



# USER MANUAL



**PL7100**



**RS2100**



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### REGULATORY COMPLIANCE

The device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

### FCC WARNING STATEMENT

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

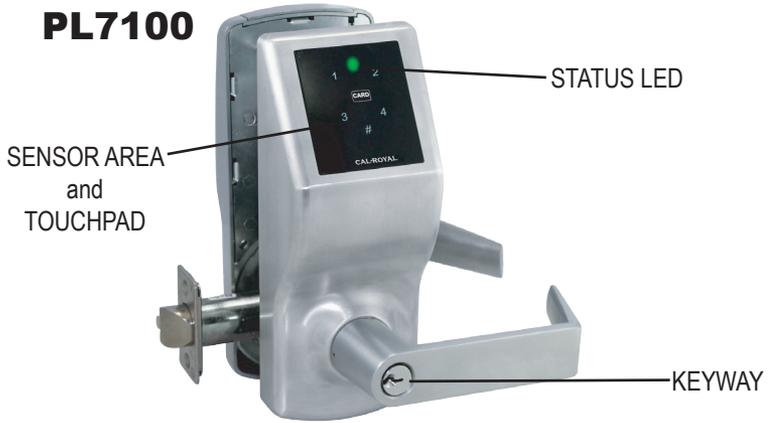
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate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

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

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**PARTS LIST - EXTERIOR**

**PL7100**



**RS2100**



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## PARTS LIST - INTERIOR

### PL7100

SETUP  
BUTTON



### RS2100

SETUP  
BUTTON



## 1. Introduction

PL7100 and RS2100 are smart locks with MiFARE RFID and Touchpad capabilities.



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## 2. Compatible cards

### 2.1 RFID Cards / Key Fobs

- Support MiFARE Classic, MiFARE Ultralight, MiFARE DesFire, or ISO/IEC 14443 type A with fixed UID.

## 4. Management

### 4.1 By Touchpad

The touchpad can be used for selected management tasks.  
See later section for the full specification.

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## 6. Touchpad Operations

### 6.1 Wake up

Before any touchpad operations, touch the Lock sensor to wake it up.

### 6.2 Setting the Master Code (MC)

**THE FACTORY DEFAULT MASTER CODE IS 12341234**

MC length is between 6 to 12 digits. Follow these steps to change the Master Code:

1. Press the Setup Button
2. Wake up touchpad
3. Enter the new MC followed by #
4. Enter the new MC again and followed by #

### 6.3 Programming Codes using the Touchpad

1. **Add Code** (new CODE length is between 6 to 12 digits)

**MC** + **#** + **1** + **1** + **NEW CODE** + **#** + **NEW CODE** + **#**

2. **Add RFID Card / Key Fob**

**MC** + **#** + **1** + **2** + **TAP CARD OR KEY FOB**

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3. Delete CODE

**MC** + **#** + **2** + **1** + **CODE** + **#** + **CODE** + **#**

4. Delete RFID Card / Key Fob

**MC** + **#** + **2** + **2** + **TAP CARD  
OR KEY FOB**

5. Delete All Codes (exclude Master Code)

**MC** + **#** + **3** + **1**

6. Delete All RFID Cards / Key Fobs

**MC** + **#** + **3** + **2**

7. Delete All Phones including Admin

**MC** + **#** + **3** + **3**

8. Delete All Codes/Cards/Key Fobs/Phones  
including Admin

**MC** + **#** + **3** + **4**

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## 6.4 CODE Unlocking

Wake-up touchpad, enter CODE followed by #

### 7. Unlocking by RFID Card / Key Fob

Tap the card/key fob in front of the sensor/touchpad, and wait until the LED flashes and you hear a sequence of beeps.

### 8. Low Battery Warning

There are two indicators when the batteries are running low:

- When successfully unlocked, you will hear 3 beeps then 5 beeps for low battery warning.
- If the batteries are too low, it will not unlock even after successful authentication using a registered RFID/Key Fob/Phone or correct CODE, and you will hear 3 beeps then 10 beeps as warning.

\*\*Both indicators will only stop once the batteries are replaced with new ones.

### 9. Lock-out

After 3 consecutive unsuccessful unlocking attempts, the Lock will be non-responsive for 1 minute.

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## 10. Reset to Factory Default

To reset to factory default, follow these steps:

1. Remove battery cover and take one battery out.
2. Press and hold setup button and replace the battery.
3. Wait until you hear 4 beeps and then release the setup button.  
All previous created users and Admin will be deleted.
4. Replace the battery cover.

## 11. Events, Beeps and LED

| Events               | Beeps   | LED   |
|----------------------|---|---|
| Setup Button Pressed | 2 short beeps   | <br>Green flash 1x |
| Exit Setup Mode      | 2 short and 1 long beeps                                  | <br>Green flash 1x |
| During Setup Mode    | -   | <br>Red light ON   |
| Pairing Success      | 4 beeps ascending tone                                    | <br>Green flash 1x |
| Pairing Fail         | 1 long and 4 short beeps,<br>the long beep tone is higher | <br>Red flash 1x  |

| Events   | Beeps   | LED  |
|--|---|--|
| Successful Unlocking   | 3 beeps ascending tone                                  | <br>Green flash 1x                              |
| Access Denied  | 1 long and 4 short beeps, the long beep tone is higher  | <br>Red flash 1x                                |
| Low Battery Successful Unlocking   | 3 ascending tone beep followed by 5 short beeps         | <br>Green flash 1x<br>Red short flashes 5x      |
| Successful Authentication but does not unlock due to extreme low battery | 3 ascending tone beep followed by 10 short beeps        | <br>Green flash 1x<br>Red short flashes 10x     |
| Successful Menu Operation  | 4 beeps, ascending tone                                 | <br>Green flash 1x                              |
| Failed Menu Operation  | 1 long and 4 short beeps, the long beep tone is higher  | <br>Red flash 1x                                |
| Lock-out   | 1 long and 4 short beeps, followed by another long beep | <br>Red long flash 1x                           |
| During lock-out period   | -   | <br>Red flash 2x every 5 seconds (for 1 minute) |
| After successful unlocking, before relocking                             | -   | <br>Green flash once per second                 |
| Relocking  | -   | <br>Red flash 1x                              |

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## 12. Technical Specifications

- User Counts: 50 Codes and 50 Cards
- Powered by 4x AA Batteries
- Operation Temperature: -20°C to 70°C
- Radio Frequency: MiFARE 13.56MHz

## 13. Troubleshooting

- If the lock is not responding, remove the battery and insert it again to restart the lock.

**DISCLAIMER:** Cal-Royal Products does not claim that this lock can provide complete security by itself. This lock may be defeated by forcible or technical means, or evaded by entry elsewhere on the property like any other locks. No lock can substitute for vigilance, awareness of your environment, and common sense. Builder's hardware is available in multiple performance grades to suit the application. In order to enhance security and reduce risk, you should consult a qualified locksmith or other security professional.

### **Notice of Open Source Licenses**

#### **[FreeRTOS]**

This product uses FreeRTOS v7.3.0. The source code of FreeRTOS used can be downloaded here:  
<http://sourceforge.net/projects/freertos/files/>

#### **[OpenSSL]**

This product uses OpenSSL, and the OpenSSL license can be downloaded here:

<http://www.openssl.org/source/license.html>

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit.  
(<http://www.openssl.org/>)

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

This product includes software written by Tim Hudson (tjh@cryptsoft.com).

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