Log Form has been included for this purpose. Do not write on this form; use it as a photocopy master.

Because a new Transponder ID Number can be assigned to any available User ID Number, the reader always has capacity to store 100 Transponders, even after many Transponders have been voided from the reader. Radio Key® RK-65K

THE RK-HHP HANDHELD PROGRAMMER AND THE RK-PD1 PROGRAM DECK

Note: The RK-PD1 or the RK-HHP is required to program the reader. One RK-PD1 or RK-HHP may be used on several readers.

The RK-PD1 consists of the 16 following cards:

≁	ENTER	"7"	SEVEN
"0"	ZERO	"8"	EIGHT
"1"	ONE	"9"	NINE
"2"	TWO	"★"	THRU
"3"	THREE	"+"	VALID
"4"	FOUR	""	VOID
"5"	FIVE	8	SET TIMER
"6"	SIX	••••	MODE

Presenting these cards to the Radio Key[®] RK-65K is equivalent to pressing the identically marked keys on the RK-HHP handheld programmer. As you present program cards to the unit, it will chirp to indicate that it has read the card. The next sections of this manual explain the program card sequences used to perform the various program functions.

PROGRAMMING STEPS

To program the Radio Key[®] RK-65K, you must first enter the program mode as described in the next section below. Once in the program mode, the LED will blink amber as an indicator. To take the unit out of program mode you may select an operating mode (see page 14) or simply allow 15 seconds to elapse without presenting a program card to the reader.

After you have completed a proper program sequence, the unit will beep and the LED will flash green to indicate that the program instruction has been accepted. A red light and a beep at the end of a programming sequence means that you have made an error. Refer to the appropriate section, and carefully re-enter the command in the proper sequence.

NOTE: User ID Number and ID Number Values in the following examples are for demonstration purposes only; enter the appropriate values for your system.

To Enter Program Mode (RK65K/RK100M):

Using your programmer, enter your password and then press "ENTER". (All new units are pre-programmed with the password 12345.) The LED will flash amber to show that the unit is in Program Mode. The unit will "time out" and return to Active (Normal) Mode in 15 seconds if no programming follows.



NOTE: If five incorrect passwords are entered, the unit will sound an alarm and display a red LED for 30 seconds, then return to normal mode.

Change your Password (RK65K/RK100M):

Put the unit into the Program mode, if necessary (See above). Press THRU. Then enter the sequence of digits representing the desired new password (exactly 5 digits). Then press THRU again. Repeat the new password. Press ENTER. A green light and beep means that the Password was changed. Note that 12345 is the default (factory) password; use another number sequence for best security.



Lost or forgotten Password (RK65K/RK100M)

If the password is lost or forgotten, it can be restored to the factory default (12345). Remove the Radio Key[®] RK-65K unit from the wall and disconnect power. With the Data 1 line (white wire) temporarily connected to the Remote open line (brown wire), restore power. The factory default (12345) is now in effect. The LED will flash alternately Red and Green. While this is occurring, set the Facility Code or Codes in the reader (see below). Remove power and reconnect the unit for operation, restore power and remount the unit. This procedure will NOT delete any transponders from reader's memory.

Setting Facility Code(s) (RK65K)

Before any cards are added to the RK-65K you must set the Facility Code or Codes. When a new reader is first powered up the LED should be flashing alternately Red and Green. This indicates that the unit is in the "Learn Facility Code" mode.

You can also place a reader in this mode by entering the Program Mode (see page 8) then pressing Mode followed by "9" followed by Enter.



While the LED is flashing Red/Green present one User Card for each Facility Code being used to the reader, one at a time. After you are finished, allow the reader to time out and return to the Normal Mode before proceeding. **NOTE**: An invalid facility code will beep with no LED visible.

ADDING AND DELETING USERS (RK65K)

Add A Transponder (Key Tag or Card) To The System:

Place the unit in the Program Mode (See Page 8). Press Add, followed by the sequence of digits representing the Transponder ID number. Then press Enter. For example, to add transponder #12 to the reader the following sequence would be followed:



Add A Series Of Transponders To The System (RK65K): Place the unit into the Program mode (see Page 8). Press Add, followed by the sequence of digits representing the lowest transponder ID number. Then press Thru, followed by the sequence of digits representing the highest transponder ID number. Then press Enter. For example, to add transponders #1 through #10 to the system:



Transponder number 1 through 10 are now valid.

Delete A Transponder From The System (RK65K):

Place the unit in the Program Mode (see Page 8). Press Void, followed by the sequence of digits representing the transponder ID number. Then press Enter. For example, to delete transponder #12, the following sequence would be presented:



Transponder #12 is now void.

Delete A Series Of Transponders From The System (RK65K): Place the unit in the Program Mode (see Page 8). Press Void, followed by the sequence of digits representing the lowest transponder ID. Then press Thru followed by the sequence of digits representing the highest number transponder. Finally, press Enter. For example, to delete transponders #1 through #10:



Transponders #1 through #10 are now void.

Set the Latch Timer (RK65K/RK100M):

Put the unit into the Program mode, (See Page 8). Press SET TIMER, then press the sequence of digits representing the desired Latch Time (0 - 65535 seconds) to the unit. Press ENTER. A green light and beep means that the Latch Timer setting was changed. (If you set the Latch Timer for "0" seconds, the actual latch time will be approximately 0.25 seconds.) For example, to set the latch timer to 15 seconds, the following sequence would be followed;



For longer latch times it may be easier to set the timer with hour: minute notation. Press SET TIMER; then press the sequence of digits representing the number of hours (2 digits); then press the sequence of digits representing the number of minutes; then press THRU; then ENTER. (The maximum relay time is 18 hours and 00 minutes.) For example, to set the latch timer for 2 hours and 45 minutes the following sequence would be followed:



If you have set an extended latch time, but need to interrupt it, follow this procedure. Put the unit in Program Mode (see Page 8). Then press Set Timer then "1" then Enter. After the Program Mode expires, present a valid card to the reader. After one second the relay will return to it's normal state. You will then have to reprogram the latch timer to the desired duration.

PROGRAMMING HINTS:

Setting the Latch Timer (RK65K/RK100M):

The latch timer controls the latch relay. The factory preset latch time is 1 second but it can be changed to any value from .25 seconds to 18 hours. If the latch timer is set to 0 seconds, this pulses the latch relay for 0.25 second, sufficient for most electric turnstiles. The beeper and LED are always fixed at one second.

Set the Operating Mode (RK65K/RK100M):

The Radio Key[®] RK-65K may be put into any of four operational modes. The Modes are as follows;

```
"1" - Active (Normal) -- LED is Off
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"2" - Inactive (Locked) -- LED blinks Red
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"3" - Door Unlocked -- LED blinks Green
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"4" - Toggle Mode - LED is Off
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In mode 1, a valid tag or closure of the remote open input will activate the relay for the time the latch timer is set.

Mode 2 deactivates the unit. No tag can activate the relay, but the remote open input will activate the relay.

In mode 3, the door is kept unlocked (the relay is kept latched).

In mode 4, when a valid tag is presented or the remote open input is activated, the relay changes its state from deactivated to activated or from activated to deactivated. The relay will stay in this state until another valid tag is presented or the remote input is activated and so forth. To set the Operating Mode, put the unit into the Program mode, (See Page 8). Press MODE, then press either "1", "2", "3", or "4". Press ENTER. The Access Control Unit will exit Programming Mode and enter the selected Mode. For example, to set the unit to the inactive (locked) mode, the following sequence would be followed;

To Exit Programming Mode Immediately (RK65K/RK100M): Press MODE, then "1" (or 2, 3, or 4) card to the unit. Press ENTER. This returns the unit to the selected mode immediately, bypassing the 15 second timeout.



Timed Antipassback(RK65K)

Timed antipassback is used to discourage card sharing. After one successful card use, the unit will treat that card as Void for a preset number of minutes. When timed antipassback is enabled, it will apply to all valid cards.

Enable Timed Antipassback (RK65K):

Place the unit in the Program Mode (see Page 8). Press SET TIMER, then press ADD, finally press ENTER.



Set Antipassback Timer (RK65K):

Place the unit in the Program Mode (see Page 8). Press SET TIMER then press THRU. Press the digits representing the maximum number of minutes you want antipassback to apply (01 – 99). Press ENTER. (Antipassback can be from one to ninety-nine minutes. Depending upon the clock cycle of the unit when a card is read, the actual antipassback time may be as little as one-half the time selected.)



Disable Timed Antipassback (RK65K):

Place the unit in the Program Mode (see Page 8). Press SET TIMER then VOID, finally press ENTER.



Configure the Relay (RK65K/RK100M)

The relay is set at the factory to be normally open and to close upon presentation of a valid transponder or upon activation of the remote open (Request to Exit) input. It may be changed to normally closed or to SecuRelay[™] operation. A normally open relay is used for a "fail-secure" electric lock or door strike and to trigger a gate operator. A normally closed relay is used for "fail-safe" devices such as magnetic locks. The Secura Key SecuRelay[™] (sold separately) is a remote intelligent relay used to prevent entry when the access control unit is physically attacked. (NOTE: When placed in the SecuRelay[™] mode the "Remote Open" input is disabled.) To configure the relay, put the unit in the Program mode (See Page 8). Press THRU two times. Then press either the "6", "7" or "8". Press ENTER. Selections are:

6.	Normally Open (Factory default)
7.	Normally Closed
В.	SecuRelav™ Option.

For example, to configure the relay normally closed, the following sequence would be followed:

Using the RK-65K as a Wiegand Output Reader (RK65K/RK100M) The RK-65K can be connected to a multidoor access control system (such as the Secura Key SK-ACP) using the Wiegand output. When any Radio Key[®] transponder is presented to the unit, whether or not it has been programmed into the unit, the appropriate transponder ID will be sent out via the white and green wires.

Program the Input (RK65K/RK100M)

The input is set at the factory as a Remote Open input. Connecting the brown and the orange wire (usually with a push button switch) will activate the relay for the time set for the latch timer. This input may also be configured as an LED control or as an LED/beeper control. When configured as an LED control, grounding the brown wire will turn on the Red LED, grounding the orange wire will turn on the Green LED and grounding the yellow wire will turn on the beeper.

To configure the input, put the unit into the Program mode, (See Page 8). Press THRU TWICE. Then press either the "1" or "2" button. Press ENTER. Selections are:

"1" - Remote Open (Factory default). "2" - LED Control. For example, to program the input for LED control, the following sequence would be followed:



BASIC OPERATION (RK65K/RK100M)

To use a Key Tag with Radio Key[®] RK-65K, simply hold your Radio Key[®] Transponder near the Radio Key[®] RK-65K Unit. The Radio Key[®] RK-65K Unit generates an RF field, which causes the Key Tag to transmit a unique Transponder ID Number back to the Unit.

If the Transponder ID Number is stored in memory, the latch relay is activated, unlocking the controlled door or gate . A green light and a beep indicates that access is granted. If the Transponder ID Number is not stored in memory, the door or gate remains locked and a red light and beep indicate that access is denied. Otherwise the LED is normally off. Remote Open (Request to Exit) Input (RK65K/RK100M)

When the Remote open input is activated, the relay will activate. When the remote open input is deactivated, the relay will return to the inactive state after the latch timer times out. A green light and a beep indicates that access is granted.

NOTE: Remote Open Input is disabled when the unit is configured for use with SecuRelayTM.

CONVERTING TO RK100M MODE

The RK100M has been replaced by the new RK-65K. The RK100M was designed to read randomly numbered cards and tags without facility codes (RKCM-01, RKKT-01). The RK100M unit is only able to enroll up to 100 users. If you need to replace an existing RK100M, or if you want a reader that uses random cards and tags, you may convert this product to the RK100M mode, as shown below.

In the RK100M mode, some programming steps differ from the RK-65K. The following section also describes those different program steps.

Converting between RK-65K and RK100M modes:

Place the unit in the Program Mode (see Page 8). Press MODE, followed by "5" (for RK65K mode) or "6" (for RK100M mode). Press ENTER. (RK-65K mode is the default.)



ADDING AND DELETING USERS: RADIO KEY® 100M

Radio Key[®] Transponders (Key Tags and Cards) are preencoded and engraved at the factory with unique Transponder ID numbers. Because these numbers are unique, Facility Codes (Site Codes) are not required. The steps for adding and deleting users is different from the RK-65K. Follow the directions on the following pages.

Transponder ID Numbers are not pre-programmed into the Radio Key $^{\circ}$ 100M; you must add them to the system as described below.

Radio Key® 100M allows you to assign a Transponder to each User ID Number (1 - 100) for programming purposes. The User ID Number is associated with the individual person using the transponder.

Be sure to record the User ID Number, the Transponder ID Number and the user's name, and keep this information in a secure place. A blank User Log Form has been included for this convenience.

Because a new Transponder ID Number can be assigned to any available User ID Number, the reader always has capacity to store 100 Transponders, even after many Transponders have been voided from the reader. Add a Transponder (Key Tag or Card) to the System:

Put the unit into the Program mode (See Page 8). Press ADD, then press the sequence of digits representing the desired User ID Number (1-100), then press ENTER. Hold the Transponder near the Unit. A green light and beep means that the Transponder was accepted. For example, to program a transponder into User ID Number 12, the following sequence would be followed;



Record the User ID Number and Transponder ID Number.

NOTE: If you assign a new transponder to a User ID Number where another transponder was already assigned, the new transponder will replace the old transponder for that User ID Number.

NOTE: Adding the Same Transponder More Than Once If you add the same Transponder to the system more than once, the Transponder ID will be deleted from the previous User ID Number position and added to the newest User ID Number position.

Add a Transponder by Entering the Transponder ID:

Instead of presenting the transponder, you can also use the Programmer to enter the Transponder ID number: Put the unit into the Program mode (See Page 8). Press ADD then press the sequence of digits representing the desired User ID Number (1 - 100). Press THRU. Press the sequence of digits representing the ID number printed on the Transponder, then press ENTER. For example, to program a Transponder ID Number 995 into User ID Number 12, the following sequence would be followed;

Record the User ID Number and Transponder ID Number in the User Log Form.

NOTE: If you assign a new transponder to a User ID Number where another transponder was already assigned, the new transponder will replace the old transponder for that User ID Number.

Add a Series of Transponders to the System:

Put the unit into the Program mode (See Page 8). Press ADD, then press the sequence of digits representing the desired

starting User ID Number to the unit. Press THRU. Then press the sequence of digits representing the desired ending User ID Number. Press THRU, then press ENTER. Present the Transponders to the reader in the desired order (making a careful record of which transponders are assigned to which User ID Numbers). If one or more Transponders are already entered into the User ID Number range you have selected, they will be overwritten. For example, to program ten transponders into User ID Numbers 1 through 10, the following sequence would be presented;



then present the ten transponders to the unit one at a time.

Delete a Transponder from the System:

Put the unit into the Program mode (See Page 8). Press VOID, then press the sequence of digits representing the desired User ID Number (1 - 100). Then press ENTER. A green light and beep means that the Transponder was deleted. For example, to delete the transponder for User ID Numbers 12, the following sequence would be executed;



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Delete a Range of Transponders from System:

Put the unit into the Program mode (See Page 8). Press VOID, then press the sequence of digits representing the desired starting User ID Number. Press THRU, then press the sequence of digits representing the desired ending User ID Number. Finally, press ENTER. A green light and beep mean that the range of Transponders was deleted.



Delete a Transponder by Presenting to Reader:

Put the unit into the Program mode (See Page 8). Press VOID, then press ENTER. Hold the Transponder near the Radio Key[®] 100M Unit. A green light and beep means that the Transponder was deleted.



(Hold Key Tag near Unit)

Delete a Transponder by Entering Transponder ID:

Put the unit into the Program mode (See Page 8). Press VOID. Press THRU, then press the sequence of digits representing the ID number printed on the Transponder. Finally, press ENTER. A green light and beep means that the transponder was deleted. For example, to delete Transponder ID Number 995, the following sequence would be followed;

WARRANTY (U.S. and Canadian)

"This product is warranted against defects in materials and workmanship for life. Secura Key shall, at its option, either replace or repair this product, if returned to us freight prepaid within the warranty period. This warranty does not include freight, taxes, duties, or installation expenses THE WARRANTY SET FORTH ABOVE IS EXCLUSIVE AND NO OTHER WARRANTY. WHETHER WRITTEN OR ORAL. IS EXPRESSED OR IMPLIED. SECURA KEY SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. The remedies provided herein are the buyers' sole and exclusive remedies. In no event shall Secura Key be liable for direct, indirect, special, incidental or consequential damages (including loss of profits), whether based on contract, tort or any other legal theory." Contact Secura Key for Card/Tag and Export Warranty Policies.

Radio Key® RK-65K

SPE	CIFIC	ATIONS	5
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Models	<u>RK-65K</u>	<u>RK-65KS</u>
Physical Depth Width Height Weight Material Color	0.60" (1.52 cm) 1.60" (4.06 cm) 3.50" (8.89 cm) 2.88 oz. (81.65 gm) ABS Black	0.84" (2.13 cm) 3.20" (8.12 cm) 4.50 (11.43 cm) 6.67 oz. (189.15 gm Lexan® Beige

Power Requirements 5-14 VDC, 90 mA Max., 40 mA Idle

 Wiegand Output
 Any Wiegand Format up to 40 bits

 Maximum Distance:
 500 Ft.- 5 or 6 conductor 20 gauge shielded cable

Outputs

SPST Solid State Relay, 1A max. @60 VAC or DC. Normally open or normally closed (field programmable). May also be used with SecuRelay[™] intelligent relay module (sold separately).

Inputs

Programmable as Remote Open (requires contact closure); Bicolor (Red or Green) LED Control or Buzzer/LED Control

Environment

Ambient Temperature Humidity -40° to +70° C (-40° to +158° F) 0% to 100% (non-condensing)

Operational

Reading Distance Molded Card: Up to 6" (15.24 cm) Key tag & ISO Card: Up to 5" (12.70 cm) User Capacity **RK-65K**: 65,000 key tags or cards (26 or 32 bit), 10 Facility Codes **RK-100M mode**: 100 tags/cards (random numbered only)

Card/Key Tag Operation Transmit Frequency	Passive 125 kHz
Memory	Non-Volatile
Latch Timer	Programmable
	0.25 sec. to 18 hours or Toggle Mode

Accessories

RK-HHP	Hand-held Programmer
RK-PD1	Proximity Programming Deck
RK600-PS	9VDC, 200 mA, plug-in Power Supply,
	120 VAC Input. For Access Unit Only.
SK-SR	SecuRelay [™] - Smart relay module, DPDT.

This product complies with UL 294 Standards, with Part 15, Class B FCC Rules and (European Standards).

FCC ID: NNHRK-100M INSTRUCTION TO THE USER

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more or the following measures:

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

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.



A Division of Soundcraft, Inc. 20301 Nordhoff Street Chatsworth, CA 91311 Phone: 818-882-0020 • Fax: 818-882-7052 TOLL FREE (800) 891-0020 Website:www.securakey.com E-mail: mail@securakey.com