

# Chapter 5

## The Keypad (KP103)

Part #650209



# The Keypad (KP103)

- Specifications
- Positioning
- Wiring
- Programming



Figure 5.1  
The KP103 Keypad

The KP103 keypad (Part # 650209, Figure 5.1), provided by Accutech, is used to escort residents through a monitored zone and to reset zone equipment once an alarm has occurred.

The keypad features two relays. The first relay is used for authorized escorting and resetting of zone equipment after an alarm event. The second relay is an anti-tailgate feature that will allow unimpeded passage through the exit point without triggering an alarm, while any tailgater with a tag who attempts to subsequently pass-through will trigger an alarm.

The keypad has circuitry to handle Request-To-Exit applications. Contact your Accutech representative for more information. Request-to-Exit devices are available in many forms—such as a simple-push button, motion detector, or card swipe.

For complete information about the keypad, consult the manufacturer's manual.

## Specifications

### Power Requirements

Operating Voltage: 12 V OR 24 V AC/DC

Active Current Draw:

100 mA Max @ 12 V

65 mA Max @ 24 V

Idle Current Draw:

9 mA Max @ 12 V

17 mA Max @ 24 V

Relay Contact Rating: 10 A @ 28 VDC/120 AC

Cable: minimum 22-gauge, 6-conductor

### Mechanical

Size: 4-5/8" x 2-7/8" x 1-3/8"

Weight: 4.3 ounces

Mounting: Flush or Surface Mount

\*Metal box not recommended

### Operating Characteristics

Keypad LED Indicators:

LED	Status	Function
Green	On	Reset active
Yellow	On	Tag Detect active
Red	On	Unit is in alarm

### Environmental

Operating Temperature: 32° to 120° F

Operating Humidity: 40%-60%

Intended for indoor use only

### Duty Cycle

Rated for continuous use.

## Positioning

The keypad should be located within 3 to 5 feet of the monitored door or elevator. In hallway applications, mount the keypad just outside of the zone to avoid alarm activation when escorting a monitored resident.

# Wiring

The keypad should be wired directly to the LC1400T. Refer to Figure 5.2.

All wiring connections must be done in accordance with NFPA 70. Use UL-approved, plenum rated cable.

You will need 22-gauge, 6-conductor plenum-rated cable for this connection.

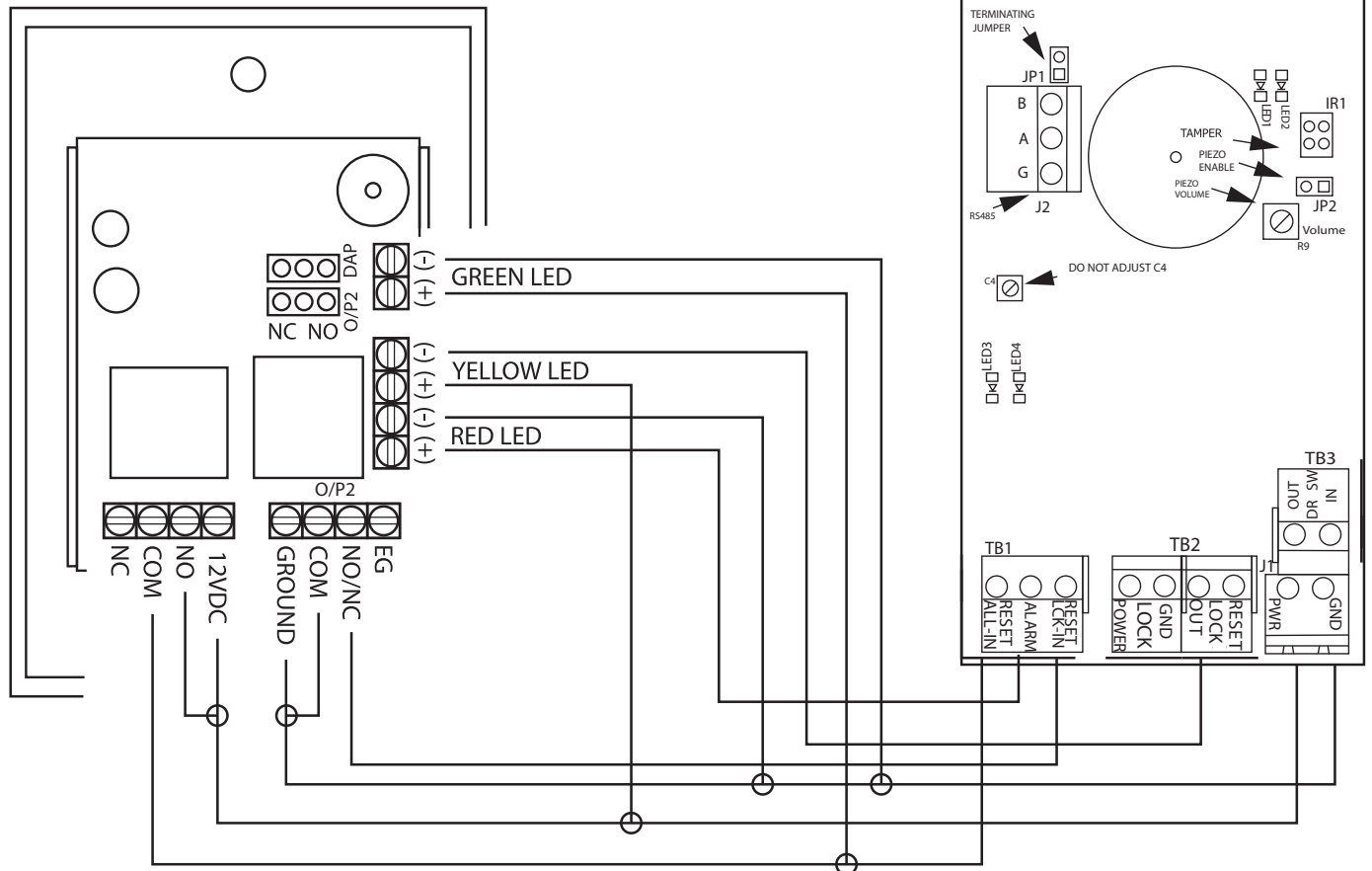


Figure 5.2 - Wiring LC1400T to KP103 Keypad

## Programming

- Initiating the first relay (Reset All/Escort)
- Initiating the second relay (Reset Lock Only/Anti-tailgate)
- How to enter user codes
- How to delete user codes
- How to set the relay time
- DAP Instructions
- How to change the installer code

Programming the keypad is, in simple terms, providing it with a set of instructions on how to react in various contingencies. The keypad must be programmed as soon as all installation and wiring has been completed. Later on, as changes take place, partial or full reprogramming may be carried out as many times as necessary.

Table 5.3 - Keypad LED Indicators		
LED	Status	Function
Green*	On	Output Relay is Active
Yellow	On	Monitors power input
Red	On	Unit is in Alarm

\*During programming, the green LED functions differently.

### Important

The Reset All timer (default is 16 seconds) must be longer than the Internal Keypad Relay timer (default is 2 seconds).

## Initiating the First Relay (Reset All / Escort)

To initiate the first relay, enter a valid user code and press the [#] key. The green LED will illuminate.

Accutech default Reset All code is:

1234#

Keypad resets are used to reset zone equipment after an alarm has been addressed. When you initiate a keypad reset, all zone equipment and alarms will be reset. However, if the alarm condition is not properly corrected, the alarm will resume.

The keypad's Escort function is used to escort tags through a monitored zone without triggering alarms. When you initiate the Escort function, for the duration of the Escort time, you will be able to escort the tag through a door, down a hallway, or while using an elevator, without triggering alarms.

## Initiating the Second Relay (Reset Lock Only / Anti-Tailgate)

To initiate the second relay, enter a valid user code and press the [#] key. The green LED will turn on.

Accutech Default Reset Lock Only code is:

7139#

The second relay is an anti-tailgate feature that will allow unimpeded passage through the exit point without triggering an alarm. However, any banded tailgater attempting to subsequently pass-through will trigger an alarm event.

## How to Enter User Codes (First Relay)

User code 1234 is already factory set as user number 01.

### Note

First Relay user numbers are two digits and range from 01 to 99.

You must delete a user code before programming another user code into its user number position.

- 1) Input the installer code [1][1][1][1][\*] to enter Program mode. You will hear two beeps.
- 2) Press [1], then enter the desired user number (Example: 01).
- 3) Input the new user code (for example 5555) followed by the [#] key. You will hear two beeps.
- 4) Continue programming for additional user codes as desired (for example 03, 9999, #).
- 5) When finished, press [\*] to exit program mode and return the keypad to normal operation mode.

## How to delete user codes (First Relay)

- 1) Input the installer code [1][1][1][1][\*] to enter Program mode. You will hear two beeps.
- 2) Press [1], then the desired user number (Example: 01), then the [#] key. You will hear two beeps.
- 3) Continue deleting additional user codes as desired (Example: 03, #).
- 4) When finished, press [\*] to exit program mode and return the keypad normal operation mode.

1 1 1 1 \*

Enter Programming Mode

1

Selects Relay 1

0 1

Selects user number 01

5 5 5 5 #

Selects 5555 as the code

\*

Exits programming mode

1 1 1 1 \*

Enter Programming Mode

1

Selects relay 1

0 1

Selects user number 02

#

Deletes user code for user number 02

\*

Exits programming mode

## How to set the relay time (First Relay)

### Note

The Relay time is factory set to 15 seconds.

To change the relay time:

- 1) Input the installer code [1][1][1][1][\*] to enter Program mode. You will hear two beeps.
- 2) Press [4][0], then input the desired relay time (1-999 seconds) followed by [#]. You will hear two beeps.
- 3) Press [\*] to exit program mode and return the keypad normal operation mode.

## How to enter user codes (Second Relay)

### Note

Second relay user numbers are one digit and range from 1 to 9.

- 1) Input the installer code [1][1][1][1][\*] to enter Program mode. You will hear two beeps.
- 2) Press [2], then input the desired user number (Example: 1).
- 3) Input the new user code (Example: 5555) followed by [#]. You will hear two beeps.
- 4) Continue programming for additional user codes as desired (Example: 03, 9999)
- 5) When finished, press [\*] to exit program mode and return the keypad to normal operation mode.

1 1 1 1 \*

Enter Programming Mode

4 0

Selects timer for relay 1

1 5 #

Sets timer to 15 seconds

\*

Exits programming mode

1 1 1 1 \*

Enter Programming Mode

2

Selects relay 2

1

Selects user number 1

5 5 5 5 #

Selects 5555 as the new user code

\*

Exits programming mode

## How to delete user codes

### (Second relay)

- 1) Input the installer code [1][1][1][1][\*] to enter program mode. You will hear two beeps.
- 2) Press [2], then the desired user number (Example: 1) followed by [#]. You will hear two beeps.
- 3) Continue deleting additional user codes as desired (Example: 03, #).
- 4) When finished, press [\*] to exit program mode and return the keypad to normal operation mode.

#### Important

The default code for relay 2 is 7139 and is assigned to user number 1.

## How to set the relay time

### (Second relay)

#### Note

The Relay time is factory set to 15 seconds.

To change the relay time:

- 1) Input the installer code [1][1][1][1][\*] to enter program mode. You will hear two beeps.
- 2) Press [5][0], then input the desired relay time (1-999 seconds), followed by [#]. You will hear two beeps.
- 3) Press [\*] to exit program mode and return the keypad normal operation mode.

1 1 1 1 \*

Enter Programming Mode

2

Selects relay 2

1 #

Selects and deletes user code #1

\*

Exits programming mode

1 1 1 1 \*

Enter Programming Mode

5 0

Selects timer for relay 2

1 5 #

Sets timer to 15 seconds

\*

Exits programming mode

## DAP Instructions

### Important

Direct access programming (DAP) should only be used if the keypad programming has become unstable. The keypad programming is unstable if 5 beeps continuously occur between programming steps. DAP programming will reset the KP103 keypad to Accutech factory settings.

- 1) Remove the power and keypad faceplate from the back box.
- 2) Move the DAP jumper from OFF position to ON position.
- 3) Apply power to the keypad.
- 4) Move the DAP jumper back to OFF position.
- 5) Input [8][9][0][1][#] to initialize. You will hear 2 beeps.
- 6) Press [0] to select user code 0, then Input [1][1][1][1][#] to designate the new installer code. You will hear 2 beeps.
- 7) Press [4][0], then [1][5] (to set to 15 seconds), then press [#]. You will hear 2 beeps.
- 8) Press [5][0], then [1][5] (to set to 15 seconds), then [#]. You will hear 2 beeps.
- 9) Press [1], then [0][1] (to select user number 01), then input [1][2][3][4][#]. You will hear 2 beeps.
- 10) Press [2], then [1] (to select user number 01), then input [7][1][3][9][#]. You will hear 2 beeps.
- 11) Press [\*] to exit. You will hear 2 beeps.

[8][9][0][1][#]

Initialize

[0] [1][1][1][1] [#]

Designate new Installer Code

[4][0] [1][5] [#]

Set relay 1 timer to 15 seconds

[5][0] [1][5] [#]

Sets relay 2 timer to 15 seconds

[1] [0][1][1][2][3][4][#]

Sets default user code 1 for relay 1

[2] [1] [7][1][3][9][#]

Sets default user code 1 for relay 2

[\*]

Exit



## How to change the installer code

### Important

The original installer code is 0000. The Accutech preprogrammed code is 1111. If the installer code is unknown, or if it differs from the Accutech preprogrammed code, and you need to revert back to the original installer code, refer to the DAP instructions section.

- 1) Input the installer code [1][1][1][1][\*] to enter program mode. You will hear two beeps.
- 2) Press [0], then input the new desired installer code number (4-8 digits) followed by the [#] key. You will hear two beeps.
- 3) When finished, press [\*] to exit program mode and return the keypad normal operation mode.

## Request-to-Enter

The KP103 keypad has Request-to-Enter (RTE) functionality.

Typically, in access control applications, RTE allows uncontrolled egress (exiting) from a secure area. However, in ResidentGuard applications, RTE is reversed (as ResidentGuard is designed to prevent egress of a monitored resident from a secure area).

In ResidentGuard applications, visitors and staff still need to be able to freely enter the secure area. This is achieved via a RTE device (such as a push button) mounted to the unsecure side of the door.

1 1 1 1 \*

Enter Programming Mode

0

Selects user number 0

5 5 5 5 #

Selects 5555 as the new code

\*

Exits programming mode



# Chapter 6

## Power Supplies

# Power Supplies

- 15VDC, 4.5A Central Power Supply (part #500253)
- 15VDC, 2A Wall Wart Switching Power Supply (part #500224)
- Power Supply Specifications
- Positioning the Power Supply
- Connecting the Power Supply

Local jurisdiction or code will determine whether a central power supply is required or if local power with an outlet on emergency power above the door as acceptable. Other factors may include ceiling accessibility, customer preference, and/or the scale of the system.

## 15 VDC, 4.5 A Central Power Supply Specifications

- Part # 500253, Model PS51C2
- UL1310 and CSA 22.2 #223 Class 2 Power Supply
- Each PS51C2 Power Supply comes with a grounded 7.5-foot power cord for ease of installation
- Can be hardwired

### *Electrical*

Input: 120VAC, 60Hz, 2A on Emergency Power  
Output: 15VDC, 4.5A

### *Temperature*

A Power Supply operates best in an ambient temperature between 35 and 90 degrees Fahrenheit. Operation outside of this range may cause unexpected or undesirable results, including premature failure.

### *Mechanical*

Construction: Metal Case  
Enclosure size: 12.00" x 12.00" x 4.00"  
Weight (including enclosure): 12 US pounds

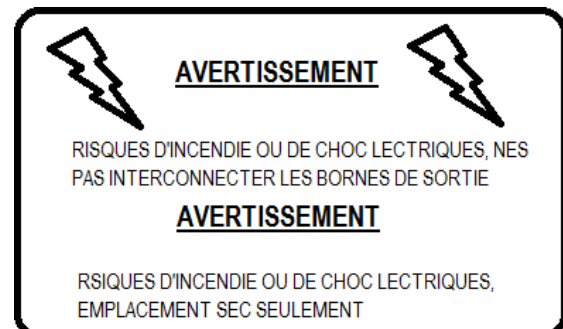
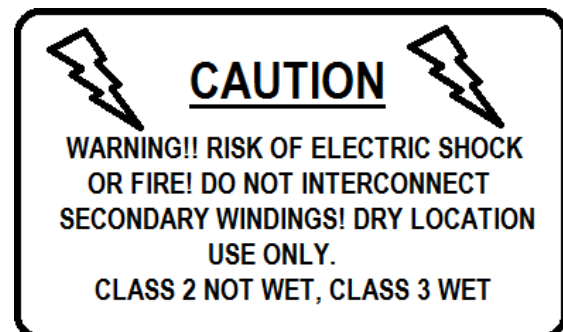
## Positioning the Power Supply

The Power Supply should be located in a utility closet near a 120VAC dedicated power outlet on emergency power. Use appropriate hardware for the weight and mounting surface.

## Connecting the Power Supply

For all connections to the Power Supply, use 18-gauge, 2-conductor plenum-rated wire. Gauge determined by overall total length of cable run.

To connect a Power Supply to an LC1400T, refer to Figure 6.1: Using RED and BLACK wire, connect the +15V and Ground between the Power Supply terminal strip and LS Controller J1.



NOTE:  
USE A VOLT METER TO CONFIRM +15V AND  
GROUND OUTPUT WIRES OF THE POWER SUPPLY

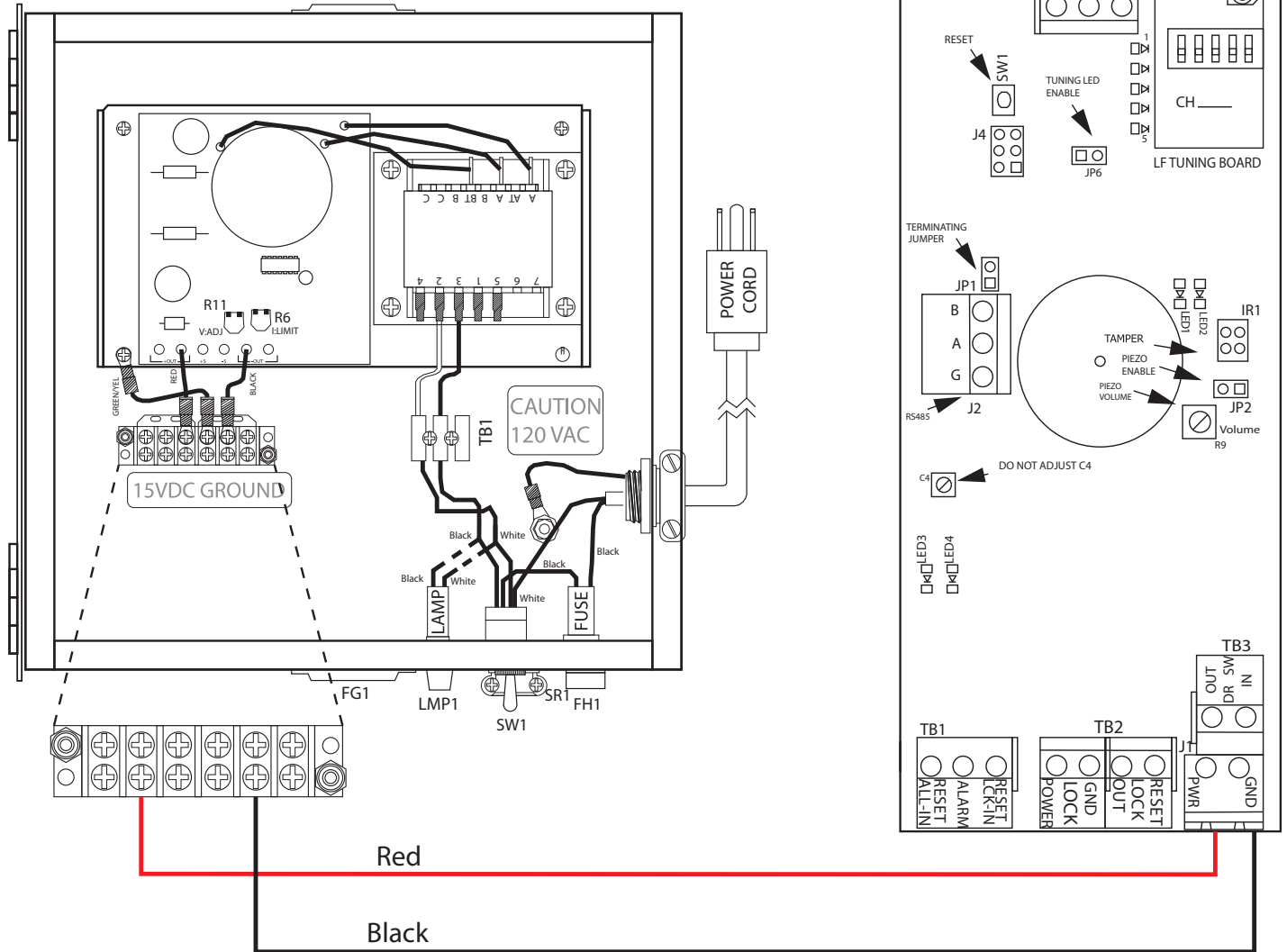


Figure 6.1  
PS51C2 Power Supply to LC1400T Wiring

## 15VDC, 2A Switching Plug-In Power Supply Specifications

- Listings: UL, CUL, CCC, CE, FCC
- Part Number: 500224

### *Power*

AC Input: 100-240V, 1.0A, 50-60Hz on

Emergency Power

DC Output: 15 VDC, 2A Switching Regulated

### *Temperature*

Operates best in an ambient temperature between 35 and 90 degrees Fahrenheit.

Operation outside of this range may cause unexpected or undesirable results, including premature failure.

## Positioning the Power Supply

The 15VAC, 2A Power Supply is located above the drop ceiling near a 120VAC dedicated power outlet on emergency power. Typically located within 10' of the LC1400 zone.

## Connecting the Power Supply

To connect a Power Supply to an LC1400T, refer to Figure 6.2: After confirming with a volt meter which wire is positive and negative, connect the +15V and Ground between the Power Supply and LS Controller J1. Do not short these wires together as it will cause the power supply to fail.

NOTE:  
USE A VOLT METER  
TO CONFIRM +15V  
AND GROUND OUTPUT  
WIRES OF THE POWER  
SUPPLY

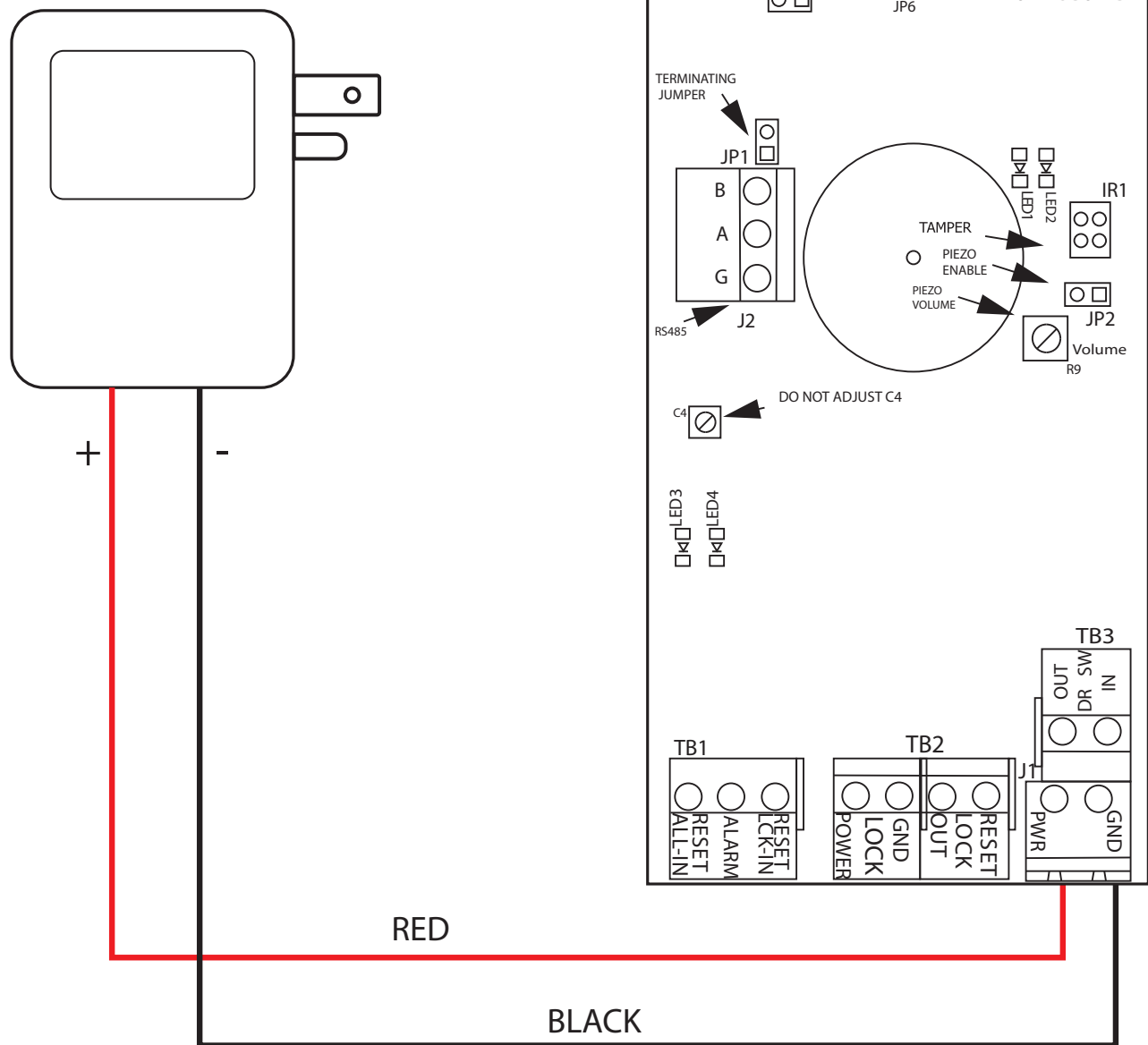


Figure 6.2  
LC1400T to Plug In Power Supply Wiring





# **Chapter 7**

## **LCT Utility Software**

# LC1400T Utility Software 1.0.4.0

## Important

The instructions in this chapter are written for computers running Windows 10. Setup may be different for previous versions of Windows.

The LC1400 Utility Software provides the ability to view alarms from LC1400T controllers in real time. The software allows users to configure or make changes to each LC1400T unit connected to the computer/software.

## Setup

### Connecting the USB-RS485 Cable and Noting the COM Port Number

Before you begin, do the following:

- 1) Plug the USB end of the cable into any available USB port on your computer.
- 2) From your computer, open the Start menu and type "Device Manager" into the Search bar (If there is no Search bar, simply begin typing after opening the start menu to make it appear). Select Device Manager from the results list.
- 3) In the Device Manager, click on the triangle next to Ports (COM & LPT). This will open a submenu. Note the assigned USB COM Port Number (Figure 7.2), which will be needed during the software setup.
- 4) Connect the RS485 end of the cable to TB6 or TB7 (RS485) of the LC1400T.

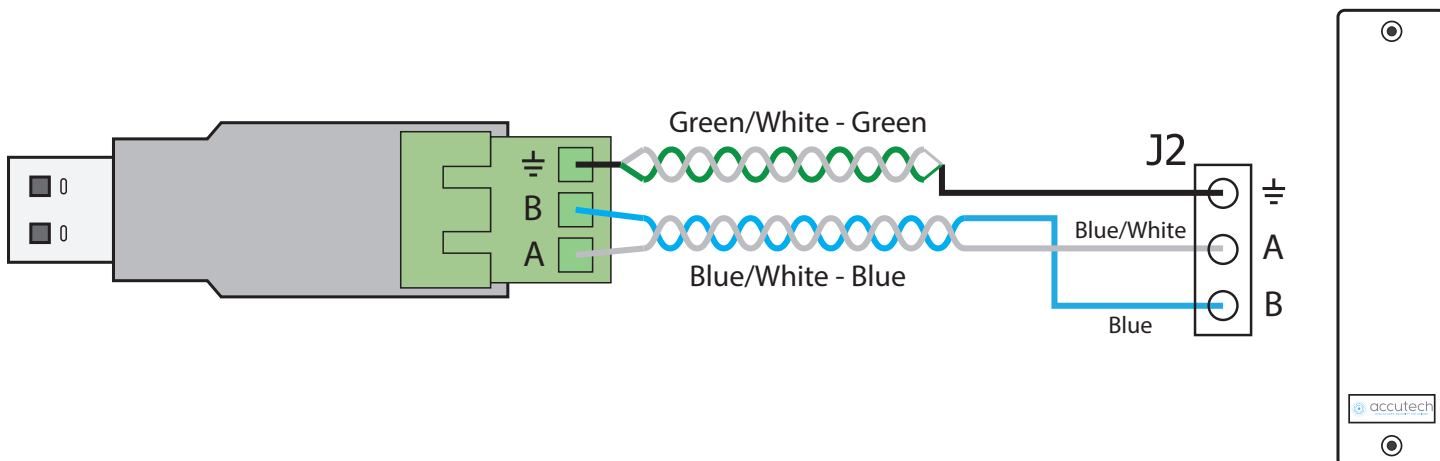


Figure 7.2  
RS485 to LC1400T Wiring

## LCT Software Utility

Open the application by double clicking the shortcut for the LCTUTIL on your desktop (Figure 7.7). This will bring up the Accutech LCT Software Utility window.

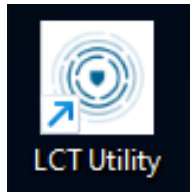


Figure 7.3  
LCT UTILITY Desktop  
Shortcut Icon

## Installing the Software

To install the LCT Utility Software:

- 1) Locate and open the LCTAppSetup program to open the installation wizard.
- 2) Wait for the wizard to load, then click Next, followed by Install. Wait for the software to finish installing.
- 3) When the software is finished installing, a new window will appear. Click Finish.

## LC1400T Selection

- 1) Open the dropdown menu in the Communication Settings section of the panel on the right side of the screen. Select the USB serial COM port that the LC1400T is connected to.



- 2) If you have a proper connection, the window will populate with real-time information about the LC1400T's configurations.
- 3) You can now make changes to the selected LC1400T's configurations.

**Note:** The Command Information section of the software's right panel may occasionally flash between "Command: Poll" and "Command: Read Error Code". This is normal and does not indicate a disconnection.

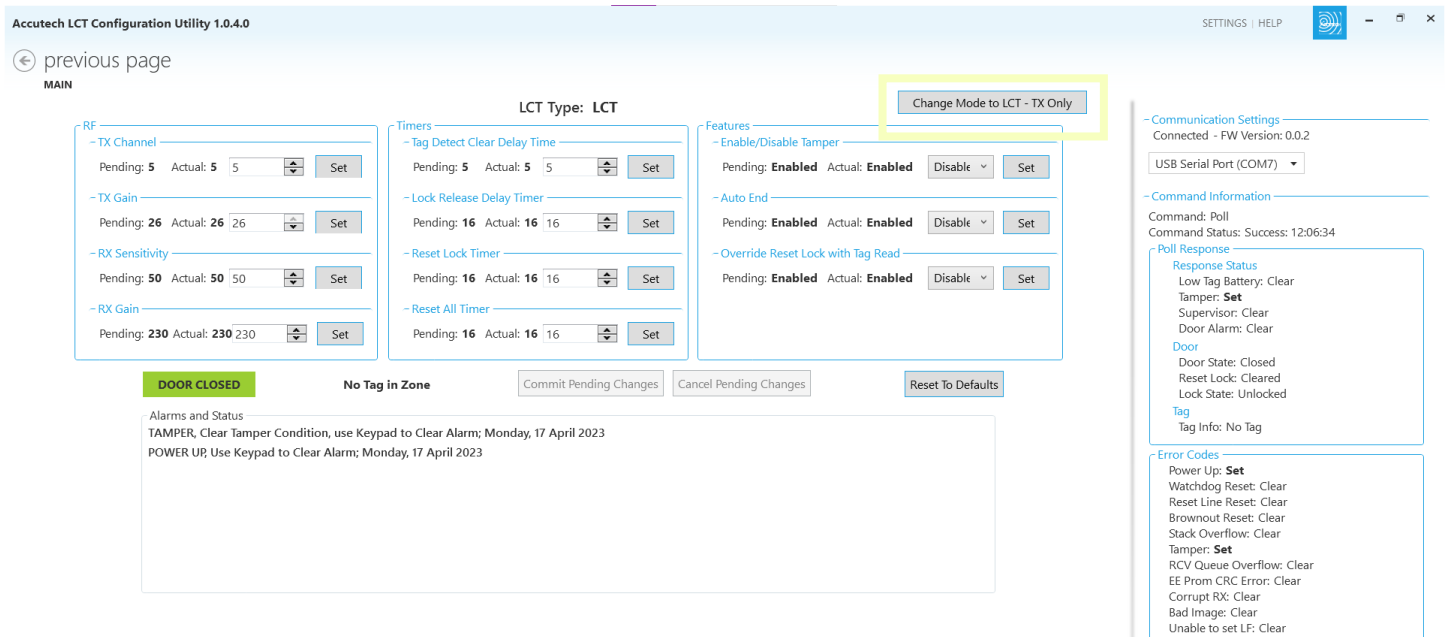
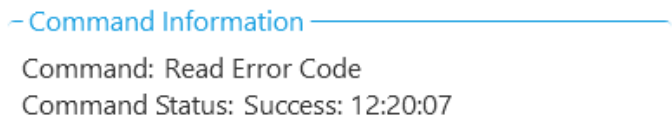
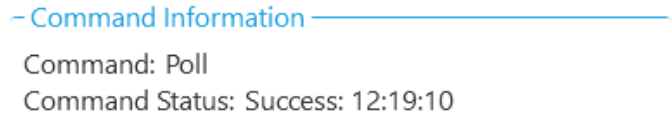


Figure 7.4  
Software window with an LC1400T selected

## Software Sections

### Timers

The Timers section allows you to adjust timers for the Tag Detect Clear Delay, Lock Release Delay, Reset Lock, and Reset All functions.

For example, to change and extend the Reset Lock timer to 25 seconds:

- 1) Use the arrow buttons to change the number in the field of the Reset Lock Timer row to 25 seconds.

#### - Reset Lock Timer

Pending: **20** Actual: **20**

- 2) Click Set. The row will be highlighted blue, showing that the change is pending.

#### - Reset Lock Timer

Pending: **25** Actual: **20**

- 3) Click on the Commit Pending Changes button to download the changed setting to the LC1400T .
- 4) The areas with pending changes will briefly gray out, and will return to full color when the changes are complete.

#### - Reset Lock Timer

Pending: **25** Actual: **20**

**Important:** If you do not click the **Commit All Pending Data** button after a change and only select **Set**, the data will only temporarily change and remain pending. Always click **Commit All Pending Data** before moving to the next tab or screen. Click the **Cancel All Pending Data** button will revert the temporary change if you did not click on the **Commit All Pending Data** button.

**Timers**

- Tag Detect Clear Delay Time

Pending: **5** Actual: **5**

- Lock Release Delay Timer

Pending: **16** Actual: **16**

- Reset Lock Timer

Pending: **20** Actual: **20**

- Reset All Timer

Pending: **2** Actual: **2**

Figure 7.5  
The Timers Section

## Features

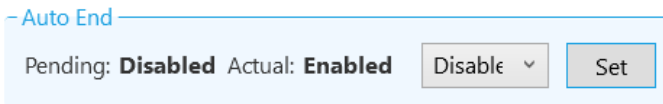
The Features section allows you to enable or disable certain features in the LC1400T. Once the software reads all the settings in the Features tab, you can then make a change to that LC1400T.

For example, to disable the Auto End Status for LCT:

- 1) Select Disable from the dropdown menu in the Auto End row.



- 2) Click Set. The row will be highlighted blue, showing that the change is pending.



- 3) Click on the Commit Pending Changes button to download the changed setting to the LC1400T .
- 4) The areas with pending changes will briefly gray out, and will return to full color when the changes are complete.

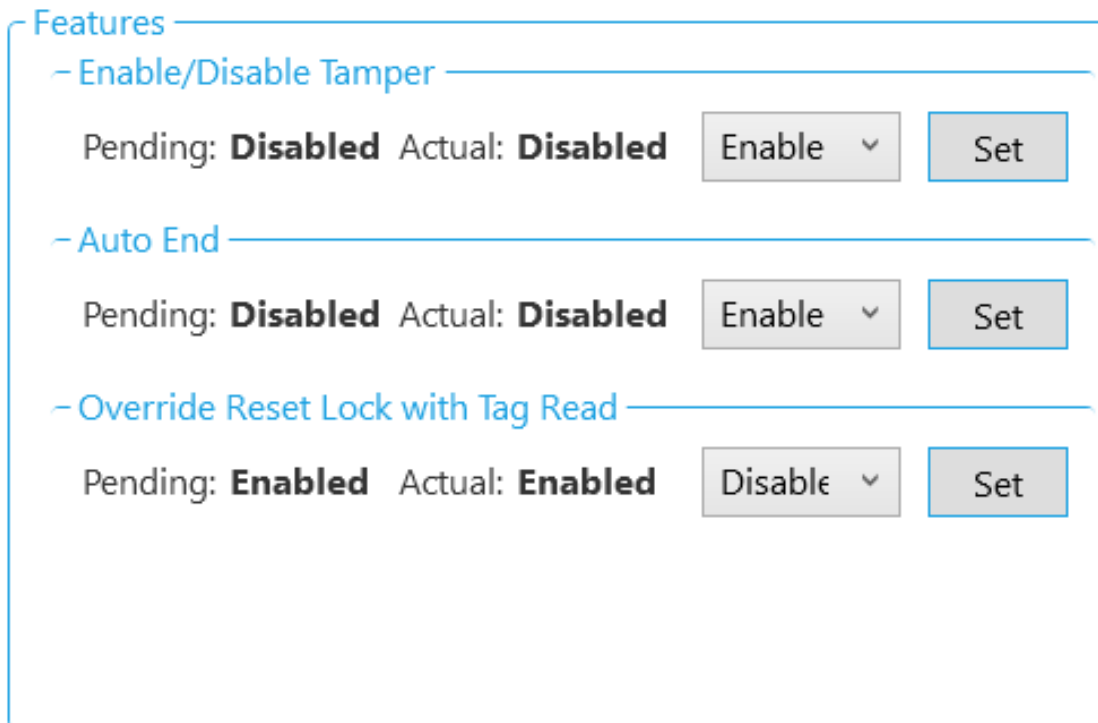
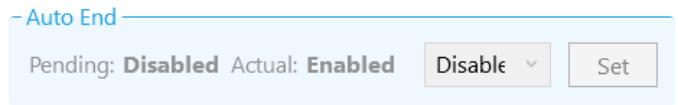


Figure 7.6  
The Features Section

## RF

The RF section allows you to change certain radio frequency functions in the LC1400T. Once the software reads all the settings in the RF tab, you can then make a change to that LC1400T.

### *Default (TX) Gain = 6*

The TX Gain allows you to increase or decrease the transmitter activation field size.

To change the TX Gain setting, do the following:

- 1) Use the arrow buttons to change the number in the field to the desired setting.

- TX Channel

Pending: 6    Actual: 6   

- 2) Click Set. The row will be highlighted blue, showing that the change is pending.

- TX Channel

Pending: 4    Actual: 6   

- 3) Click on the Commit Pending Changes button to download the changed setting to the LC1400T .

- 4) The areas with pending changes will briefly gray out, and will return to full color when the changes are complete.

Note: To change settings in an LCT-TX only controller, select the "change to LCT-TX only" button. (see fig. 7.4)

- TX Channel

Pending: 4    Actual: 4   

RF

- TX Channel

Pending: **2**    Actual: **2**   

- TX Gain

Pending: **6**    Actual: **6**   

- RX Sensitivity

Pending: **50**    Actual: **50**   

- RX Gain

Pending: **230**    Actual: **230**   

Figure 7.6b  
RF Section

### Transmit Channel (Tx Frequency)

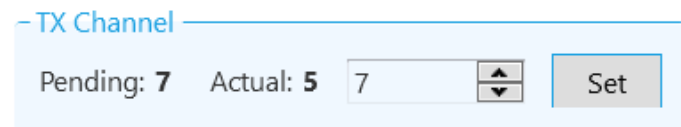
**Note:** You must tune the LCT board itself after changing this setting in the software. See Field Configurations chapter for tuning instructions.

To change the TX Channel setting, do the following:

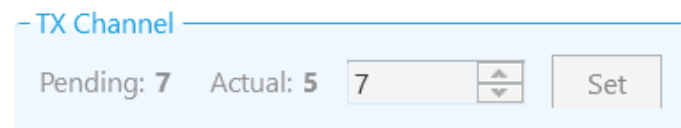
- 1) Use the arrow buttons to change the number in the field to the desired setting.



- 2) Click Set. The row will be highlighted blue, showing that the change is pending.



- 3) Click on the Commit Pending Changes button to download the changed setting to the LCT .
- 4) The areas with pending changes will briefly gray out, and will return to full color when the changes are complete.



- 5) Go to the LCT circuit board and tune the LCT. See Field Configurations chapter for tuning instructions.

### RX Sensitivity

RX Sensitivity is adjusted in the same way that TX Gain is.

### RX Gain

RX Sensitivity is adjusted in the same way that TX Gain is.

NOTE: Do not adjust RX gain or RX sensitivity due to bleed through. They are only adjusted in the event there is noise.



## Command Information

The command information section on the right side of the screen displays information about the LC1400T's statuses and error codes.

### – Command Information –

Command: Poll

Command Status: Success: 12:47:16

#### Poll Response

##### Response Status

Low Tag Battery: Clear

Tamper: **Set**

Supervisor: Clear

Door Alarm: Clear

##### Door

Door State: Closed

Reset Lock: Cleared

Lock State: Unlocked

##### Tag

Tag Info: No Tag

#### Error Codes

Power Up: **Set**

Watchdog Reset: Clear

Reset Line Reset: Clear

Brownout Reset: Clear

Stack Overflow: Clear

Tamper: **Set**

RCV Queue Overflow: Clear

EE Prom CRC Error: Clear

Corrupt RX: Clear

Bad Image: Clear

Unable to set LF: Clear

Command	Definition: Indicates connection to the LCT.  Poll = Connected Read Error Code = Connection Lost
Command Status	Definition:  Success: XX:XX:XX =
Response Status	
Low Tag Battery	Definition: Indicates if the controller detects a low battery Tag.  Clear = Tag battery is OK Set = Tag battery is low
Tamper	Definition: Indicates if a Tamper event is occurring.  Clear = No tamper event Set = Active tamper event
Supervisor	Definition: Indicates if a Supervisor event is occurring.  Clear = No supervisor event Set = Active supervisor event
Door Alarm	Definition: Indicates if a Door Alarm is occurring.  Clear = No door alarm event Set = Active door alarm event
Door	
Door State	Definition: Indicates the current state of the door at the controller zone.  Closed = Door is closed Open = Door is open

Figure 7.7  
The Advanced Tab

Lock State:	Definition: Indicates the current state of the lock at the controller zone.  Locked - Lock is engaged Unlocked - Lock is not engaged
Tag	
Tag Info:	Definition:
Power Up:	Definition:  Clear - Set -
Watchdog Reset =	Definition:  Clear - Set -
Reset Line Reset:	Definition:  Clear - Set -
Brownout Reset	Definition:  Clear - Set -
Stack Overflow	Definition:  Clear - Set -
Tamper	Definition:  Clear - Set -
RCV Queue Overflow	Definition:  Clear - Set -
EE Prom CRC Error	Definition:  Clear - Set -

Corrupt RX	Definition:  Clear - Set -
Bad Image:	Definition:  Clear - Set -
Unable to set LF	Definition:  Clear - Set -



<b>Label</b>	<b>Range</b>	<b>Default</b>
AtoD for X Gain	0-26	6
Frequency channel	1-9	3
Rx gain digital pot	0-255	230
Rx sensitivity digital pot	0-255	50
Tag Detect Delay Timer	0-255 sec.	5 sec.
Lock Release Delay Timer	0-255 sec.	16 sec.
Exit Door Timer	0-255 sec.	16 sec.
Reset All Timer	0-90 sec.	16 sec.
Tamper audible alarm	enable/disable	enable
Override ResetLock with Tag	enable/disable	enable

## LC1400T Configuration Checklist

X axis	_____		
Tx Channel	_____		
Tx X axis gain digital pot	_____		
Rx gain digital pot	_____		
Rx sensitivity digital pot	_____		
Tag detect delay timer	_____		
Lock release delay timer	_____		
Exit door timer	_____		
Reset all timer	_____		
Tamper audible alarm	<input type="checkbox"/> Enabled	<input type="checkbox"/> Disabled	
Auto (door close) end resets	<input type="checkbox"/> Enabled	<input type="checkbox"/> Disabled	
Display address	_____		
Perimeter Control	<input type="checkbox"/> Software Enabled <input type="checkbox"/> Hardware Disabled	<input type="checkbox"/> Software Enabled, <input type="checkbox"/> Hardware Disabled	
Override ResetLock with Tag	<input type="checkbox"/> Enabled	<input type="checkbox"/> Disabled	
Perimeter Alarm on ResetLock	_____		



# **Chapter 8**

## **Field Adjustments**

# Field Adjustments

- Setting Addresses
- Why tune the LC1400T?
- Adjusting the Tx Activation Field (Tuning)
- Stagger Tuning
- Setting Timer Values

## Why Tune the LC1400T / LCT\_TX?

The LC1400T comes from the factory tuned to typical parameters that will be effective under most circumstances. Factory defaults set the frequency at Channel 3 (131 kHz).

However, there are possible reasons to make tuning adjustments:

- To accommodate special environmental conditions (This is the most likely reason to tune since every zone should be tested and adjusted during initial installation to assure proper coverage).
- The unit had to be mounted close to a metal object during installation and was detuned.
- Stagger tuning was implemented.

## Adjusting the TX Activation Field (Tuning)

Adjustments to the LC1400T are achieved through the LC1400T's RS485 connection and a computer with the LC1400 Utility Software installed.

These steps assume a connection to a computer running the LC1400 Utility software has already been established.

To tune the LC1400T, use the following instructions:

- 1) Notify staff and security that you will be adjusting the zone and they will need to pay special attention to area traffic during this time.
- 2) Open the LC1400T cover by removing the four spanner screws. A Tamper alarm will be generated. The piezo will sound and LED1 (Red) will illuminate. Silence the Tamper alarm by removing jumper JP2 (Sound Enable).
- 3) In the Loop window of the LC1400 Utility software, select the LCT address of the controller.
- 4) Open the RF tab in the LC1400 Utility Software and verify that the desired Tx Channel is set. If not, select the correct channel using the field in the New column of the Transmit Channel row.
- 5) Click on the Set button next to any changed settings, then click Commit Pending Values. **Important:** If you do not select "Commit all Pending values", your changes will not be saved and will revert to previous settings.
- 6) Each antenna has a corresponding LFT (Low Frequency Tuning Module). Set the LFT's five dip switches to the desired channel/frequency configuration (figure 8.2).

**Note:** The LCT-TX must be set and tuned to the same frequency as the LC1400T controller.

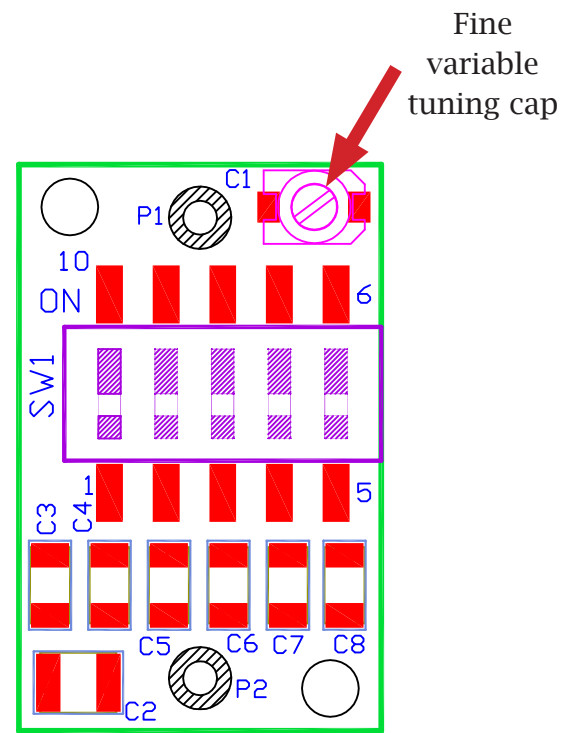
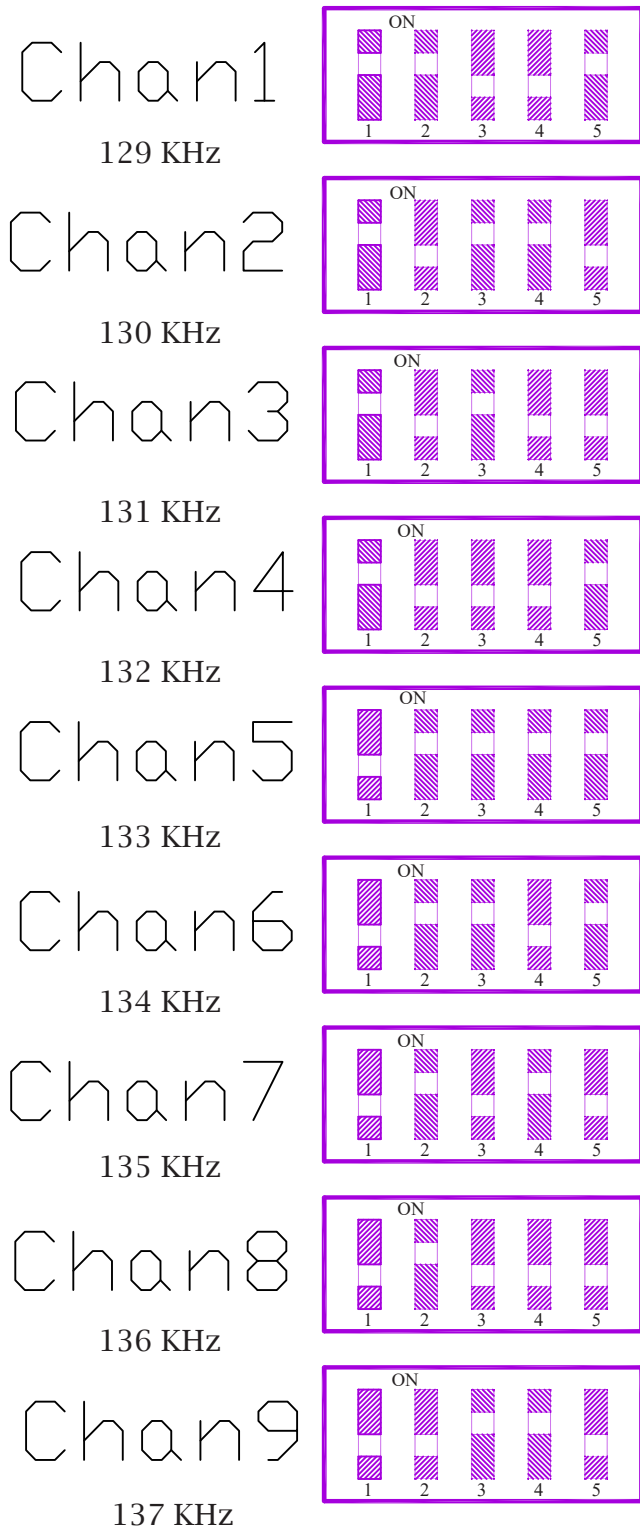


- 7) Using a slotted screwdriver, adjust the fine variable tuning cap on the LFT to achieve as much readout of the antenna's LED array as possible. You will either need to adjust the cap clockwise or counterclockwise depending on the set frequency.
- 8) The phase lock green LED 8 should be lit. IF LED 6 or 7 are lit instead, use a slotted screwdriver to adjust the fine variable tuning cap (see figure 9.2) on x and/or y to get LED 8 to light up.
- 9) Note the digital value of the antenna as displayed on the dial in the RF tab. The value should be as close to 800 as possible. This values is a representation of the current size and shape of the Tx activation field.
- 10) When finished, the controller will automatically be tuned. Confirm the zone has adequate coverage. If necessary, readjust by repeating steps 3 through 10.
- 11) Enable the internal piezo by replacing JP2 (Sound Enable) and replace the cover with the four spanner screws.
- 12) Enter a valid code into the keypad to reset the zone and clear the Tamper alarm.

**DO NOT USE THESE CONFIGURATIONS IF YOUR CONTROLLER'S CIRCUIT BOARD HAS A PINK STICKER ON IT.**

*If your controller's circuit board has a pink sticker on it, the controller has unique tuning configurations. Use the configurations from the insert on the controller's inside cover instead.*

*If the controller does not have an insert, call (800) 356-2671 for support.*



Low Frequency Tuning Module (LFT)

Figure 8.2

LFT (Low Frequency Tuner) Dip switch configurations for channels 1-9

## Stagger Tuning

Stagger tuning allows monitored zones to be located closer together than the normal minimum distance by using different Tx operating frequencies (channels) for adjacent zones. When two LC1400 units are close enough to detect a tag in each other's zones, you should implement stagger tuning by changing the channel configuration of the unit(s).

These steps assume a connection to a computer running the LC1400 Utility software has already been established.

To implement stagger tuning, use the following instructions:

- 1) Notify staff and security that you will be adjusting the zone and they will need to pay special attention to area traffic during this time.
- 2) Open the LC1400T cover by removing the four spanner screws. A Tamper alarm will be generated. The piezo will sound and LED1 (Red) will illuminate). Silence the Tamper alarm by removing jumper JP2 (Sound Enable).
- 3) In the RF Tab of the LC1400 Utility Software, use the arrows in the Transmit Channel row of the New column to select the desired channel (1-9). Click the Set button next to the channel number, then click Commit All Pending Data to save these settings.

Channel 1	129010 (129)
Channel 2	129980 (130)
Channel 3	131030 (131)
Channel 4	132030 (132)
Channel 5	133030 (133)
Channel 6	133970 (134)
Channel 7	135010 (135)
Channel 8	136060 (136)
Channel 9	136960 (137)

### Important

If you do not click Commit All Pending Data, the changes will not be saved and will revert to the previous settings.

- 4) One at a time, set each capacitor's dip switches to the correct configuration for the channel you selected in the software (see figure 9.2). Each capacitor should be set to the same configuration.
- 5) When finished, press the red Reset button.
- 6) Enable the internal piezo by reinstalling JP2 (Sound Enable). Replace the cover with the four spanner screws.
- 7) Enter a valid code into the zone keypad to reset the zone and clear the Tamper alarm.

## Setting Timer Values

The LC1400T has six configurable timers. All of the timers measure in seconds.

### *Tag Detect Delay Timer*

Time that the Controller holds the valid Tag Detect event active even after a Tag has left the zone (default = 5 seconds).

### *Lock Release Delay Timer*

Time that the Controller holds the Lock energized after the lock is activated by an event (default = 16 seconds).

### *Exit Door Timer*

Time the controller holds the door exit alarm active after the door has opened (default = 16 seconds).

### *Reset All Timer*

Amount of time the unit stays deactivated after a Reset All event (default = 16 seconds).

To set timer values, use the following instructions:

- 1) With the LCT selected in the Loop window of the LC1400 Utility Software, click on the Timers tab. A list of the timers and their current settings will be displayed.
- 2) In the row labeled with the name of the timer you intend to adjust, click the up or down arrow keys on the field in the New column to select a time in seconds.
- 3) Click the Set button next to the field. The Pending column will update to the new time.
- 4) To save these changes, click on the Commit All Pending Data button below the Loop window. **Important:** If you do not complete this step, the changes will not be saved and will reset to the previous settings.





# **Chapter 9**

## **System Maintenance & Testing**

# System Maintenance and Testing

- Tag and Band Maintenance
- LC1400T Maintenance
- Testing Monitored Zones
- Facility Performance Test Log

## Warning

This chapter is intended as a guidance document only. Each facility should review these recommendations and modify as necessary to meet their own unique security requirements. Not all options may necessitate inclusion in your unique system.

## Tag and Band Maintenance

For information on cleaning tags and bands, and for information on testing a tag or a tag's battery life, see Chapter 3.

## LC1400T Maintenance

LC1400T covers can be cleaned with antibacterial wipes or hydrogen peroxide.

## Testing Monitored Zones

- Zone Functions Tested
- Test Equipment Required
- Zone, Lock Test
- Zone, Egress Test (3000 and 3101 Magnetic Locks)
- Zone, Delayed Egress Test (3101 Magnetic Locks only)
- Zone, Hallway Test
- Zone, Elevator Deactivation Test
- Zone, Automatic Door Deactivation Test
- Fire Panel Interface (FPI) Test

## Warning

These tests should only be performed by trained personnel.

This document defines the recommended periodic testing procedures for the Accutech security systems. Accutech recommends that these tests be performed on a monthly basis, minimum.

Periodic testing of these critical performance functions can help prevent undetected security system failures.

## Zone Functions Tested

Accutech systems respond to RF signals generated by the tags. Most conditions occur at a monitored zone.

Each exit point around the area of protection should be evaluated to determine:

- If doors lock and/or elevators disable when a tag approaches.
- If alarms are generated due to passage of a tag through an exit point.

## Test Equipment Required

You will need a IDTAD and tags that you have designated to be used solely for testing purposes.



## Zone, Lock Test

When a tag approaches a monitored door zone equipped with locks, the lock should engage. When the tag leaves the monitored zone, the Lock should disengage. This test will evaluate this operation.

### Warning

In the event of a fire, all locks are disabled and the door can be opened immediately.

Test results should be written down and kept in a test log. Make your own or use the included log to ensure that every monitored zone is tested.

These test reports should become part of your permanent quality assurance records.

- 1) Notify staff and security that you will be testing zone performance and alarms may be generated. They should pay special attention to traffic during this time.
- 2) While not in a monitored zone, use a IDTAD to activate the tag you will be using for testing.
- 3) Hold the test tag in your hand and approach each monitored door zone.
- 4) Each door should lock as you approach.

### Important

You may be able to hear the lock “click” as it changes states. Otherwise, For 3000 Series magnetic locks, you can push on the door to verify the lock is engaged. For 3101 Series magnetic locks, the LED will turn from green to red when the lock is engaged. However, do not open the door; this test is intended only for verifying that a door locks when a tag approaches.

- 5) As you approach each zone, try varying your approach angle (i.e., straight on, from the sides, down low, etc.). Make sure there is adequate coverage from all angles leading to the monitored zone.
- 6) Record the results (pass or fail).
- 7) If the test fails to lock the door:
  - a. Notify staff and security of the vulnerable area.
  - b. Check for visible damage or tampering to the zone equipment.
  - c. Have a maintenance technician verify power to the zone equipment.
  - d. Have a maintenance technician verify the FPI is set properly.
  - e. Call your Accutech representative.
- 8) To reset the lock, deactivate the test tag or leave the monitored zone. Depending upon your settings, the lock may disengage itself automatically. Otherwise enter a keypad reset code.

## Zone, Egress Test (3000 and 3101 Magnetic Locks)

Most monitored door zones equipped with locks are configured to generate an alarm if a tag is detected in the zone and the door is open. This test will evaluate this operation.

### Warning

In the event of a fire, all locks are disabled and the door can be opened immediately.

This test should be conducted selectively. Create a rotating schedule to test a different set of zones each time that periodic testing is conducted.

Test results should be written down and kept in a test log. Make your own or use the included log to ensure every monitored zone is tested. These test reports should become part of your permanent quality assurance records.

- 1) Notify staff and security that you will be testing zone performance and alarms will be generated. They should pay special attention to traffic during this time.
- 2) Prop the door open.
- 3) While not in the zone, use an IDTAD to activate the test tag.
- 4) Approach the door. An alarm should sound.
- 5) Record the results (pass or fail).
- 6) If the test fails to cause an alarm:
  - a. Notify staff and security of the vulnerable area.
  - b. Check for visible damage or tampering to the zone equipment.
  - c. Have a maintenance technician verify power to the zone equipment
  - d. Have a maintenance technician verify the FPI is set properly
  - e. Call your Accutech representative.

- 7) To reset the zone, enter a keypad reset, deactivate the test tag, and close the door completely. If necessary, clear the alarm on the PC.

## Zone, Delayed Egress Test (3101 Magnetic Locks only)

Delayed egress circuitry is a feature of the Accutech 3101 magnetic lock that, due to fire and life safety codes, allows free egress through a door after 15 seconds (including a 1 to 3 second nuisance delay) of constant force is applied. This test will evaluate this operation.

### Warning

In the event of a fire, delayed egress circuitry is disabled and the door can be opened immediately.

This test should be conducted selectively; create a rotating schedule to test a different set of zones each time that periodic testing is conducted.

Test results should be written down and kept in a test log. Make your own, or use the included log to ensure every monitored zone is tested. These test reports should become part of your permanent quality assurance records.

- 1) Notify staff and security that you will be testing zone performance and alarms will be generated. They should pay special attention to traffic during this time.
- 2) While not in the zone, use an IDTAD to activate the test Tag.
- 3) Approach the door. The Lock should engage. **Note:** The LED on the Lock will turn from green to red when the Lock is engaged.
- 4) Remember, once the lock is engaged, in order to open the door you have invoke the delayed Egress Circuitry

feature. To do this, press on the door for the duration of the Nuisance delay (1 to 3 seconds) and the Delayed Egress countdown (15 to 30 seconds) then the lock will disengage and you can open the door. **Note:** During the delayed egress countdown, the lock's piezo will beep. After you open the door, the lock's piezo will sound continuously.

- 5) Record the results (pass or fail).
- 6) If the test fails to cause an alarm:
  - a. Notify staff and security of the vulnerable area.
  - b. Check for visible damage or tampering to the zone equipment.
  - c. Have a maintenance technician verify power to the zone equipment.
  - d. Have a maintenance technician verify the FPI is set properly.
  - e. Call your Accutech representative.
- 7) To reset the zone, enter a keypad reset, deactivate the test Tag, close the door completely, and, if necessary, clear the alarm on the PC.

## Zone, Hallway Test

Two conditions are required to generate an alarm at a hallway zone: Tag detection and PIR detection. This test will evaluate this operation.

- 1) Notify staff and security that you will be testing zone performance and alarms will be generated. They should pay special attention to traffic during this time.
- 2) Using an IDTAD, activate the test tag.
- 3) Enter the monitored hallway zone and move in the path of the PIR. An alarm should be generated and may sound.
- 4) Record the results (pass or fail).

- 5) If the test fails to cause an alarm:
  - a. Notify staff of the vulnerable area.
  - b. Check for visible damage or tampering to the zone equipment.
  - c. Have a maintenance technician verify power to the zone equipment.
  - d. Call your Accutech representative.
- 6) To reset the zone, enter a keypad reset, deactivate the test tag and, if necessary, clear the alarm on the PC.

## Zone, Elevator Deactivation Test

When a tag approaches an elevator zone, the elevator call buttons will be disabled. This test will evaluate this operation.

- 1) Notify staff that you will be testing zone performance and alarms will be generated. They should pay special attention to traffic during this time.
- 2) Use an IDTAD to activate the test tag.
- 3) Enter the elevator zone. The zone's response will depend on the state of the elevator door(s):
  - a. Elevators with door(s) open will disable as you approach and an alarm will sound. The car will not be able to leave the floor.
  - b. Elevators with door(s) closed will have their call button(s) disabled.
  - c. Elevators en route will arrive, open, and then an alarm will sound. The car will not be able to leave the floor.
- 4) Record the results (pass or fail)
- 5) If the test fails to cause an alarm:
  - a. Notify staff and security of the vulnerable area.
  - b. Check for visible damage or tampering to the zone equipment.
  - c. Have a maintenance technician verify power to the zone equipment.

- d. Have a maintenance technician verify the FPI is set properly
- e. Call your Accutech representative.

- 6) To reset the zone, deactivate the test tag and, if necessary, enter a keypad reset and clear the alarm on the PC.

## Zone, Automatic Door Deactivation Test

When a tag approaches an automatic door deactivation zone, the motion detector and/or push paddle will be disabled. This test will evaluate this operation.

- 1) Notify staff and security that you will be testing zone performance and alarms will be generated. They should pay special attention to traffic during this time.
- 2) Using an IDTAD, activate the test tag.
- 3) Enter the automatic door deactivation zone. The door's motion sensor or push paddle is disabled.
- 4) Record the results (pass or fail)
- 5) If the test fails to cause an alarm:
  - a. Notify staff and security of the vulnerable area.
  - b. Check for visible damage or tampering to the zone equipment.
  - c. Have a maintenance technician verify power to the zone equipment
  - d. Have a maintenance technician verify the FPI is set properly
  - e. Call your Accutech representative.
- 6) To reset the zone, deactivate the test tag and, if necessary, enter a keypad reset.

## Fire Panel Interface (FPI) Test

State codes require all locks, elevator deactivation, and automatic door deactivation to be wired into a facility's fire alarm system. In Accutech systems this is done via the fire panel interface (FPI). This is done so, in the case of a fire, any lock, elevator deactivation, or automatic door deactivation disengages and allows free egress or ingress. For more information, check your local codes. This test should be performed concurrently with your facility's fire alarm test.

### Warning

Before you test the system, notify the facility and the local fire department that you will be testing the fire alarm system.

- 1) Using an IDTAD, activate a test tag.
- 2) Activate your facility's fire alarm. **Note:** The LED on the FPI enclosure will blink.
- 3) Proceed to each zone and verify doors are unlocked and egress is possible. Elevators and automatic doors should be inoperable due to the fire alarm.
- 4) Record the results (pass or fail).
- 5) If a zone fails to disengage during the fire alarm, call your system service technician immediately for further assistance.
- 6) After your facility's fire alarm has been reset the FPI may automatically reset or press the Reset button on the outside of the FPI enclosure to reset the FPI and engage all restraints. **Warning:** The Reset button on the FPI enclosure will not work during the fire alarm. You must reset the fire alarm first and then reset the FPI.
- 7) Return to each tested zone with the test tag and verify that doors now lock and elevators disable as you approach.
- 8) Using a IDTAD, deactivate the test tag.





# **Chapter 10**

## **FAQ & Troubleshooting**

# FAQ & Troubleshooting

- Tags
- Tag Bands
- System (General)
- System (Maintenance)
- Troubleshooting

## Tags

### *What can I use to clean tags?*

- Wipe down with 3% hydrogen peroxide with water solution then rinse with a water-dampened cloth towel and wipe dry. Do not soak, submerge or place under running water.
- Wipe down with isopropyl alcohol wipes then rinse with a water-dampened cloth towel and wipe dry.

### *How should I store tags?*

Ideally, to preserve battery life, tags should be turned off with an IDTAD. However, if you do not have an IDTAD or if your tags are always active, tags should be stored away from sources of electrical noise and stored in a metal container with lid.

### *How can I be sure the Tag is on and functioning properly?*

You can test whether or not a tag is on and functioning properly by using a IDTAD or taking the tag to a monitored zone (this may cause alarms).

### *How often should I check a tag's battery with my STAD/IDTAD?*

Accutech recommends testing a tag's battery during assignment, then testing again during unassignment prior to cleaning and restocking of the tag for new use. Periodic weekly testing of tags for long-term patients is also recommended.

### *How long will the tags last before I need to replace them?*

Accutech tags operate via an internal battery. The tags are engineered for greater than 12 months usage.

### *Can I replace or recharge the battery in the tag?*

No. Once a tag's battery is drained, the tag must be replaced.

### *What is the tag case made of?*

The tag case is made of FDA-approved Lexan® plastic.

## Tag Bands

### *What is the tag band made of?*

The tag band is nylon-mesh-reinforced latex-free vinyl.

### *Are Tag bands reusable?*

No. Tag bands are for one-time use only.

## IDTAD

### *How long will the 9-volt lithium battery last in the STAD?*

The life of the 9-volt lithium battery in the IDTAD is dependent upon usage, but should last approximately 1 month on a full charge. You should always power off the IDTAD when not in use.

## System (General)

If you are locking the doors, what happens in the case of a fire?

Accutech follows NFPA codes and regulations. Therefore, in the event of a fire, all Accutech restraints will be disabled (audible and visual alarms remain active).



### *How can I reduce nuisance alarms?*

Nuisance alarms are typically caused by:

- Improper zone coverage (see Field Adjustments chapter)
- Improper storage of tags

### *How do I change the Keypad Escort time?*

To change the keypad Escort time, see Chapter 5.

## **System (Maintenance)**

### *How often should I test my zones?*

Accutech recommends performance testing be done on a monthly basis. However, each facility should review and modify the testing procedures as necessary to meet their own unique security requirements.

### *Who do I call about upgrading or adding to my system?*

If you would like information about upgrading or adding to your system, contact your local area Accutech representative by calling 1-800-356-2671.

### *How do I order replacement tags/bands/components?*

If you would like to order replacement tags/band/components for your system, contact your local area Accutech representative by calling 1-800-356-2671.

## **Troubleshooting**

### *A tag is not being detected by the monitored zone.*

- 1) Use a STAD/IDTAD to verify tag is active.
- 2) Use a STAD/IDTAD to verify tag battery is sufficient.
- 3) Verify proper zone coverage (see Field Adjustments chapters).
- 4) Verify proper zone wiring of LC1400T.

### *I am getting an abundance of nuisance alarms.*

A nuisance alarm is an undesired alarm activation stemming from such things as improper zone coverage and improper tag storage.

- 1) Verify proper zone coverage. Proper zone coverage fully protects the intended area without extending into other areas.
- 2) Verify proper tag storage techniques are being followed.

### *When I escort a patient through a zone via a keypad reset, the Reset time allotted is too brief and an alarm occurs.*

Adjust the keypad Escort time to accommodate slow-moving patients (see Chapter 5).



# Cut Sheets

## Electrical

**Operating Voltage:** Minimum: 15 VDC

**Current Consumption:** Maximum: 250 mA

## Mechanical

**Construction:** Vacuum molded fire rated ABS

**Size:** 13.25" x 2.50" x 2.25"

**Weight:** 1 US pound

**Mounting Surface:** Four 3/16" screws

## Operating Characteristics

**Transmit Frequency:** Nominal 131 kHz

(129-137kHz for Stagger tuning)

**Receive Frequency:** 418 MHz

**Frequency Range:** up to 10 feet radius (360°)

**Output Impedance:** 300 ohms nominal

**Internal peizo:** 85 db at 10 feet

**Communication:** RS485

**Baud Rate:** 115200 bps

**Firmware Version:** 0.0.2



**LC1400T Controller**

Part Number:

## Environmental

**Operating Temperature:** 32° to 120° Fahrenheit

**Intended for indoor use only.**

## Duty Cycle

Terminals:		
J1	1	Power for board
	2	Ground for board
TB1	1	Reset All In
	2	Alarm N/O
	3	Reset Lock In
TB2	1	Power for Lock
	2	Ground for Lock
	3	Lock Trigger
	4	Reset to Lock
TB3	1	PIR/Mag Switch In
	2	PIR Power/Mag Switch Out
TB4	1	Perimeter In
	2	Perimeter Out

LED indicators:
LED1 (Alarm/Error)(Red)
LED2 (Power indicator)(Green, Solid)
LED3 (Rx Signal Strength)
LED4 (Rx Signal Strength)
LED5 (Real-time Tag Detect)



Jumpers Settings:	
JP1 (RS485, Terminating Resistor)	In: Add resistor Out: Remove resistor
JP2 (Sound Enable)	In: Sound enabled Out: Sound disabled

## Electrical

**Operating Voltage:** Minimum 15 VDC  
**Current Consumption:** Maximum: 250mA

## Mechanical

**Construction:** Vacuum molded fire rated ABS  
**Size:** 13.25" x 2.50" x 2.25"  
**Weight:** 1 US pound  
**Mounting Surface:** Four 3/16" screws

## Operating Characteristics

**Transmit Frequency:** Nominal 131 kHz  
 (129-137kHz for Stagger tuning)  
**Frequency Range:** up to 10 feet radius (360°)  
**Communication:** RS485  
**Baud Rate:** 115200 bps  
**Firmware Version:** 0.0.2

## Environmental

**Operating Temperature:** 32° to 120° Fahrenheit  
**Intended for indoor use only.**

## Duty Cycle

**Rated for continuous use.**



**LC1400T Controller:**  
 Part Number: 672022

Terminals:		
J1	1	Power for board
	2	Ground for board

LED Indicators :	
LED1 (Alarm/ Error)	(Red)
LED2 (Power indicator)	(Green,Solid)

Jumper Settings:	
JP1 (RS485, Terminating Resistor)	In: Add resistor Out: Remove resisor





The Magnetic Switch is used on doors when alarm activation is not desired unless the door is opened.

## Electrical:

Operating Voltage: 150 VDC maximum

Contact Rating: 3 watts

Maximum Switch Voltage: 30V AC/DC

Switching

Current: 0.5 amps DC

Cable: needs minimum 22-gauge, 2-conductor

## Mechanical:

Size: 2.50" x 0.80" x 0.60"

Weight: 1.2 ounces

Color: Brown

Surface mounted (Flush available)

## Operating Characteristics:

Contacts: N.O., N.C., and Common

Initial contact resistance: 100 ohms maximum

Operating Time: 1.0 ms maximum

Bounce Time: N.C. leg 1.5 ms maximum

N.O. leg: 1.0 ms maximum

Release Time: 0.5 ms maximum

Maximum Operating Frequency: 200 Hz

Insulation resistance: 1 x 10 ohms maximum

Electrostatic capacitance: 1.5 pF maximum

## Environmental:

Operating Temperature: 32° to 120° F

Operating Humidity: 40%-60%

Intended for Indoor Use Only

## Duty Cycle:

Rated for continuous use.



Magnetic Switch

Model Number: MCSM

Part Number: 650514

UL Listed:

AMQV.BP2343



The KP-103 keypad is used to escort residents through a monitored zone and to reset zone equipment once an alarm has occurred. Up to 100 different (4 to 8 digits) user codes can be used to reset the alarm and to activate the Escort function.

## Electrical:

Operating Voltage: 12 V OR 24 V AC/DC

Active Current Draw:

100 mA Max @ 12 V

65 mA Max @ 24 V

Idle Current Draw:

9 mA Max @ 12 V

17 mA Max @ 24 V

Relay Contact Rating: 10 A @ 28 VDC/120 AC

Cable: minimum 22-gauge, 6-conductor

## Mechanical:

Size: 4-5/8" x 2-7/8" x 1-3/8"

Weight: 4.3 ounces

Mounting: Flush or Surface Mount

\*Metal box not recommended

## Operating Characteristics:

Keypad LED Indicators:

LED	Status	Function
Green	On	Reset active
Yellow	On	Tag Detect active
Red	On	Unit is in alarm

## Environmental:

Operating Temperature: 32° to 120° F

Operating Humidity: 40%-60%

Intended for Indoor Use Only

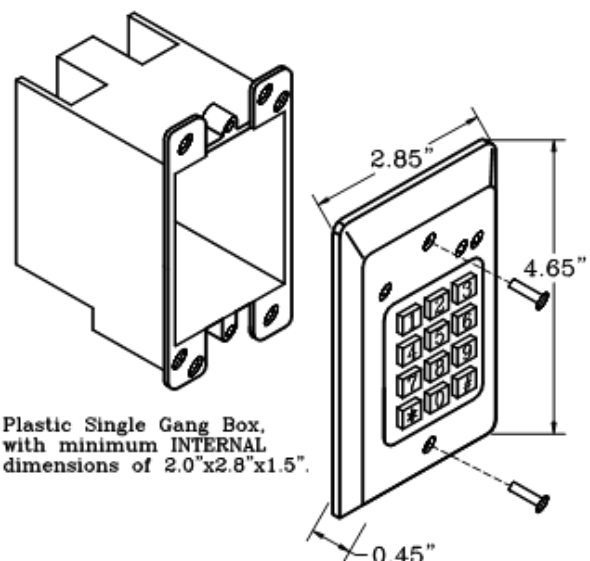
## Duty Cycle:

Rated for continuous use.



Model Number: KP-103

Part Number: 650209





LC1400 System Tags are small wristwatch-sized devices worn by a resident, infant, or attached to an asset. When a resident or patient enters a Tx Activation Field, the Tag sends a signal to the zone Controller via the Receiver. The zone Controller processes this information for appropriate control action or response (e.g., sounding alarms, locking doors). LC1400 System Tags are assigned to a specific patient or resident via the Tag Test Station and Accutech Software. Once assigned, the computer associates a name, room number, and any other pertinent information with that Tag.

## Electrical:

LC1400 System Tags operate by internal battery. The Tags have been engineered for greater than 12 months usage and can be activated/deactivated with an IDTAD.

## Mechanical:

Size: 1¼" x 1½" x ½"

Weight (with band): 0.5 ounce

## Operating Characteristics:

Transmit Frequency: 418 MHz

Receive Frequency: 127-137 kHz

FCC ID: JM7-IGWT-662002

Canada IC: 2683A-662002

## Attachment:

LC1400 System Tags are attached with a nylon-mesh-reinforced vinyl band (latex-free). The band is designed to resist tearing caused by pulling or chewing on the band. However, if the band becomes frayed or torn it will need to be replaced. In long-term applications, the band should be replaced periodically for cleanliness. Tags are typically attached to a wrist or ankle.

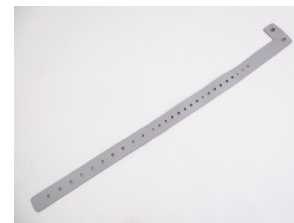
## Maintenance:

- LC1400 System Tags are reusable but they must be thoroughly cleaned and sanitized between applications.
- Acceptable cleaning products: Clorox Healthcare Hydrogen Peroxide disinfectant wipes or Sani-Hy-PerCide Germicidal Disposable wipes.
- LS 2400 Tag bands are for one-time use only.
- In long-term applications, periodically replace the bands and clean the Tags.



Model: LT  
Part Number:

Model: SB  
Part Number:



Grey Band  
Part Number: 100901

## Testing:

To test a Cut Band Tag, place it in the Tag Test Station (preferred method). Alternatively, test the tag at a monitored zone.

## Storing:

Ideally, to preserve battery life and prevent nuisance alarms, LC1400 System Tags should be turned off with an IDTAD, stored away from sources of electrical noise, and stored in a metal container with lid. Extra Tag bands should be stored in a clean and dry environment.

## Environmental:

Operating Temperature: 32° to 120° Fahrenheit  
Intended for indoor use only.



The IDTAD is used to activate a tag for use and to deactivate a tag when not in use for the purpose of conserving the battery life of a tag. The IDTAD is also meant to be used as a tester for a tag. A tag must be checked every week at a minimum to verify the integrity of the tag with either the IDTAD or Tag Test Station. The IDTAD incorporates an LCD screen to visually display tag information during testing and/or activating and deactivating a tag. An integrated keypad interface is used for secure access to these functions. The IDTAD also incorporates an internal tag that is active when the IDTAD is off and will cause an alarm if brought to a monitored exit.

## Electrical:

An IDTAD comes with and requires a rechargeable lithium ion battery pack to operate.

Battery: 3.7 VDC 1600 mAh (5.92 Wh) lithium ion battery pack

Maximum Charging Current: 0.8 A

Nominal Charging Voltage: 5.0 V

Charging Cable: USB Type C

Component Cell: UL1642

Test Specification: UL2054:2004 R9.11

Shipping Compliance: UN38.3

## Mechanical:

Size: approximately 5.50" x 3.00" x 1.25" (with boot)

Weight: 7 ounces

## Operating Characteristics:

Transmit Frequency: 127.0 kHz

Receive Frequency: 418 MHz

FCC ID: JM7-HWHY-662015

Canada IC: 2683A-662015

Internal Security Tag Transmit Frequency: 418 MHz

Internal Security Tag Receive Frequency: 127-137 kHz

FCC ID: JM7-IGWT-662002

Canada IC: 2683A-662002

## Environmental:

Operating Temperature: 32° to 120° Fahrenheit

Intended for indoor use only.



Model Number: IDTAD

Part #762015 (LC, ES)

Part #772015 (LS, IS, BR)

## LED Display Info:

- Tag ID#
- Tag Type: SB, LT, BR, CB, MT
- Tag Low Battery: LB
- Tag Useful Battery Life: 1-100%=Good
- Tag Warranty Date
- Mother Baby Match Process
- IDTAD Battery Charge Level



The Tag Test Station (TTS) is used to test tags in a LS2400 system or an LC1200 system. In a similar fashion to a Tx antenna, the TTS emits a small Tx activation field that reads the tag info without turning the tag on with a STAD or IDTAD. Once read, a tag sends a signal to the receiver in the TTS, which then sends the information to the computer and is interpreted by the Accutech software. The TTS will provide the warranty date, manufacture date, battery level, tag type, and tag number when used with the Accutech software. A battery level of 1-100% is verification that the tag tests good and can continue to be used. A level of 0% indicates that the tag needs to be replaced. The TTS can also turn tags on for use and off to conserve battery life and for storage purposes. The TTS is connected to a computer via a USB cable and requires Accutech software.

## Electrical:

Operating Voltage: 5 VDC@150 mA (provided by computer)

Cable: USB-C Cable

## Mechanical::

Size: 7.375" x 5.125" x 2.125"

Weight: 11.2 ounces/0.7 lbs.

## Operating Characteristics:

Transmits Frequency: 127.6 KHz

Receiver: 418 MHz

## Environmental:

Operating Temperature: 32° to 120° Fahrenheit  
Intended for indoor use only.

## Duty Cycle:

Rated for continuous use.



Part Number: 700020B

## Electrical

AC Input: 100-240V-1.0A, 50-60Hz

DC Output: 15VDC, 2A Switching Regulated

## Listings:



**15V, 2A Switching Plug-in Power Supply**  
Part Number: 500224

Some installations of the Accutech LC and LS Systems require a central power supply.

## Electrical

Operating Voltage: 120V AC, 2 amp  
Output: 15V DC, 4.5 amps

## Mechanical

Construction: Metal Case  
Enclosure size: 12.00" x 12.00" x 4.00"  
Weight (including enclosure): 12 US pounds

## Operating Characteristics

Provides 15V DC to multiple system components including:

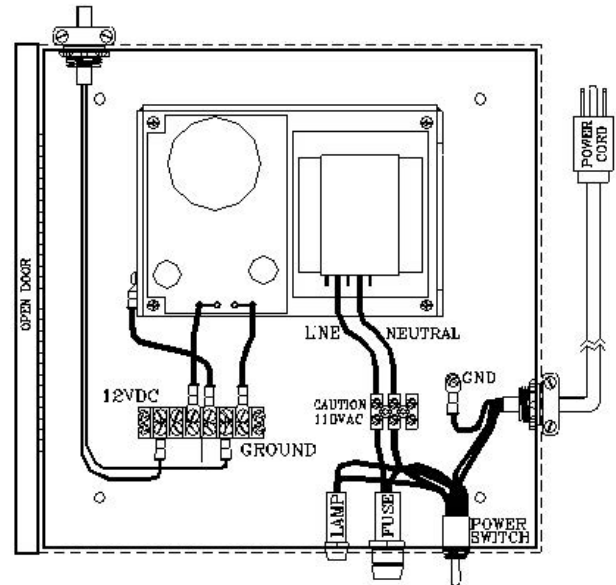
- Staff Alert Panel (SAP)
- Graphic Display Panel (GDP)
- LC Units, LS Units
- Fire Panel Interface (FPI)

## Environmental

Operating Temperature: 32° to 120°  
Fahrenheit  
Intended for indoor use only.

## Duty Cycle

Rated for continuous use.



Power Supply

Model Number: PS51  
Part Number: 500253





A Wander Wearable Tag is a stylized form fitting tag and band worn by a resident or patient. When a resident or patient enters a Tx Activation Field, the Tag sends a signal to the receiver in the door controller. The door controller processes this information for an appropriate response (e.g., sounding alarms, locking doors). Door controllers can be an LC Unit, ES Unit or a LS unit. WW (L) is for LC and ES systems and WW (S) is for LS and IS systems. The WW tags are warranted for 6 months, have been engineered for greater than 6 months usage, and can be activated/deactivated with an IDTAD. The WW tag is used with band, part # 100917-5 (5 pack).

## Electrical:

Power: 3.0 V lithium battery

## Mechanical::

Tag Size: 2.25" x 0.625" x 0.875"

Tag Weight: 0.5 ounce

Band Size: 14.25" x 0.95" x 0.25"

Band Weight: 0.25 ounce

## Operating Characteristics:

Transmit Frequency: 418 MHZ

Receive Frequency: 127-137 kHz

FCC ID: JM7-HWHY-662017

Canada IC: 2683A-662017

## Attachment:

Wander Wearable (WW) tags are attached with an adjustable silicon band. The band is designed to resist tearing caused by pulling or chewing on the band. However, if the band becomes frayed or torn it will need to be replaced. The band should be replaced periodically for cleanliness. Tags are typically attached to a wrist or ankle.

## Maintenance:

- WW tags are reusable but must be thoroughly cleaned and sanitized between applications
- Acceptable cleaning methods are anti-bacterial wipes or hydrogen peroxide (wipe, do not soak)
- In long-term applications, periodically replace the bands and clean the tags.



**Tag Model Number: WW (L)**

Part Number: 77L017

**Tag Model Number: WW(S)**

Part Number: 77S017

**Band Model Number:**

Part Number: 100917-5

## Testing:

- Enter a monitored zone (Alarm may sound)
- With an IDTAD or TTS

## Storing:

To preserve battery life and prevent nuisance alarms, WW Tags should be turned off with an IDTAD, stored away from sources of electrical noise, and stored in a metal container with lid. Extra Tag bands should be stored in a clean and dry environment.

## Activate/Deactivate:

WW tags are activated/deactivated by the IDTAD by placing in the receptacle at a slight angle with the Accutech name positioned upside down.

## Environmental:

Operating Temperature: 32° to 120° Fahrenheit  
Intended for indoor use only.