SAM® RF
Operations Manual

Section 6:
Locks

 WL 12/19/2007

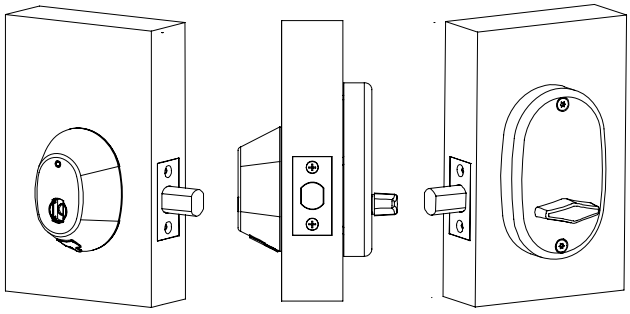
Section 6: Locks

6.1 InSync Locks

There are several different InSync locks available for use with the SAM RF system. Each lock type is shown below with a description of how they operate.

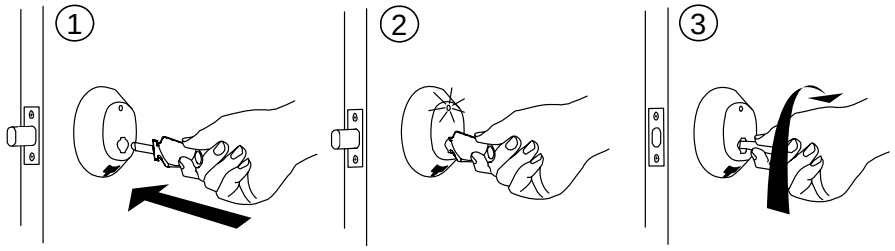
D (Unit or Suite) Lock

The D Lock is a battery operated deadbolt lock that is mounted above the passage latch lock on a door.



Unlocking your door from the outside

1. Fully insert your RFID key into the lock port.
2. Wait until the GREEN light flashes once.
3. Rotate the key as you would a standard mechanical dead bolt.

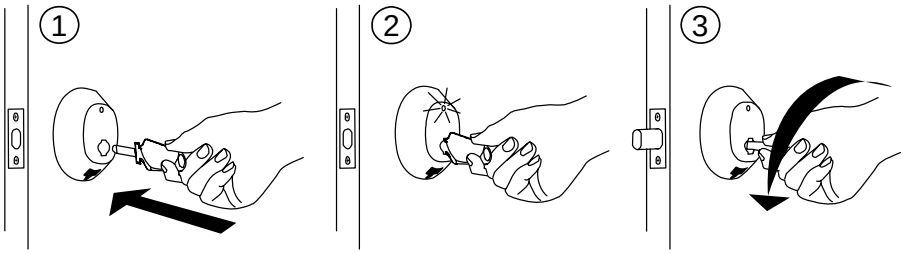


Locking and unlocking your door from the inside

- To lock the door from the inside, rotate the thumb turn to lock the dead bolt.
- To unlock the door from the inside, the thumb turn in the opposite direction.

Locking your door from the outside

1. Shut the door, then insert your key into the lock port.
2. Wait until the GREEN light flashes once.
3. Rotate the key to extend the dead bolt.

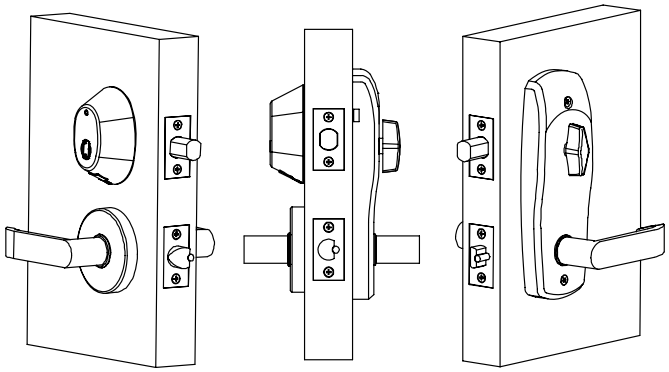


Section 6: Locks

InSync Locks (continued)

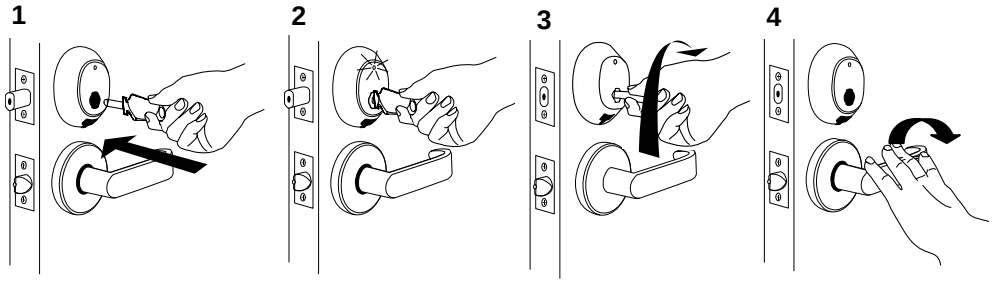
I (Unit or Suite) Lock

The I Lock is a stand-alone, battery operated, interconnected cylindrical latch and deadbolt lock.



Unlocking your door from the outside

1. Fully insert your RFID key into the lock port.
2. Wait until the GREEN light flashes once.
3. Rotate the key as you would a standard mechanical dead bolt.
4. Rotate the lever to open the door.

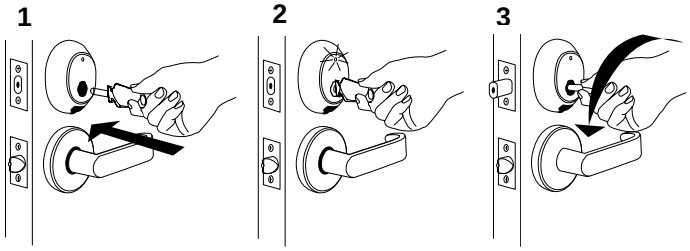


Locking and unlocking your door from the inside

- To lock the door from the inside, rotate the thumb turn to lock the dead bolt.
- To unlock the door from the inside, rotate the inside lever to retract the latch and dead bolt simultaneously. Rotating the outside lever retracts the latch only.

Locking your door from the outside

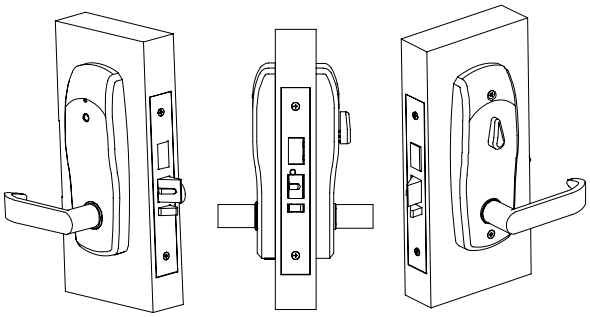
1. Pull the door shut, then insert your key into the lock port.
2. Wait until the GREEN light flashes once.
3. Rotate the key to extend the dead bolt.



Section 6: Locks

InSync Locks (continued)

M Unit Lock



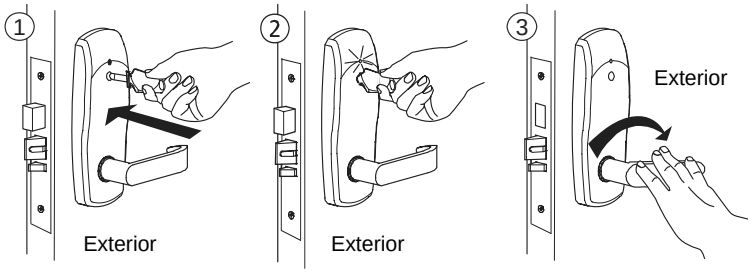
The M Unit Lock is a stand-alone, battery operated, full mortise lock with a latch, automatic deadbolt and thumb turn on the inside.

Note: The door will remain unlocked until a key is inserted from the outside or the thumb turn is rotated from the inside.

Unit Configuration

Unlocking your door from the outside

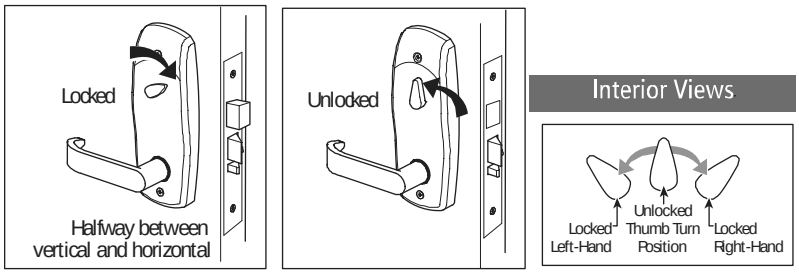
1. Fully insert your RFID key into the lock port.
2. Wait until the GREEN light flashes once.
3. Rotate the lever downward to retract the latch bolt and the dead bolt to open the door.



Locking and unlocking the door from the inside

To lock the door from the inside, rotate the thumb turn to a position halfway between vertical and horizontal.

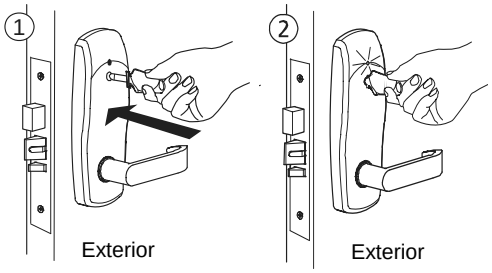
To unlock the door from the inside, rotate the lever downward or return the thumb turn to a vertical position.



Note: The thumb turn in a vertical position does not always indicate that the door is unlocked; it could be locked from the outside in this condition.

Locking your door from the outside

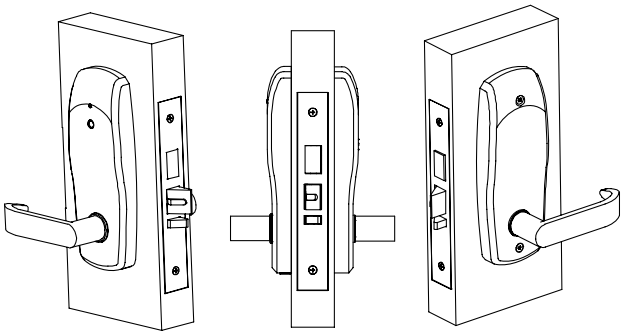
1. Pull the door shut and insert the key into the lock port.
2. Wait unit the RED light flashes once.



Section 6: Locks

InSync Locks (continued)

M Suite Lock

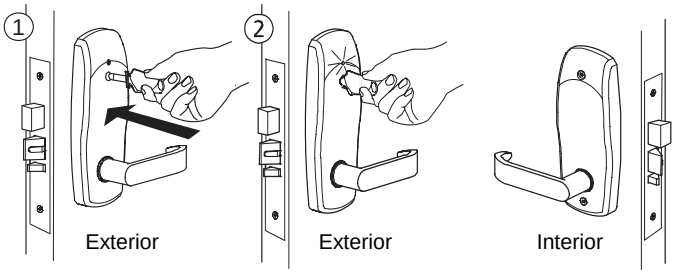


The M Suite Lock is a stand-alone, battery operated, full mortise lock with a latch and an automatic deadbolt. InSync M locks for suite configuration have no thumb turn. Suite locks cannot be left unlocked.

Note: The lock will latch/lock immediately after the door is opened.

Unlocking your door from the outside

1. Fully insert your RFID key into the lock port.
2. Wait until the GREEN light flashes once.
3. Rotate the lever downward to retract the latch bolt and the dead bolt to open the door.

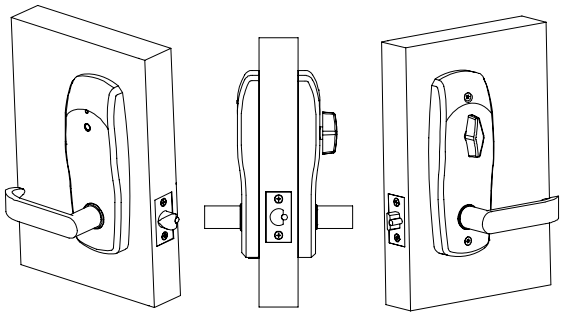


Section 6: Locks

InSync Locks (continued)

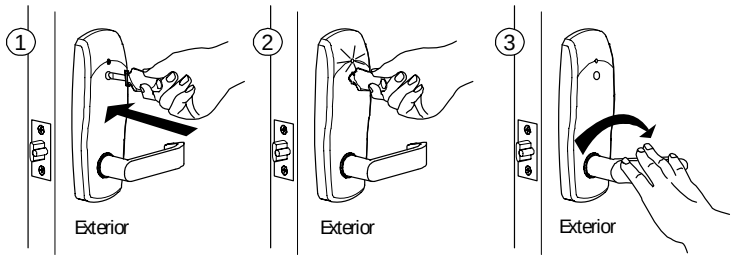
L Unit Lock

The L lock is a stand-alone, battery operated, cylindrical latch lock with a thumb turn on the inside.



Unlocking your door from the outside

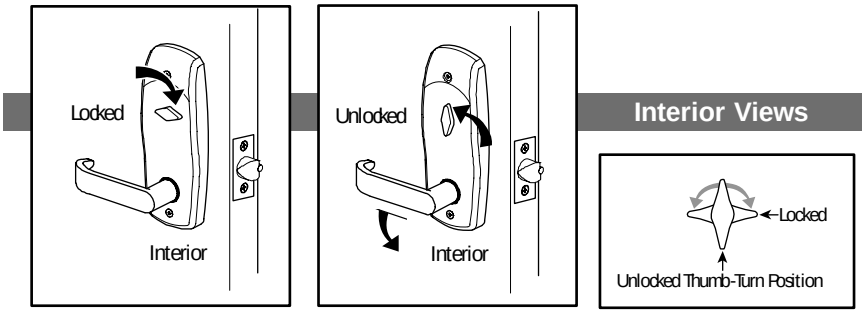
1. Fully insert your RFID key into the lock port.
2. Wait until the GREEN light flashes once.
3. Rotate the lever downward to retract the latch bolt to open the door.



Locking and unlocking the door from the inside

To lock the door from the inside, rotate the thumb turn to the horizontal position.

To unlock the door from the inside, rotate the lever downward or return the thumb turn to the vertical position.

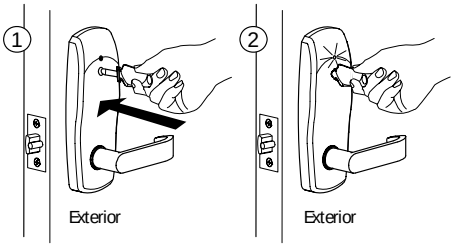


Notes:

1. If the lever is used when the door is locked, the thumb turn will always return to the vertical position and the door will remain unlocked. To lock the door from the outside, insert the key and wait for the RED light to flash once.
2. If the door is locked from the inside and entry if made from the outside, the thumb turn will remain in the horizontal position and the door will re-lock in approximately five seconds.

Locking your door from the outside

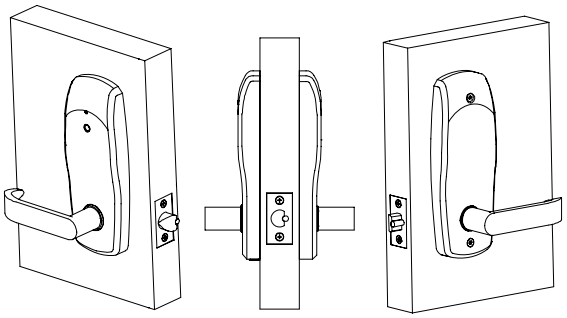
1. Pull the door shut and insert the key into the lock port.
2. Wait until the RED light flashes once.



Section 6: Locks

InSync Locks (continued)

L Suite Lock

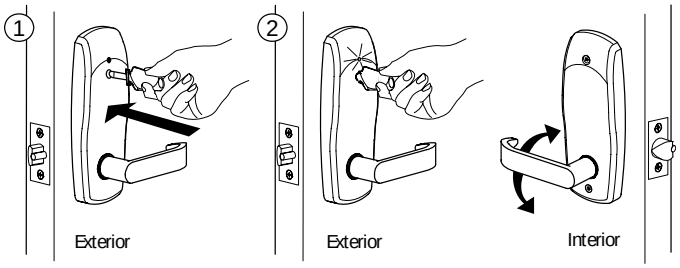


The L Suite lock is a stand-alone, battery operated cylindrical latch lock. InSync L locks for suite configuration have no thumb turn. Suite locks cannot be left unlocked.

Note: The lock will latch/lock immediately after the door is opened.

Unlocking your door from the outside

1. Fully insert your RFID key into the lock port.
2. Wait until the GREEN light flashes once.
3. Rotate the lever downward to retract the latch bolt and the dead bolt to open the door.

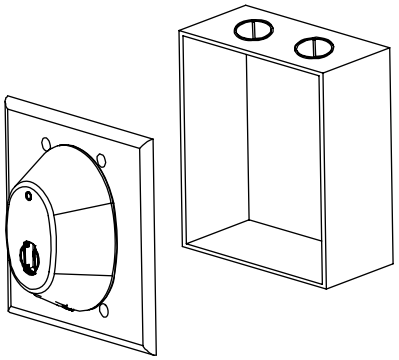


C Locks

The C locks are locking devices provided for common areas of the property such as pools, laundry rooms, garages, etc. There are several different C locks available.

Note: The common area locks will latch/lock immediately after the door is opened, unless the lock is latched open.

CR Lock



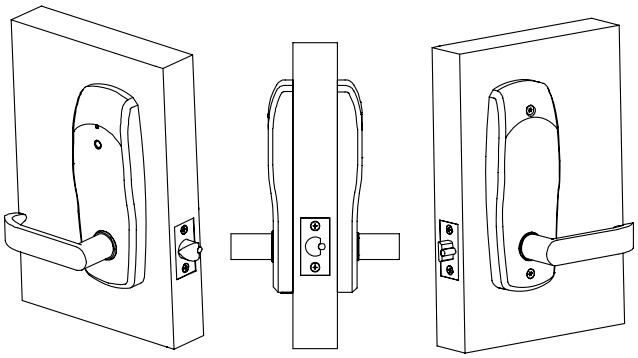
The CR is a key reader mounted in an electrical box adjacent to the door, gate or elevator panel for controlling electrical locking devices such as electric strikes, magnetic latches, elevator control panels and parking gates.

From Outside
To Unlock: Insert key, wait for green light to flash. The relay will engage allowing the door to be opened, the gate to lift or the elevator button to be pushed.
To Lock – No action necessary, automatically relocks.

Section 6: Locks

InSync Locks (continued)

CL Lock

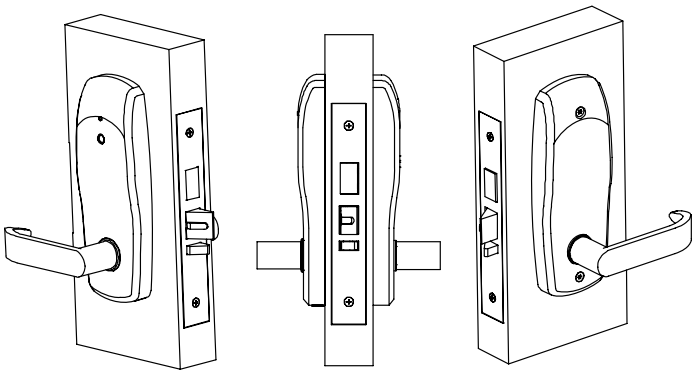


The CL is a latch only lock designed for common access areas.

From Outside
To Unlock – Insert the key, wait for the green light to flash and turn the handle.
To Lock – No action necessary, automatically relocks.

From Inside
To Lock – No action necessary, automatically relocks.
To Unlock – Turn the handle which will release the latch.

CM Lock

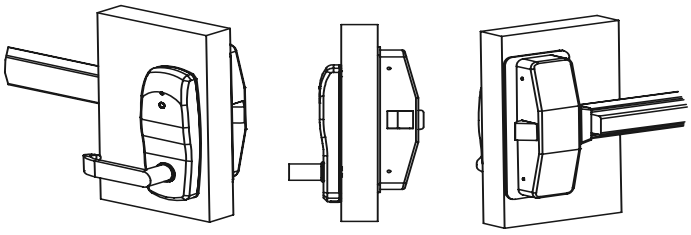


The CM is a mortise lock designed for common access areas. The CM is available with or without a deadbolt.

From Outside
To Unlock – Insert the key, wait for the green light to flash and turn the handle.
To Lock – No action necessary, automatically relocks.

From Inside
To Lock – No action necessary.
To Unlock – Turn the handle which will release the latch or latch and deadbolt.

CP Lock



The CP is an L outer trim with a common access circuit board mounted with panic hardware on the inside of the door.

From Outside
To Unlock – Insert the key, wait for the green light to flash and turn the handle.
To Lock – No action necessary, automatically relocks.

From Inside
To Lock – No action necessary.
To Unlock - Push the panic bar.

Section 6: Locks

6.2 Lock Maintenance and Diagnostics

Lock Diagnostics (Lights)

The InSync locks have an LED (Light Emitting Diode) located above the lock port. When a key is used, the LED will flash, providing information to the user. Listed below are the LED patterns and a description of what they indicate.

One Green Flash – indicates that a correct key was used.

One Green followed by Six Red Flashes – indicates that the lock batteries are low.

Three Green Flashes – indicates that the lock is unable to communicate with the key.

Three Red Flashes – indicates that an incorrect key was used in the lock

> **Note:** An expired key, a wrong key, or a key that was never encoded could have been used.

Three Red followed by Three Green Flashes – indicates that the key is an old key and new key was used to invalidate the key

Three Red followed by Two Green Flashes – indicates that the clock in the lock needs to be reset.

No Lights – Indicates that the lock batteries are dead

Clock Maintenance

Every InSync Lock has its own clock built into the unit. This internal clock is set with the proper time and date by the SAM RF System utility device when the lock is first programmed. To ensure accuracy, it is recommended the date and time in the locks be updated once a year. The utility device is used to update the clock (refer to Resetting the Date/Time in Locks later in this section).

Lock Environmental Considerations

InSync Locks are operable in normal environmental conditions. Extreme weather conditions may have a temporary adverse effect on operation.

Checking Lock Batteries

Rather than waiting for a low battery indication, it is recommended that you perform periodic preventive lock maintenance. To check the battery condition, use the SAM RF System to set the utility device to “Get Lock Info” (see Section 6.4) or to create a “Battery Check Key” (see Section 5.17 “Creating Battery Check Keys”).

Low Battery Indication

Every time an access key is used in a lock, the lock will do a self-check on its battery condition. A low battery indication will occur when the battery voltage drops below 5.0 volts.

After the lock first senses a low battery, the light will flash green followed by six red flashes. If your lock has the optional buzzer, each flash will be accompanied by the buzzer sounding. This will occur with every use of the key until the batteries are changed (approximately 100 lock openings/closings).

Section 6: Locks

6.3 Programming the Locks

For the lock programming process, the utility device assigns a name or number identification and programs the correct date and time into a lock.

Note: The utility device should never be exposed to wet conditions.

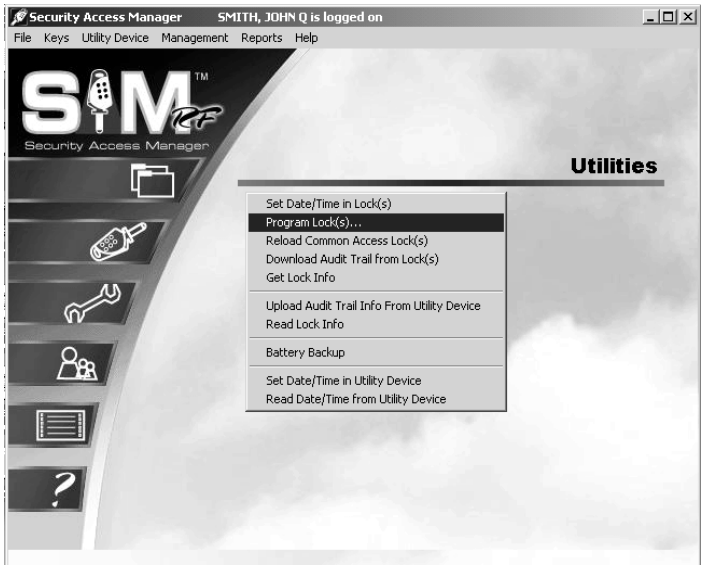
Programming Locks

1. Be sure that the PC is turned on, the electronic key encoder device is plugged in an electrical outlet and the USB cable between them is properly attached (see Section 2.5 “Installing the Key Encoder and Utility Device”).

2. Click on the **Utilities** menu at the top of the window or the **Utilities** icon.

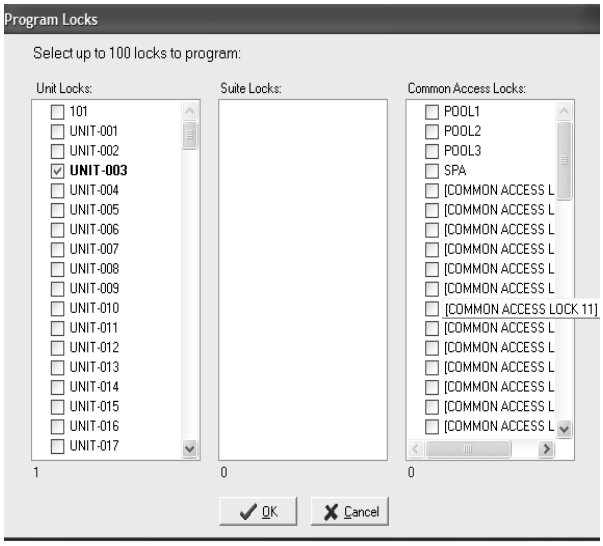
3. Click on **Program Lock(s).**

Note: You must keep all USB cables connected between the electronic key encoder base, the utility device and the PC while the key image spins on the PC screen.



4. Click the unit, suite, and/or common access locks for which you wish to program. You may select up to a maximum of 100 locks. Click **OK.**

Note: You must keep all USB cables connected between the electronic key encoder base, the utility device and the PC while the key image spins on the PC screen. The number of lock identifications requested will determine the length of the downloading process time.



Section 6: Locks

Programming the Locks (continued)

Note: You must keep all USB cables connected between the electronic key encoder base, the utility device and the PC while the key image spins on the PC screen.

5. When the PC screen displays, "The write operation was successful!", click **OK.**

6. Disconnect the USB cable located on the back left hand side of the electronic key encoder base. The USB cable must remain attached to the top of the utility device.

7. Remove the utility device with the USB cable attached and take it to the lock.

8. The utility device screen will display, "Ready to Program."

Utility Ver. Ready to Program UNIT-007

9. Press **HOME/0** to display multiple lock identifications. The first one to three lock identifications will display on the utility device screen. Press the Arrow Buttons down or up to view the next three locks. Continue pressing the Arrow Buttons up or down until you locate the desired lock identification number(s). Press the appropriate number (**1, 2** or **3**) on the utility device pad of the lock identification number you wish to program.

Please select a door 1. UNIT-005 2. UNIT-006 3. UNIT-007

Note: Press **Home/0** at any time to bring back the first three locks on the list. You may also press **ESC** to return to the default screen with the first lock on the list.

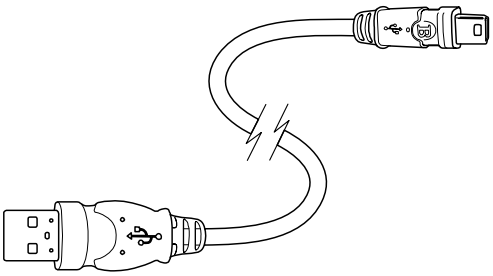
10. You will see **Ready to Program** on the utility device screen after you have selected the lock identification.

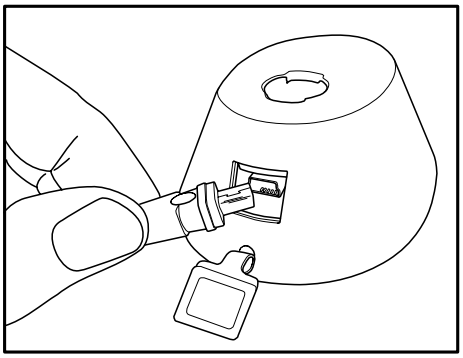
Utility Ver. Ready to Program UNIT-006

Section 6: Locks

Programming the Locks (continued)

11. Connect the USB cable on the utility device to the lock's receptive port located underneath the bottom of the lock. You will need to remove the rubber cover on the lock's receptive port to insert the USB cable. Be sure the connectors of the USB cable and the lock's receptive port match up.





12. The utility device screen will display the message, "OPERATION COMPLETED REMOVE DEVICE NOW Ready to Program." You will hear two beeps. The lock identification has been programmed. Remove the USB cable from the lock. Replace the rubber cover on the lock's receptive port.

```
OPERATION COMPLETED
REMOVE DEVICE NOW
Ready to Program

UNIT-006
```

13. The next lock identification will appear for programming. You may continue programming locks if you wish.

```
Utility Ver.

Ready to Program
UNIT-007
```

After you have finished programming locks, return the utility device to the electronic key encoder base. Reconnect the USB cable to the back left hand side of the electronic key encoder base.

Section 6: Locks

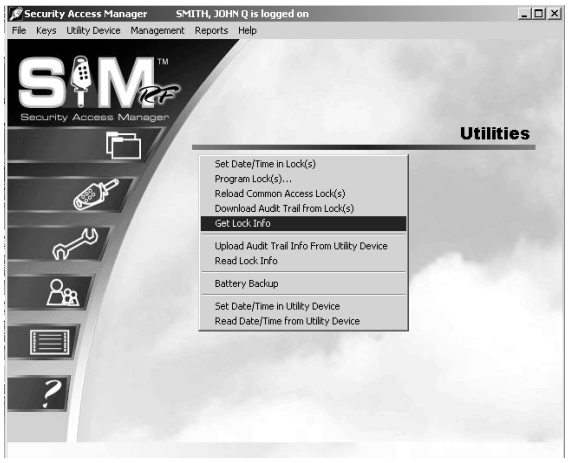
6.4 Get Lock Info

The SAM RF System allows you to retrieve information about a lock's identity, current date and time, and current battery voltage status using the utility device. This feature is an important part of your regular maintenance routine, including lock battery replacement and making certain that the lock's clock is properly synchronized.

1. Be sure that the PC is turned on, the electronic key encoder device is plugged in an electrical outlet and the USB cable between them is properly attached (see Section 2.5 "Installing the Key Encoder and Utility Device").

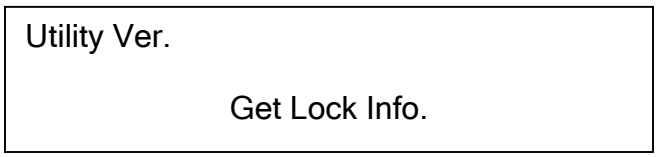
2. To initialize the utility device to get lock information, point to the **Utility Device** pull-down menu and select **Get Lock Info.**

Note: You must keep all USB cables connected between the electronic key encoder base, the utility device and the PC while the key image spins on the PC screen.



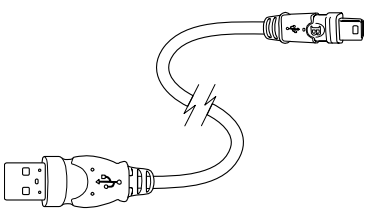
3. The PC screen will display, "The write operation was successful!" Click **OK.**

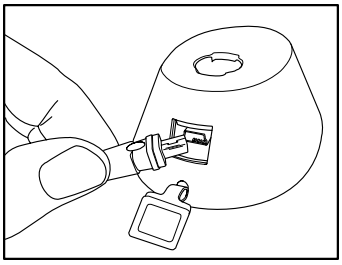
4. Disconnect the USB cable located on the back left hand side of the electronic key encoder base. The USB cable must remain attached to the top of the utility device. Remove the utility device with the USB cable attached and take it to the lock.



The utility device screen will display, "Get Lock Info."

5. Connect the USB cable on the utility device to the lock's receptive port located underneath the bottom of the lock. You will need to remove the rubber cover on the lock's receptive port to insert the USB cable. Be sure the connectors of the USB cable and the lock's receptive port match up.

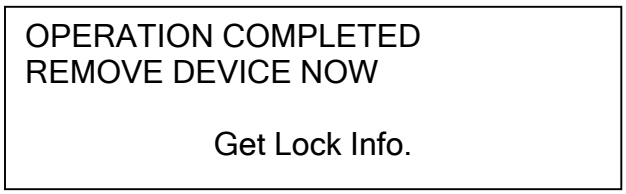




Section 6: Locks

Get Lock Info (continued)

6. The utility device screen will display the message “OPERATION COMPLETED REMOVE DEVICE NOW Get Lock Info.” You will hear two beeps. The lock information has been retrieved. Remove the USB cable from the lock. Replace the rubber cover on the lock’s receptive port.



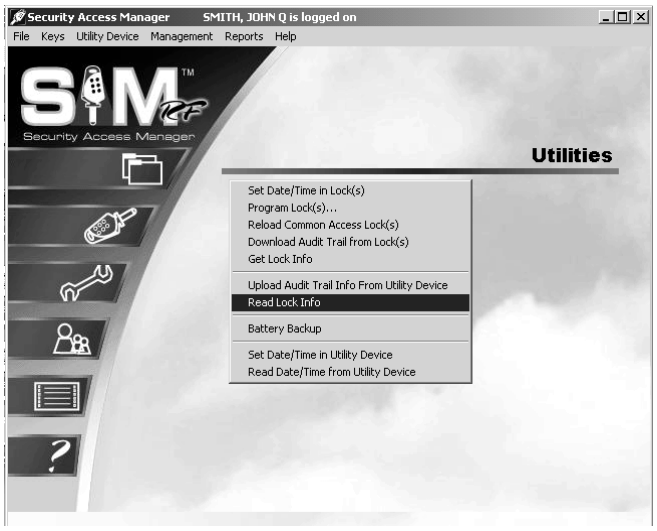
7. You may continue by inserting the USB cable attached to the utility device into additional locks for which you wish to retrieve lock information.

Note: You can get lock info for up to 100 locks. You will need to return the utility device to the PC and reprogram it in order to continue getting lock info for more than 100 locks.

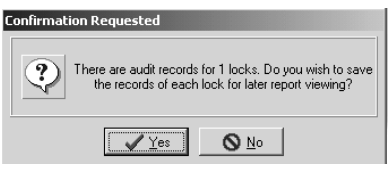
8. When you have finished, bring the utility device with the attached USB cable to the electronic key encoder base and your PC. Reconnect the USB cable to the back left hand side of the electronic key encoder base and place the utility device in the base for recharging.

9. Be sure that all USB cables between the PC, electronic key encoder and utility device are attached. The PC must be turned on and the electronic key encoder plugged in to an electrical outlet (see Section 2.5 “Installing the Key Encoder and Utility Device”).

10. To read the lock information, point to the **Utility Device** pull-down menu and select **Read Lock Info.**



11. The PC screen will display the message “There are audit records for [the number of locks previously read, up to 100] locks. Do you wish to save the records of each lock for later report viewing?”



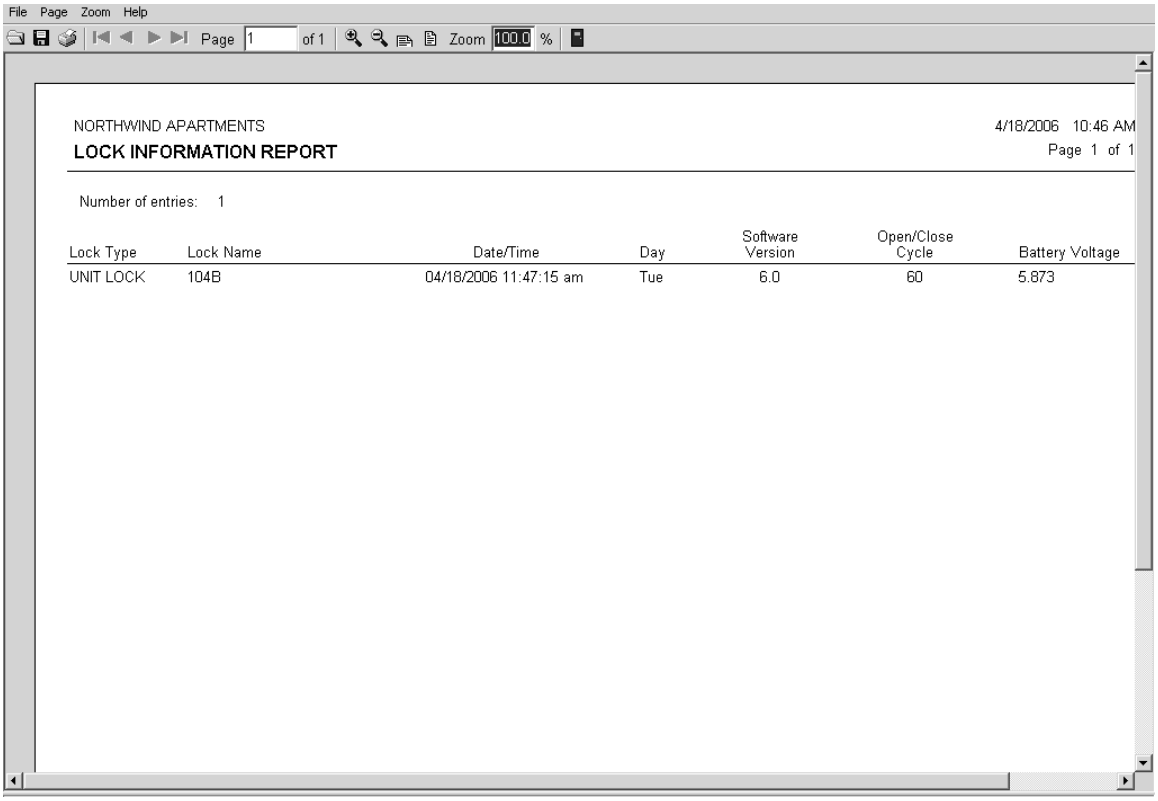
12. Click **Yes.** The Output Options PC Dialog Box will appear.

Section 6: Locks

Get Lock Info (continued)

13. At the top of the Output Options PC dialog box, your default printer will be listed. Beneath that will be a Report Destination PC dialog box, along with three options:
    - **Printer:** To print the report out as hard copy
    - **Preview:** To view the report on screen
    - **File:** To save the report to your hard drive or to disk.

14. To view the report on screen, confirm that the **Preview** option is selected and click **OK**. Within a few moments, the Lock Information Report PC dialog box will open up in a new window that you can maximize or minimize like any Windows-based window.



Section 6: Locks

Get Lock Info (continued)

The Lock Information Report lists the locks that were checked in the order in which the utility device retrieved the information. In addition, the report lists the following information:

- **Lock Type:** Whether unit lock, suite lock or common access lock
- **Lock Name:** Such as Pool or Unit 101
- **Date/Time:** The date and time setting in the lock at the time the lock information was requested

Note: Be sure to take a close look at the date and time settings of each lock. If there is a wide variance in the times from one lock to the next, it is highly recommended that you reset the date and time in the lock(s) using the utility device (see “Resetting the Date/Time in Lock(s)” later in this section).

- **Day:** The day of the week the lock information was requested
- **Software Version:** The version of the SAM RF System software that the lock was programmed with
- **Open/Close Cycle:** The number of times the lock has been unlocked using an access key
- **Battery Voltage:** The actual voltage of the batteries inside the lock. **N**

Note: If a lock’s battery voltage is below 5.0, “LOW” will appear next to the voltage number to flag the lock for possible battery change (see Section 6.6 “Replacing Lock Batteries”.)

If there are several pages to the report, the lock information report provides tools for going from one page to another using either the buttons at the top of the box or the **Page** menu. There are also options for zooming in or zooming out of the report using either the **Zoom** box or the **Zoom** menu.

15. To exit the lock information report, point to the **File** menu and click **Exit**. This will return you to the SAM RF System main menu screen.

Section 6: Locks

6.5 Resetting the Date/Time in Lock(s)

It is important that your lock's clock is set to the correct time. When the clock is set properly, the lock will keep an accurate audit trail and allow entrance for keys with particular shift times, including Limited Use keys. Each lock's clock should be programmed yearly and after each battery change.

Note: Check that your computer's clock is also set to the correct time.

1. Be sure that the PC is turned on, the electronic key encoder device is plugged in an electrical outlet and the USB cable between them is properly attached (see Section 2.5 "Installing the Key Encoder and Utility Device").

2. Click on the **Utilities** menu at the top of the window or the **Utilities** icon.

3. Click on **Set the Time/Date in Lock(s).**

Note: You must keep all USB cables connected between the electronic key encoder base, the utility device and the PC while the key image spins on the PC screen.

4. The set date/time in lock(s) process will take a few moments. When it is completed, a message will appear indicating, "The write operation was successful!" Click **OK**.

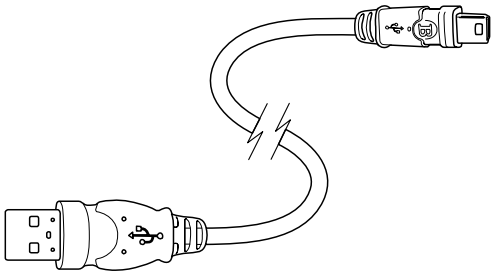
5. Disconnect the USB cable located on the back left hand side of the electronic key encoder base. The USB cable must remain attached to the top of the utility device. Remove the utility device with the USB cable attached and take it to the lock(s).

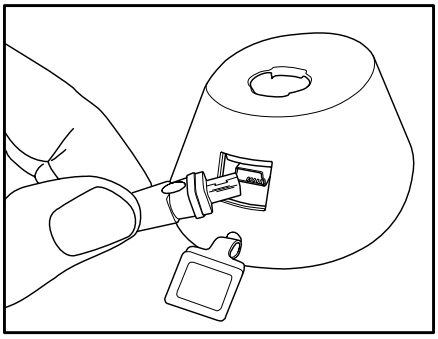
   The utility device screen will display, "Set Date/Time."

Section 6: Locks

Resetting the Date/Time in Lock(s) (continued)

6. Connect the USB cable on the utility device to the lock's receptive port located underneath the bottom of the lock. You will need to remove the rubber cover on the lock's receptive port to insert the USB cable. Be sure that the connectors of the USB cable and the lock's receptive port match up.





7. You will hear two beeps indicating that the date/time have been set. The utility device screen will display the message "OPERATION COMPLETED REMOVE DEVICE NOW Set Date/Time."

8. Remove the USB cable from the lock. Replace the rubber cover on the lock's receptive port. You may continue resetting the date/time in additional locks or return the utility device to the electronic key encoder base for reconnection and charging.

Section 6: Locks

6.6 Replacing Lock Batteries

If the lock information report indicates any locks with low voltage (below 5.0), it is recommended you replace the set of double AA batteries immediately.

To replace the batteries, follow these simple steps:

1. Remove the two torque-head screws on the inside cover plate.
2. Remove the inside cover plate from the lock.
3. Remove all the old batteries.
4. Replace the batteries with a new set of AA alkaline batteries.

Note: Do not use a mix of old and new batteries.

5. The lock will reinitiate. It will beep once, flash one red light, and then one green light.
6. Replace the back cover.

Note: A backup power source is used to power the lock's internal clock for up to two minutes after the batteries are removed. If more than two minutes elapse between removing the old batteries and replacing them with new ones, you may have to reset the lock's date and time using the utility device as discussed in the previous section.

Section 6: Locks

6.7 Opening a Lock With a Dead Battery

The SAM RF System offers you two options for accessing a lock with a dead battery. The utility device when set to act as a Battery Backup (see information below) is one option. The SAM RF System is also available with an external power supply (EPS) unit that will also open a lock (see "EPS Unit" later in this section).

Option 1: Battery Backup

1. Be sure that the PC is turned on, the electronic key encoder device is plugged in an electrical outlet and the USB cable between them is properly attached (see Section 2.5 "Installing the Key Encoder and Utility Device").

2. To initialize the utility device to be used as the battery backup, point to the **Utility Device** pull-down menu and select **Battery Backup.**

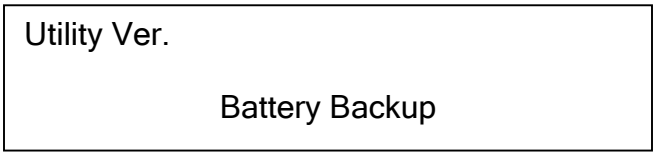
Note: You must keep all USB cables connected between the electronic key encoder base, the utility device and the PC while the key image spins on the PC screen.

3. The PC screen will display, "The write operation was successful!" Click **OK.**

4. Disconnect the USB cable located on the back left hand side of the electronic key encoder base. The USB cable must remain attached to the top of the utility device. Remove the utility device with the USB cable attached and take it to the lock.

Note: You will also need to take a valid key for the lock.

5. The utility device screen will display, "Battery Backup."

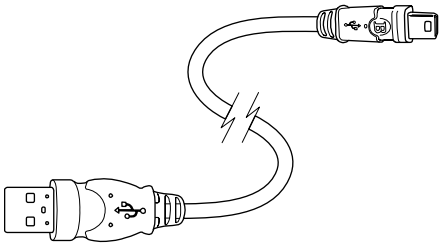


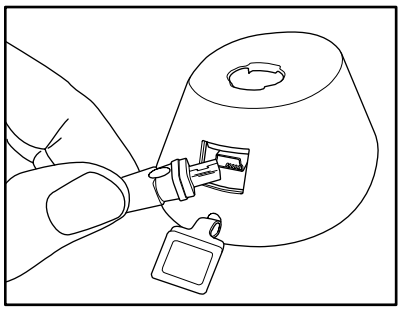
Section 6: Locks

Opening a Lock With a Dead Battery (continued)

6. Connect the USB cable on the utility device to the lock's receptive port located underneath the bottom of the lock. You will need to remove the rubber cover on the lock's receptive port to insert the USB cable. Be sure the connectors of the USB cable and the lock's receptive port match up.

7. You will hear two beeps. Insert the valid key *that has been programmed for this lock*. The lock will open.





8. Remove the USB cable from the lock. Replace the rubber cover on the lock's receptive port. The utility device screen will display the message "OPERATION COMPLETED REMOVE DEVICE NOW Battery Backup."

9. Once the door is open, replace the batteries. Return the utility device to the electronic key encoder base for reconnection and charging.

Option 2: EPS Unit

The EPS (External Power Supply) can be used to supply power to a lock when its internal batteries are too low to allow the lock to open. See the introduction for a diagram of the EPS unit.

Take the EPS and a valid key to the lock and follow these simple steps:

1. Connect the USB cable on the EPS unit to the lock's receptive port located underneath the bottom of the lock. You will need to remove the rubber cover on the lock's receptive port to insert the USB cable. Be sure the connectors of the USB cable and the lock's receptive port match up.

2. Insert a valid key for the lock.

3. The lock should now open.

4. Remove the USB cable from the lock's receptive port and replace the rubber cover.

5. Replace the lock's batteries.

Section 6: Locks

6.8 Reloading Common Area Locks

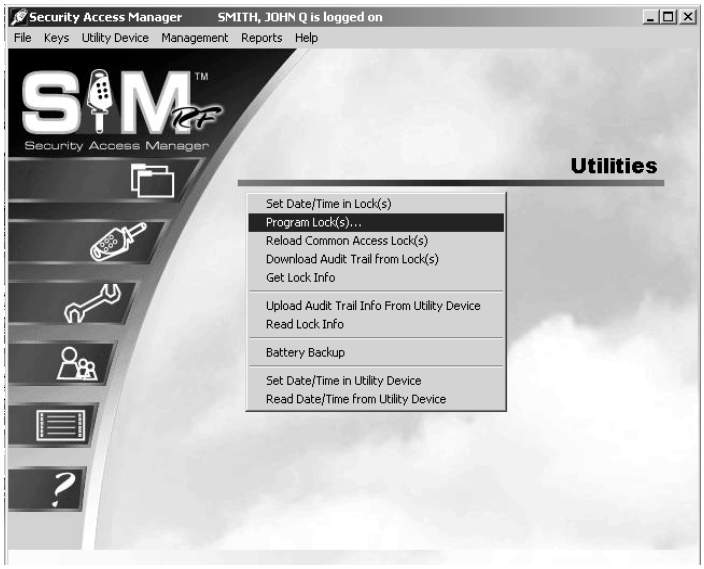
Normally, when a resident moves out and takes their key with them, you would simply inhibit the key. The Inhibit key would be used in the unit lock and all common area locks where their key had access. However, if numerous residents move out at one time (e.g., the end of a semester at a university) it will be faster to invalidate the resident keys in the common area locks by using the utility device to reload common area locks. The process will put the common area locks in sync with the current authorized keys in the database.

Important: You will still need to inhibit Resident keys at the unit doors.

1. Be sure that the PC is turned on, the electronic key encoder device is plugged in an electrical outlet and the USB cable between them is properly attached (see Section 2.5 “Installing the Key Encoder and Utility Device”).

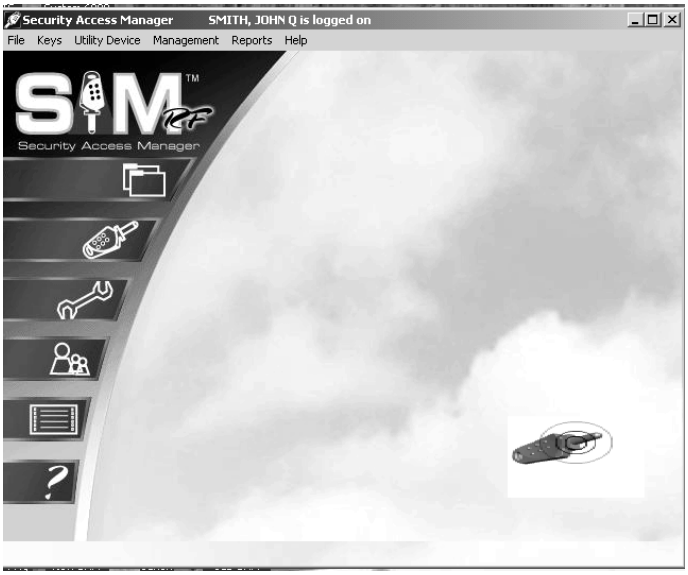
2. Click on the **Utilities** menu at the top of the window or the **Utilities** icon.

3. Click on **Reload Common Area Locks**.



4. The screen will not prompt you to select lock identifications as with lock programming. It will simply download the current information from the database.

Note: You must keep all USB cables connected between the electronic key encoder base, the utility device and the PC while the key image spins on the PC screen.



Section 6: Locks

Reloading Common Area Lock (continued)

5. The PC screen will display, “The write operation was successful!” Click **OK**.

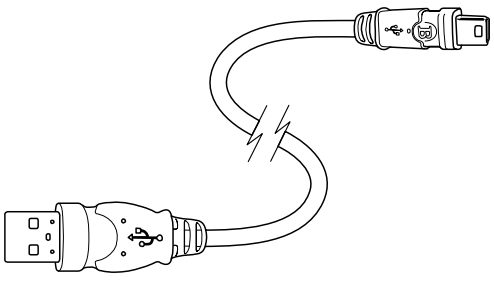
6. The utility device screen will display, “Reload Common Acc.”

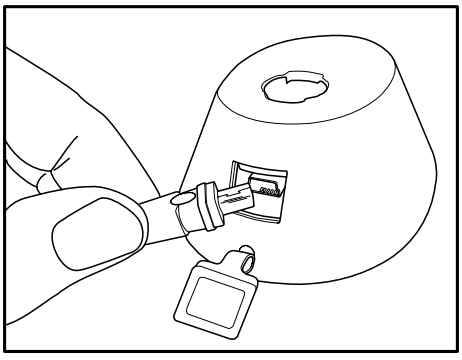
Utility Ver. 1.00

Reload Common Acc.

7. Disconnect the USB cable located on the back left hand side of the electronic key encoder base. The USB cable must remain attached to the top of the utility device. Remove the utility device with the USB cable attached and take it to the lock.

8. Connect the USB cable on the utility device to the lock’s receptive port located underneath the bottom of the lock. You will need to remove the rubber cover on the lock’s receptive port to insert the USB cable. Be sure the connectors of the USB cable and the lock’s receptive port match up.

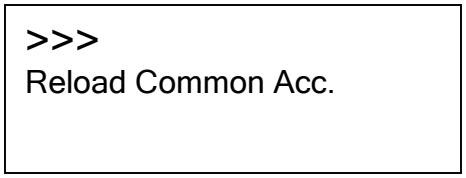




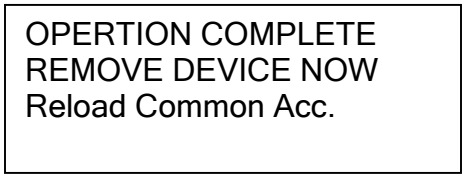
Section 6: Locks

Reloading Common Area Lock (continued)

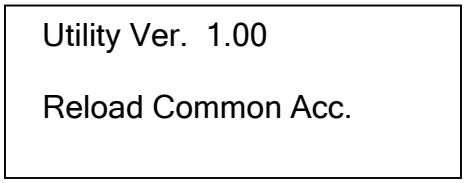
9. The utility device will display the screen above and the red light will flash on the lock while the utility device reloads the common access lock.



10. When complete, the utility device screen will display the message, “OPERATION COMPLETED REMOVE DEVICE NOW Reload Common Acc.” You will hear two beeps. The common access lock has been reloaded. Remove the USB cable from the lock. Replace the rubber cover on the lock’s receptive port.



11. Once the cable is removed from the lock the Utility Device will return to the screen shown above. You may continue reloading common access locks.



12. After you have finished, return the utility device to the electronic key encoder base. Reconnect the USB cable to the back left hand side of the electronic key encoder base.