Offline Hardwired Access Control Systems

INSTALLATION & PROGRAMMING MANUAL

CT500

UNIVERSAL ACCESS CONTROLLER
PLEASE READ ALL INSTRUCTIONS PRIOR TO INSTALLING THE SYSTEM.
HANDLE ALL EQUIPMENT CAREFULLY.
IMPORTANT: This manual is intended to be kept for programming, maintenance, and troubleshooting purposes. Do not dispose of after installation. Please present this manual to facility manager upon completion of installation.

Table of Contents:

Contact Information: ................................................................. 2
Compatible Readers: ................................................................. 3
Specifications: ................................................................. 4
Getting Started: ................................................................. 4
Typical System Installation: ...................................................... 5
Overview on Installation: ...................................................... 6
Set Dipswitches: ................................................................. 6
Wiring: ................................................................. 7
Wire Colors: ................................................................. 8
Programming: ................................................................. 9
Definition of Access Functions and Factory Defaults: ......................... 10
Creating a Master iButton/Card: .................................................. 11
Keypad/100CAB Initialization: .................................................... 11
Programmer Initialization TEP1: .................................................. 11
System 7 Programming: ...................................................... 12
Erasing Memory: ................................................................. 12
Setting Time Delays: ................................................................. 13
Configuring the System: ...................................................... 14
Manual Programming - Keypad - Codes Only: ...................................... 15
Manual Programming - Codes, Cards and iButtons: .................................. 16
3-Digit Function Codes: ................................................................. 17
Sample Wiring Diagrams: ............................................................. 18
Error Codes: ................................................................. 19
Troubleshooting: ................................................................. 19
NOTES: ................................................................. 20

Contact Information:

Schlage Lock Company
575 Birch Street
Forestville, CT 06010
technical support: 866-322-1237
fax: 860-584-2136
http://www.irsupport.net
Compatible Readers:

CR90
Card Reader
w/Keypad & iButton Reader

CR91
Card Reader
w/iButton Reader

PX95xKP78+
Prox Card Reader
w/Keypad & iButton Reader

PX95xTR83
Prox Card Reader
w/iButton Reader

KP79+
Mini-Keypad
Single-Gang

TR84
iButton Reader

KP79+
Mini-Keypad
Narrow Stile

TR83
iButton Reader

KP74+
 Keypad

KP76+
 Keypad

TR81
iButton Reader

TR80
iButton Reader
Specifications:

**Electrical:**

- Input Voltage: 12 to 24 VAC/VDC
- Current Draw: 200mA max.
- DC Output Voltage (with AC input): 1 amp max. (Matches input voltage)

**Control Relays:**

- Main - DPDT contacts, 5 amp max @ 30VDC
- Aux - SPDT contacts, 5 amp max @ 30VDC
- Alarm - SPDT contacts, 5 amp max @ 30VDC

**Programmable Users:**

- 500 User Codes/iButtons, mag-stripe or prox cards.

**4 Internal “Timers”:**

All Adjustable 0-255 Seconds.

Getting Started:

The CT500 universal access controller can be interfaced to any Schlage access control devices such as iButton readers or Keypads. The CT500 can also be used with mag-stripe emulation output HID Prox Card readers as well as magnetic stripe card readers. The unit may have been ordered with the PS option (505 power supply in the same enclosure). If it does not have a supply, one will be required. Make sure that the supply chosen will meet the electrical requirements of all components in the system. Note that electrical power gets dissipated over long wire runs so it is important that the equipment be located close to the opening it is controlling.

Consult national electric code handbook for information regarding wire run lengths and minimum required wire gauge and type for the voltage and current in the system.
Typical System Installation:

A typical installation consists of a locking device (magnetic lock (a), electric strike, etc.), a power supply (b), a controller (c), an adapter cable (d) (in some cases), an access control (keypad (e), card reader, etc.), an exit control (exit device (f), pushbutton, etc.), and door cord (g) or electric hinge. Any installation involving modification or specification of an opening which is considered to be a means of egress (emergency exit) or a fire rated opening must conform to all local and national life safety and building codes. The specific gage and number of wires will vary with the kind of equipment used, the intended function, and local and national building codes. In most cases it is required that magnetic locks open in the event of a fire alarm condition. (Consult local authority having jurisdiction.)
Overview on Installation / Set Dipswitches

Overview on Installation:

1) INSTALL COMPONENTS
   A. Determine where each component will be located. Mount Controller and Power Supply to Wall. Run conduit as required by local and national codes.
   B. Follow instructions included with Access Control device to mount it and run wires to controller.
   C. Mount Lock.

2) MAKE WIRING CONNECTIONS
   A. Set Dip switches correctly for your system.
   B. Make wiring connections as required.
   C. Connect Power.

3) CONFIGURE AND PROGRAM SYSTEM
   A. Initialize Master iButton/Card and programmer as required.
   B. Configure and Program System.
   C. Test System.

1) Set Dipswitches:

The Universal Access Control Board can accommodate virtually all types of Schlage access control. Set the dipswitches (SW1) according to your system requirements for “Normal Operation”. Consult the table below for the desired setting. Note that different positions are required depending on the function desired. Keypad only access control is also available. Note: if the board is replacing an older board, CT500 Universal controller can be used with almost any type of keypad or iButton reader offered by Schlage in the past; simply connect all wires which were previously connected as shown in the board layout in this document.

<table>
<thead>
<tr>
<th>Normal Operation</th>
<th>Keypad Only/770CAB Enables simplified programming of codes only by keypad. Computer programming also possible.</th>
<th>TR80/TR81/100CAB Manual programming by TEP1, TEP2, or computer programming</th>
<th>770CAB Magstripe or prox cards, codes, iButtons, manual or computer programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear Memory (Press SW2 three times)</td>
<td>![SW1 Diagram]</td>
<td>![SW1 Diagram]</td>
<td>![SW1 Diagram]</td>
</tr>
<tr>
<td>&quot;System 7&quot; (Press SW2 one time)</td>
<td>![SW1 Diagram]</td>
<td>![SW1 Diagram]</td>
<td>![SW1 Diagram]</td>
</tr>
<tr>
<td>Programming Initialization Master iButton/Card (Press SW2 one time)</td>
<td>![SW1 Diagram]</td>
<td>![SW1 Diagram]</td>
<td>![SW1 Diagram]</td>
</tr>
</tbody>
</table>
2) Wiring:

Note that the main relay is a double pole, double throw relay. TB4 will put out DC unregulated voltage up to one Amp. Note that it is not necessary to use this terminal if your system already uses DC voltage from a power supply.

For wire colors, see next page.

For dipswitch settings, see previous page.

Request to Exit: Closing contacts will activate relays for eight seconds (timer adjustable see page 13)

Door Prop: Triggers Alarm Relay when door is held open for 30sec. (Requires door position switch.)

Anti-Tailgate: Allows relocking of door immediately upon reclosing. (Requires door position switch.)

Forced Door: Triggers Alarm Relay when door is forced open without a legal release. (Requires door position switch.)

Day/Night Timer: Input from an external timer allows codes to work only during certain times of day.
Wire Colors

Make connections to the access control device or adapter cable as required. Be sure that all wiring is correct before power is applied. If more than one card reader or prox card reader must be wired, a CR2 adapter board will be required. Refer to the instructions included with the adapter board for special wiring instructions.

<table>
<thead>
<tr>
<th>*100CAB or TR80/TR81 Cable</th>
<th>770CAB (KP70+ &amp; TR83/TR84)</th>
<th>CR90/CR91 Card Reader</th>
<th>PX95 Prox Card Reader</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB6</td>
<td>TB6</td>
<td>TB6</td>
<td>TB6</td>
</tr>
<tr>
<td>White</td>
<td>Tan</td>
<td>&lt;Brown&gt;</td>
<td>Black</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Black</td>
<td>Black</td>
<td>&lt;Black&gt;</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Red</td>
<td>Grey</td>
<td>&lt;Red&gt;</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>&lt;Orange&gt;</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>&lt;Yellow&gt;</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TB5</td>
<td>TB5</td>
<td>TB5</td>
<td>TB5</td>
</tr>
<tr>
<td>Green</td>
<td>&lt;Green&gt;</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td>&lt;Blue&gt;</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violet</td>
<td>White</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>White/Black</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>White/Brown</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>&lt;Violet&gt;</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES:
1. 100CAB must be initialized to function with a keypad.
2. Only one 100CAB adapter cable can be wired. Two keypads can be connected to a single 100CAB.
3. Two TR80 or TR81 touch readers can be wired in parallel.

1. New 770CAB adapter cables are shipped with the brown wire clipped. It is not necessary to connect it.
2. Consult factory when connecting older keypads that do not use the 770CAB cable to new controller.

NOTES:
1. All 15 wires shown must be connected on the CR90 models.
2. On CR91 models, connect the 9 wires which are <bracketed> to the terminals shown.

1. The PX95 requires the use of a iButton capable device for programming. Use connection information for appropriate device as shown in addition to information above (usually, a 770CAB with a keypad or iButton reader). There will therefore be two wires on some terminals. This is normal.
3) Programming:

GENERAL INFORMATION:
Programming the CT500 can be done either by computer programming or manually, using the keypad, or TEP1 programmer. The standard unit can have up to 500 codes, cards, or iButtons. Their functions can be chosen using software or by manually adding the code/card/iButton and function (see “Definition of Code/iButton functions and factory defaults” on page 10). Day/Night time zones can be arbitrarily established with an external timer. (See page 7 for terminal details and “day/night/24 hour” information on page 10) When manual programming, it is critical to keep a record of the people and codes/cards/iButtons which are issued to them along with their functions and PIN numbers (for cards or iButtons). This will enable the ability to manage the access system properly. Time delays can be set either manually or using computer programming.

The units come from the factory with preset factory default codes (described on page 10). When the lock is reset (memory erased), it will return to factory default codes. A keypad (using the 100CAB) or TEP1 and Master Card/iButton will need to be initialized again. Initializing a Master Card/iButton, TEP1, or changing the Master Code, or computer programming, will erase the factory default codes and “System 7” cards and iButtons.

When programming with a computer, it is possible to enable or disable manual programming. If manual programming is enabled, and a code, card, or iButton is entered manually, the Audit Trail Report will be corrupted. Using the “System 7” programming method, up to 7 iButtons and/or cards can be entered into a unit. (See page 12.)

WHEN SWIPING MAG-STRIPE CARDS THE STRIPE MUST BE TO THE RIGHT AS SHOWN. INSERT THE CARD AT THE TOP OF THE READER AND SWIPE SMOOTHLY DOWNWARD.

WHEN SWIPIG PROX CARDS OR FOBS, SIMPLY PRESENT THE CARD OR FOB WITHIN A FEW INCHES OF THE READER.
Definition of Access Functions and Factory Defaults:

<table>
<thead>
<tr>
<th>Function</th>
<th>Factory Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASTER</td>
<td>97531</td>
<td>Allows access to programming functions. Will not activate relays.</td>
</tr>
<tr>
<td>NORMAL ACCESS</td>
<td>13579</td>
<td>Activates main relay for relock time delay. Will reset alarm condition.</td>
</tr>
<tr>
<td>TOGGLE</td>
<td>135135</td>
<td>Activates main relay until same or another Toggle code/card/iButton is entered.</td>
</tr>
<tr>
<td>LOCKOUT</td>
<td>9115</td>
<td>“Freezes” the lock in its present condition, either locked or unlocked, until the same or another Lockout code/card/iButton is entered.</td>
</tr>
</tbody>
</table>

**ONE-TIME ACCESS:** No factory default. This type of code/card/iButton will allow access only once. It will then become deleted from memory.

**SUPERVISED ACCESS:** No factory default. This type of code/card/iButton allows access only when used with another Supervised Access code/card/iButton. The second code/card/iButton must be entered within five seconds of the first one. The order that they are entered does not matter. The second supervised access credential entered will be reported on the ATR.

**DAY/NIGHT/24 HOUR:** Closed dry contact from an external timer on TB2 terminals 5 and 6 sets the lock into “night” mode. Open or no contacts set the lock into “day” mode. Code/card/iButtons can be entered into memory by computer or manually. For manual entry use “Add User Code/card/iButton and Function” programming sequences on page 15 (for codes only) or page 16 (for codes/cards/iButtons).
4) Creating a Master iButton/Card: 
(for computer programming)
1) Open the cover of the controller and set dipswitch SW1 for Master iButton/card initialization according to the type of system you are using (see page 6).
2) Press SW2 once.
3) Touch Master iButton to reader (or swipe the Master Card). The LED(s) will flash to indicate acceptance.
4) When you are finished, return the dipswitches to “normal” operation.

NOTES:
1. Refer to instructions included with the programmer/software that you will use to program for more information regarding programming.
2. The Master iButton is used for initiating programming. It will not unlock the door.
3. If audit trail is required, be sure that the lock controllers being used have the ATR chip installed.

IMPORTANT: This version of the CT500 is not compatible with the DOS-based LockTrak software. Schlage software which supports magstripe/prox cards is required. Consult your distributor for product offering and availability.

5) Keypad/100CAB Initialization: 
(required to enable keypad)
It is necessary to initialize the keypad/100CAB any time that the memory is erased.
A. Set SW1 dipswitch for iButton Programmer Initialization (see page 6).
B. Press SW2 one time. The relay on the board should “click”.
C. Touch the iButton which will be used as the master iButton to the reader. When the LEDs stop flashing, press the 1-2 key. When the lights stop flashing press the 3-4 key, and so on until you press the (*) key.
D. Return SW1 dipswitch to its original position.
E. Follow programming instructions on page 15 and page 16.

6) Programmer Initialization TEP1:
TEP1 programmers are intended to simulate a keypad and are required to manually program iButtons or Cards using an iButton-only device. It is necessary to initialize the TEP1 and Master iButton or Card any time that the memory is erased.
1. Open controller cover and set dipswitches for TEP1 initialization. Press SW2 once.
2. Touch Master iButton to reader (or swipe Master Card).
3. Take the TEP1 programmer and touch reader with each disc in the following order:
   - Wait for LEDs to stop flashing before touching next key or pushing next button.
   - Waiting longer than 30 seconds will terminate initialization.
4. After the last key/button is entered, the LEDs will flash, indicating that programming has ended.
5. Return dipswitch to its original position.
7) System 7 Programming:

Follow this procedure to create 7 iButtons (or cards) without the use of a separate programmer. Note that 7 iButtons or 7 cards can be entered and up to 7 more, provided that the first 7 were all cards or all iButtons. (If the first 7 were cards then the second 7 must be iButtons and visa versa). The function will be determined by the order they are entered, as shown below. Each time system 7 programming is done, previously “System 7” programmed cards/iButtons will be erased. Computer programming, initializing a master iButton/card, or erasing memory will also delete iButtons/cards programmed by this method.

1. Label the 7 iButtons/Cards as follows:
   - #1 User iButton/Card
   - #2 Toggle iButton/Card
   - #3 Lockout iButton/Card
   - #4 User iButton/Card
   - #5 User iButton/Card
   - #6 User iButton/Card
   - #7 User iButton/Card

2. Open cover of controller and set dipswitches for “System Seven” according to the system you have (See page 6).

3. Momentarily depress SW2 microswitch once. The red LED (or both LED’s w/ 100CAB) will turn on.

4. Touch iButton #1 to the reader (or swipe card). The LED will flash indicating acceptance.

5. Wait for the LED(s) to stop flashing before entering the next iButton (or swiping the next card).
   Repeat Step 4 using iButton/card #2 thru iButton/card #7.

6. If fewer than 7 iButtons (or cards) were programmed, press SW2 microswitch once to end programming. The LED will turn off.

8) Erasing Memory:

   (return to factory defaults)

IMPORTANT: Resetting will delete all Keypad codes, iButtons/Cards, Master iButton/Card, and TEP programmers from the lock memory. All time delays and default codes will be restored to default values.

1. Open cover of controller and set dipswitches according to chart on page 6.
2. Depress SW2 microswitch three times. Relay clicking may be heard.
9) Setting Time Delays:
In most cases, the default time delays are sufficient. If advanced functions are required, follow the steps below to change any or all of the four timers shown below. Note that timers A, B, and C can be assigned to codes, cards or iButtons with different functions. It may be necessary to configure the system (see page 14) for your system to function as desired.

"A" timer is the default timer for normal access codes. timers A, B, and C can be assigned to codes using three digit function codes (see page 17).

The door propped delay is the time (starts counting after relock delay ends) before the alarm relay will close. The alarm will clear once the door closes again. The Door Propped Alarm must be enabled (see page 14)
10) Configuring the System:

In many cases it will not be necessary to configure the system. If, however, certain functions are desired it will be necessary. Follow the steps below. Note that many functions require that the system be outfitted with additional equipment.

NOTES:
1. The doorbell function and the lamp function require that something be connected to the auxiliary relay.

2. The door forced open or door propped open alarm require that there be a door position switch (normally open) which closes when the door opens, connected to TB2 terminals 3 and 4, as well as an alarm of some kind connected to the alarm relay output.

3. The duress alarm requires that there be an alarm (silent or audible) connected to the alarm relay output.

4. The REX input is for a remote or local control other than a keypad. For example, an exit pushbutton, electrified exit device, keyswitch, or remote console button. It must be connected to TB2 terminals 1 and 2, normally open.
11) Manual Programming - Keypad - Codes Only:

(Using Master Code)

When manually programming the CT500, using a keypad, the keypad must first be initialized. It is recommended that the factory default Master Code be changed. Doing so will delete all factory default codes and ensure the security of the system. After entering the Master code the LEDs on the keypad will flash. They will also flash each time that * is entered. Wait for the LED to stop flashing before entering the next sequence.

TO CHANGE MASTER CODE:

Master Code *...7 *...New Master Code (5-8 digits)*...New Master Code *

TO ADD NORMAL ACCESS CODES: - Will unlock door for relock time delay period. Will also reset lock in alarm.

Master Code *...3 *... New Code (3-8 digits) *...* (to end)

TO ADD CODES WITH SPECIAL FUNCTION: (See page 12 for “3-DIGIT FUNCTION CODES”)

Master Code *...33 *...(3-DIGIT FUNCTION CODE) *...New Code (3-8 digits) *...* (to end)

TO CHANGE CODES:

Master Code *...1 *...Old Code*...New Code (3-8 digits) *...* (to end)

TO CHANGE FUNCTION AND/OR PIN:

Master Code *...11*...Old Code*... (New/Same 3-digit function code) *...New/Same Code (3-8 digits) *...* (to end)

TO DELETE CODES:

Master Code *...5 *...Old Code *...* (to end)

TO DELETE CODES WITH ALARM/ATR NOTICE: Codes will be not be allowed to function but will remain in memory. When the code is used, the alarm relay will close. The door will not unlock. If the ATR option is present and the unit was programmed by computer, an access attempt will show in the audit trail.

Master Code *...55 *...Old Code *...* (to end)
12) Manual Programming - Codes, Cards and iButtons:

(Using Master Card or iButton)

A Master Card or iButton must be used to enter the programming mode in order to program cards or iButtons. If the system does not have a keypad, a TEP1 must be used to manually program cards or iButtons. It must first be initialized. See steps below. After entering the Master Card/iButton the red and green LEDs flash. They will also flash each time that * is entered. Wait for the LED(s) to stop flashing before entering the next sequence.

TO ADD NORMAL ACCESS (DAY) CARDS/iBUTTONS/CODES: Will unlock door for relock time delay period. Will also reset lock after an alarm condition.

Master Card/iButton...3*...New PIN(3-8 digits)*...New Access card/iButton...* (to complete)

TO ADD FUNCTION CARDS/iBUTTONS/CODES: (Note that a three digit function code sets the function. See page 17)

Master Card/iButton...33*...(3-digit FUNCTION CODE)*...PIN(3-8 digits)*...card/iButton...* (to end)

TO CHANGE CODE/PIN:

Master iButton/card...1*...Old PIN*...New/Same PIN (3-8 digits) *...* (to end)

TO CHANGE FUNCTION AND/OR CODE/PIN:

Master iButton/card...11*...Old PIN*... (New/Same 3-digit function code) *...New/Same PIN (3-8 digits) *...* (to end)

TO DELETE CARDS/iBUTTONS/CODES:

Master Card/iButton...5 *...Old Code/PIN*...* (to end)

TO DELETE CARDS/iBUTTONS/CODES (with alarm/ATR notice): Codes will be not be allowed to function but will remain in memory. When the code is used, the alarm relay will close. The door will not unlock. If the ATR option is present and the unit was programmed by computer, an access attempt will show in the audit trail.

Master Card/iButton...55 *...Old PIN*...* (to complete)
13) 3-Digit Function Codes:
The following 3-digit function codes can be used to attribute certain special functions to codes, cards, or iButtons. Only one function can be manually assigned to a code/card/iButton. Note that different timers can be assigned. The time delay may be changed manually (see page 13).

NOTE:
Cards/iButtons/codes generated using 3-digit function codes in this column will change the state of the MAIN RELAY ONLY.

111...Day Access Code: timer A
151...Day Access Code: timer B
171...Day Access Code: timer C
113...Day One-Time Access Code: timer A
153...Day One-Time Access Code: timer B
173...Day One-Time Access Code: timer C
117...Day Supervised Access Code: timer A
157...Day Supervised Access Code: timer B
177...Day Supervised Access Code: timer C
191...Day Toggle Code
193...Day One-Time Toggle Code
197...Day Supervised Toggle Code
115...Day Lockout Code

FOR USE WITH EXTERNAL TIMER ONLY:
311...Night Access Code: timer A
351...Night Access Code: timer B
371...Night Access Code: timer C
313...Night One-Time Access Code: timer A
353...Night One-Time Access Code: timer B
373...Night One-Time Access Code: timer C
317...Night Supervised Access Code: timer A
357...Night Supervised Access Code: timer B
377...Night Supervised Access Code: timer C
391...Night Toggle Code
393...Night One-Time Toggle Code
397...Night Supervised Toggle Code
315...Night Lockout Code

511...24Hr. Access Code: timer A
551...24Hr. Access Code: timer B
571...24Hr. Access Code: timer C
513...24Hr. One-Time Access Code: timer A
553...24Hr. One-Time Access Code: timer B
573...24Hr. One-Time Access Code: timer C
517...24Hr. Supervised Access Code: timer A
557...24Hr. Supervised Access Code: timer B
577...24Hr. Supervised Access Code: timer C
591...24Hr. Toggle Code
593...24Hr. One-Time Toggle Code
597...24Hr. Supervised Toggle Code
515...24Hr. Lockout Code

NOTE:
Cards/iButtons/codes generated using 3-digit function codes below will change the state of the AUXILIARY RELAY ONLY.

711...24Hr. Access Code: timer A
751...24Hr. Access Code: timer B
771...24Hr. Access Code: timer C
713...24Hr. One-Time Access Code: timer A
753...24Hr. One-Time Access Code: timer B
773...24Hr. One-Time Access Code: timer C
717...24Hr. Supervised Access Code: timer A
757...24Hr. Supervised Access Code: timer B
777...24Hr. Supervised Access Code: timer C
791...24Hr. Toggle Code
793...24Hr. One-Time Toggle Code
797...24Hr. Supervised Toggle Code
715...24Hr. Lockout Code

NOTE:
Cards/iButtons/codes generated using 3-digit function codes below will change the state of the MAIN AND AUXILIARY RELAYS

911...24Hr. Access Code: timer A
951...24Hr. Access Code: timer B
971...24Hr. Access Code: timer C
913...24Hr. One-Time Access Code: timer A
953...24Hr. One-Time Access Code: timer B
973...24Hr. One-Time Access Code: timer C
917...24Hr. Supervised Access Code: timer A
957...24Hr. Supervised Access Code: timer B
977...24Hr. Supervised Access Code: timer C
991...24Hr. Toggle Code
993...24Hr. One-Time Toggle Code
997...24Hr. Supervised Toggle Code
915...24Hr. Lockout Code
Sample Wiring Diagrams:

Below are two sample wiring diagrams showing only the power supply connections, connections to fail safe or fail secure lock, request to exit (REX), door status switch, and external timer. Note that the door status switch and timer are completely optional, depending on the design of your system.

CT500 w/MODEL 505 POWER SUPPLY (OR PS OPTION):

CT500 w/AC TRANSFORMER:
• Error Codes:
If an error is made while manually programming a lock, an error code indication will be indicated at the
iButton Key reader or keypad. The LED(s) will flash several times. Count the number of flashes and refer
to the chart below for diagnosis.

<table>
<thead>
<tr>
<th>Number of Flashes</th>
<th>Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Code entered too long. Code length cannot exceed 8 digits.</td>
</tr>
<tr>
<td>3</td>
<td>Memory full - too many codes/iButtons entered.</td>
</tr>
<tr>
<td>4</td>
<td>Master Code cannot be deleted, only changed.</td>
</tr>
<tr>
<td>6</td>
<td>Invalid commend.</td>
</tr>
<tr>
<td>7</td>
<td>Code does not exist. (For “Delete WIth Alarm/ATR” only.)</td>
</tr>
<tr>
<td>9</td>
<td>Not a unique code/iButton.</td>
</tr>
</tbody>
</table>

• Troubleshooting:
Some common problems associated with the installation of the CT500 series can be easily recognized and corrected:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>System has power but lock won’t lock. No lights on.</td>
<td>Check wiring. Possibly the relay is wired wrong or power is not applied to lock.</td>
</tr>
<tr>
<td>System has power, but lock won’t lock. Light/Lights always flashing.</td>
<td>REX (request to exit) input device wired closed instead of open.</td>
</tr>
<tr>
<td>Keypads lights work, but programming steps don’t seem to function.</td>
<td>Initialized Keypad (100CAB only) Wrong master code, iButton, or Card.</td>
</tr>
<tr>
<td>When programming, unit will not accept iButtons or Cards.</td>
<td>Must use master iButton or Card to program iButtons or Cards.</td>
</tr>
<tr>
<td>Door Forced/Propped Alarm configured, but not Active.</td>
<td>Door Position switch not installed or wired properly.</td>
</tr>
<tr>
<td>Door Position installed and wired properly. Door Forced/Propped Alarm not working.</td>
<td>System not configured properly. Alarm not wired properly.</td>
</tr>
</tbody>
</table>