
Futronic Technology Company Ltd.

Futronic Fingerprint Access Control System Fin'Lock FS21M

User's Guide

Version 8.0

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1. INSTALLATION

1.1. Pre-Installation Notes

Before installing Fin'Lock, it is important to check a few criteria for safe and easy installation.

- . The Fin'Lock terminal is designed for indoor installation. Please beware of not exposing Fin'Lock to water or harsh conditions if it is needed to install it outdoors

- . To prevent electrical shortage or short-circuits, it is advised not to share the power supply of the Fin'Lock with any other device, e.g. electrical lock.

- . Do NOT install the product next to heat emitting sources or in a place subject to direct sunlight or excessive dust.

- . Allow adequate air circulation to prevent internal heat buildup.

1.2. Power Requirements

Fin'Lock requires a switching DC 12V / 1.5A power supply. It is not recommended that the same power supply to be shared by both Fin'Lock and the door strike because of the potential back E.M.F. Problem.

1.3. Deciding where to install

It is recommended that the Fin'Lock should be installed as close to the door as possible, so that the user can open the door within the timeout period (default is 9 seconds)

1.4. Connections - Power & external controls

Fin'Lock provides easy-access terminals for connections to Door Strikes and Door Open Switch.

+12V(Power Plug-in):

The power requirement is 12V DC, 260mA(idle), 1.5A (peak).

+12V(Screw Terminal):

This terminal has been directly connected to +12V of Power Plug-in.

GND(Ground):

This terminal has been directly connected to Ground of Power Plug-in.

DS(DOOR SWITCH):

This is an active low input for turning on the coil of internal relay.

COM(Common), NC(Normal Close), NO(Normal Open):

These terminals are connected directly to the internal relay, rating at 12V / 5A. If the door strike is within this current limit, it can be directly connected to these terminals. If the system is used solely for Time Attendance System, user can disable the Relay (Please refer to 4.3.8.) and leave these terminals disconnected.

1.5. Fingerprint Authentication Server(FAS)

FAS is a Futronic Proprietary Software for user/finger and access log management and Fin'Lock control. It can run on Windows 2000/XP Professional. FAS can control up to 253 Fin'Lock via LAN. For more information about FAS, please refer to FAS User Guide.

1.6. Real Time Clock battery.

At the back of Fin'Lock, there is a battery socket for CR1220 3V battery. This battery is for real time clock (rtc) purpose. It is used to keep rtc running even if the +12V input is off.

1.7. Front Red and Green LED indicator

Fin'Lock has a green and red LED indicator. Green LED means success. Red LED means failure.

1.8. LCD Backlight

LCD backlight will turn off only at standby mode if no action is done within this 5-second period.

2. Power Up

Description	LCD Display
Power Up – It needs about 10 seconds for system initialization	Initializing...
If Reboot Set Time function is enabled (Please refer to 3.3.1.3.), it will enter Set Time function after initialization. Otherwise, Set Time and Date function will be skipped. Press ▲ to move to previous digit. Press ▼ to move to next digit. Press “ESC” to go to next step without saving Press “ENT” to save the change If none of the key is pressed within 5 seconds, it will go to next step without saving	Set Time hhmmss 19:30:59
After time setting, it will enter Set Date function. Press ▲ to move to previous digit. Press ▼ to move to next digit. Press “ESC” to go to next step without saving Press “ENT” to save the change If none of the key is pressed within 5 seconds, it will go to next step without saving	Set Date ddmmyy 01/12/05
After time and date setting, Fin'Lock will enter standby mode and is ready to use.	Ready-Local 19:30:59 01DEC
If Fin'Lock is connected to FAS, it will show “Network” on the display	Ready-Network 19:30:59 01DEC

3. Fin'Lock Administration

In order to enter Administration Menu, please follow steps below.

Description	LCD Display
While in standby Mode, hold "ENT". Fin'Lock will prompt user to enter Administrator Password. If none of key is pressed within 5 second, it will go back to standby mode.	Enter pin
Enter the Administrator Password(Default:123456) and press "ENT".	Enter pin *****
If Administrator finger has been registered, user can put the registered Administrator finger on the scanner instead of entering password. To add an Admin finger, please refer to 3.3.5.	>>>Scanning<<<

Administration Menu has 9 function

1. Admin Password
2. User Admin
3. System Admin
4. Code Access
5. Card Admin (**ONLY** in Fin'Lock with Mifare function)
6. Allow Init
7. Allow Update
8. Wiegand (**ONLY** in Fin'Lock with Mifare function)
9. Life Finger Detection

Press ▲ to scroll up the menu.

Press ▼ to scroll down the menu.

3.1. Admin Password

Please follow the steps below to change the admin password.

Description	LCD Display
Press ▲ or ▼ in order to scroll “1.Admin pin” to the first line of display (or press ‘1’)	1.Admin pin 2.User Admin
Press “ENT”. Fin’Lock will prompt user to enter old password. Press “ESC” if you want to go back to previous menu. If an admin finger is registered (see 3.3.5.2. Add Admin Finger), this step can be passed through by scanning the admin finger.	Enter Old pin
Enter old password and press “ENT”. If password is not matched, It will show “Wrong password!”	Wrong password!
After entering the old password, Fin’Lock will prompt user to enter new password. After input the new password, press “ENT” to next step.	Enter New pin
Fin’Lock will prompt user to enter the new password again for confirmation. If you do not want to change the password, press “ESC” instead of entering the password.	Confirm New pin
Press “ENT” to save new password. If two new input passwords are the same, Fin’Lock will show “Write Success” and password is changed.	Write Success
If two new input passwords are different, It will show “Wrong Input!” and password is unchanged	Wrong Input!

3.2. User Admin menu

Press ▲ or ▼ in order to scroll “2. User Admin” to the first line of display and press “ENT” to enter User Admin menu (or press ‘2’). User Admin menu has 7 function.

1. Add User
2. Add POU (Pin Only User)
3. Add CSN User
4. Delete User
5. Edit User
6. Verify Finger
7. Number of User Fingers
8. Erase All
9. Get Total Number of Fingers

User Information

Name	Description
User ID	12 digit(except 0)
Group ID	2 digit
Security Level 1-4	1-lowest 4-highest Higher the Security Level, more accurate the fingerprint verification but higher verification failure rate.
Type	1 - VIP(Do not need to enter user ID before fingerprint verification) 0 - Ordinary user(Need to enter user ID or Group ID for fingerprint verification)
Status	1 - Suspended 0 – Activated If the user is suspended, Fin’Lock will not open the door or add access log for this user.
Finger ID	0-9

There are 6 different user type that supported by FS21M. Please clarify & select your user type according to the description below:

1. VIP User

- Maximum number of VIP user's fingerprint records is 300. If there are more than 300, "Too many VIP" will be shown after putting finger. (It is **NOT** max of VIP users. Each user can have 3 fingerprint records.)
- User no need to provide ID when doing fingerprint identification (1-N matching)
- User can using mifare card to hold his/her ID in order to doing 1-1 matching more convenience.
- Authentication combination:
 - I. fingerprint only
 - II. ID + fingerprint
 - III. Group + fingerprint (Search only within specify group in the fingerprint database)
 - IV. Mifare card + fingerprint

2. Ordinary User

- User need to provide his/her ID before doing fingerprint identification (1-1 matching)
- User can using mifare card to hold his/her ID in order to doing 1-1 matching more convenience.
- Authentication combination:
 - I. ID + fingerprint
 - II. Mifare card + fingerprint

3. Card only User

- User can only pass through the FS21M by mifare card.
- Authentication combination:
 - I. Mifare card only
 - II. Mifare card + password

4. Free Card User

- Free card user can be created from neither normal VIP or ordinary user
- User ID & fingerprint were not need to stored in FS21M or FAS
- Only support 4K mifare card

Purpose:

- If you want to allow some users who are not included in FS21M or FAS database to pass through the Fin'Lock
- Identify the mifare card is belonging to the card holder by fingerprint verification.
- Authentication combination:
 - I. Mifare card + fingerprint

5. PIN Only User(POU)

- User need to provide his/her ID before entering his/her password(1-1 matching)
- Fingerprint scanning is not needed
- Authentication combination:
 - I. ID + password

6. CSN User

- CSN User is a POU or normal user with User ID equal to the CSN of the 1K/4K Mifare Card.
- Authentication combination:
 - I. Mifare card + password(for POU case)
 - II. Mifare card + fingerprint(for normal user case)

3.2.1. Add a User

3.2.1.1. Normal User - VIP & Ordinary User

Please follow the below table to add the VIP user & Ordinary User

Description	LCD Display
Press ▲ or ▼ in order to scroll "1.Add User" to the first line of display and press "ENT"(or press '1')	1.Add User 2.Add POU
Fin'Lock will prompt user to enter the user ID(1-999999999999) Press "ESC" if you want to go back to previous menu.	Enter User ID
If user ID already exists, it will show number of finger of this user recorded for 2 seconds. Then Fin'Lock will jump to enter finger ID step	Num of Fingers 2
Press "ESC" for Normal User(This step ONLY appears in Fin'Lock with Mifare function)	Card only user? YES=ENT::NO=ESC
Enter the Group ID(0-99)	Enter Group ID
Enter the Security level(1-4) Recommended level is 3.	Security level
Enter Type(1 or 0) 1=VIP user, 0=Ordinary User	Type1-VIP/0-Ord
Enter Finger ID of user(0-9)	Enter Finger ID
Number of Finger Samples to be taken. Maximum is 5.	Samples(1-5) 5
Put the finger to be recorded on the scanner	Please Put Your Finger! 1/5
Remove the finger from the scanner	Please Remove Your Finger!
After samples registration, Fin'Lock will show "Done!" and return to User Admin menu	Done!

3.2.1.2. Card Only User (COU)

Description	LCD Display
Press ▲ or ▼ in order to scroll “1.Add User” to the first line of display and press “ENT”(or press ‘1’)	1.Add User 2.Add POU
Fin’Lock will prompt user to enter the user ID(1-999999999999) Press “ESC” if you want to go back to previous menu.	Enter User ID
Press “ENT” for Card Only User	Card only user? YES=ENT::NO=ESC
Enter the Group ID(0-99)	Enter Group ID
Fin’Lock will prompt user to enter password for corresponding user. If NO password is needed for this user, press “ESC”. After input the password, press “ENT”.	Enter New pin

3.2.2. Add POU (Pin Only User)

Description	LCD Display
Press ▲ or ▼ in order to scroll “2. Delete User” to the first line of display and press “ENT”(or press ‘2’)	2.Add POU 3.Add CSN User
Fin’Lock will prompt user to enter the user ID(1-999999999999) Press “ESC” if you want to go back to previous menu.	Enter User ID
Enter the Group ID(0-99)	Enter Group ID
Fin’Lock will prompt user to enter password for corresponding user. (Maximum 6 digit)	Enter pin *****
Fin’Lock will prompt user to enter password again to confirm.	Confirm pin *****
If the user ID is valid and two passwords input are matched, Fin’Lock will show “Done!” and then return to User Admin menu	Done!

3.2.3. Add CSN User

CSN User is a POU or normal user with User ID equal to the CSN of the 1K/4K Mifare Card.

Description	LCD Display
Press ▲ or ▼ in order to scroll “3. Add CSN User” to the first line of display and press “ENT”(or press ‘3’)	3.Add CSN User 4. Delete User
Fin’Lock will prompt user to show the 1K/4K Mifare card.	Please put card.
Hold the card in front of the red/green LED of Fin’Lock. CSN of the card will be shown. This CSN will be used as User ID to create User Record	CSN= 12345678
Press “ENT” for PIN Only User. If it is normal user, press “ESC”. Following steps are similar to those of adding a normal user or POU.	PIN only user? YES=ENT::NO=ESC
If the user record is added successfully, Fin’Lock will show “Done!” and then return to User Admin menu	Done!

3.2.4. Delete a User

3.2.4.1. Card Only User(Fin'Lock with Mifare function ONLY) and Pin Only User

Description	LCD Display
Press ▲ or ▼ in order to scroll "4. Delete User" to the first line of display and press "ENT"(or press '4')	4.Delete User 5. Edit User
Fin'Lock will prompt user to enter user ID.	Enter User ID
If the user ID does not exist, Fin'Lock will show "Unknown user" and return to User Admin menu	Unknown user
If the user ID is valid, Fin'Lock will show "Done!" and then return to User Admin menu	Done!

3.2.4.2. Normal User – VIP & Ordinary User

Description	LCD Display
Press ▲ or ▼ in order to scroll "4. Delete User" to the first line of display and press "ENT"(or press '4')	4.Delete User 5. Edit User
Fin'Lock will prompt user to enter user ID.	Enter User ID
If the user ID does not exist, Fin'Lock will show "Unknown user" and return to User Admin menu	Unknown user
If the user ID is valid, Fin'Lock will prompt user to enter finger ID and the word "All" will be flashing	Enter Finger ID All
If all finger records of this user are needed to delete, press "ENT". Fin'Lock will show "Done!" and ALL finger records of this user are deleted.	Done!
If only one of the finger record is needed to delete, press "ESC" instead of "ENT". The flashing "All" will be replaced by the cursor.	Enter Finger ID —
If the finger ID does not exist, Fin'Lock will show "Unknown user" and return to User Admin menu	Unknown user
If the finger ID is valid, Fin'Lock will show "Done!" and then return to User Admin menu.	Done!

3.2.5. Edit a User

3.2.5.1. Card Only User (Fin'Lock with Mifare function ONLY) and Pin Only User

Description	LCD Display
Press ▲ or ▼ in order to scroll "5. Edit User" to the first line of display and press "ENT"(or press '5')	5. Edit User 6. Verify Finger
Fin'Lock will prompt user to enter user ID. Press "ESC" if you want to go back to previous menu. Enter the user ID that is needed to edit.	Enter User ID
If the user ID does not exist, Fin'Lock will show "Unknown user" and return to User Admin menu	Unknown user
If user ID exists, Fin'Lock will prompt user to modify Group ID. After modification, press "ENT" to next step. *	Enter Group ID 1
Fin'Lock will prompt user to modify user Status. After modification, press "ENT" to next step. *	Stat1-Ssp/0-Act 0
Fin'Lock will prompt user to save previous changes. Press "ENT" to confirm or "ESC" to discard.	Save changes?
If press "ENT", changes will be saved. Fin'Lock will show "Done!" and then return to User Admin menu.	Done!

3.2.5.2. Normal User

Description	LCD Display
Press ▲ or ▼ in order to scroll "5. Edit User" to the first line of display and press "ENT"(or press '5')	5. Edit User 6. Verify Finger
Fin'Lock will prompt user to enter user ID. Press "ESC" if you want to go back to previous menu. Enter the user ID that is needed to edit.	Enter User ID
If the user ID does not exist, Fin'Lock will show "Unknown user" and return to User Admin menu	Unknown user
If user ID exists, Fin'Lock will prompt user to modify Group ID. After modification, press "ENT" to next step. *	Enter Group ID 1
Fin'Lock will prompt user to modify Security level. After modification, press "ENT" to next step. *	Security level 3
Fin'Lock will prompt user to modify user Status. After modification, press "ENT" to next step. *	Stat1-Ssp/0-Act 0
Fin'Lock will prompt user to modify user Type. After modification, press "ENT" to next step. *	Type1-VIP/0-Ord 1
Fin'Lock will prompt user to save previous changes. Press "ENT" to confirm or "ESC" to discard.	Save changes?
If press "ENT", changes will be saved. Fin'Lock will show "Done!" and then return to User Admin menu.	Done!

* if you do not need to modify the corresponding field, just press "ENT" to jump to next step.

3.2.6. Verify Finger (Normal User ONLY)

Description	LCD Display
Press ▲ or ▼ in order to scroll “6. Verify Finger” to the first line of display and press “ENT”(or press ‘6’)	6.Verify Finger 7.Num User Fing
Fin’Lock will prompt user to enter user ID. Press “ESC” if you want to go back to previous menu. Input the user ID.	Enter User ID
If the user ID does not exist, Fin’Lock will show “Unknown user” and return to User Admin menu	Unknown user
If the user ID is valid, Fin’Lock will prompt user to put the finger on the scanner for fingerprint verification	Please Put Your Finger!
If the finger is not matched with the user record, Fin’Lock will show “Unknown user” and return to User Admin menu	Unknown user
If the finger is matched, Fin’Lock will show user ID and corresponding Finger ID for three seconds. Then return to User Admin menu.	ID=1234 Finger ID=3

3.2.7. Number of Fingers (Normal User ONLY)

Description	LCD Display
Press ▲ or ▼ in order to scroll “7.Num User Fing” to the first line of display and press “ENT”(or press ‘7’)	7.Num User Fing 8.Erase All
Fin’Lock will prompt user to enter user ID. Press “ESC” if you want to go back to previous menu. Input the user ID	Enter User ID
If the user ID does not exist, Fin’Lock will show “Unknown user” and return to User Admin menu	Unknown user
If the user ID is valid, Fin’Lock will show number of finger records of corresponding user for three seconds. Then return to User Admin menu.	Num of Fingers 2

3.2.8. Erase All

Description	LCD Display
Press ▲ or ▼ in order to scroll “8. Erase All” to the first line of display and press “ENT” (or press ‘8’)	8.Erase All 9. No. of Fing
Fin’Lock will prompt user to confirm. If it is not needed to erase all user record, press “ESC”	Are you sure?
If you press “ENT”, all user record will be erased. Fin’Lock will show “Done!” and then return to User Admin menu	Done!

Erase All Function will erase all user records except the Admin Finger record. For more information about Admin Finger, please refer to 4.3.5.

3.2.9. Get Total Number of Fingers

Description	LCD Display
Press ▲ or ▼ in order to scroll “9. No. of Fing” to the first line of display and press “ENT” (or press ‘9’)	9. No. of Fing 1.Add User
All=Total number of fingers stored in Fin’Lock VIP= Total number of VIP fingers stored in Fin’Lock Free=Total number of finger record space can be used.	All/VIP/Free 3/1/4668

3.3 System Admin menu

Press ▲ or ▼ in order to scroll “3. System Admin” to the first line of display and press “ENT” to enter System Admin menu (or press ‘3’). System Admin menu has 9 function.

1. Time Admin
2. Access Log
3. Network Admin
4. Check Version
5. Admin Finger
6. Global Security Level
7. Send Raw Image
8. Relay Admin
9. Language and Buzzer

3.3.1. Time Admin

Press ▲ or ▼ in order to scroll “1. Time Admin” to the first line of display and press “ENT” to enter Time Admin menu (or press ‘1’). Time Admin menu has 6 function.

1. Set Time
2. Set Date
3. Reboot Option
4. Set Event
5. Open Period
6. Reset Period

3.3.1.1. Set Time

Description	LCD Display
Press ▲ or ▼ in order to scroll “1. Set Time” to the first line of display and press “ENT”(or press ‘1’)	1. Set Time 2. Set Date
Fin’Lock will prompt user to set the time. Press “ESC” if you want to discard the change.	Set Time hhmmss 19:30:59
Press “ENT” after setting time. Fin’Lock will show “Done!” and then return to Time Admin menu	Done!

3.3.1.2. Set Date

Description	LCD Display
Press ▲ or ▼ in order to scroll “2. Set Date” to the first line of display and press “ENT”(or press ‘2’)	2. Set Date 3. Reboot Option
Fin’Lock will prompt user to set the date. Press “ESC” if you want to discard the change.	Set Date ddmmyy 01/12/05
Press “ENT” after setting date. Fin’Lock will show “Done!” and then return to Time Admin menu	Done!

3.3.1.3. Reboot Set Time Option

If Reboot Set Time function is enabled, Fin’Lock will prompt user to update the Time and Date after initialization,.

Description	LCD Display
Press ▲ or ▼ in order to scroll “3. Reboot Option” to the first line of display and press “ENT”(or press ‘3’)	3. Reboot Option 4. Set Event
Enter ‘1’ to enable or enter ‘0’ to disable. Press “ESC” if you want to discard the change.	Reboot Set Time 0
Press “ENT” after setting time. Fin’Lock will show “Done!” and then return to Time Admin menu	Done!

3.3.1.4. Set Event

When event is set, event number will be shown on top right corner of the display in normal mode. If user needs to select another event number instead of the event number shown, user can press ▲ or ▼ to choose the event number needed. For each successful recognition, corresponding event number will keep in the access log. For more information about access log, please refer to FAS user guide.

Description	LCD Display
Press ▲ or ▼ in order to scroll “4. Set Event” to the first line of display and press “ENT”(or press ‘4’)	4. Set Event 5. Open Period
Fin’Lock will prompt user to select event number. Press “ESC” if you want to discard the change.	Event NO.(1-14) 1
Fin’Lock will prompt user to set event start time. Press “ESC” if you want to discard the change.	Start Time hhmm 10:30
Fin’Lock will prompt user to set event stop time. Press “ESC” if you want to discard the change.	Stop Time hhmm 11:45
Press “ENT” after setting time. Fin’Lock will show “Done!” and then return to Time Admin menu	Done!

3.3.1.5. Open Period

“Open Period” function is used to keep the Relay to be activated for a period of Time. For example, if user wants to keep the door open from 9:00 to 18:00 each Monday, user can choose “Mon” and set start time 9:00 and stop time 18:00. Maximum number of period is four for each weekday.

Description	LCD Display
Press ▲ or ▼ in order to scroll “5. Open Period” to the first line of display and press “ENT”(or press ‘5’)	5. Open Period 6. Reset Period
Press ▲ or ▼ to choose the weekday and press “ENT”.	1.Sun 2.Mon
Enter Period No.(0-3). Press “ESC” if you want to discard the change.	Period No.(0-3) 0
Fin’Lock will prompt user to start time. Press “ESC” if you want to discard the change.	Start Time hhmm 10:30
Fin’Lock will prompt user to stop time. Press “ESC” if you want to discard the change.	Stop Time hhmm 11:45
Press “ENT” after setting time. Fin’Lock will show “Done!” and then return to Time Admin menu	Done!

3.3.1.6. Reset Period

This function is used to reset all the open period setting time to 0:00.

Description	LCD Display
Press ▲ or ▼ in order to scroll “6. Reset Period” to the first line of display and press “ENT”(or press ‘6’)	6. Reset Period 1. Set Time
Fin’Lock will prompt user to confirm. Press “ESC” if you do NOT need to RESET period setting. Press “ENT” to RESET period setting.	Are you sure? YES=ENT::NO=ESC
Press “ENT”. Fin’Lock will show “Done!” and then return to Time Admin menu	Done!

3.3.2. Access Log

Press ▲ or ▼ in order to scroll “2. Access Log” to the first line of display and press “ENT” to enter Access Log menu (or press ‘2’). Access Log menu has 3 function.

1. Get Log space
2. Erase Log
3. Activate Log

Get Log space

Description	LCD Display
Log used=number of Log used Free=number of free Log	Log used/free 1/1048159

Erase Log

Description	LCD Display
Fin'Lock will prompt user to confirm. Press "ESC" if you do NOT need to erase the Log. Press "ENT" to erase the Log.	Are you sure? YES=ENT::NO=ESC
Log used=number of Log used Free=number of free Log	Log used/free 0/1048160

Activate Log

Description	LCD Display
Enter '1' to enable the Log function or enter '0' to disable. Press "ESC" if you want to discard the change.	1-Act/0-Deact 1
Press "ENT" to save the modification. Fin'Lock will show "Done!" and then return to Access Log menu.	Done!

Please note that more users are stored in Fin'Lock, less access log space can be used. For more information about access log, please refer to FAS user guide.

3.3.3. Network Admin

Press ▲ or ▼ in order to scroll "3. Network Admin" to the first line of display and press "ENT" to enter Network Admin menu (or press '3'). Network Admin menu has 9 function. After **ANY** network admin modification, you **NEED** to run the **Save Options** function (Function 9) to save the modification.

1. Set Local IP(IP address of the Fin'Lock)
2. Set Local PORT (Default is 5001)
3. Set Gateway
4. Subnet Mask (Default is 255.255.255.0)
5. MAC Address (Read Only)
6. PC Server IP(IP address of the FAS)
7. PC Server PORT (Default is 4900)
8. Operation Mode(Local mode=0/Network mode=1)
9. Save options

Please remember to update Firewall Setting of computer that is connected.

3.3.4. Check Version

Press ▲ or ▼ in order to scroll "4. Check Version" to the first line of display and press "ENT" to enter Check Version menu (or press '4'). Check Version menu has 3 function.

1. AVR firmware version
2. BF firmware version
3. FAC hardware version

These version numbers are for maintenance use only

3.3.5. Admin Finger

Press ▲ or ▼ in order to scroll “5. Admin finger” to the first line of display and press “ENT” to enter Admin Finger menu (or press ‘5’). Admin Finger menu has 5 function.

1. Admin Security Level
2. Add Admin Finger
3. Erase Admin Finger
4. Verify Finger
5. Number of Admin fingers

3.3.5.1. Admin Security Level

Description	LCD Display
Press ▲ or ▼ in order to scroll “1. Admin Sec Lv” to the first line of display and press “ENT”(or press ‘1’)	1. Admin Sec Lv 2. Add Adm Fing
Fin’Lock will prompt user to modify Admin Security level. Press “ESC” if you want to discard the change.	Security level 4
Press “ENT” after modification. Fin’Lock will show “Done!” and then return to Admin Finger menu	Done!

3.3.5.2. Add Admin Finger

Description	LCD Display
Press ▲ or ▼ in order to scroll “2. Add Adm Fing” to the first line of display and press “ENT”(or press ‘2’)	2. Add Adm Fing 3. Erase Finger
If Admin finger has been recorded before, it will show number of admin finger records for 2 seconds. Then Fin’Lock will jump to enter finger ID step	Num of Fingers 2
Enter the Security level(1-4). Recommended level is 3.	Security level
Enter Admin Finger ID (0-9)	Enter Finger ID
Put the finger to be recorded on the scanner	Please Put Your Finger! 1/5
Remove the finger from the scanner	Please Remove Your Finger!
After put and remove the finger five times, Fin’Lock will show “Done!” and then return to Admin Finger menu	Done!

3.3.5.3. Erase Admin finger

Description	LCD Display
Press ▲ or ▼ in order to scroll “3.Erase Finger” to the first line of display and press “ENT”(or press ‘3’)	3. Erase Finger 4. Verify Finger
If No Admin finger has been recorded, Fin’Lock will show “Empty base!” and then return to Admin Finger menu	Empty base!
If Admin finger has been recorded, Fin’Lock will prompt user to enter finger ID and the word “All” will be flashing	Enter Finger ID All
If All admin finger records are needed to delete, press “ENT”. Fin’Lock will show “Done!” and ALL admin finger records are deleted.	Done!
If only one admin finger records is needed to delete, press “ESC” instead of “ENT”. The flashing “All” will be replaced by the cursor.	Enter Finger ID _
If the finger ID does not exist, Fin’Lock will show “Unknown user” and return to Admin Finger menu	Unknown user
If the finger ID is valid, Fin’Lock will show “Done!” and then return to Admin Finger menu.	Done!

3.3.5.4. Verify Admin Finger

Description	LCD Display
Press ▲ or ▼ in order to scroll “4. Verify Finger” to the first line of display and press “ENT”(or press ‘4’)	4. Verify Finger 5. Num Adm Finger
If No Admin finger has been recorded, Fin’Lock will show “Empty base!” and then return to Admin Finger menu	Empty base!
If Admin finger has been recorded, Fin’Lock will prompt user to put the finger on the scanner for fingerprint verification	Please Put Your Finger!
If the finger is not matched, Fin’Lock will show “Unknown user” and return to Admin Finger menu	Unknown user
If the finger is matched, Fin’Lock will show admin finger ID for three seconds. Then return to Admin Finger menu.	Admin Finger ID 3

3.3.5.5. Number of Admin Fingers

Description	LCD Display
Press ▲ or ▼ in order to scroll “5.Num Adm Finger” to the first line of display and press “ENT”(or press ‘5’)	5.Num Adm Finger 1. Admin Sec Lv
If No Admin finger has been recorded, Fin’Lock will show “Empty base!” and then return to Admin Finger menu	Empty base!
If Admin finger has been recorded, Fin’Lock will show number of admin finger records for three seconds. Then return to Admin Finger menu.	Num of Fingers 2

3.3.6. Global Security Level

Each user has its security level. If it is needed to lower the security level of whole system, only Global Security Level is needed to be modified. Fin’Lock will compare Security Level of user and Global Security Level and choose the lower one for fingerprint verification.

Description	LCD Display
Press ▲ or ▼ in order to scroll “6.Global Sec Lv” to the first line of display and press “ENT”(or press ‘6’)	6.Global Sec Lv 7. Send Raw Img
Fin’Lock will prompt user to modify the Global Security Level. Press “ESC” if you want to discard the change.	6.Global Sec Lv 1
Press “ENT” after modification. Fin’Lock will show “Done!” and then return to System Admin menu.	Done!

3.3.7. Send RAW Image

It is the function for sending fingerprint image to FAS

Description	LCD Display
Press ▲ or ▼ in order to scroll “7. Send Raw Img” to the first line of display and press “ENT”(or press ‘7’)	7. Send Raw Img 8.Relay Admin
If Fin’Lock is not connected to FAS via LAN, it will show “No network” and then return to System Admin menu.	No network
If Fin’Lock is connected to FAS via LAN, it will prompt user to input filename(max 9 digit)	Type Filename
After input filename, Fin’Lock will prompt user to put finger on the scanner.	Please Put Your Finger!
After Fin’Lock has scanned the finger, it will send the captured finger image to FAS.	Image Sending..
If the image is sent successfully, Fin’Lock will show “Done!” and then return to System Admin menu.	Done!

For more information about sending raw image, please refer to FAS user guide

3.3.8. Relay Admin

Press ▲ or ▼ in order to scroll “8. Relay Admin” to the first line of display and press “ENT” to enter Relay Admin menu (or press ‘8’). Relay Admin menu has 2 function.

1. Activation
2. Set Relay Time

Relay Activation

Description	LCD Display
Press ▲ or ▼ in order to scroll “1. Activation” to the first line of display and press “ENT”(or press ‘1’)	1. Activation 2. Set Act Time
Enter ‘1’ to enable the relay or enter ‘0’ to disable the relay. Press “ESC” if you want to discard the change.	1-Act/0-Deact 1
Press “ENT” to save the modification. Fin’Lock will show “Done!” and then return to Relay Admin menu.	Done!

If the system is used solely for Time Attendance System, user can disable the relay action with Relay Activation function.

Set Relay Coil Turning on Time

Description	LCD Display
Press ▲ or ▼ in order to scroll “2. Set Act Time” to the first line of display and press “ENT”(or press ‘2’)	2. Set Act Time 1. Activation
Fin’Lock will prompt user to modify the Relay coil turning on time. (1-9 seconds) Press “ESC” if you want to discard the change.	Set Relay Time 9 sec
Press “ENT” to save the modification. Fin’Lock will show “Done!” and then return to Relay Admin menu	Done!

3.3.9. Language and Buzzer

Press ▲ or ▼ in order to scroll “9. Lang&Buzzer” to the first line of display and press “ENT” to enter Language and Buzzer menu (or press ‘9’). Language and Buzzer menu has 2 function.

1. Language
2. Buzzer

3.3.9.1. Language

Description	LCD Display
Press ▲ or ▼ in order to scroll “1. Language” to the first line of display and press “ENT”(or press ‘1’)	1. Language 2. Buzzer
Chinese=1, English=0. Press “ESC” if you want to discard the change.	1-Chi/ 0-Eng 1
Press “ENT” to save the modification. Fin’Lock will show “Done!” and then return to Language and Buzzer menu	Done!

3.3.9.2. Buzzer

Description	LCD Display
Press ▲ or ▼ in order to scroll “2. Buzzer” to the first line of display and press “ENT”(or press ‘2’)	2. Buzzer 1. Language
Enter ‘1’ to enable the Buzzer or enter ‘0’ to disable. Press “ESC” if you want to discard the change.	1-Act/0-Deact 1
Press “ENT” to save the modification. Fin’Lock will show “Done!” and then return to Language and Buzzer menu	Done!

3.4. Code Access menu

Press ▲ or ▼ in order to scroll “4. Code Access” to the first line of display and press “ENT” to enter Code Access menu (or press ‘4’). Code Access menu has 2 function.

1. Activation
2. Set Code

Code Activation

Description	LCD Display
Press ▲ or ▼ in order to scroll “1. Activation” to the first line of display and press “ENT”(or press ‘1’)	1. Activation 2. Set Code
Enter ‘1’ to enable the code access function or enter ‘0’ to disable. Press “ESC” if you want to discard the change.	1-Act/0-Deact 1
Press “ENT” to save the modification. Fin’Lock will show “Done!” and then return to Code Access menu.	Done!

Set Code

Description	LCD Display
Press ▲ or ▼ in order to scroll “2. Set Code” to the first line of display and press “ENT”(or press ‘2’)	2. Set Code 1. Activation
Fin’Lock will prompt user to enter new code. (Default is 123456)	Enter New Code
After entering the new code, Fin’Lock will prompt user to enter the new code again for confirmation. If you do not want to change the code, press “ESC” instead of entering new code.	Confirm Code
Press “ENT” to save new code. If two new input codes are the same, Fin’Lock will show “Write Success” and access code is changed.	Write Success
If two new input codes are different, It will show “Wrong Input!” and the access code is unchanged	Wrong Input!

3.5 Card Admin menu (ONLY in Fin'Lock with Mifare Function)

Card Admin menu has 8 functions.

1. Card Format
2. Master Card Admin
3. Init Reader
4. Save COU-> Card(Save Card Only User to Card)
5. Save ID-> Card(Save User ID to Card)
6. SaveTML-> Card (Save finger Template to Card)
7. Erase Card
8. CSN User function

To activate Mifare function, user **MUST** run Init Reader function with Master Card. **The Mifare Card Reader is near the green and red LED indicator of Fin'Lock.**

3.5.1 Format Card

All blank cards **SHOULD** be formatted by Card Format function first. Card Format function will NOT erase a written card. To erase a card, please use Erase Card function.

3.5.2 Master Card Admin

Master Card Admin menu has 3 functions.

1. Copy Master Card
2. Change Master Card Pin
3. Make Master Card

3.5.2.1. Copy Master

It is highly recommended to create Master Card copy for spare purpose. Please follow the below step to copy the Master card

Description	LCD Display
Press ▲ or ▼ in order to scroll "1. Copy Master" to the first line of display and press "ENT"(or press '1')	1.Copy Master 2.Change MC pin
Enter Master Card Password(default Master Card Password is written on the card)	Ent MCard pin
Hold the Master Card in front of the red/green LED of Fin'Lock	Put Master Card
Hold the formatted card in front of the red/green LED of Fin'Lock	Put New MCard
If success, It will show" Done!"	Done!

3.5.2.2. Change Master Card Password

Description	LCD Display
Press ▲ or ▼ in order to scroll “2. Change MC pin” to the first line of display and press “ENT”(or press ‘2’)	2. Change MC pin 3. Make Master
Enter Master Card Password	Ent MCard pin
Hold the Master Card in front of the red/green LED of Fin’Lock	Put Master Card
Enter New Master Card Password	New MCard pin
Hold the Master Card in front of the red/green LED of Fin’Lock	Put Master Card
Do NOT remove the card when it show “Please Wait”	Please Wait
If success, It will show” Done!”	Done!

Note: It is **NOT** recommended to change the password of the original Master Card. Once the change password process fails, the Master Card will be corrupted. It is recommended to keep the original Master Card and **ONLY** change the password of the Master Card Copy(please refer to 4.5.2).

Caution: If all master cards (original and copies) are lost, please erase all old user cards (created with this master card) first. It is because all old user cards cannot be erased once a new original Master Card has used to initiate the Mifare reader. If user cards are not erased first, it cannot be reused any more.

3.5.2.3. Make Master Card

Description	LCD Display
Press ▲ or ▼ in order to scroll “3. Make Master” to the first line of display and press “ENT”(or press ‘3’)	3. Make Master 1.Copy Master
Enter New Master Card Password	New MCard pin
Hold the Master Card in front of the red/green LED of Fin’Lock	Put Master Card
Do NOT remove the card when it show “Please Wait”	Please Wait
If success, It will show” Done!”	Done!

Caution: “Make Master” function is used for creating a new Master Card. Since the Card Key is created randomly, this new Master Card is totally different from other Master Card even if they have the same password. If you only want to copy a Master Card, **Please use “COPY MASTER” function.**

3.5.3. Init Reader

This function is to initiate the Mifare Function with a Master Card. In Standby mode, Fin'Lock will **ONLY** handles the User Cards created with corresponding Master Card for reader initialization. Fin'Lock will ignore User Cards created with other Master Cards.

3.5.4. Save COU->Card

Issue Mifare card for Card Only User. UserID and password (if it is set) will be written to card.

Description	LCD Display
Press ▲ or ▼ in order to scroll "4.SaveCOU -> Card" to the first line of display and press "ENT"(or press '4')	4. SaveCOU->Card 5. Save ID -> Card
Enter Master Card Password(default Master Card Password is written on the card)	Ent MCard pin
Hold the Master Card in front of the red/green LED of Fin'Lock	Put Master Card
Enter the user ID,	Enter User ID 1605
Hold the formatted card in front of the red/green LED of Fin'Lock.	Please put card
If success, It will show" Done!"	Done!

3.5.5. Save ID-> Card

Issue Mifare Card for VIP or ordinary user. It help more convenience when doing 1 to 1 matching as user only need to place the mifare card on the device & no need to key in their user ID anymore.

Description	LCD Display
Press ▲ or ▼ in order to scroll "5. Save ID->Card" to the first line of display and press "ENT"(or press '5')	5. Save ID -> Card 6. SaveTML -> Card
Enter Master Card Password(default Master Card Password is written on the card)	Ent MCard pin
Hold the Master Card in front of the red/green LED of Fin'Lock	Put Master Card
Enter the user ID to be written to card.	Enter User ID 1605
Hold the formatted card in front of the red/green LED of Fin'Lock	Please put card
If success, It will show" Done!"	Done!

3.5.6. SaveTML-> Card (Only support 4K mifare card.)

Issue Mifare Card for Free Card User. User ID & fingerprint template will be written to card.

Description	LCD Display
Press ▲ or ▼ in order to scroll “6. SaveTML -> Card” to the first line of display and press “ENT”(or press ‘6’)	6. SaveTML->Card 7. Erase Card
Enter Master Card Password(default Master Card Password is written on the card)	Ent MCard pin
Hold the Master Card in front of the red/green LED of Fin’Lock	Put Master Card
Enter the user ID to be written to card.	Enter User ID 1605
Hold the formatted card in front of the red/green LED of Fin’Lock	Please put card
If success, It will show” Done!”	Done!

3.5.7. Erase Card

Description	LCD Display
Press ▲ or ▼ in order to scroll “7. Erase Card” to the first line of display and press “ENT”(or press ‘7’)	7. Erase Card 8. CSN User
Enter Master Card Password(If it is a User Card, password is that of corresponding Master Card)	Ent MCard pin
Hold the Card to be erased in front of the red/green LED of Fin’Lock	Please put card
Do NOT remove the card when it show “Please Wait”	Please Wait
If success, It will show” Done!”	Done!

3.5.8. CSN User function

3.5.8.1. CSN User function Activation

If no CSN user is registered, user can stop the CSN User function

Description	LCD Display
Press ▲ or ▼ in order to scroll “1. Activation” to the first line of display and press “ENT”(or press ‘1’)	1. Activation 2. Read CSN
Enter ‘1’ to enable the CSN User function or enter ‘0’ to disable the CSN User function. Press “ESC” if you want to discard the change.	1-Act/0-Deact 1
Press “ENT” to save the modification. Fin’Lock will show “Done!” and then return to CSN User function menu.	Done!

3.5.8.2. Read CSN

User can use this function to read CSN of 1K/4K Mifare card. Since delete/edit a CSN user, user needs to know the CSN in order to enter it as User ID.

3.6. Allow init

1 for enable initiation from FAS and 0 for disable. For more information, please refer to FAS user guide.

3.7. Allow Update

1 for enable firmware upgrade through FAS and 0 for disable. For more information, please refer to FAS user guide.

3.8. Wiegand menu (**ONLY** in Fin'Lock with Mifare Function)

Wiegand menu has 2 function.

1. Wiegand Type
2. Facility Code (**ONLY** for 26 bits CSN)

Wiegand Type Definition:

- a. 26 bits User ID
Output 8 bit facility code (bit 2 to bit 9, MSB first) plus 16 lower bits of User ID (bit 10 to bit 25, MSB first). Bit 1 is even parity over bits 2 to 13. Bit 26 is odd parity over bits 14 to 25. Default facility code is 000. User can change it with Facility Code Function in Wiegand menu. Note that the input format of Facility Code is in decimal but the Wiegand output is in HEX. (For AVR ver 4.60 or before, Facility code is last 3 decimal digits of the Fin'Lock IP address (but output is in HEX).)
- b. 26 bits CSN
Output 8 bit facility code (bit 2 to bit 9, MSB first) plus 16 lower bits of 32 bit CSN (bit 10 to bit 25, MSB first). Bit 1 is even parity over bits 2 to 13. Bit 26 is odd parity over bits 14 to 25. Default facility code is 000. User can change it with Facility Code Function in Wiegand menu. Note that the input format of Facility Code is in decimal but the Wiegand output is in HEX.
- c. 32 bits CSN
Outputs 32 bits CSN as Wiegand data (MSB first)
- d. 34 bits CSN
Outputs 32 bits CSN (bit 2 to bit 33, MSB first) plus beginning and ending parity bits as Wiegand data. Bit 1 is even parity over bits 2 to 17. Bit 34 is odd parity over bits 18 to 33.
- e. 40 bits CSN
Outputs 32 bits CSN (bit 1 to bit 32, MSB first) plus 8 bits checksum (bit 33 to bit 40, MSB first) as Wiegand data

The default Wiegand type is 26 bits User ID format.

Wiegand data will **ONLY** output if recognition succeeds in Standby mode (Fin'Lock will show "Welcome" and user ID). For normal usage (without Mifare Card), output format is 26 bits User ID format. For Mifare User Card usage, the output format will follow the selected Wiegand type.

3.9. Life Finger Detection (LFD)

This setting is **ONLY** for Fin'Lock with LFD function. 1 for enable LFD and 0 for disable. With Life Finger Detection, Fin'Lock will prompt "Pls try again" in Standby mode if Fin'Lock detects a fake finger.

4. Basic Operation

In Fin'Lock system, there are two user types---VIP and Ordinary User. VIP user does not need to enter user ID before fingerprint verification at standby mode. Ordinary User needs to enter user ID or Group ID for fingerprint verification.

4.1 Door Control with Fingerprint Verification

4.1.1 VIP user case

Description	LCD Display
While in Standby Mode, put the finger on the scanner.	Ready-Local 19:30:59 01DEC
Fin'Lock will show scanning and start fingerprint verification	>>>Scanning<<<
If the finger is matched, Fin'Lock will turn on the relay coil and show "Welcome" and user ID for three seconds. Then it will go back to standby mode.	Welcome 1234
If the finger is not matched, Fin'Lock will show "Unknown user" and return to standby mode.	Unknown user

4.1.2 Ordinary user and Pin Only User using user ID

Description	LCD Display
While in Standby Mode, press "*".	Ready-Local 19:30:59 01DEC
Fin'Lock will prompt user to enter user ID.	Enter User ID
If the user ID does not exist, Fin'Lock will show "Unknown user" and return to standby mode.	Unknown user
If the user ID exists, Fin'Lock will prompt user to put the finger on scanner.	Please Put Your Finger!
For Pin Only User case, press in the password instead of putting finger on the scanner. Note: User may need to hold the first password input key for around half second.	Enter pin *****
If the finger is matched, Fin'Lock will turn on the relay coil and show "Welcome" and user ID for three seconds. Then it will go back to standby mode.	Welcome 1234
If the finger is not matched, Fin'Lock will show "Unknown user" and return to standby mode.	Unknown user

4.1.3 VIP user using Group ID

Description	LCD Display
While in Standby Mode, press “#”.	Ready-Local 19:30:59 01DEC
Fin’Lock will prompt user to enter Group ID.	Enter Group ID
After entering the Group ID, Fin’Lock will prompt user to put the finger on scanner.	Please Put Your Finger!
If the finger is matched, Fin’Lock will turn on the relay coil and show “Welcome” and user ID for three seconds. Then it will go back to standby mode.	Welcome 1234
If the finger is not matched, Fin’Lock will show “Unknown user” and return to standby mode.	Unknown user

4.1.4 Mifare Function(Card Only User)

Description	LCD Display
Hold the Mifare User Card in front of the red/green LED of Fin’Lock	Ready-Local 19:30:59 01DEC
If the user is registered with password, Fin’Lock will prompt user to enter password.	Enter pin
If password is matched or the user is registered without password, Fin’Lock will turn on the relay coil and show “Welcome” and user ID for three seconds. Then it will go back to standby mode.	Welcome 1234

4.1.5 Mifare Function(VIP, Ordinary & Free Card User)

Description	LCD Display
Hold the Mifare User Card in front of the red/green LED of Fin’Lock	Ready-Local 19:30:59 01DEC
Please note that if you are Free Card User. You need to hold the mifare card around 0.5SEC in front of the reader. It is because Fin’Lock needs to get your fingerprint template from the mifare card.	
Fin’Lock will prompt user to put the finger on scanner.	Please Put Your Finger!
If the finger is matched, Fin’Lock will turn on the relay coil and show “Welcome” and user ID for three seconds. Then it will go back to standby mode.	Welcome 1234
If the finger is not matched, Fin’Lock will show “Unknown user” and return to standby mode.	Unknown user

Note: If Fin’Lock is **without** Mifare function, please **ignore** 4.1.4 and 4.1.5.

4.2 Sign-out function

For sign-out, Fin'Lock does not need to open the door. In this case, sign-out function is used.

Description	LCD Display
While in standby Mode, press '0'. The word "Out" will show at the end of the first line	Ready-Local Out 19:30:59 01DEC
Sign-out function will time out after ten seconds	Ready-Local 19:30:59 01DEC
Within this 10 second period, follow steps in 3.1.1, 3.1.2 or 3.1.3. If fingerprint verification succeeds, access log is added and the door does not open	Welcome 1234

4.3. Code Access function

Code Access function provides user another way to turn on the relay coil. User hold "ESC" at standby mode. If code access function is enabled, Fin'Lock will prompt user to enter the code. If the code is matched, Fin'Lock will turn on the relay coil. If user does not press any key within 5 second, Fin'Lock will return to standby mode.

Description	LCD Display
While in standby Mode, hold "ESC". If code access is enabled, Fin'Lock will prompt you to enter access code. If none of key is pressed within 5 second, it will go back to standby mode.	Enter Code
Enter the Access Code(Default:123456) and press "ENT".	Enter Code *****
If the code is matched, Fin'Lock will turn on the relay coil and show "Welcome" for three seconds. Then it will go back to standby mode.	Welcome

5. FS30 Remote Relay Unit (RRU)

RRU is an optional accessory for FS21M (**AVR version 4.52** or above). It is an external relay unit. It has two door switch inputs, two alarm trigger inputs, a set of NC/NO/COM terminal. **FS21M with AVR version 4.60 or before must use RRU with firmware version 1.06 or before.**

When RRU is connected to FS21M, Administration Menu Choice 8 will change to Wiegand & RRU. The RRU menu has four functions

1. Set Alarm1
2. Set Alarm2
3. Set DS2
4. Alarm Stop Option

To activate or deactivate alarm function of RRU:

Description	LCD Display
Enter '1' to enable the alarm function or enter '0' to disable. Press "ESC" if you want to discard the change.	1-Act/0-Deact 1
Press "ENT". If '0' is entered, Fin'Lock will show "Done!" and then return to RRU menu. If '1' is entered, Fin'Lock will ask user to set the alarm input normal open(NO) or normal close(NC)	1-NO/0-NC 0
Press "ENT". Fin'Lock will ask user to set Alarm Delay Time. If the alarm input is kept triggered more than this time limit, the alarm will occur.	Alarm Delay 60 sec

"Set DS2" function is for setting DS2 of RRU as a door switch or a door sensor. If DS2 is set as a door sensor, the RRU will sound "do--do--do" while DS2 is activated.

Description	LCD Display
Enter '1' to set the DS2 as door sensor. Enter '0' to set DS2 as door switch. Press "ESC" if you want to discard the change.	1-Act/0-Deact 1
Press "ENT". If '0' is entered, Fin'Lock will show "Done!" and then return to RRU menu. If '1' is entered, Fin'Lock will ask user to set the DS2 input normal open(NO) or normal close(NC)	1-NO/0-NC 0

Alarm Stop Option function is to set whether only administrator can stop the Alarm or not. If it is set to '0', ordinary user can stop the alarm by successful recognition. If it is set to '1', Alarm will be stopped only by entering **Administration Menu** from **standby Mode**.

The Firmware version of RRU can be read under the **3.System Admin -> 4.Check Version -> 4.RRU F/W Vers.**

- END -

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