AY-B9350

Professional Fingerprint Reader

User Manual

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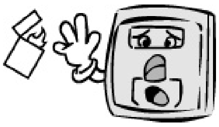
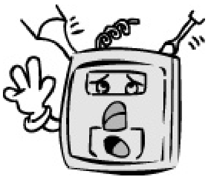
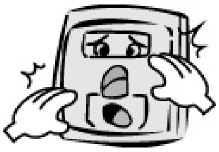
1. Checking Before Use

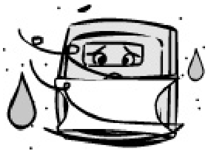
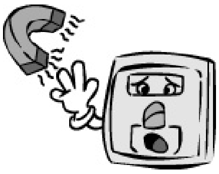
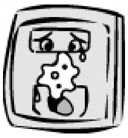
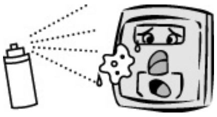
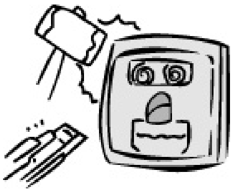
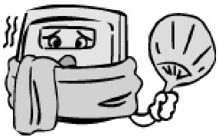
1.1 Safety Precautions

- Warning

Do not operate the device with a wet hand. Do not allow liquid such as water into the device . -> It can cause failure, electric shock.		Do not device heat source near the device. -> It can cause fire.	
Do not randomly disassemble, repair or remodel. -> It can cause failure, electric shock or fire.		Keep children away from the device. -> It can cause children's safety accident or failure.	

- Failing to observe the precautions mentioned above can cause user death or serious injury.

- Caution

Do not install the device in place exposed to direct rays of the sun. -> It can cause malfunction, deformation and/or discolor.		Do not install the device in a place where with much moisture or dust. -> It can cause failure.	
Do not wash the device by directly splay water and do not clean it with benzene, thinner or alcohol. -> It can cause electric shock or fire.		Do not allow magnetics near the device. -> It can cause failure and/or malfunction.	
Do not make fingerprint input part dirty. -> Correct fingerprint recognition won't be possible.		Do not spray insecticide or flammable spray on the device. -> It can cause deformation and discolor.	
Do not allow impact on the device or contact with sharp object. -> It can cause failure due to product damage.		Do not install the device in a place where temperature severely changes. -> It can cause failure.	

- Failing to observe the precautions mentioned above can cause user injury or property damage.

* We are not responsible for any accidents and damage that may arise from non-compliance of the information in this manual.

- How to use touch screen

To select the function you want, touch lightly with your fingertip.

When the touch is recognized, the color of button or icon will be temporarily reversed and return to the original color.

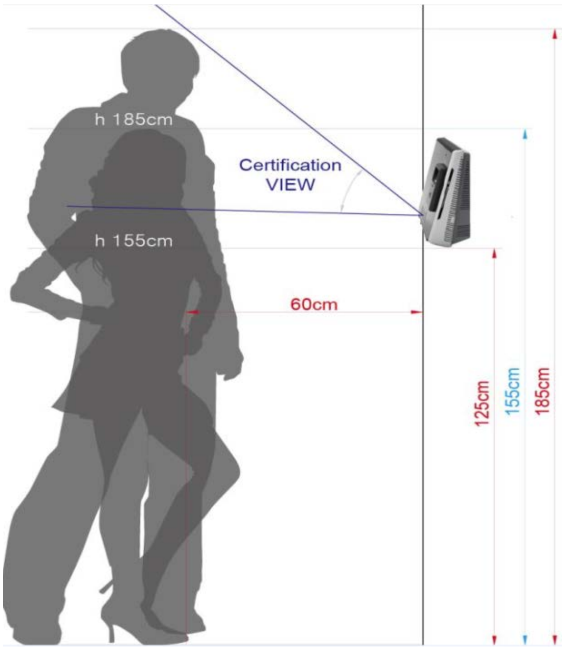
Touch screen operates by recognizing human body's tiny current (capacitive), so you must use your fingertip (do not use fingernails).

[Caution]

- Do not let anything with electricity flow touch the touch screen. The touch screen might not operate properly due to electric stimulation such as static.
- Do not press strongly with sharp object. The touch screen might be damaged.
- The touch sensor might not properly operate with water on the screen or on your finger.

- How to use face recognition

Installation height for face recognition: We recommend that the device to be installed 125cm high from the ground.



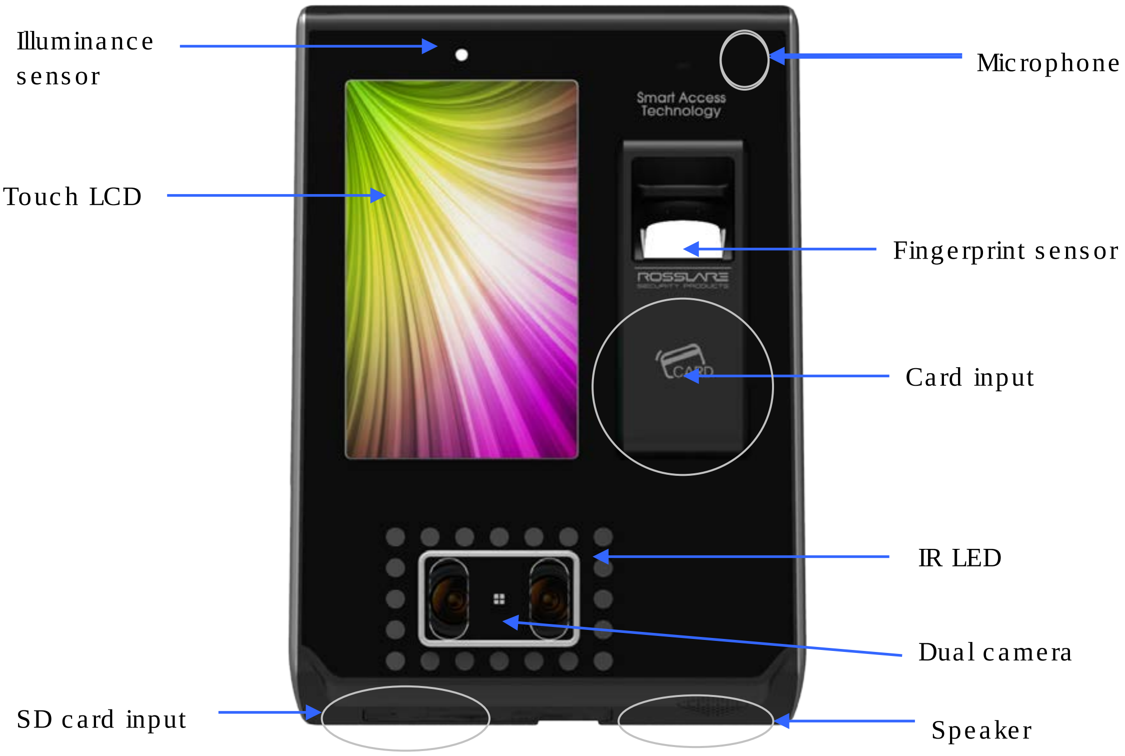
* Caution when installing

- Install the device indoor.

- Do not install under an incandescent light.

- Do not install where there is direct sunlight or counter light.

1.2 Reader Layout



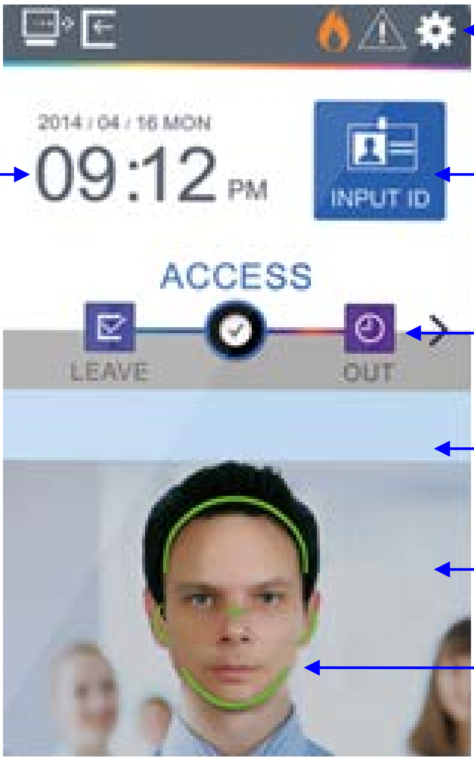
1.3 Screen Information during Operation

□ Connection state with the server

□ Current state of the entrance

□ Warning signals such as terminal separation

□ Fire sensor



Menu button

Current time

ID input button

Entrance mode selection button (Indication of the state of the entrance)

User guidance message

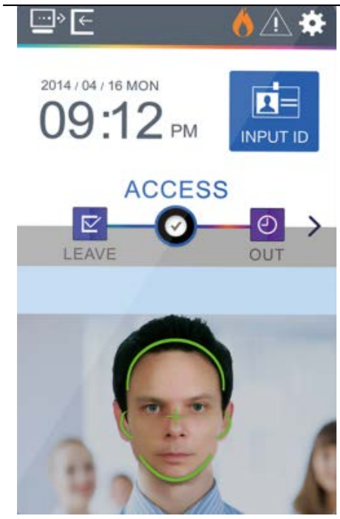
Camera movie display

Face registration location guide

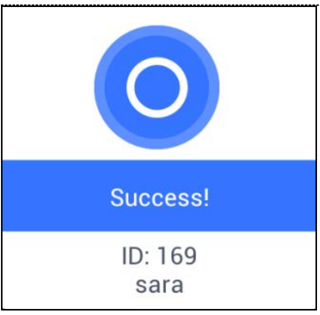
1.3.1 Icon Information

□ Warning display	None	: Normal
	⚠	: Terminal is disassembled or abnormal status like door error
□ Door status	▯	: Door status is not known
	🟧	: Door is closed
	⇥	: Door is open
□ Server connection status	🖥	: LAN cable is not connected
	☒	: Not connected to server program
	⇄	: Not connected to server program

1.3.2 Message Information



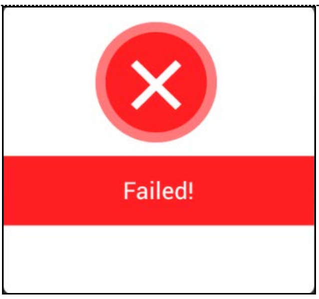
- Main screen



Success!

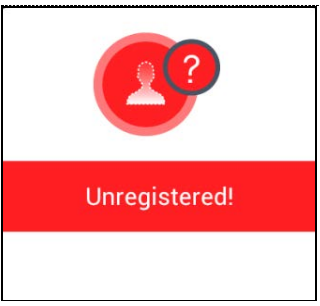
ID: 169
sara

- Authentication is successful



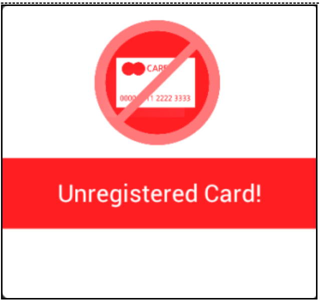
Failed!

- Authentication failed



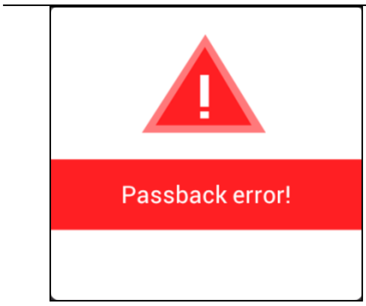
Unregistered!

- Unregistered user ID is input



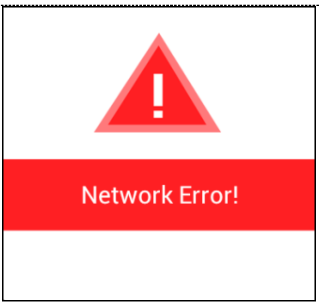
Unregistered Card!

- Unregistered card is input



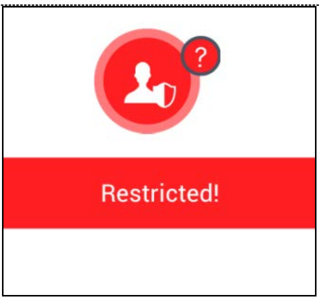
Passback error!

- Pass back error occurred when anti-pass back function is used.



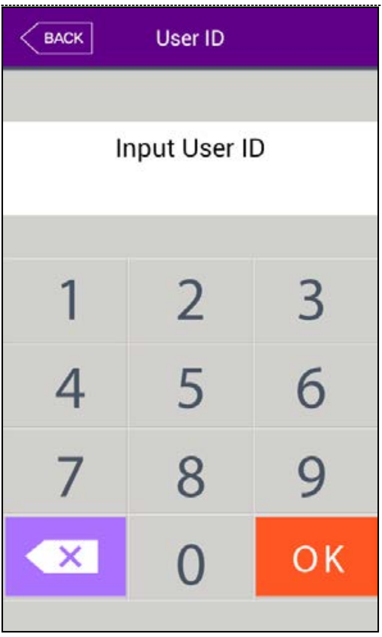
Network Error!

- No response from the server while trying authentication.
- Network to the server is disconnected while trying authentication.

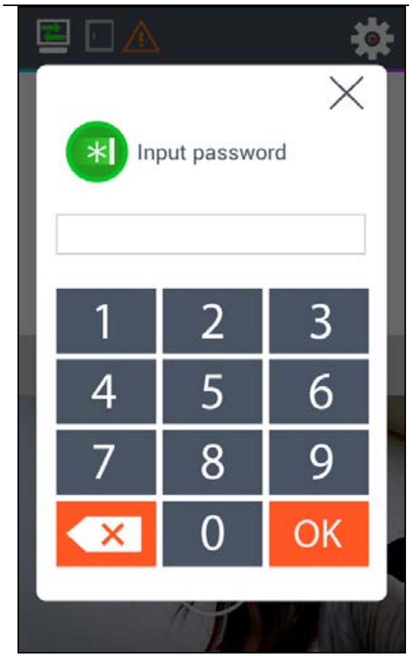
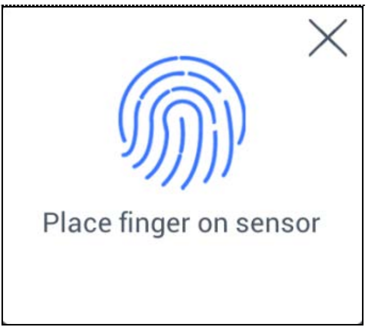
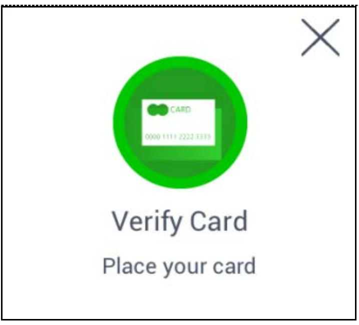
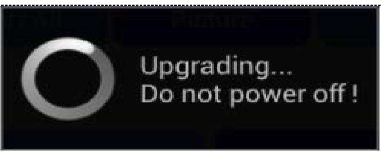


Restricted!

- Registered but no authentication authorization, or authentication is tried when it is not access time



- Waiting for user ID input

 Input password 	- Waiting for password input
 Place finger on sensor	- Waiting for fingerprint input
 Verify Card Place your card	- Waiting for card input
 Upgrading... Do not power off !	- Upgrading terminal program (Do not turn OFF terminal power when this message is displayed.)

1.4 Voice Information during Operation

Division	**Voice information**
When authentication is successful	You are authenticated.
When authentication failed	Please try again.

1.5 Buzzer Sound Information during Operation

Beep	Reading Fingerprint or card	A card is read. fingerprint is input in the fingerprint window
Beep, beep	Verification failed	Authentication is failed
Long beep	Verification is successful	Authentication is succeeded

1.6 Correct Face Registration and Authentication Method

- Face registration method

- Maintain distance between terminal and face to be about 50 cm.
  (Place face into the guide line in the LCD screen.)
- Register face pose according to information. However, stop movement during capturing.
- Register face after lift up hat or hair to prevent blocking of the lower part of face including eyebrow. (Based on picture for passport)
- In case of people who wear glasses, he must register both of face with glasses and face without glasses. However, if glasses frame is replaced, face with glasses must be registered again.

- Face authentication method

Face authentication method can be set in user environment with the following 3 modes.

- Normal mode: Tilting function of the camera works when a user approaches within 1.5m by detecting user's face and face position. Face authentication will be performed when a user approaches between 50 ~ 70 cm. IR LED remains on under high-intensity illumination while remains off under low illumination.

- Fixed mode: The mode has the fastest authentication speed. However, since it does not have tilting function, maintain distance between the terminal and user at 50Cm to set user face position into the LCD guideline. IR LED remains on at all times

- Adaptive mode: The camera will tilt according to face position by detecting user's face when a user approaches within 3m. Face authentication will be performed when a user approaches between 50 ~ 70 cm. IR LED remains on under high-intensity illumination while remains off under low illumination.

- Cautions

- It is the best to register and authenticate in terminal installation place.
- If a user takes a pose which is different from the registered face, it can reduce face recognition rate.

  If possible, it is best to take a pose facing the front.
- Thick glasses frame or sunglasses can reduce face recognition rate.

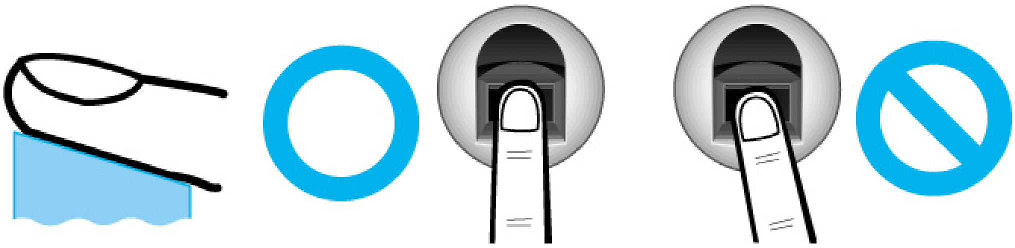
- Installation precautions

- Make sure the terminal is installed indoor.
- Do not install the device under lighting with incandescent lamp.
- It is not recommended that installation in environment exposed to backlight or direct rays of the sun.

1.7 How to Register and Input Correct Fingerprint

- Correct fingerprint input method

If possible, input index finger as like to imprint thumbmark.
Slight contact of fingertip is not a correct register/input method.
Touch the center of a fingerprint in the fingerprint input part.

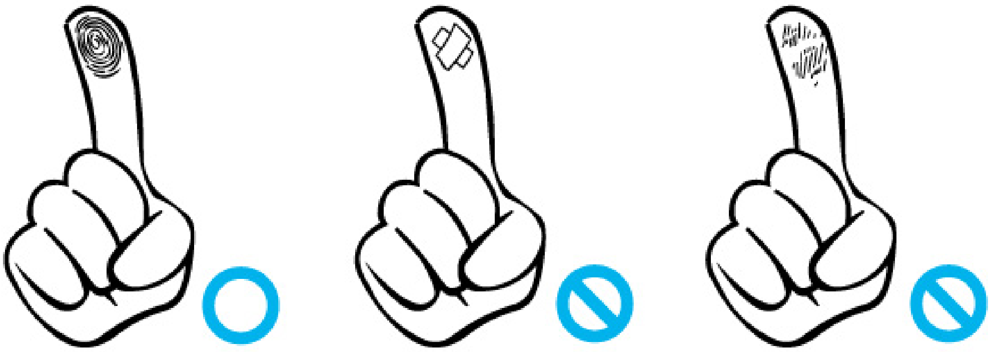


- If possible, input fingerprint of index finger.

For correct and stable input of fingerprint is possible if index finger is used.

- Check if fingerprint is blur or there is any wound.

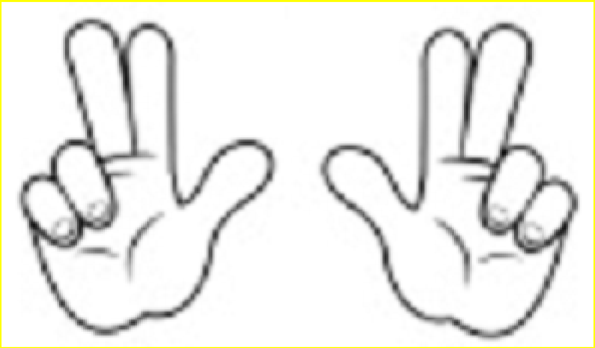
In case of too dry or moist fingerprint, blur fingerprint or wounded fingerprint, it is hard to recognize. In this case, register fingerprint of another finger.



- Precautions according to fingerprint status

Sometimes fingerprint can’t be used or there can be difficulty in using fingerprint according to user’s fingerprint state.

- The product is a fingerprint recognition system. If fingerprint is damaged or too tender, fingerprint can’t be used, and password must be used.
- **If hands are too dry, blow user’s breaths** on the fingerprint for easy use.
- In case of children, If fingerprint is too small or too tender, sometimes use is difficult or impossible. It is needed to newly register fingerprint every 6 months.
- In case of the old, if there are too many crackles on the fingerprint to be registered, it can be hard to register fingerprint.
- If possible, it is recommended that more than 2 fingerprints of a user are registered.
- If you want to increase the success of authentication, you’d better use 6 fingers among ten fingers as below.



2. Introduction

2.1 Features

- Multi-Modal product which can use both of face and fingerprint authentication functions.

- Tilting camera automatically trace face position.

- Since an illuminance sensor and a Dual Camera (Color & IR) are installed, face recognition is impossible even in a dark place. Save log image which can be recognized.

- Can be used along with RF Card (EM Card; 125 kHz) and Smart Card (MIFARE Card; 13.56MHz) simultaneously.

- Simple self- authentication through face or fingerprint
  - Face recognition and fingerprint recognition technology (Biometrics) are used for the device. Therefore, risk of password forgetting, card or key missing or robbery can't be prevented. In addition, security is enhanced using one's own biometric information.

- Access control system through network (LAN)
  - Since communication is made between fingerprint recognition device and authentication server using TCP/IP protocol, expansion is easy because it can be directly applied to the existing Network. Not only 10/100 Mbps Auto Detect secures quick speed but also management and monitoring through network is easy and simple.

- **Various registration and authentication methods are provided**

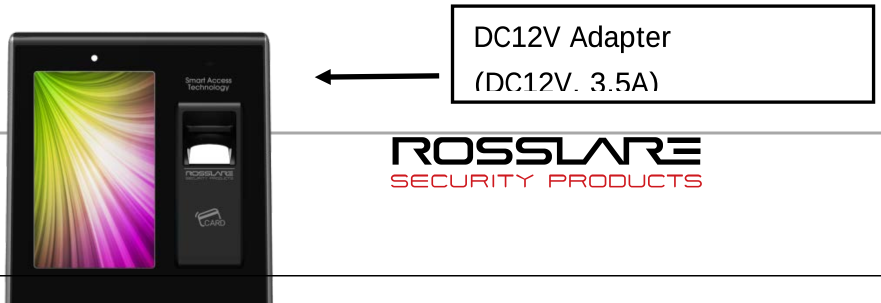
  - Or / And combination of face, fingerprint, card and password is supported.

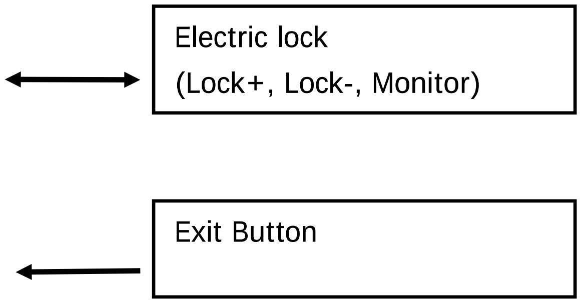
  If it is set to **'**Or', authentication will be regarded as successful if any of the registered authentication methods is successful. If it is set to 'And', all registered Authentication methods must be successful to regard authentication as to be successful.

  Ex> Fingerprint, card or fingerprint, fingerprint and card, face or fingerprint or card or password

2.2 Configuration Diagram

2.2.1. Exclusive Usage (Access)

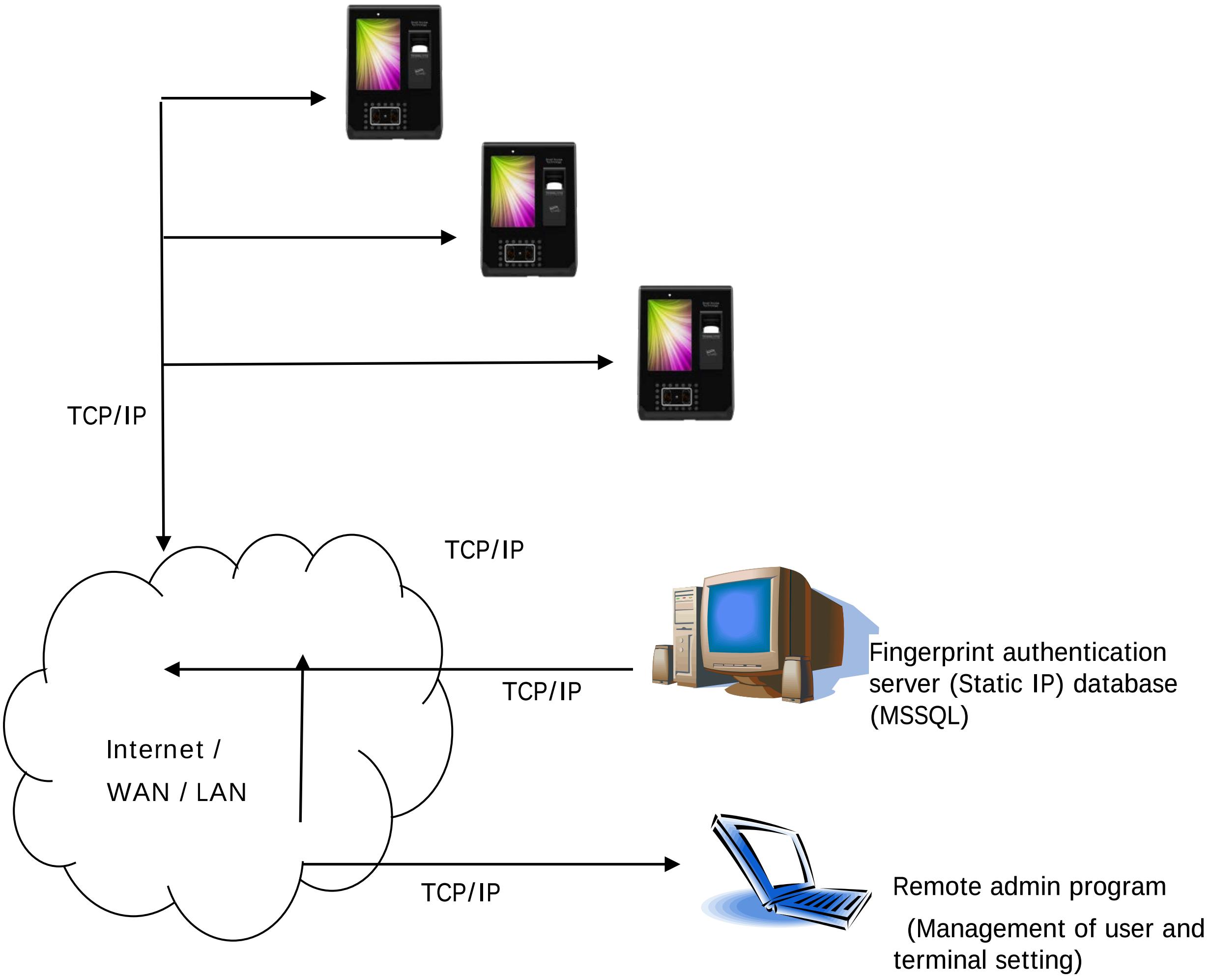




Electric lock
(Lock+, Lock-, Monitor)

Exit Button

2.2.2. Connection with PC Server (Access, Time & Attendance)



TCP/IP
TCP/IP
Internet /
WAN / LAN
TCP/IP
Fingerprint authentication server (Static IP) database (MSSQL)
TCP/IP
Remote admin program
(Management of user and terminal setting)

2.3 Product Specification

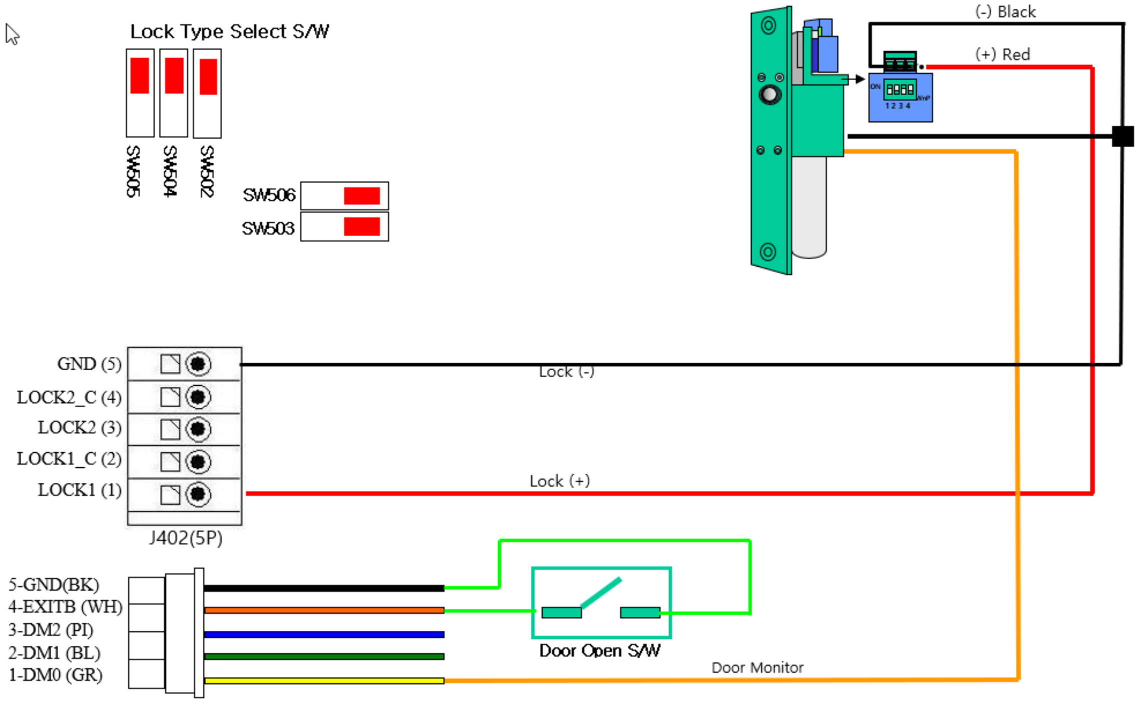
Division	SPEC	REMARK
CPU	1GHz Quad Core CPU	
LCD	5.0 inch Touch LCD (480*800)	
MEMORY	4G + 8G Flash	
	2GB RAM	
External SD Card support	data backup / FW upgrade	
Camera	Tilted Dual Camera (Color & IR)	
Authentication speed	Within 1 second	
Number of users	100,000 User 100,000 Template (1: N→1: 100,000) 10,000 Face (1: N→1: 2,000) 1,000,000 Log / 20,000 Image Log	
Fingerprint sensor	Optical type	
Scan Area / Resolution	20 * 20mm / 500 DPI	
Temperature / Humidity	-20 ~ 45 / Lower than 90% RH	
AC / DC Adapter	INPUT: Universal AC100 ~ 250V	
	OUTPUT: DC 12V (Option: DC 24V)	
	UL, CSA, CE Approved	
Lock Control	EM, Strike, Motor Lock, Auto Door	
I/O	4 In (1 Exit, 3 Monitor) 2 Out (Also for Lock Control)	
Communication Port	TCP/IP (10/100Mbps)	Authentication server comm.
	RS-232	
	RS-485	Controller communication
	Wiegand In/Out	Card reader or Controller comm.
Card Reader	125 kHz RF / 13.56 MHz Smart simultaneous use (1 SAM socket) HID 125K Prox card (option) HID iClass Card (option)	option
Dimension	88.0mm * 175.0mm * 43.4mm	

3. Connections

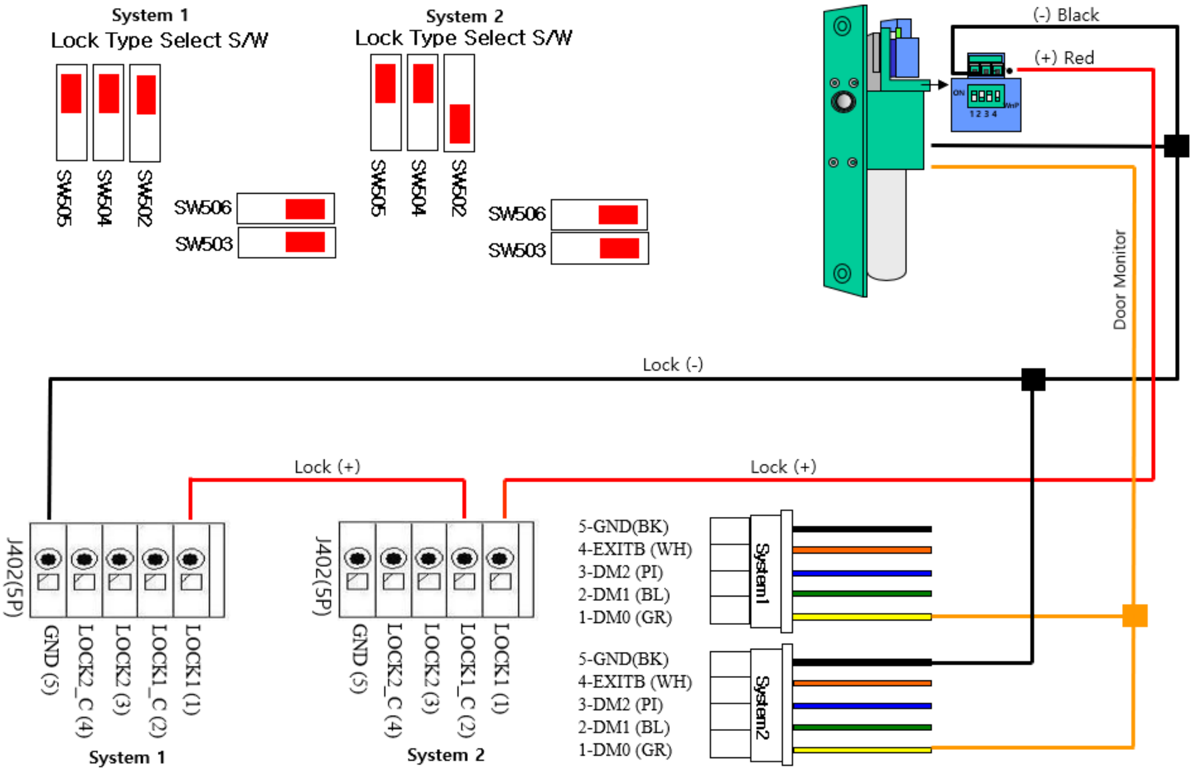
The following diagrams show various connection scenarios.

3.1 Dead-Bolt Type Door Lock (Fail Safe)

3.1.1 Connecting One System/One Lock

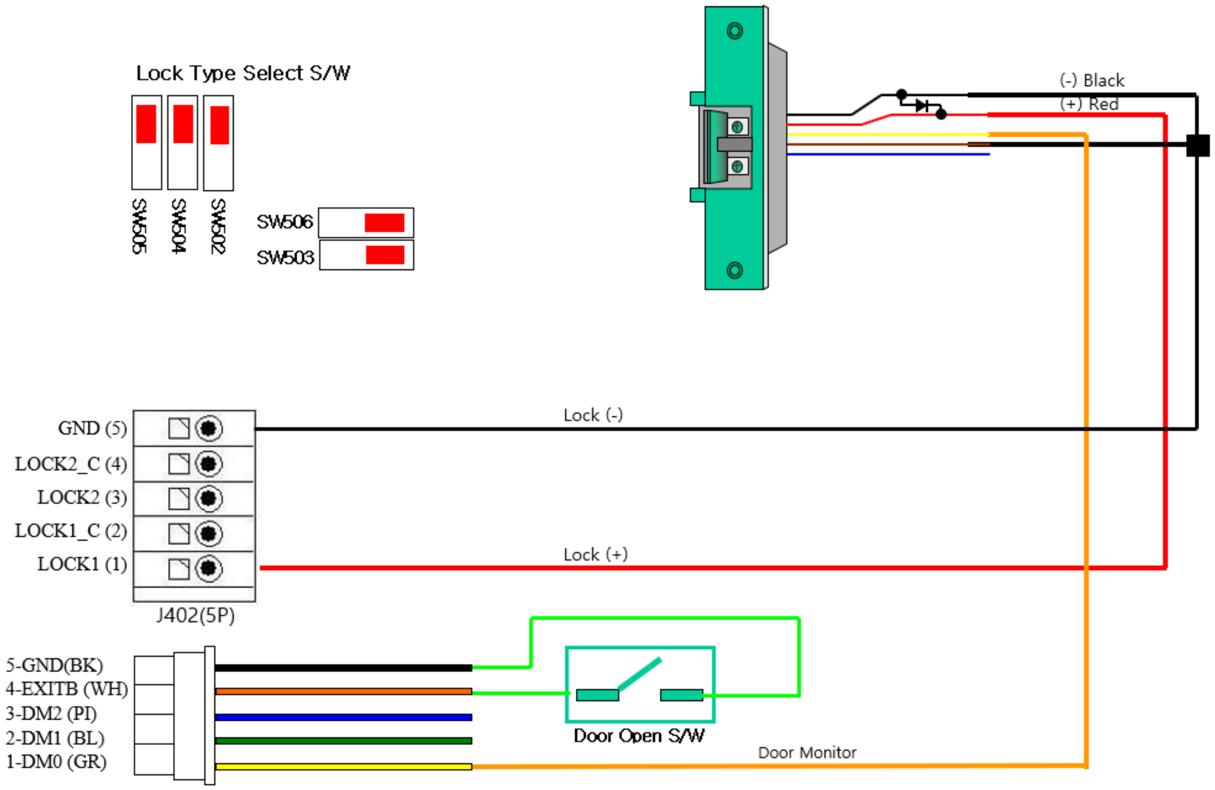


3.1.2 Connecting Two Systems/One Lock

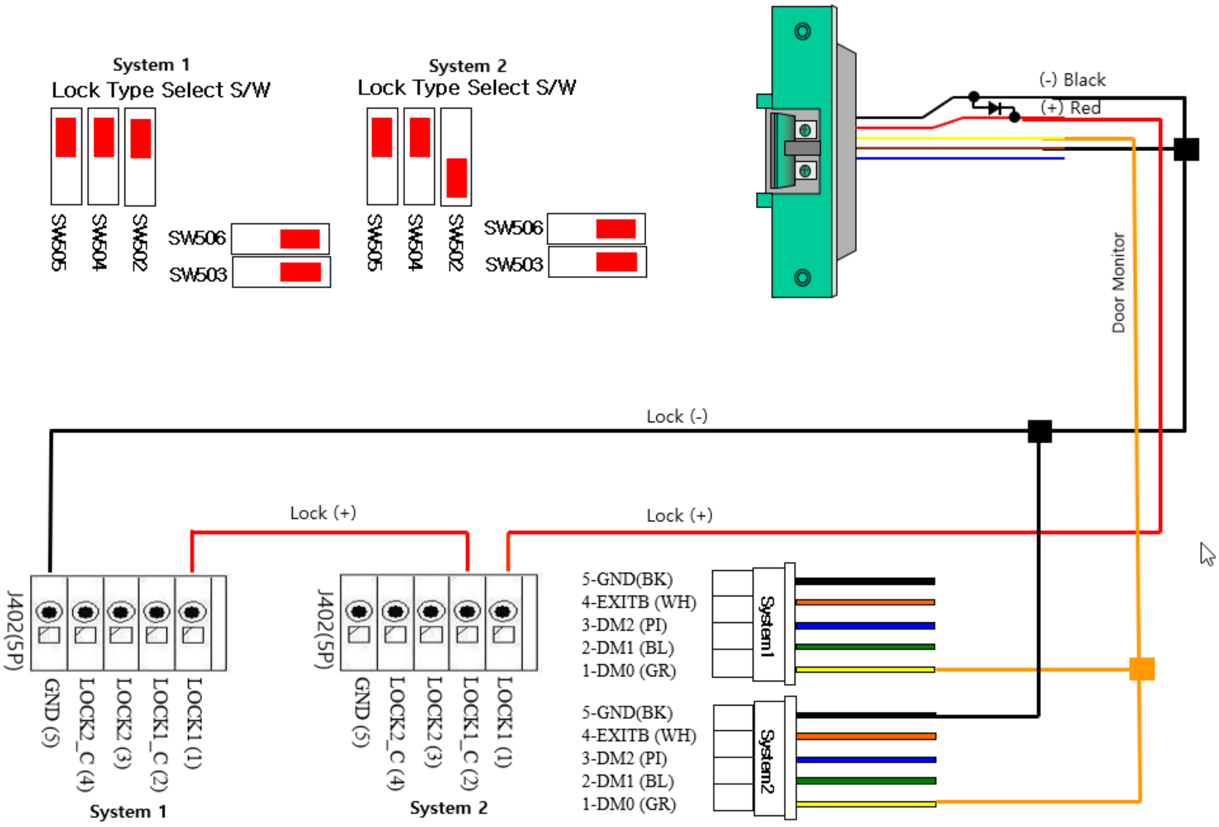


3.2 Strike-Type Door Lock (Fail Safe)

3.2.1 Connecting One System/One Lock

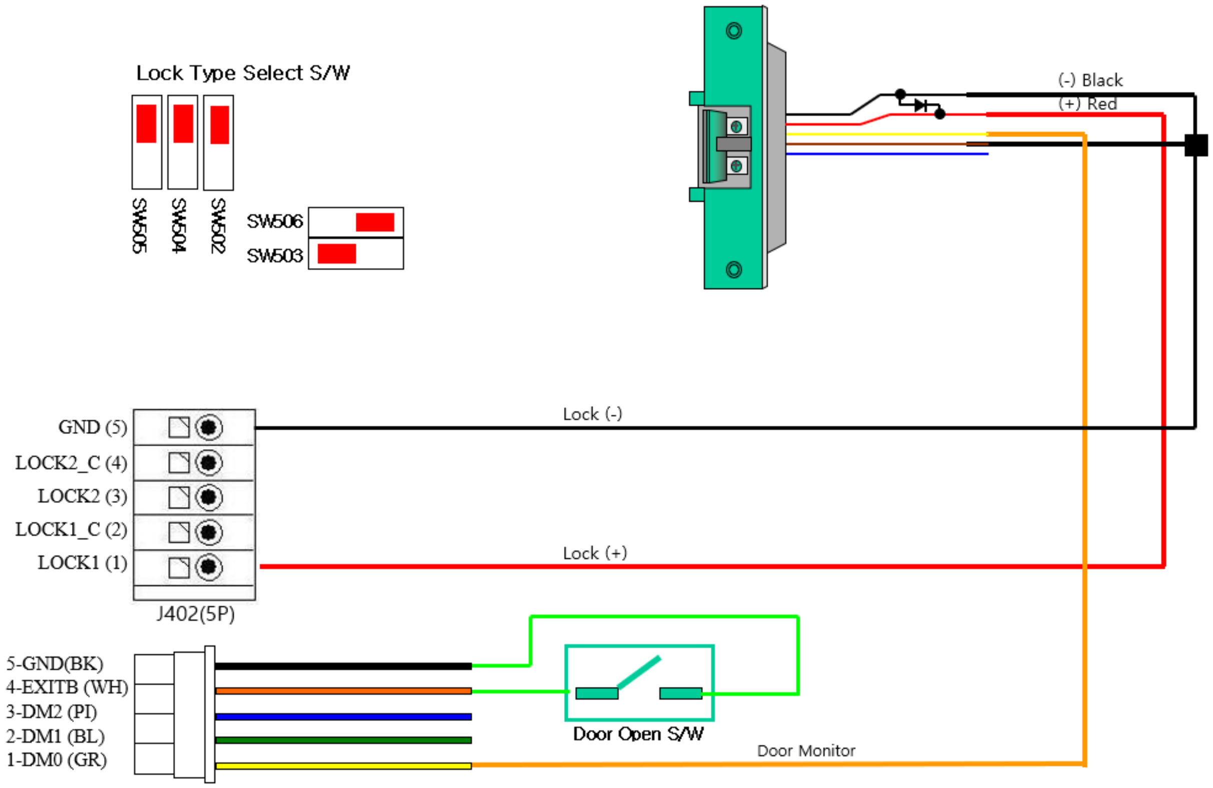


3.2.2 Connecting Two Systems/One Lock

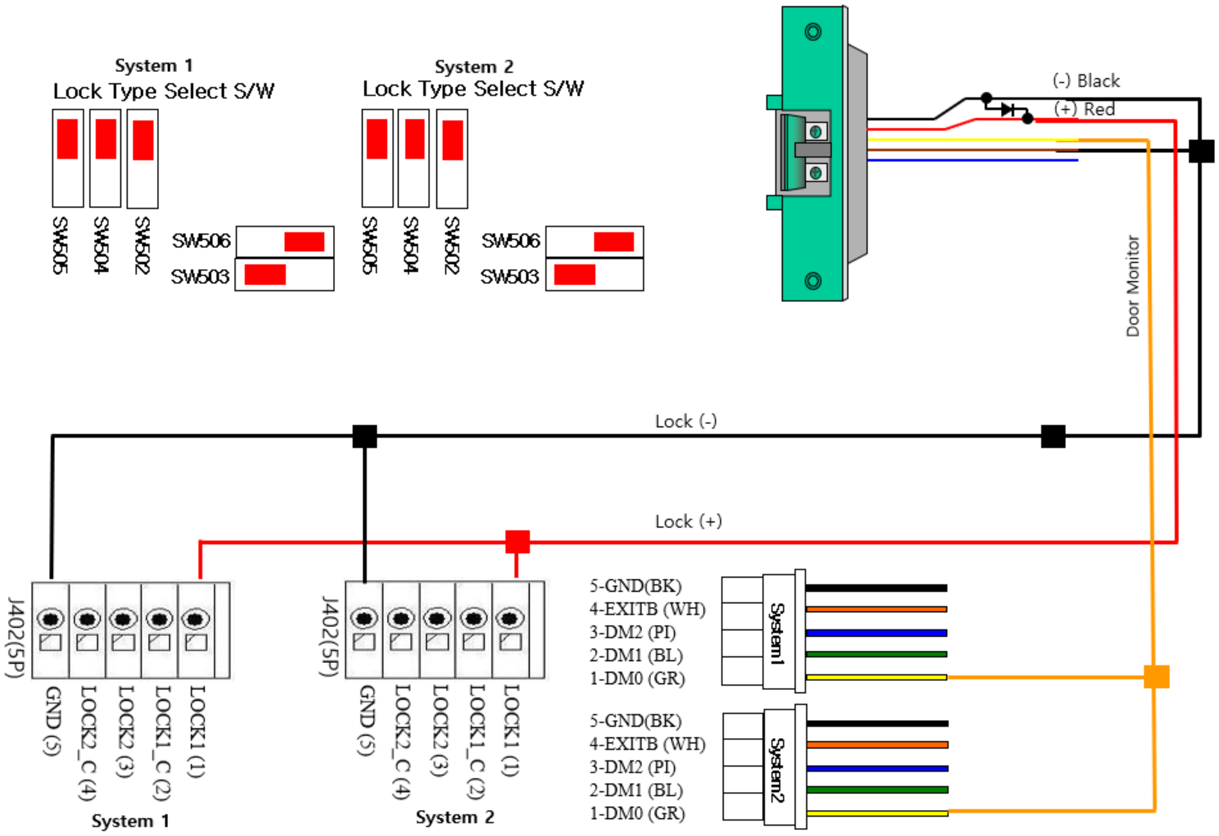


3.3 Strike-Type Door Lock (Fail Secure)

3.3.1 Connecting One System/One Lock

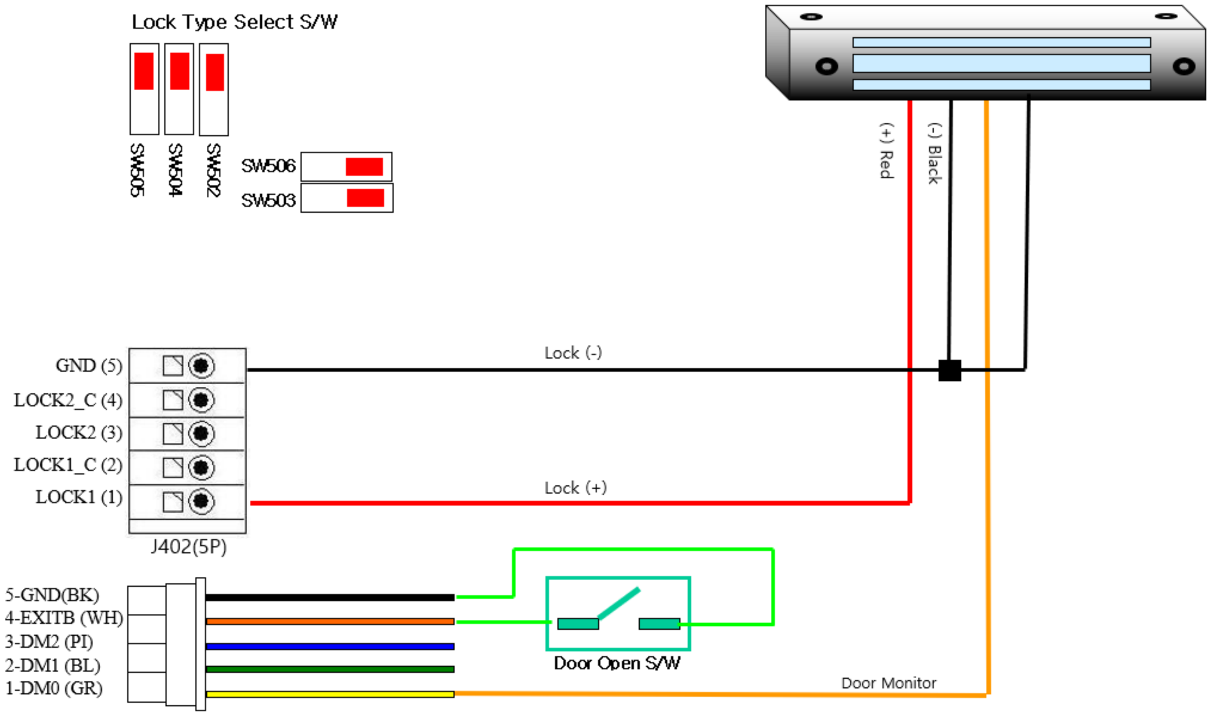


3.3.2 Connecting Two Systems/One Lock

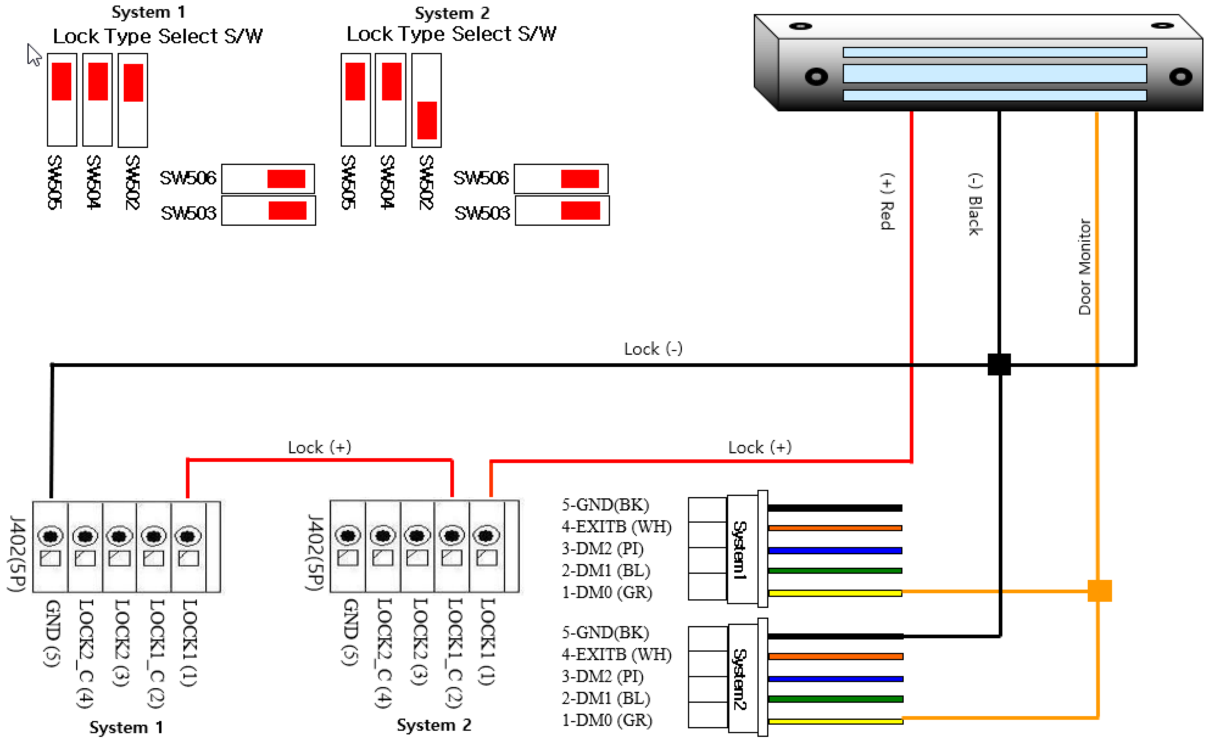


3.4 Connecting an EM-Type Door Lock (Fail Safe)

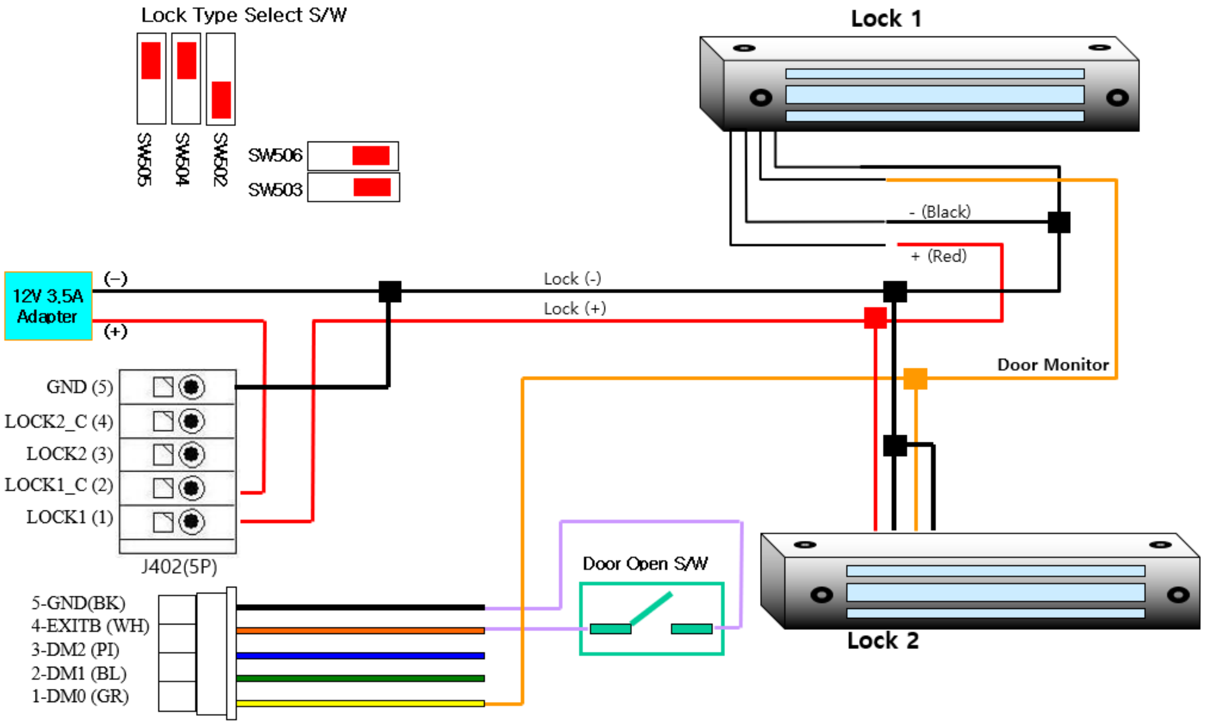
3.4.1 Connecting One System/One Lock



3.4.2 Connecting Two Systems/One Lock

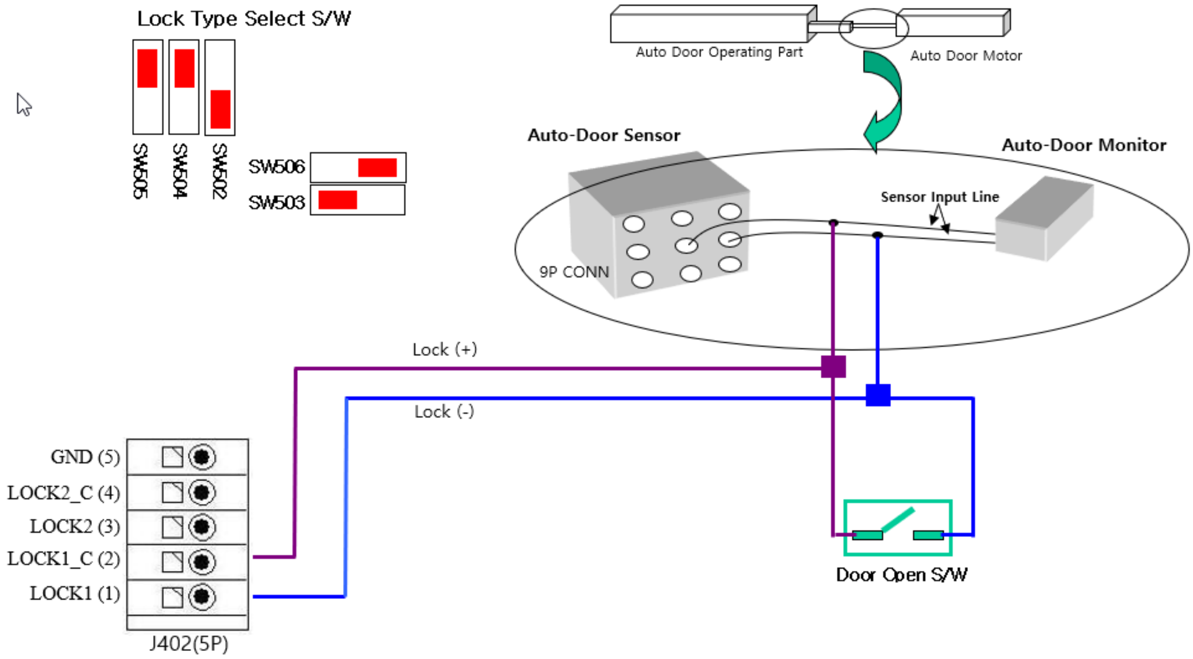


3.4.3 Connecting One System/Two Locks Using an External DC Power Adapter

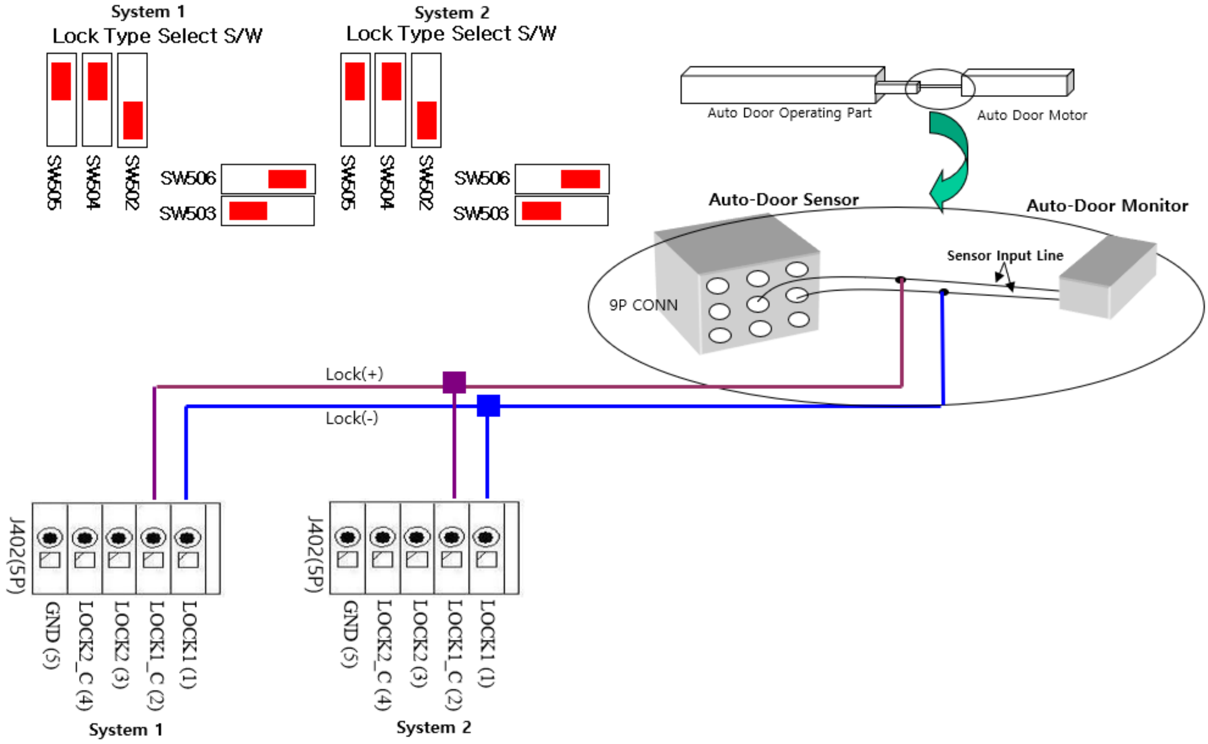


3.5 Connecting Auto-Door (Contact Control)

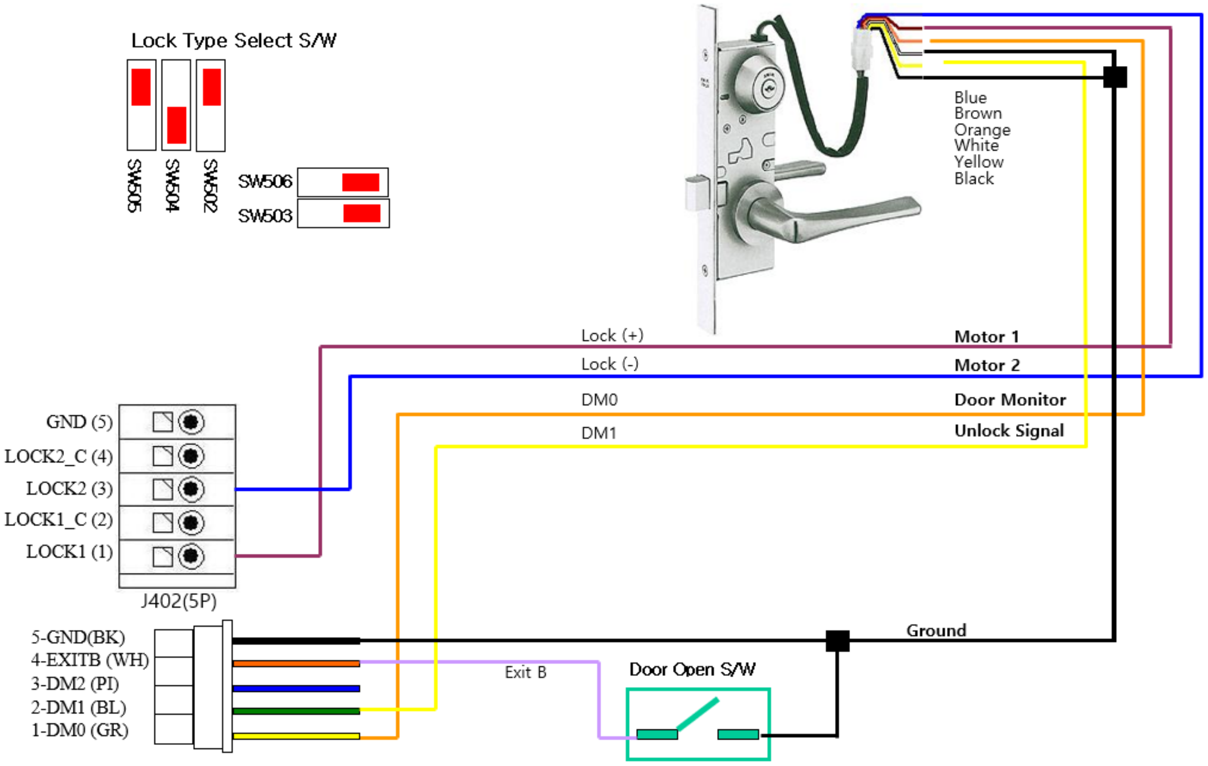
3.5.1 Connecting One System/One Door



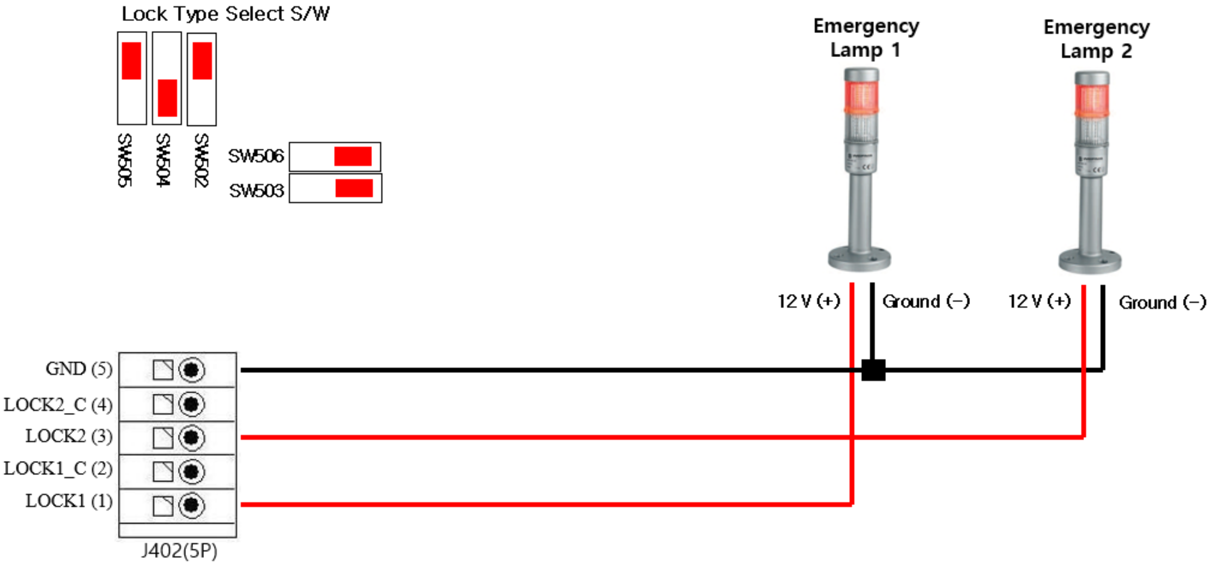
3.5.2 Connecting Two Systems/One Door



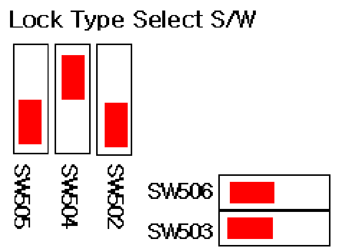
3.6 Connecting a Motorized Lock

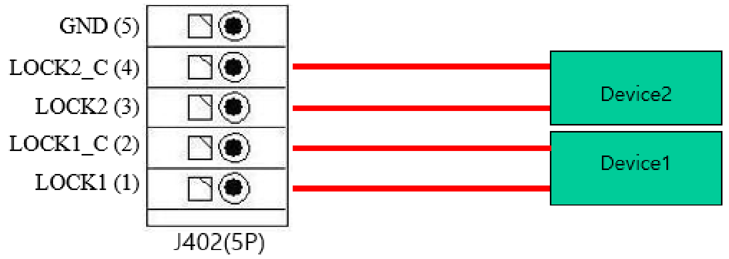


3.7 Connecting Two Emergency Lamps



3.8 Connecting Two Non-Powered Contacts (Normally Open)



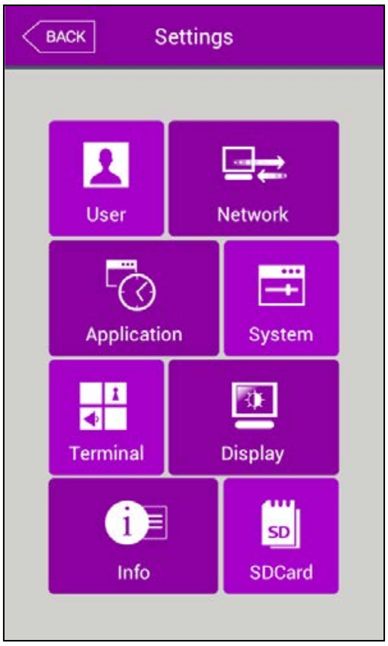


4. Configuration

4.1 Check Points before Configuration

4.1.1 Entering Menu

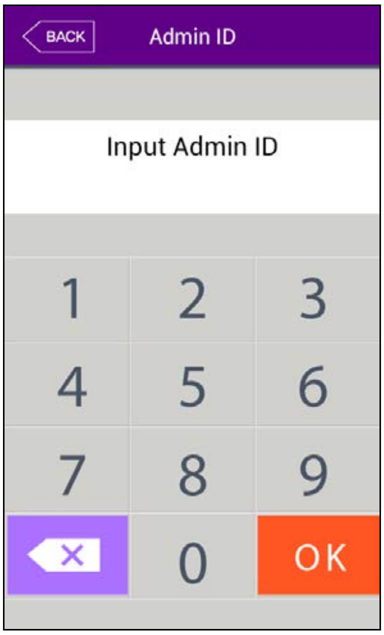
Press [⚙] icon in the main screen to access into the main menu screen below.



Press the relevant button to move to each sub menu.

3.1.2. Administrator Authentication

If an administrator is registered, the following administrator authorization screen will be displayed first.



Admin ID

Input Admin ID

□ Administrator authentication

Input administrator ID to proceed with administrator authentication using card, fingerprint, face or password according to authentication method of the relevant administrator.

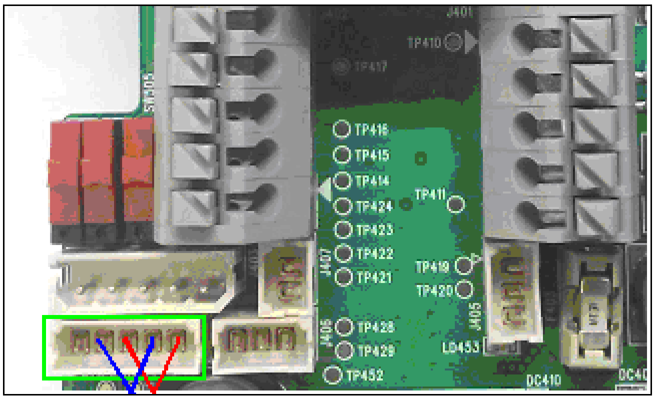
Administrator authentication screen will be displayed only when there is a registered administrator. Authentication will be performed only once to enter menu mode. After that, access to all menus is possible until completely move out of the main menu.

3.1.3. Enter Menu without Administrator Authorization

The method is to enter the menu when an administrator lost registered administrator card which is registered at the terminal or when fingerprint or face verification is impossible because there is no administrator.

□ Remove the bracket on the rear side of the terminal to open the cover

□ As shown in the figure below, in cover open status, connect each of the following 5-pin connector No 1 and 3 pin, No 2 and 4 pin on the rear side of the terminal.

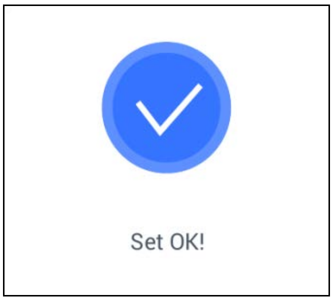


□ Press ⚙ icon in the main screen to access into administrator authorization screen, fill with ‘0’ for administrator ID length and press [OK] button to enter menu screen.
(But if the admin user ID was ‘000...0’, you can insert the unregistered user ID as you please instead of the ID ‘000...0’ and then press [OK] button to enter the menu screen)

□ Make sure that connection pin of the connector is removed after modifying the setting value.

3.1.4. Saving Setting Value

When [OK] button in each menu is pressed after setting change to save change detail, the setting detail in the screen will be saved and the following message box will be displayed.



Set OK!

□ If nothing is changed, the screen will move to the previous menu screen.

□ If nothing is input for 30 seconds while changing setting value in the menu, the screen will move to the previous menu.

4.2 Menu Configuration

1. User management	1. Add 2. Change 3. Delete 4. Delete All 5. Search	
2. Network	Terminal IP address	Static IP / DHCP □ Terminal IP address □ Subnet Mask □ Gateway
	DNS server	□ DNS server1 □ DNS server2
	Server IP address	□ Server IP address □ Port
	Terminal ID	□ Terminal ID

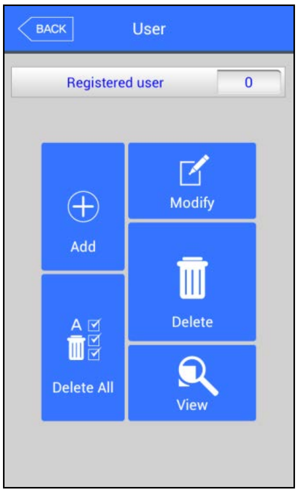
3. Operation mode	1. Function key setting	□ F1 use □ F2 use □ F3 use □ F4 use □ ID button □ Access button □ F key mode: Normal,Fixed
4. System	1. System	□ User ID length □ Authentication: Server/Terminal Terminal/Server Server Only Terminal Only □ OperationMode : Network/Standalone
	2. Fingerprint recognition	□ 1: N level [3~9] □ 1 to 1 level [1~9] □ Fake fingerprint detection : None Low Medium High □ Check similar FP
	3. Face recognition	▶ Face Authentication Use □ Matching level [1~4] □ Face recognition: Fixed Normal Adaptive □ Camera Angle [-2~4] □ Enrollment Sensitivity: Auto [1~10]
	4. Date/time	□ Display format □ Set Date □ Set Time
	5. Database	1. Delete all users 2. Delete setting 3. Delete Log 4. Delete image log

		5. Factory Init
5. Terminal setting	1. Sound	□ Voice volume □ Buzzer volume □ User Voice
	2. Terminal option	□ Read Card Number □ Card format □ Lock Terminal □ Card reader: Standard HID-iCLASS (option)
	3. Input setting	□ M0 □ M1 □ M2 □ IO □ Warn door open (sec) □ Tamper alarm
	4. Lock setting	□ Lock1 option □ Lock2 option □ Lock1 duration (ms) □ Lock2 duration (ms)
	5. External setting	▶ Wiegand Sitecode ▶ Wiegand output ▶ Wiegand Input
6. Display setting	1. Theme	□ Background
	2. Camera	□ Display option □ Save option □ Save success log □ Save failed log
	3. Language	□ Language
	4. LCD Option	□ Screen saver □ Display option □ Calibration
	5. Message display time	□ Message display time (ms)

7. Terminal information	1. System	□ System information □ Disk □ RAM
	2. Terminal	□ Terminal information Terminal ID Application Language
	3. Network	□ Network info MAC <Ethernet> IP
	4. User	□ User
	5. Log	□ Log
	6. About	□ About
8. SD card	1. Export	1. User data 2. Event log 3. System option 4. Export all 5. Picture
	2. Import	1. User data 2. System option
	3. Others	1. Theme 2. F/W upgrade

4.3 User Management

Select **[User]** in the main menu to display the screen below.

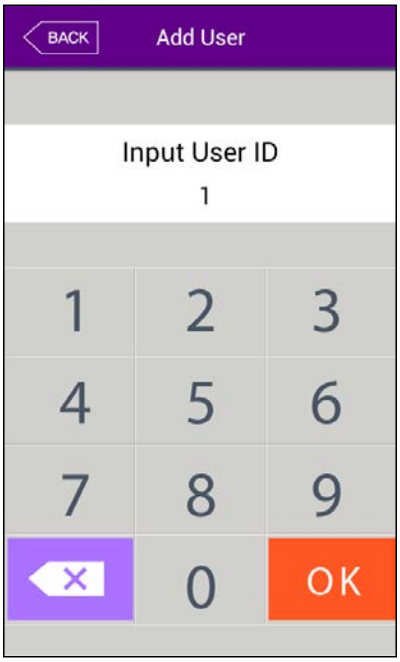


Number of all registered users including administrator will be displayed on the top of the screen.

To add a new user, press **[Add]** button.
To change a user, press [**Modify]** button.
To delete user with specific ID, press **[Delete]** button.
To delete all users, press [**Delete All]** button.
To search registered user list, press **[View]** button.

4.3.1 Adding

Select [**User] → [Add]** in the main menu to display the screen below.

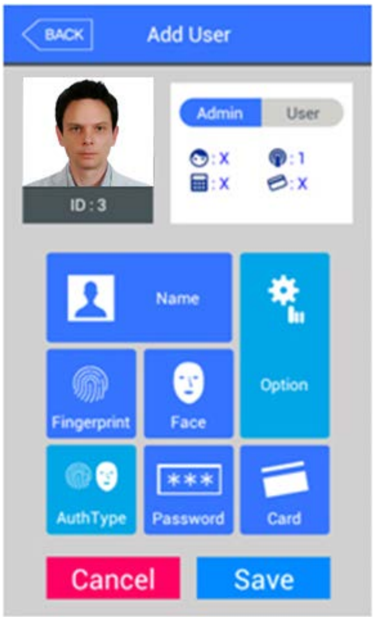


Input user ID to be registered and press [**OK]** button.

In this case, ID which can be registered is automatically displayed in the screen. Hence, registration is easy and convenient. To change ID, Press [⌫] button to delete the existing value and to input a new one.

Press [BACK] button to cancel and move out.

If an already registered ID is input, failure message will be displayed. If it is an unregistered ID, the screen below will be displayed.



Each icon has the following meaning.

☺: number of registered face

: number of registered fingerprint templet (X, 2~20)

🖩: whether password is registered (X: not registered, O: registered)

💳: whether card is registered (X: not registered, O: registered)

ID : 4: user ID to be registered

Admin User: user

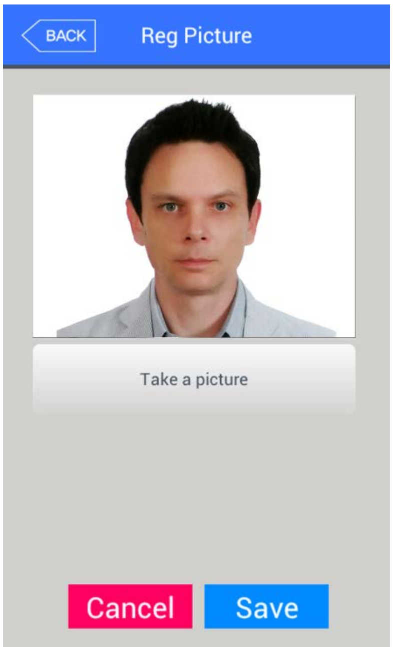
Admin User: administrator

📷 button: take user's picture to register it

Press **[name]** to register name, press **[Fingerprint]** to register fingerprint, press **[face]** to register face, press **[card]** to register card, press **[password]** button to register password. Basically, everybody is registered as a user. Press **[administrator]** button to convert into an administrator. **To save registration after completing,** press **[Save] button** or press **[Cancel]** or **[BACK]** button to cancel input or to move out of it.

※ Only the user who is registered as an administrator can change operation method for the terminal, and can register/change/delete information of all users saved at the terminal. Hence, care is required to register administrator.

4.3.1.1 Registering Picture

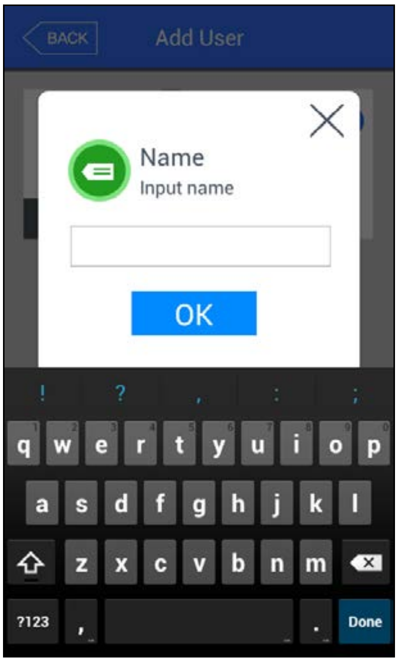


Press [📷] button in **[Add user]** screen to register a picture.

Press **[Save]** button to register current camera image as a picture.

To cancel registration and move out, press **[Cancel]** or [**BACK]** button.

4.3.1.2 Registering Name

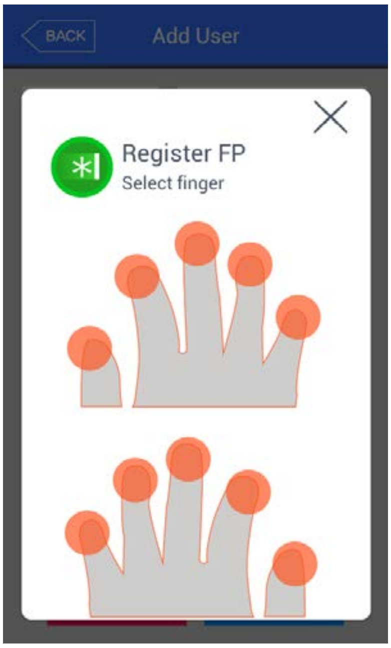


Press **[Name]** button in **[Add user]** screen to register a name.

Input name using the keyboard displayed below and press OK button. Up to 29 characters can be input for name.

To cancel registration and move out, press [✕] button.

4.3.1.3 Registering Fingerprint

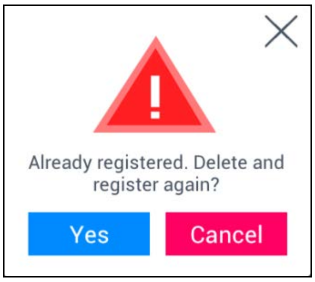


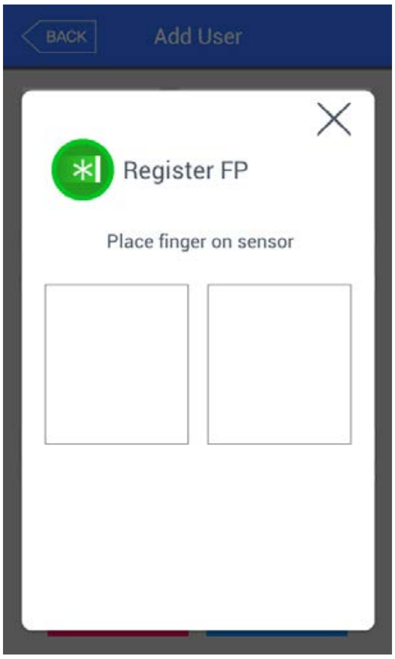
□ Press **[Fingerprint]** button in **[Add user]** screen to register.

To cancel registration and move out, press [✕] button.

When the left screen is displayed, select a finger to be registered.

※ In case of registering many fingers, already registered finger will be displayed in blue circle (●). If an already registered finger is selected, the following message will be displayed. Select Re-register to delete the existing registered fingerprint and try again.


Already registered. Delete and register again?



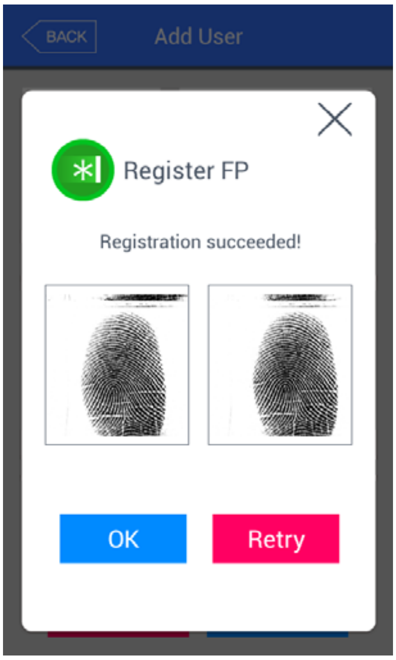
Place finger on sensor

□ Input fingerprint(s) referring to ‘1.7. Method to correctly register and input fingerprint‘. Input fingerprint 2 times according to information in the screen as follows.

When the fingerprint sensor lamp is ON along with the message of ‘input fingerprint‘, put finger in fingerprint input window and wait for about 2~3 seconds until lamp OFF and then remove the finger.

③ Input the fingerprint which is just input one more time when the message of ‘Input the same fingerprint once again’ will be displayed.

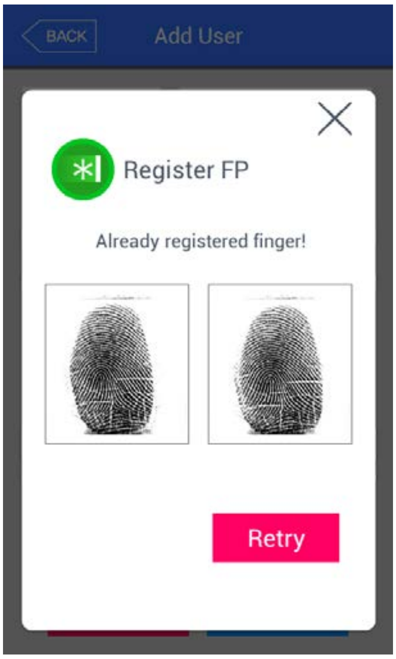
※ For the second input of the fingerprint after the first input, make sure that finger is removed from the fingerprint input window before the second input.



Registration succeeded!

□ Message on the left will be displayed when input is completed. Press [OK] button to complete registration and move to the upper menu.

To register fingerprint again, press **[Retry]** button to start it again from the process of □ above. To cancel it, press [×] button to move to upper menu.



Already registered finger!

If a fingerprint is similar with an already registered fingerprint, message of “similar with an already registered fingerprint” will be displayed as shown on the left. In this case, press **[Retry]** button to start it again from the process of □ above.

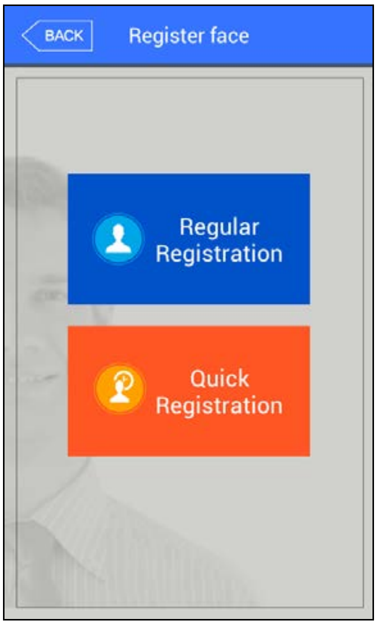
To cancel it, press [×] button to move to upper menu.

※ Max 10 fingerprints for each ID can be registered, but more than 10 fingerprints can be registered.

In case of failing after 2~3 times of registration try according to correct fingerprint registration method, it is recommended that face, password or card is used.

4.3.1.4 Registering Face

Register face referring to ‘1.6 Correct face registration and authentication method‘.

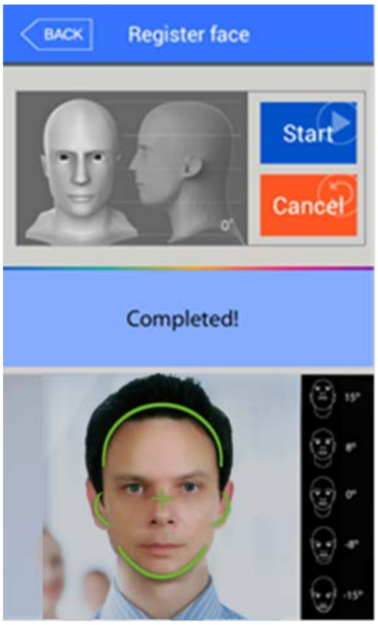


① Press **[Face]** button in **[Add user]** screen to select **[Regular Registration]** or **[Quick Registration]**.

To cancel registration, press [**BACK]** button.

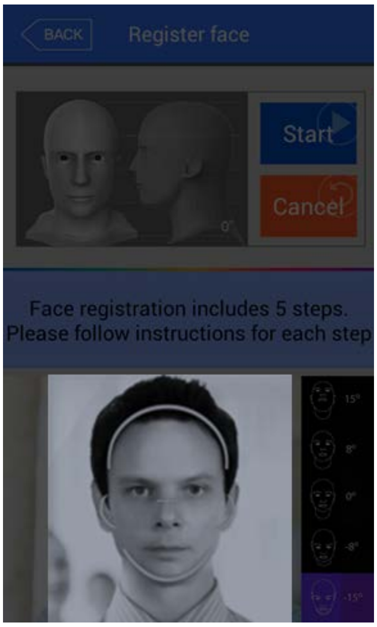
* In case of general registration, register face through 5 steps after fixing face and pose according to the guideline.

* In case of simple registration, register face through 3 steps using auto face search function when face area is detected.



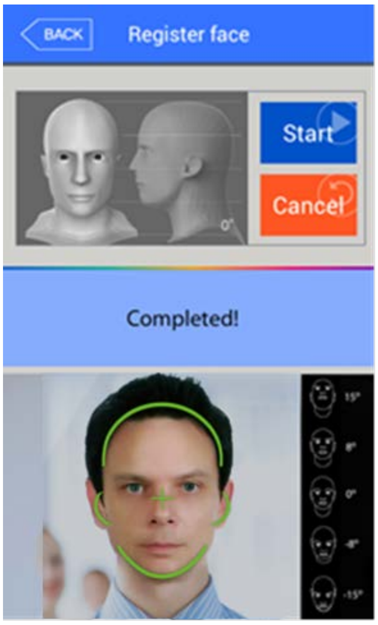
□ Press [Start**]** button to register face.

As shown in the left screen, set face to face contour in the screen and then look ahead according to the information message displayed in the screen.



Face registration includes 5 steps.
Please follow instructions for each step

□ As shown in the left screen, if face is normally recognized, guide line will be changed into green to start registering face. At this point, do not move face and stand still for easy registration.



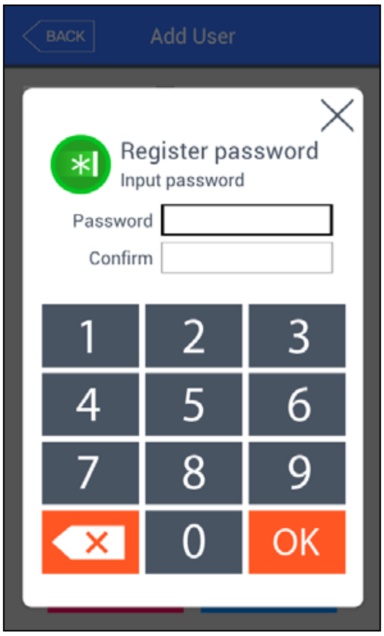
Completed!

□ Move face to front/up/down little by little whenever information message is displayed in the screen. At this point, do not move more than 15 degree.

After registering face, message of “completed” will be displayed as shown in the left screen. Press [OK] button to complete face registration and to move to the previous screen.

To register face again, press **[Start]** button to start it again from the process of □ above.

4.3.1.5 Registering Password

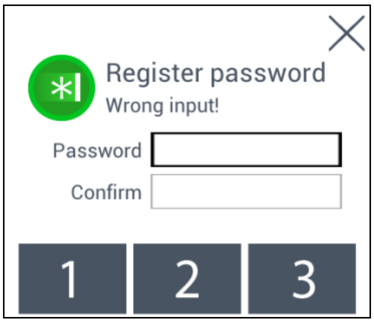


Register password
Input password
Password
Confirm

Input 4~8 digit password in password input window and press **[OK]** button to move input focus to 'password check' window below. Input the same password again and press **[OK]** button.

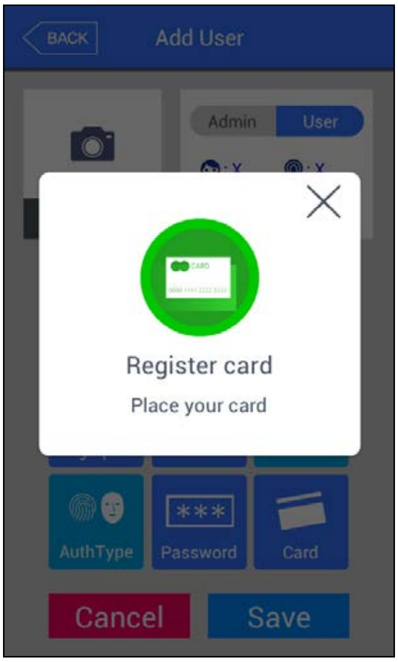
To cancel and move out, press [╳] button.

※ If wrong password is input after checking password input, message of "Check input value" will be displayed as below.



Register password
Wrong input!
Password
Confirm

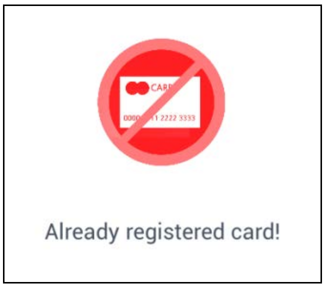
4.3.1.6 Registering Card



Register card
Place your card

Press **[Card]** button in **[Add user]** screen to register a card. To move out without registering, press [╳] button.

※ If an already registered card is input, the message below will be displayed

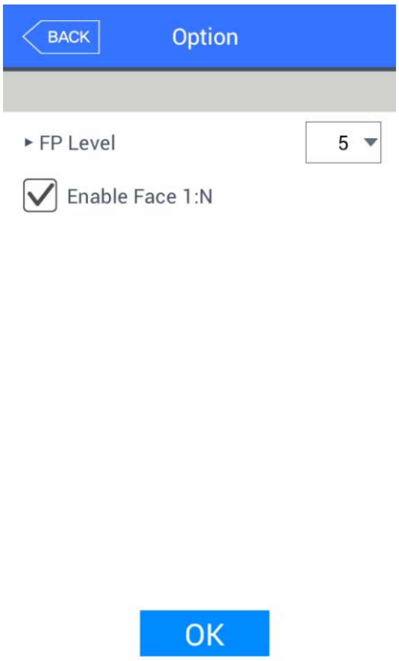


Already registered card!

※ If registration of more than 10 cards for each user is tried, the following message will be displayed.

limit Exceeded!

4.3.1.7 Authentication Option



▸ FP Level 5

☑ Enable Face 1:N

□ 'Fingerprint verification level' (Default setting: '0')

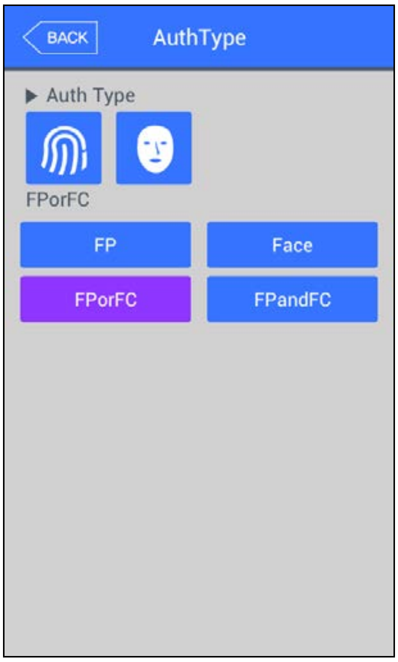
This item is to decide fingerprint verification level for each user. Authentication level for each registered user can be changed by change this value.

If it is set to '0', authentication will be done using 1 to 1 fingerprint verification level at the terminal.

□

If 'Allow 1 to N face identification (Default setting: face is registered [v])' option is checked, authentication with only face without user ID or card is possible.

4.3.1.8 Authentication Method



▶ Auth Type

FPorFC

Press [**Auth Type]** button in **[Add user]** screen to set authentication method. (However, this can be set only when more than one authentication method are registered.)

To move out without changing, press [**BACK]** button.

"□ registered authentication method" in the left screen shows all already registered authentication methods. If each authentication method is selected, it will be deleted from authentication method.

The buttons below display combination of authentication method which can be selected. Press the button desired to be changed to change authentication method to move to the previous screen.

The followings are icons for authentication method.

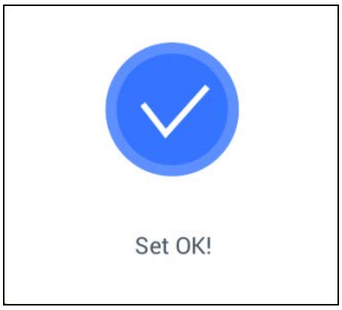
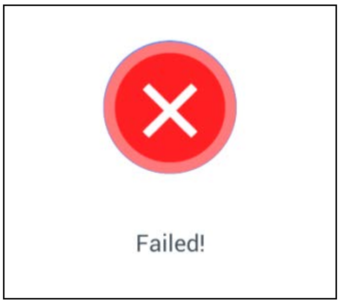
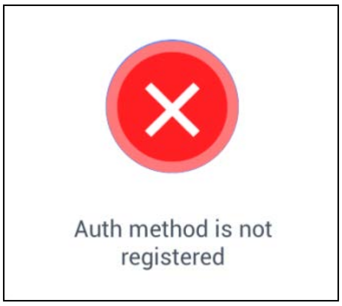
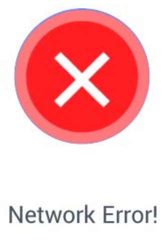
: fingerprint : face

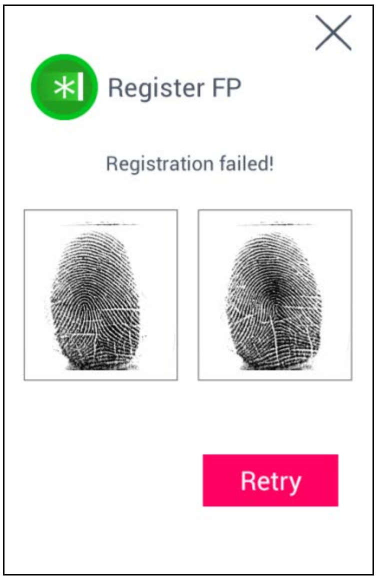
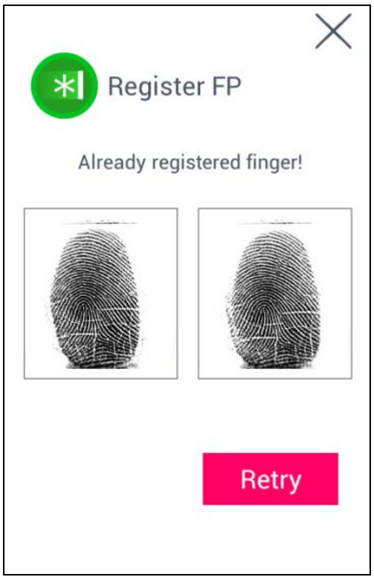
: card : password

4.3.1.9 Saving

After completing all registering processes, press **[Save]** button. At this point, if **[**Cancel**]** or **[BACK]** button is pressed without pressing **[S**ave**]** button, the user won't be saved.

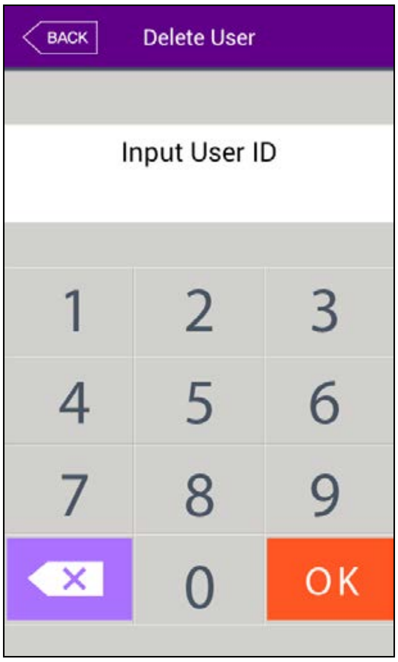
The following shows LCD messages which can be displayed during registering processes.

 Set OK!	When **[Save]** button is pressed, Normally registered
 Failed!	When **[Save]** button is pressed, User registration failed : None of authentication method using fingerprint, face, card or password is registered
 Auth method is not registered	When **[Authentication Method]** button is pressed, No Authentication Method is registered
 Network Error!	When **[Save]** button is pressed, User registration/modification failed : Operation is under Network mode but the terminal is not connected to the server

 Register FP Registration failed! 	During **[Register Fingerprint]** Not same fingerprint but different fingerprint is input during fingerprint registration
 Register FP Already registered finger! 	During **[Register Fingerprint]** Already registered fingerprint is tried to be registered again (However, same fingerprint input with same user ID is possible.) ※ To register same fingerprint with another different ID, 'System → fingerprint recognition → prevention of registration of similar fingerprint' function must be released. However, in this case, same fingerprint can be authenticated as different ID each other. Hence, it is not proper for something like time and attendance management.

4.3.2 Deleting

Select **[User management]** → **[Delete]** in the main menu to display the screen below



Input user ID to be deleted and press [**OK]** button.

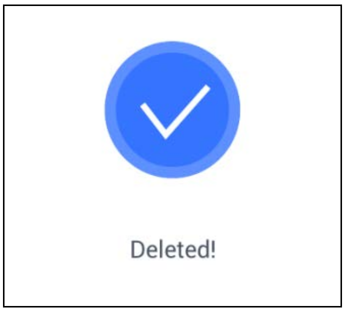
Press [BACK] button to cancel and move out.

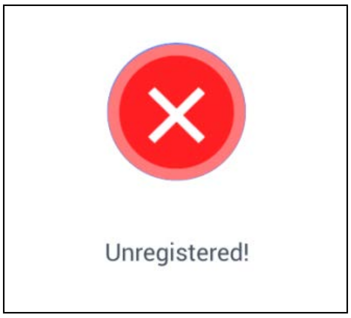
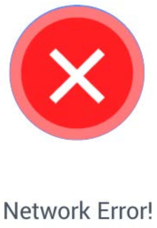
Failure message of “unregistered user” will be displayed in the screen when unregistered ID is input, and success message of “deleted” will be displayed when registered ID is input.

However, it is not deleted from the server even when it is deleted from the terminal. Therefore, it must be deleted from the server in order to completely delete it.

Deletion will be performed without distinction of user/administrator. Hence, care is required. If a user registered only at the terminal without registering at the network server is deleted, recovering is impossible. Hence, be cautious of it.

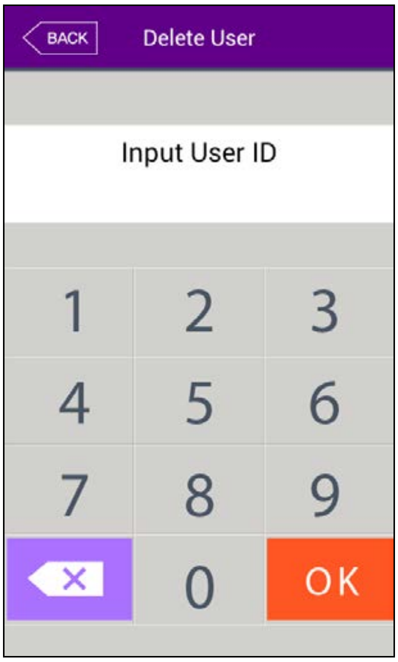
The following shows LCD messages which can be displayed during deletion.

 Deleted!	Normally deleted

 Unregistered!	Unregistered ID is input
 Network Error!	Operation is under Network mode but the terminal is not connected to the server.

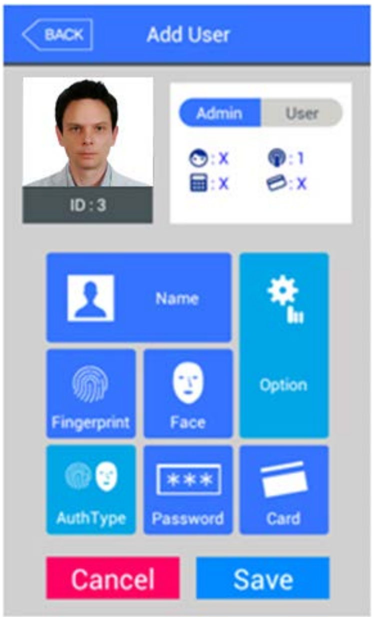
4.3.3 Changing

Select [**User management] → [Modify]** in the main menu to display the screen below.



Input user ID to be changed and press [**OK]** button.
Press [BACK] button to cancel and move out.

If an unregistered ID is input, failure message will be displayed. If a registered ID is input, information of the registered user will be displayed as below.



Each icon displayed on the left has the following meaning.

☺: number of registered face

⊚: number of registered fingerprint (X, 1~10)

▦: whether password is registered (O: registered/X: not registered)

▭: whether card is registered (O: registered/X: not registered)

ID : 4: user ID to be registered

Admin User: user

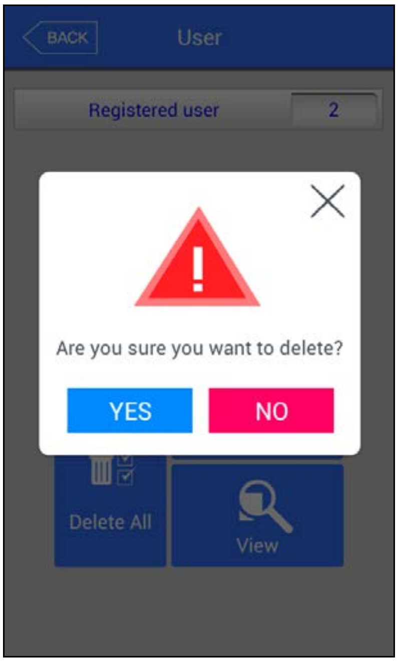
Admin User: administrator

Touch picture to take user's picture again to register a new one.

Since the method to change each item is same with that for user add, refer to '3.3.1. Add'.

4.3.4 Deleting All

Select [**User]** → **[Delete All]** in the main menu to display the screen below



Registered user 2

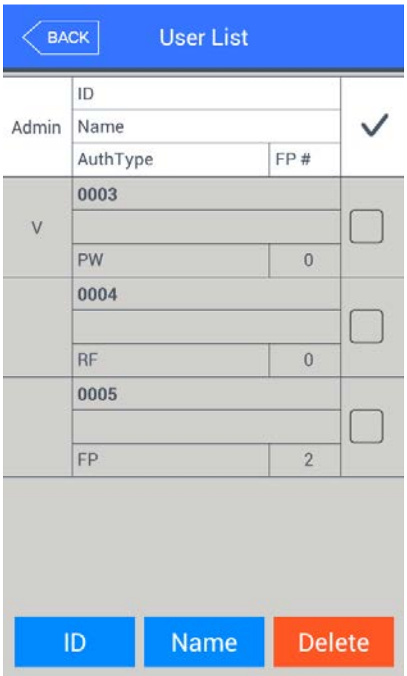
Are you sure you want to delete?

To really delete all users, press [**Yes]**. To cancel it, press [**No]**

※ If **[Yes]** is selected, all users and administrators will be deleted. Recovering after **deleting** is impossible. Hence, it should take extra care**.**

4.3.5 Searching

Select [**User**] → **[View]** in the main menu to search the list of all registered users as below.



Admin	ID Name AuthType	FP #	✓
V	0003 PW	0	□
	0004 RF	0	□
	0005 FP	2	□

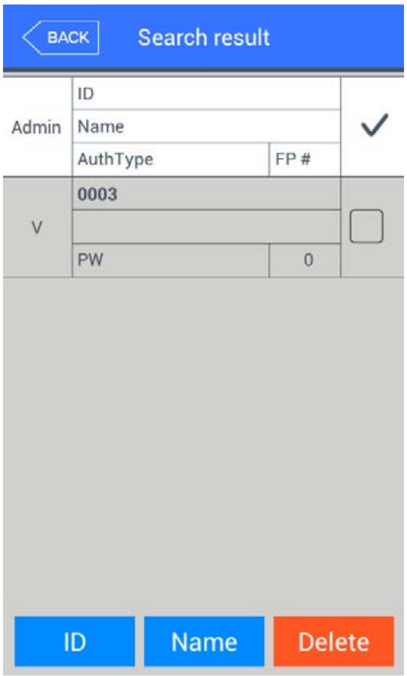
User list will be displayed in the order of ID. Scroll down screen to search following user lists.

List will be displayed by 100 persons unit. If there are more than 100 persons, press **[BACK]** or **[NEXT]** button below to search the previous or the next list.

□ **[ID]:** Touch ID of a specific user to directly move to the screen to change it.

□ **[Delete]:** Check at the check box on the right and press Delete button to delete checked users at a time.

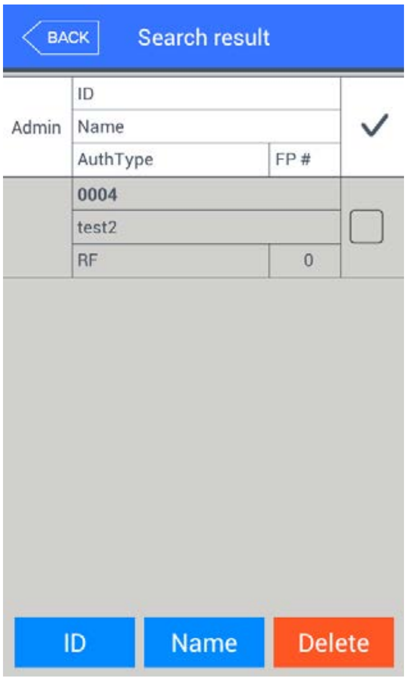
Press [**BACK]** button on the top in this screen to move to the previous ‘3.3. User management’ menu.



Admin	ID Name AuthType	FP #	✓
V	0003 PW	0	□

□ **[ID search]:** As shown in the left screen, input a user ID to search the relevant user.

Press **[BACK]** button in this screen to move to ‘3.3. User management’ menu.



Admin	ID		✓
	Name		
	AuthType	FP #	
	0004		□
	test2		
	RF	0	

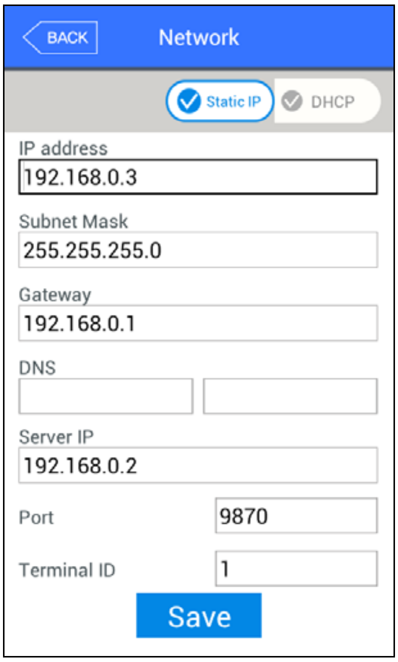
□ **[Name]:** Press the button and input user name to display registered user list with the name in which input character string is included.

Press [**BACK]** button in this screen to move to '3.3. User management' menu.

Ex) In case of searching with "test2", all users who have "test2" in their names will be searched as shown in the left screen.

4.4 Network Setting

Select [**network]** in the main menu to display the screen below.



● Static IP ○ DHCP

IP address: 192.168.0.3

Subnet Mask: 255.255.255.0

Gateway: 192.168.0.1

DNS:

Server IP: 192.168.0.2

Port: 9870

Terminal ID: 1

□ Default setting: same with the setting in the left screen

Select [S**tatic IP]** if IP is fixed in the connected network is allocated. Select [**DHCP]** if there is a DHCP server at the connected network and IP is allocated from it.

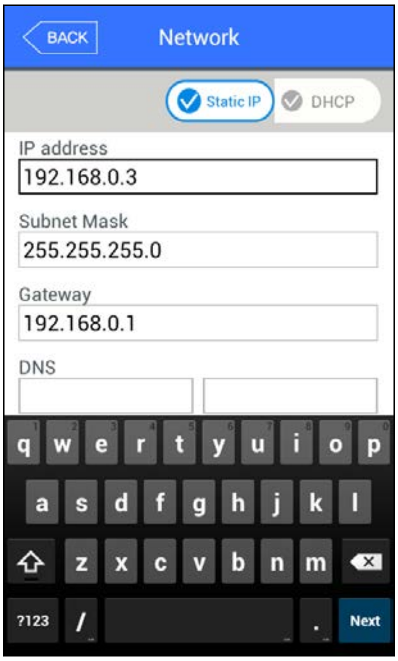
In case of setting it to **[Static IP],** set terminal IP address, subnet mask and gateway.

If **[DHCP]** is selected, no need to set it.

DNS can be input in **[Server IP address]** instead of IP. In case of using specific DNS server, input IP address of [**DNS server]** too. Up to 2 DNS servers can be designated. To input DNS, check at DNS to input English.

□ **[Port]:** default port value of the authentication server (Bio9000 server) is ‘7332’. In case of changing the value, the value must be changed to the same value at the server program as well. Hence, care is necessary to change it.

□ **[Terminal ID]:** Unique ID used to distinction of terminal by authentication server, and default value is ‘1’. It must match with the ID of terminal registered by the server program. Up to 2000 ID can be input.



IP address
192.168.0.3
Subnet Mask
255.255.255.0
Gateway
192.168.0.1
DNS

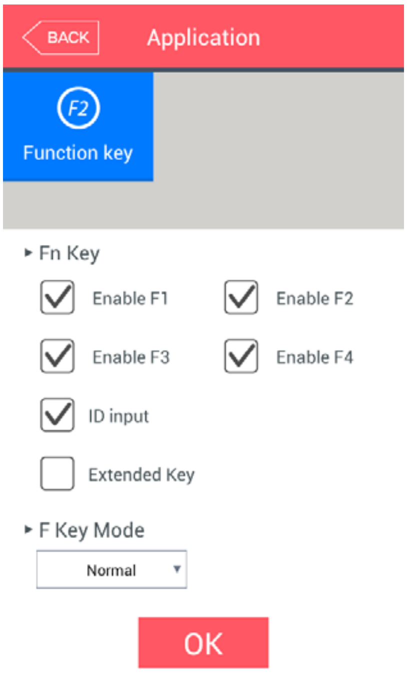
Touch a desired item to be changed to display keypad.

After completing input for the relevant item using the keypad, touch [↵] button or the next input window to continue input. After completing input, touch not input window but background to close the keypad.

Press [OK**]** button to apply the changed value after setting. To cancel it, press [**BACK]** button to move to upper menu.

4.5 Operation Mode

Select **[Application]** in the main menu to display the screen below.



▸ Fn Key

☑ Enable F1 ☑ Enable F2

☑ Enable F3 ☑ Enable F4

☑ ID input

□ Extended Key

▸ F Key Mode

Normal ▾

□ Default setting: same with the setting in the left screen

□ Function key setting

[F1] ~ [F4], [A**ccess], [ID Input]** buttons used to change authentication mode for attending/quitting. Press function button to convert authentication mode into the relevant mode. Only the checked button will be displayed in the main screen. Hence, it can be used for exclusive terminal for attending/quitting by unchecking other function keys.

□ F key mode

Normal : Selected F Key value is set back to 0 after user authentication.

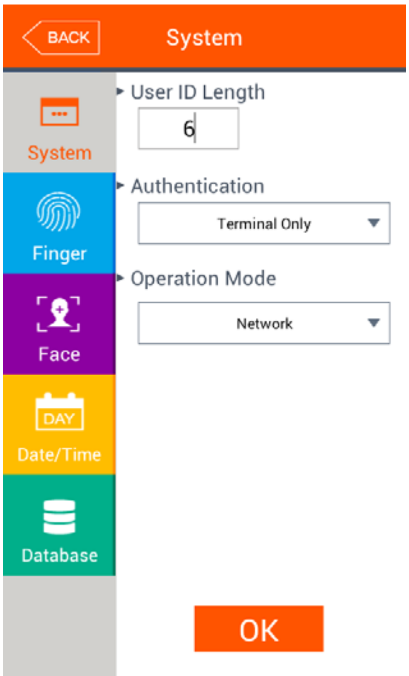
Fixed : Selected F Key value remains unchanged if no other F Key is selected.

To apply the setting value, press [OK] button, or and press [BACK] button to cancel and to move to the upper menu.

4.6 System

4.6.1 System

Select [System] → **[System]** in the main menu to display the screen below.



User ID Length: 6
Authentication: Terminal Only
Operation Mode: Network

□ Default setting: same with the setting in the left screen

□ Length of user ID

This part is to set the length of user ID. It can be changed to 4~ 20-digit ID and it must be same with the length of registered ID at the server program. If ID registered at the server program uses 6-digit ID of '000075', set it to '6'.

□ Authentication

This item is to decide authentication priority between the terminal and the network server. Authentication will be performed according to the setting order.

□ Operation Mode

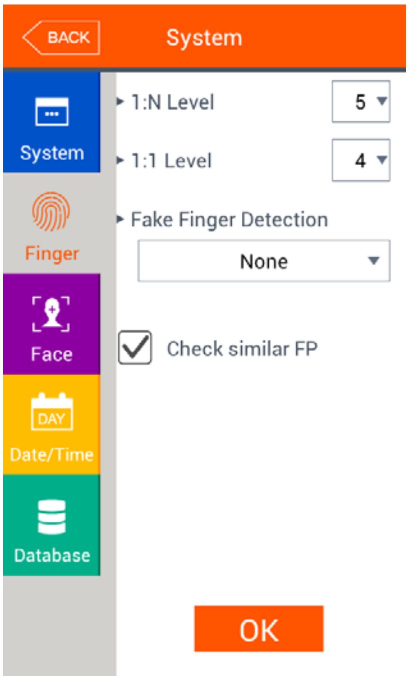
There are Network Mode that requires server connection and Standalone Mode where the terminal can function on its own without server connection. When switching from the Stand Alone mode to the Network mode, there may be a discrepancy between the server data and the terminal data. To solve this, download the users from Bio9000 to the terminal or vice versa.

To apply the setting value, press [OK**]** button or press [BACK] button to cancel and to move to the upper menu. If [OK] button is pressed without changing the setting value, directly move to upper menu.

To continuously set another item, press the relevant menu item button on the left

4.6.2 Fingerprint Recognition

Select [System] → **[Fingerprint recognition]** in the main menu to display the screen below.



▸ 1:N Level 5

▸ 1:1 Level 4

▸ Fake Finger Detection None

☑ Check similar FP

□ Default setting: same with the setting in the left screen

□ 1 to N level (3~9)

This authentication level is used for 1 to N fingerprint verification. Since authentication level for each user is not set for 1 to N identification, it is always based on the authentication level of the terminal.

□ 1 to 1 level (1~9)

This authentication level is used for 1 to 1 fingerprint verification. However, 1 to 1 verification level of the relevant user will be performed for the user for whom 1 to 1 verification level is not to set '0' (use authentication level of the terminal).

□ Fake Finger Detection

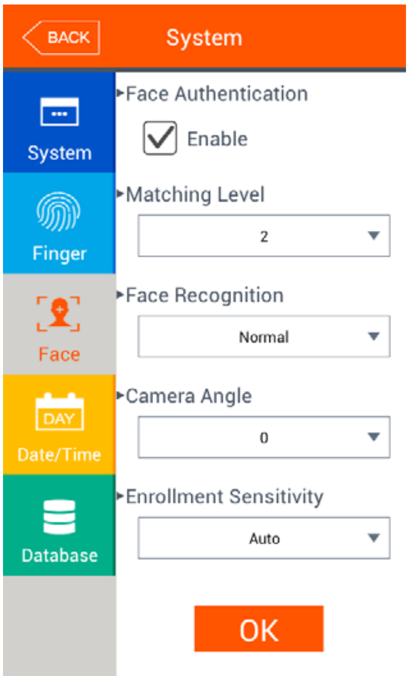
This is to set LFD level to prevent input of fake fingerprint. The higher LFD level, the higher function to prevent input of fake fingerprint made of rubber, paper, film or silicon. However, sometimes input of real fingerprint can be difficult if fingerprint is too dry.

□ Check similar FP

If this item is checked (☑), check fingerprint whether it is an already registered fingerprint to prevent reregistering it as another user ID by duplicating a same fingerprint. The function is only for the users who are saved at the terminal. It is a separate function from similar fingerprint prevention function of the server.

To apply the setting value, press [OK] button or press [BACK] button to cancel and to move to the upper menu. If [OK] button is pressed without changing the setting value, directly move to upper menu.

4.6.3 Face Recognition



▸Face Authentication

☑ Enable

▸Matching Level: 2

▸Face Recognition: Normal

▸Camera Angle: 0

▸Enrollment Sensitivity: Auto

□ Default setting: same with the setting in the left screen

□ Face Authentication

Press the check box to enable the function.

□ Matching Level

Level used for face authentication. It is set to 1~4 of steps according to match degree with registered face. Match degree must be higher than the setting authentication level for successful authentication.

The higher the authentication level, security can be the higher. However, since it requires relatively high match rate, probability that failure of authentication will be higher during self-authentication.

□ Face Recognition

The mode is to designate method for face authentication, and it can be set according to use environment.

For more information on each setting method, refer to '1.6, correct face registration and Authentication Method'.

□ Camera Angle

The mode is to set the default value of camera angle for face authentication, and it can be selected from –2 degrees to +4 degrees

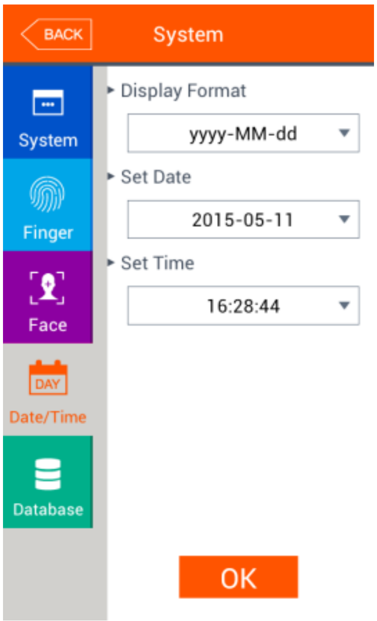
□ Enrollment sensitivity

This is to set face registration sensitivity. Default value is automatically set.

To apply the setting value, press [OK**]** button or press [BACK] button to cancel and to move to the upper menu. If 'OK' button is pressed without changing the setting value, directly move to upper menu.

4.6.4 Setting Current Time

Select [System] → **[Date / time]** in the main menu to display the screen below.



Display Format: yyyy-MM-dd

Set Date: 2015-05-11

Set Time: 16:28:44

▶ Default setting: same with the setting in the left screen

□ Display format

This is to set the method to display the current time of the terminal.

- yyyy-mm-dd: displayed in the order of year, month, day
- dd-mmm-yyyy: displayed in the order of day, month (English), year

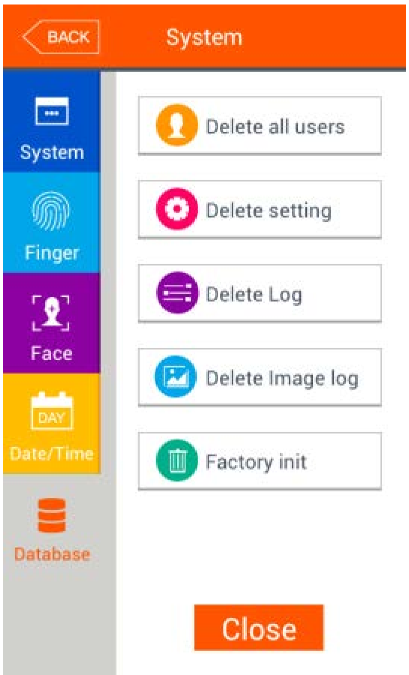
□ Set Date /Set time

This is to change the current time of the terminal. If the server is connected and the above **[Time sync]** is set to **[Auto]**, the time is synchronized with the time of the server. Hence, no need to change it.

To apply the setting value, press [OK] button or press [BACK] button to cancel and to move to the upper menu.

4.6.5 Database

Select [System] → **[Database]** in the main menu to display the screen below.



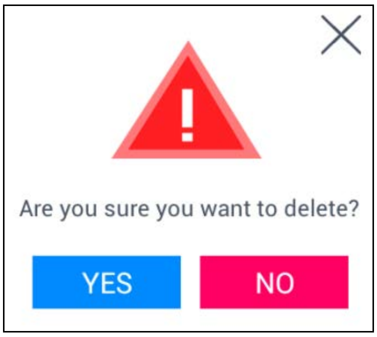
To delete all users, press **[Delete all users]** button.

To reset the setting value, press **[Delete setting]** button. To reset authentication record, press **[Delete Log]** button. To delete only image log, press [**Delete image log]** button. To delete the whole data to make the device to factory setting status, press [**Factory Init]** button.

Press [**Close**] or **[BACK]** button to move to upper menu.

4.6.5.1 Deleting All Users

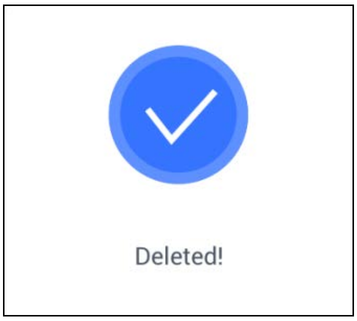
Select [System] → **[Database]** → **[Delete all users]** in the main menu to display the screen below.



To delete all users, press [**Yes]** button, or press [**No]** or **[**✕**]** button to cancel it.

If nothing is input for 5 seconds in this status, message box will be closed without delete.

The following success message box will be displayed when all users are successfully deleted by pressing **[Yes]**.

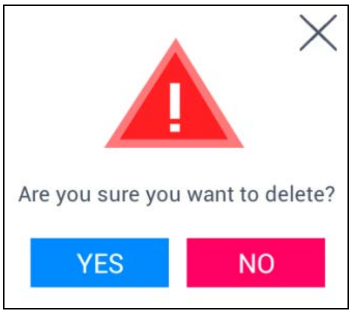


Deleted!

In this case, all of users and administrators will be deleted. **They can’t be recovered after deleting.**

4.6.5.2 Setting Delete

Select [System**] → [Database] → [Delete setting]** in the main menu to display the screen below.



Are you sure you want to delete?

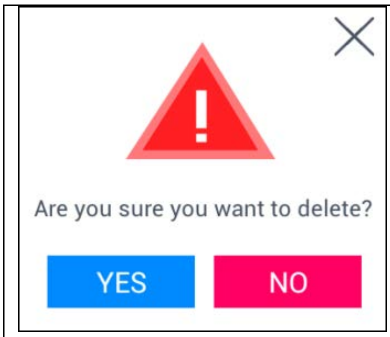
To reset all setting values, press [**Yes]** button, or press [**No]** or **[**✕**]** button to cancel it.

If nothing is input for 5 seconds in this status, message box will be closed without resetting.

Success message will be displayed when the setting is successfully delete by pressing **[Yes]** and display language and voice will be changed to default value (English). Reset all setting values of the terminal excepting MAC (physical) address and [Fingerprint templet format], but user and authentication record won’t be deleted.

4.6.5.3 Log Data Delete

Select [System**] → [Database] → [Delete Log]** in the main menu to display the screen below.



Are you sure you want to delete?

To delete all authentication records saved at the terminal, press [**Yes]** button, or press [**No] or [**✕**]** button to cancel it.

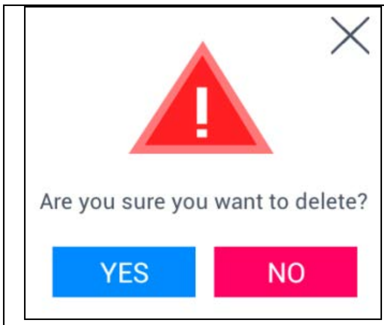
If nothing is input for 5 seconds in this status, message box will be closed without delete.

Success message will be displayed when successfully deleted by pressing **[Yes]**.

All authentication logs including image log will be deleted. They can't be recovered after **deleting.**

4.6.5.4 Image Log Delete

Select [System] → **[Database]** → **[Delete Image log]** in the main menu to display the screen below.

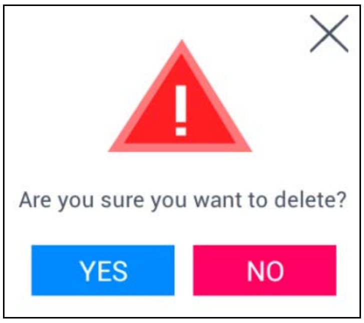
 Are you sure you want to delete?	To delete all image logs saved at the terminal, press **[Yes]** button, or press **[No]** or **[╳]** button to cancel it. If nothing is input for 5 seconds in this status, message box will be closed without delete.

Success message will be displayed when successfully deleted by pressing **[Yes]**.

Only image saved as a log will be deleted, but authentication log itself won't be deleted.

4.6.5.5 Deleting All

Select [System] → **[Database]** → **[Factory Init]** in the main menu to display the screen below.



Are you sure you want to delete?

To reset the terminal to factory setting status, **[Yes]** button, or press **[No]** or **[╳]** button to cancel it.

If nothing is input for 5 seconds in this status, message box will be closed without resetting.

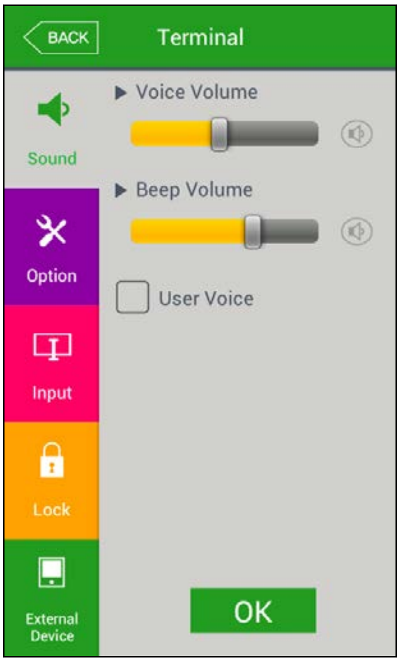
Success message will be displayed when successfully deleted by pressing **[Yes]**, and display language and voice will be changed to the default value (English).

Delete all setting values and user, log information excepting MAC (physical) address saved at the terminal to make the terminal to factory setting status. They can't be recovered after **resetting**. Hence, great care is required.

4.7 Terminal Setting

3.7.1. Sound

Select **[Terminal] → [Sound]** in the main menu to display the screen below.



□ Default setting: same with the setting in the left screen

□ Voice volume

Scroll to the left/right in 0~15 steps to set voice size. Press [🔈] button on the right to play voice in order to check voice volume.

□ Beep volume

Scroll to the left/right in 0~3 steps to set buzzer sound size. Press [🔈] button on the right to make buzzer sound in order to check buzzer sound volume.

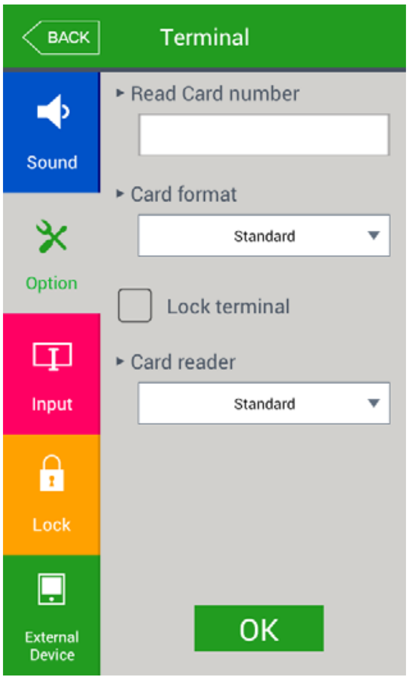
□ User voice

To change voice which outputs when authentication is successful or failed, copy the relevant voice to the terminal and then check at this option to output user voice. For the method to copy voice to the terminal, refer to 3.10. SD card → [theme] or 3.11.2 voice message change.

To apply the setting value, press [OK] button, or press [BACK] button to cancel and to move to the upper menu. To continuously set another item, press the relevant menu item button on the left

3.7.2. Terminal Option

Select **[Terminal] → [Option]** in the main menu to display the screen below.



‣ Read Card number

‣ Card format: Standard

□ Lock terminal

‣ Card reader: Standard

□ Default setting: same with the setting in the left screen

□ Read Card number

Touch a card on this screen to display card No on the LCD. Card No according to the setting value can be searched by changing [card format].

□ Lock terminal

The function is directly lock or unlock the terminal by an administrator not from the server program but at the terminal. If it is checked (☑), terminal will become lock status in which nobody can access until the administrator release the setting.

□ Card reader

Card reader can be set to Standard or HID iClass. The reader will recognize only the setting type of card.

□ Card format

This is to set method to display card No. Since card No becomes different according to the setting value as below, set it during initial installation. If it is inevitably changed during operation, the card must be registered again.

RF card(EM Card) example) card No (5byte): 08h 01h 16h 1Dh D6h

Card format	Card No	Display method
Standard	02207638	Displayed in (3+5)-digit decimal number [022 (16h) +07638 (1DD6h)]

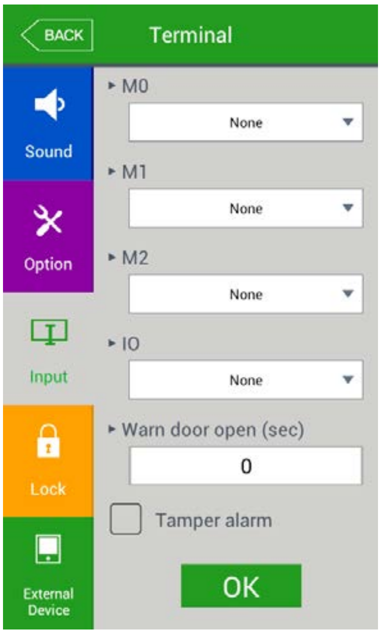
SC card(MIFARE Card) example) card No (4byte): 52h 9Dh 06h E3h

Card format	Card No	Display method
Standard	529D06E3	Displayed in 8-digit hexadecimal

To apply the setting value, press [OK] button or press [BACK] button to cancel and to move to the upper menu.

3.7.3. Input setting

Select **[Terminal] → [Input]** in the main menu to display the screen below.



▸ M0
None

▸ M1
None

▸ M2
None

▸ IO
None

▸ Warn door open (sec)
0

□ Tamper alarm

OK

□ Default setting: same with the setting in the left screen

□ M0: Set this to connect an external contact to DM0.

(If motor lock is used, set it to [door open status NO] or [door open status NC].)

- Not use: Select this when nothing is connected.
- Door open status NO or door open status NC: when door open status monitoring pin is connected.

→ Set NO/NC according to status of pin which is input during detection.

□ M1/M2: Set this to connect an external contact to DM1/DM2.

(If motor lock is used, set it to [locked status NO] or [lock status NC].)

- Not use: Select this when nothing is connected.
- Locked status NO or locked status NC: when locked status monitoring pin is connected

→ Set NO/NC according to status of pin which is input during detection

□ IO: Set this to connect an external contact to Exit pin.

- Not use: select this when nothing is connected
- Inside Open NO or Inside Open NC: Exit button is connected

→ Set NO/NC according to status of pin which is input during detection

□ Warn Door open (sec)

This function makes the terminal to check door Open time to make a warning sound if the door is open more than the setting time (min 5 seconds ~ max 60 seconds).

If it is set to [0], no warning sound will be made. Warning sound will be started after min 5 seconds even when it is set to [01~04].

The door must be closed within the setting time. If not due to unexpected situation, the terminal will make warning sound to inform the situation administrator to take measures for normal door closing.

To use this function, monitoring of the Lock for door open lock status must be possible, and monitoring pin of the Lock must be also connected to M0. In addition, M0 must be set to [door open status NO] or [door open status NC] as well.

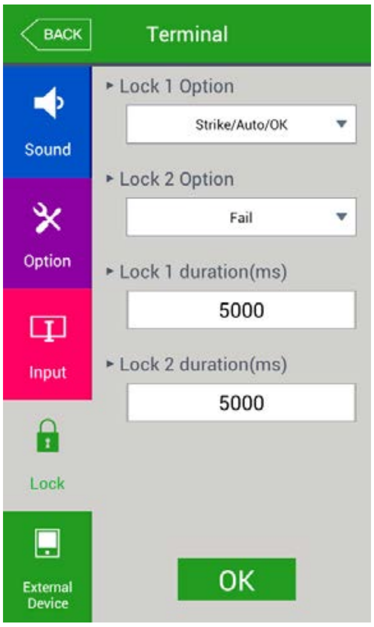
□ Tamper Alarm

If this is checked (☑), warning sound will be made when the terminal is disassembled.

To apply the setting value, press [OK] button, or press [BACK] button to cancel and to move to the upper menu.

3.7.4. Lock Setting

Select **[Terminal] → [Lock]** in the main menu to display the screen below.



Lock 1 Option: Strike/Auto/OK

Lock 2 Option: Fail

Lock 1 duration(ms): 5000

Lock 2 duration(ms): 5000

□ Default setting: same with the setting in the left screen

□ Lock 1 option

- Not use: when it is not used
- Strike/Auto/successful authentication notice: warning lamp to indicate Strike type, auto door or authentication success/failure is connected to Lock1

- Motor lock 1: when a motor lock is connected

□ Lock 2 option

- Not use: when it is not used
- Authentication failure notice: warning lamp to indicate authentication failure is connected to Lock2
- Motor lock 2: when a motor lock is connected

□ Lock 1 Duration (ms)

This is to designate time to give signal when Lock 1 is set to ‘Strike/Auto/successful authentication notice’. Since it is set to ms unit, set it to 3000 to designate it to 3 seconds. Strike type means time until the door is closed again when the door is open after authentication.

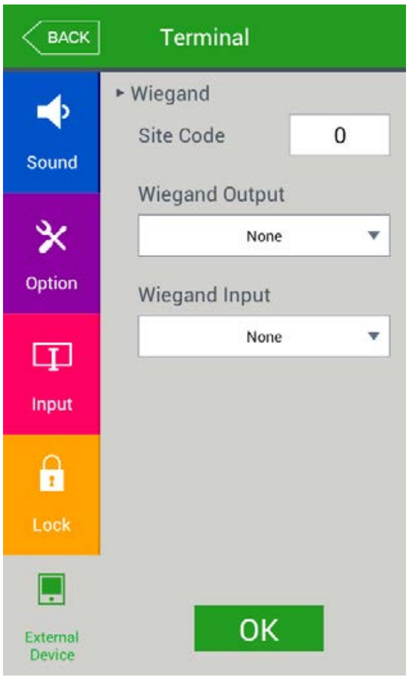
□ Lock 2 Duration (ms)

This is to designate time to give signal when Lock 2 is set to ‘authentication failure notice’. Since it is set to ms unit, set it to 3000 to designate it to 3 seconds.

To apply the setting value, press [OK] button or press [BACK] button to cancel and to move to the upper menu.

3.7.5. External Terminal Setup

If you select the **[Terminal]->[External device]** in the main menu, the following window appears.



▸ Wiegand

Site Code 0

Wiegand Output None

Wiegand Input None

□ Basic setting : Same with the window at the left side.

□ Site code

It sets the sitecode value sent in Wiegand output below.

□ Wiegand Output

It is used only when the special controller is equipped running by the Wiegand input. When the authorization is finished, the data of the following format is sent to the Wiegand port of the terminal.

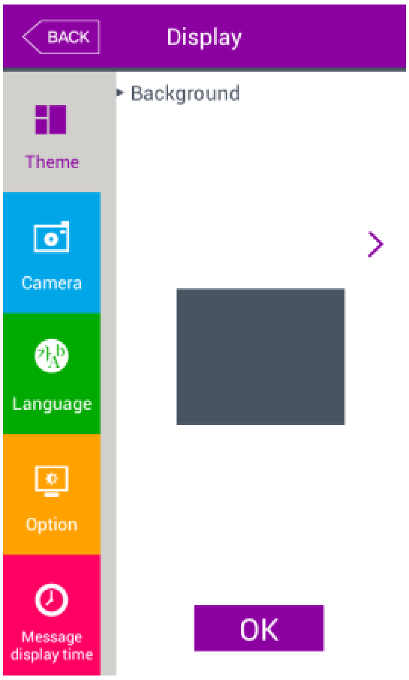
None	General case. It does not use Wiegand out port.
26bit	Because it sends “Sitecode[1byte] + User ID[2 byte]”, set the user ID less or equal than 4 digits. Send example) In case of SiteCode:045(2Dh), UID:6543(198Fh) → 1 00101101 0001 1001 10001111 0
34bit	Because it sends “Sitecode[1 byte] + User ID[3 byte]”, set the user ID less or equal than 7 digits. But, if the user ID is 8 digits, ignore sitecode and send only the “User ID[4byte]”. Send example) SiteCode:001(1h), UID:123456(1E240h) → 0 00000001 00000001 11100010 01000000 0
User definition	It is set by the user definition, which only can be set in the server, and the setting type only can be inquired in the terminal.

Click [OK] button to apply the set value, and click [BACK] button to cancel and return.

4.8 Display Setting

3.8.1. Theme

Select [Display] → **[Theme]** in the main menu to display the screen below.



□ Default setting: same with the setting in the left screen

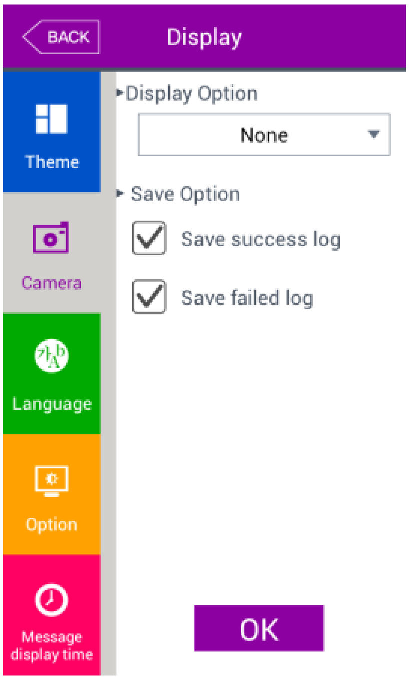
□ Main background

This is to set background of the main screen. Press [〉] button to search the next image.

To apply the setting value, press **[OK]** button or press **[BACK]** button to cancel and to move to the upper menu. To continuously set another item, press the relevant menu item button on the left.

3.8.2. Camera

Select [Display] → **[Camera]** in the main menu to display the screen below.



Display Option: None

Save Option

☑ Save success log

☑ Save failed log

□ Default setting: same with the setting in the left screen

□ Display option

This is to select image displayed in authentication success message window.

- None

- Registered photo

□ Save success log

If this is checked (☑), capture camera image and save it as an image log when authentication is successful.

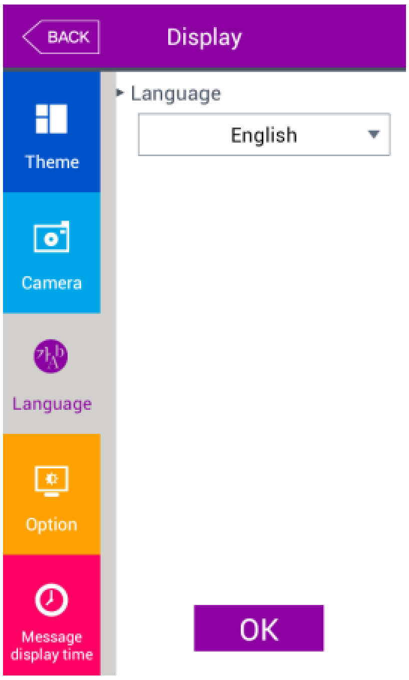
□ Save failed log

If this is checked (☑), capture camera image and save it as an image log when authentication failed.

To apply the setting value, press [OK] button or press [BACK] button to cancel and to move to the upper menu.

3.8.3. Language

Select [Display] → **[Language]** in the main menu to display the screen below.



▸ Language: English

□ Default setting: 'English'

□ Language

Press 'OK' button after changing language to change voice message and message displayed in the screen to the setting language.

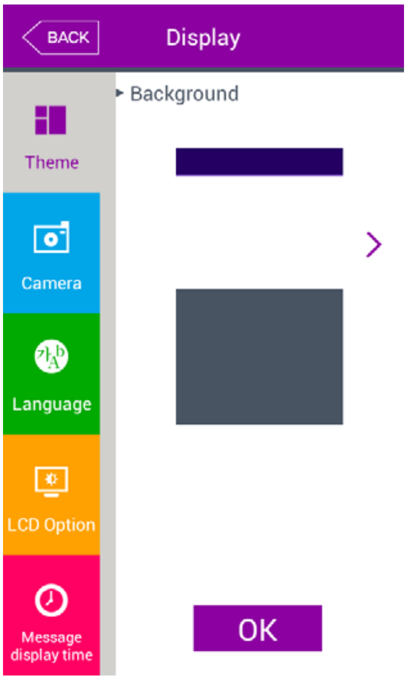
Press [BACK] button to cancel and to move to the upper menu.

※ Support language

English, Korean, Japanese, Portuguese, Chinese, French, Farsi

3.8.4. LCD Option

Select [Display] → **[Option]** in the main menu to display the screen below.



□ Default setting: same with the setting in the left screen

□ Screen saver (5 seconds ~ 10 minutes)

If nothing is input for the setting time, the screen will be automatically OFF. However, LCD will be always ON if it is set to 'None'.

□ Display option

This is to set detail to be displayed when authentication is successful.

- None: display only authentication result of [Successful/Failed]
- User ID
- User name: If user name is not registered, user ID will be displayed (In this case, add "ID:" to distinct it from name)
- Social No.

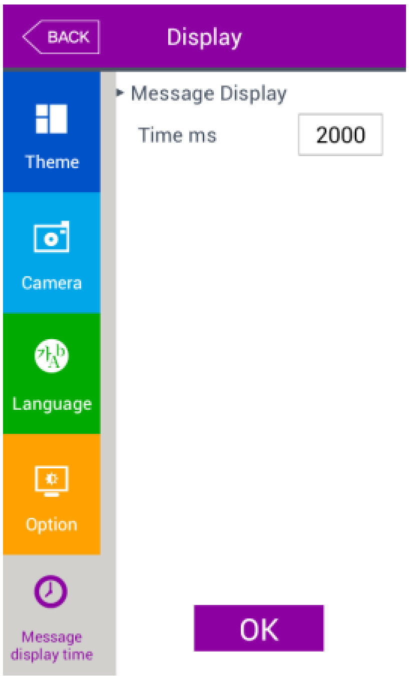
□ Calibration

Follow the terminal insructions to calibrate the screen

To apply the setting value, press [OK] button or press [BACK] button to cancel and to move to the upper menu.

3.8.5. Message Display Time

Select [Display] → **[Message display time]** in the main menu to display the screen below.



‣ Message Display
Time ms 2000

□ Default setting: same with the setting in the left screen

□ Message display (ms)

This is to set time to be displayed in authentication result window.

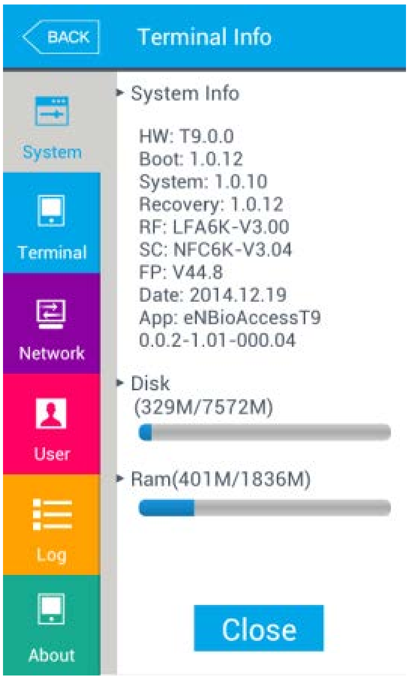
Up to 0~5000 can be set. Authentication result window will be displayed for the setting time and then it will be closed. Since it is by ms unit, input 2000 to set it to 2 seconds.

To apply the setting value, press [OK] button or press [BACK] button to cancel and to move to the upper menu.

4.9 Terminal Information

3.9.1. System Information

Select **[Terminal info] → [System]** in the main menu to display the screen below.



‣ System Info

HW: T9.0.0
Boot: 1.0.12
System: 1.0.10
Recovery: 1.0.12
RF: LFA6K-V3.00
SC: NFC6K-V3.04
FP: V44.8
Date: 2014.12.19
App: eNBioAccessT9
0.0.2-1.01-000.04

‣ Disk
(329M/7572M)

‣ Ram(401M/1836M)

□ System info

This is to display hardware and firmware version of the terminal.

□ Disk (amount used/total)

This is to display amount of used storage space.

If amount of used storage space is getting too much, it will be displayed in red.

□ RAM (amount used / total)

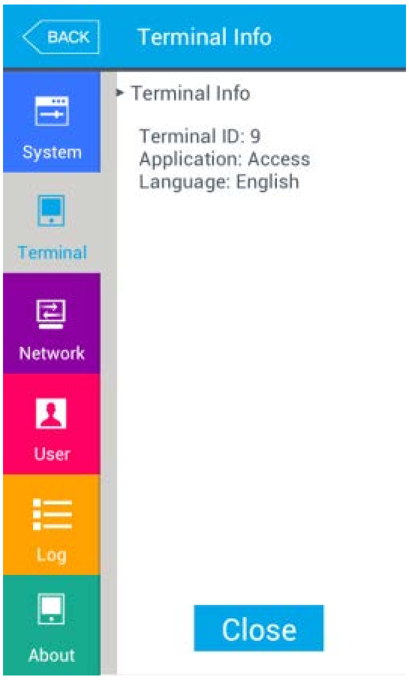
This is to display amount of RAM being used out of total RAM.

If amount of used memory is getting too much, it will be displayed in red.

To move to upper menu after searching, press [**BACK]** button. To continuously search another item, press the relevant menu item button on the left

3.9.2. Terminal Information

Select **[Terminal info] → [Terminal]** in the main menu to display the screen below.



▸ Terminal Info

Terminal ID: 9
Application: Access
Language: English

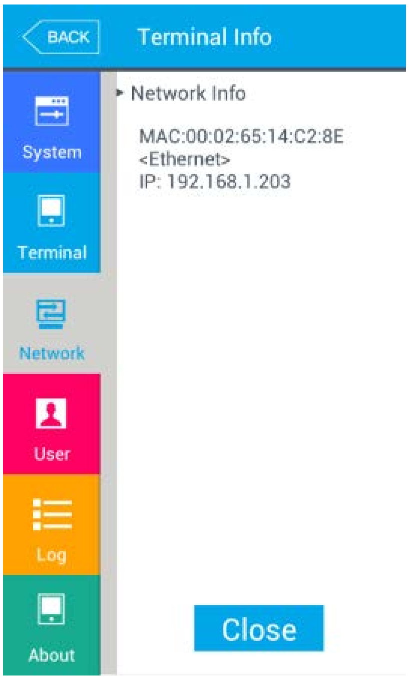
□ Terminal info

This is to display option setting value of the terminal.

To move to upper menu after searching, press [**Close]** or **[BACK]** button.

3.9.3. Network Information

Select **[Terminal information] → [network]** in the main menu to display the screen below.



▸ Network Info

MAC:00:02:65:14:C2:8E
<Ethernet>
IP: 192.168.1.203

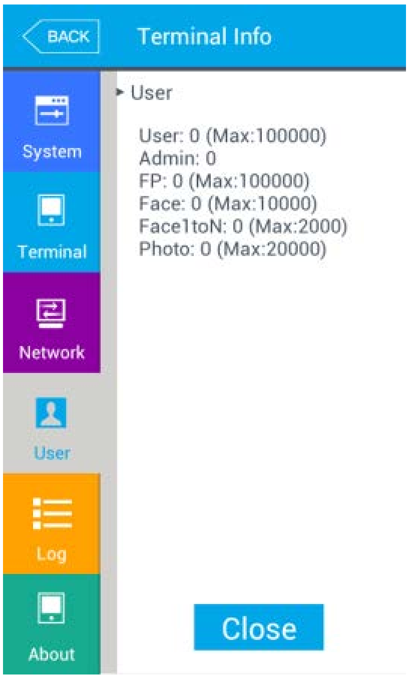
□ Network info

This is to display network setting value of the terminal.

To move to upper menu after searching, press [**Close]** or **[BACK]** button.

3.9.4. User Information

Select **[Terminal info] → [User]** in the main menu to display the screen below.



▸ User

User: 0 (Max:100000)
Admin: 0
FP: 0 (Max:100000)
Face: 0 (Max:10000)
Face1toN: 0 (Max:2000)
Photo: 0 (Max:20000)

□ User information

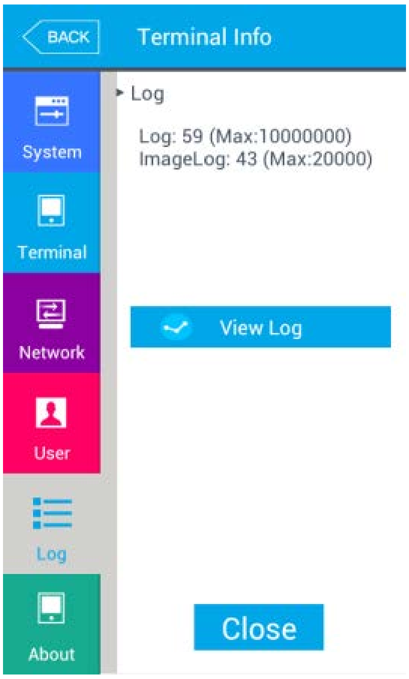
- User: number of registered user (including administrator)
- Admin: number of registered administrator
- FP: number of all registered fingerprint
- Face: number of user who registered face
- Face1toN: number of user for whom 1 to N face identification is possible
- Photo: number of user who registered picture

(Max means maximum number can be registered for each item.)

To move to upper menu after searching, press **[Close]** or **[BACK]** button.

3.9.5. Log Information

Select **[Terminal information] → [log]** in the main menu to display the screen below.



Log: 59 (Max:10000000)
ImageLog: 43 (Max:20000)

□ Log information

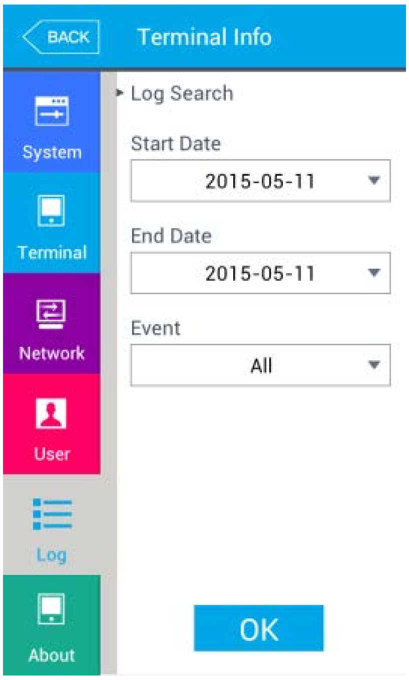
Log: number of log saved at the terminal

Image Log: number of image log saved at the terminal

(Max means maximum number can be saved for each item.)

□ View Log

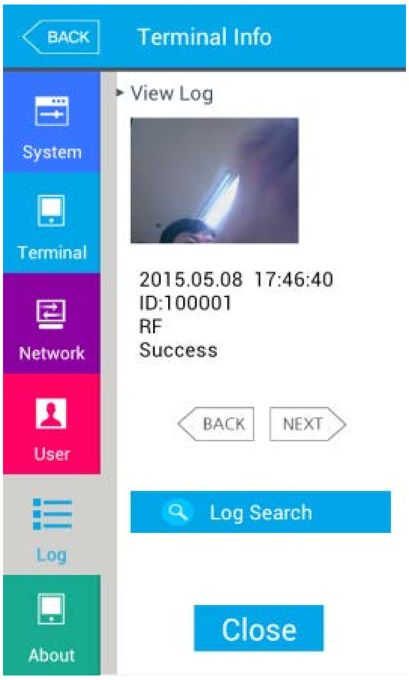
This is to display log time and authentication status.



Start Date: 2015-05-11
End Date: 2015-05-11
Event: All

□ Log search

Press **[Terminal info] → [Log] -> [View Log] -> [Log Search]** button to set start date, end date, event condition and press [OK] button to search log.



2015.05.08 17:46:40
ID:100001
RF
Success

□ Search result

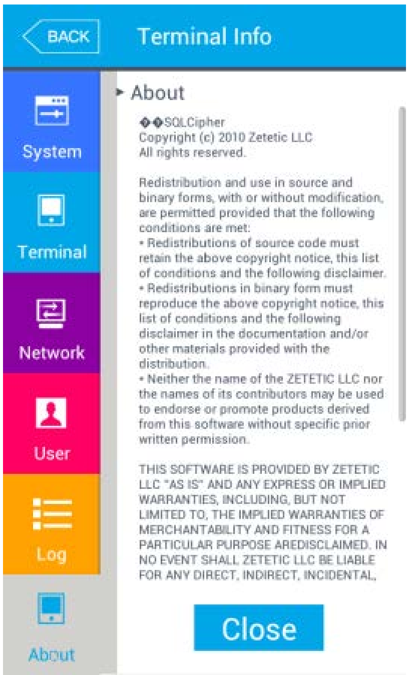
Log search result is to check information of date, time, ID, authentication result (successful or failed).

Press **[BACK]** or [**NEXT]** button to check search information.

To move to upper menu after searching, press **[Close]** or **[BACK]** button.

3.9.6. About

Select **[Terminal info]** → **[About]** in the main menu to display the screen below.



��SQLCipher
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□ About

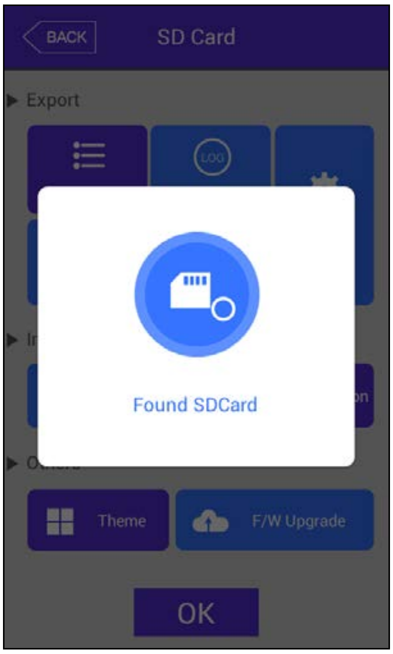
License information of Korean font applied to the terminal will be displayed.

To move to upper menu after searching, press [**Close]** or **[BACK]** button.

4.10 SD Card

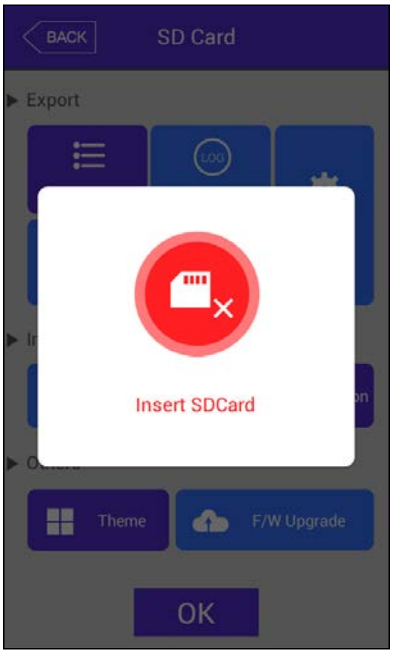
Select **[SD card]** in the main menu to display the screen below.

<When SD card is inserted,>



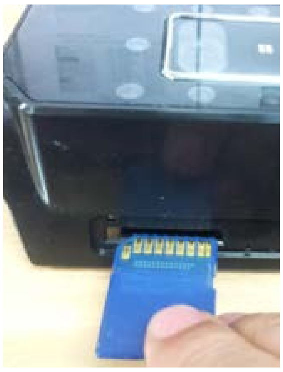
Found SDCard

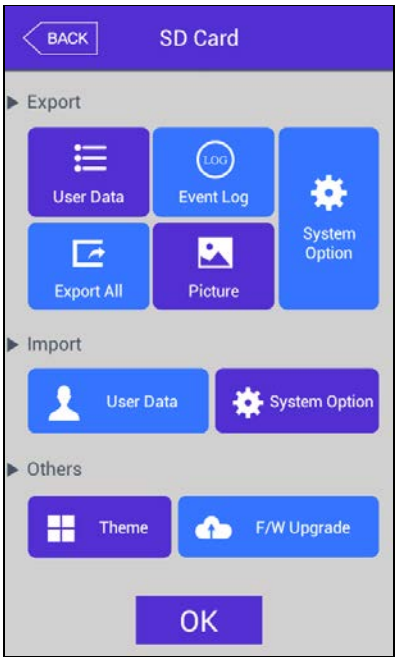
< When SD card is not inserted,>



Insert SDCard

※ This can be done only when SD card is inserted. As shown in the figure below, the card must be over side down. (Only SD card with capacity below 32G can be used.)





This function is to backup data of the terminal using **[EXPORT]**. Data backed up by **[IMPORT]** can be copied back to the terminal.

□ Export

This is to copy the relevant data from the terminal to an external SD card.

- User data: copy user DB into 'eNBioAccessT9/terminal ID/user/today's date' folder in the SD card.

- System option: Copy option setting values of the terminal into 'eNBioAccesT9/config' folder.

- Event log: Copy authentication log into 'eNBioAccessT9/terminal ID/log/ today's date' folder in the SD card. (Do not copy image log.)

Click event log button and select period of authentication log to be exported as shown in the image below.

- Picture data: Save image log into 'eNBioAccessT9/terminal ID/log/today's date / pictures' folder in the SD card as a .jpg file.

- Export all: Export the above user data and system option, event log, image log. In case of export all, all of the saved event logs will be saved.

□ Import

This is to copy the relevant data from a SD card to the terminal

- User data: Copy user data of *.ndb file name from 'eNBioAccessT9/user' folder in the SD card to the terminal.

- System option: Copy option setting values of the terminal saved in the SD card ('eNBioAccessT9/config' folder) by exporting to the terminal.

To apply a new DB or setting value when import is performed, the terminal must be rebooted.

□ Others

- Theme: This is to copy voice file in 'eNBioAccessT9/audio' folder of SD card to the terminal.

In case of replacing authentication success (user_ok.mp3), authentication failure (user_fail.mp3) message with user voice, copy each of voice defined by a user by designating it as a stipulated file name to play user voice.

- F/W Upgrade: This is to upgrade firmware from a SD card

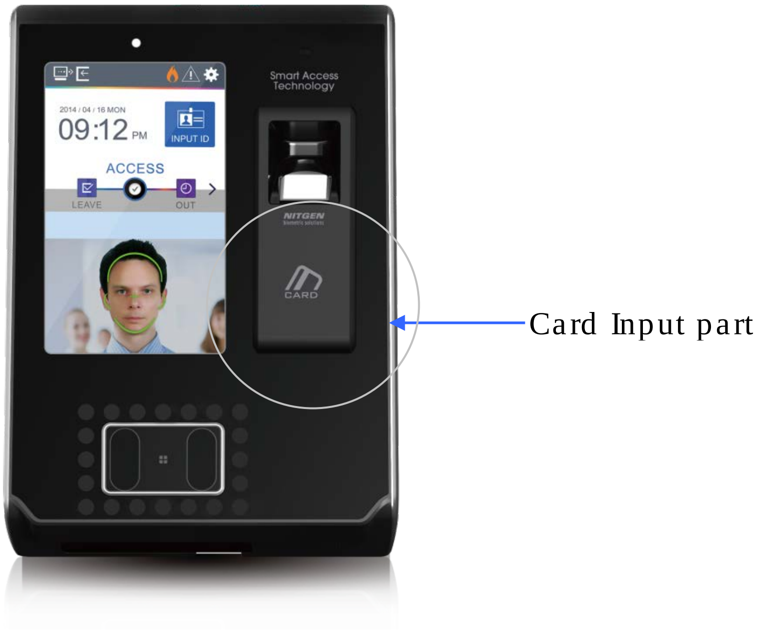
(Firmware must be located in 'eNBioAccessT9' folder in the SD card.)

To move to upper menu after upgrade, press **[OK] or [BACK]** button.

5. How to use Terminal

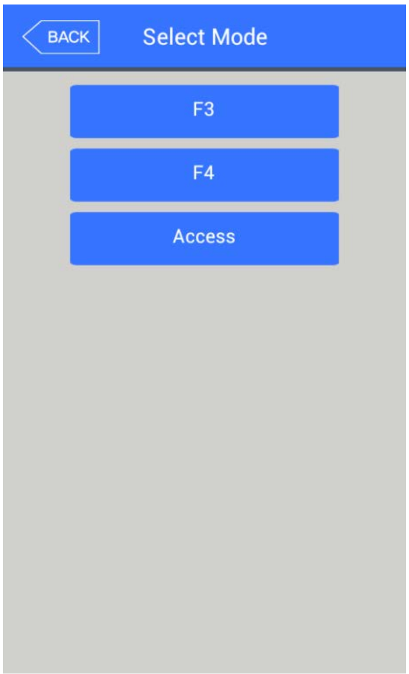
Background image and configuration in the main screen can be changed according to the setting by an administrator. In addition, if screen saver time is set by the administrator, LCD screen will be automatically OFF if nothing is operated at the terminal for the designated time. when a user approach the terminal, when authentication is tried with something like fingerprint/card or when the main screen is touched, the LCD screen will be automatically activated.

5.1 Converting Authentication Mode



<Figure 4-1>

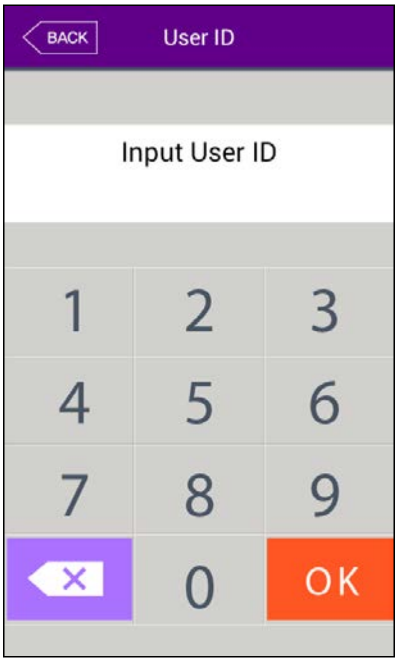
Press attending [F1]/quitting [F2] button in the screen to convert into a desired authentication mode. Press > button on the right of the screen to display the screen below in order to select mode (Going out [F3], Return [F4], Access [Access], etc) beside the modes in the screen.



Press desired access mode button in access mode selection screen in the left to close selection screen and to convert mode in the main screen into the relevant mode.

5.2 ID Input

Press **[Input ID]** button in the main screen to display the following ID input window.



Input user ID and press **[OK]** button to display fingerprint input, face input, card input or password input screen according to Authentication Method of a user.

5.3 Authentication

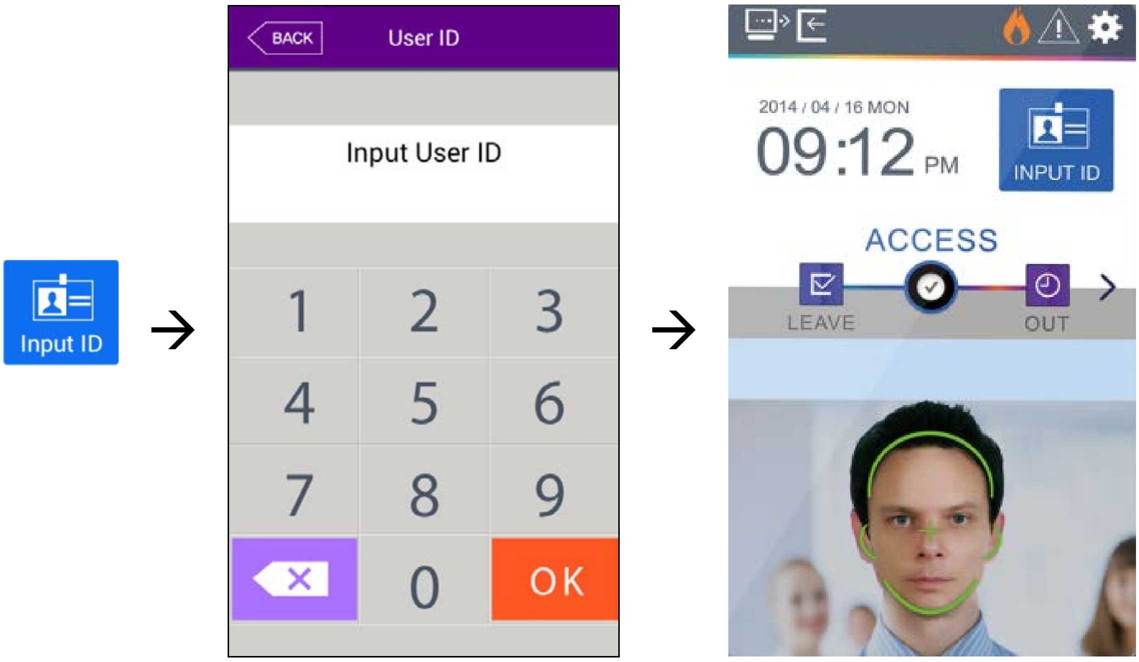
4.3.1. Face Authentication

□ 1 to N identification

Set face position until guide line is changed to green, look at the camera when the guide line becomes green and then stop movement for a moment to proceed with authentication.

□ 1 to 1 verification

As shown in the figure below, press [ID input] button to input ID first. After that, set face position until guide line becomes green when face input message is displayed and then look at the camera stopping movement for a while.



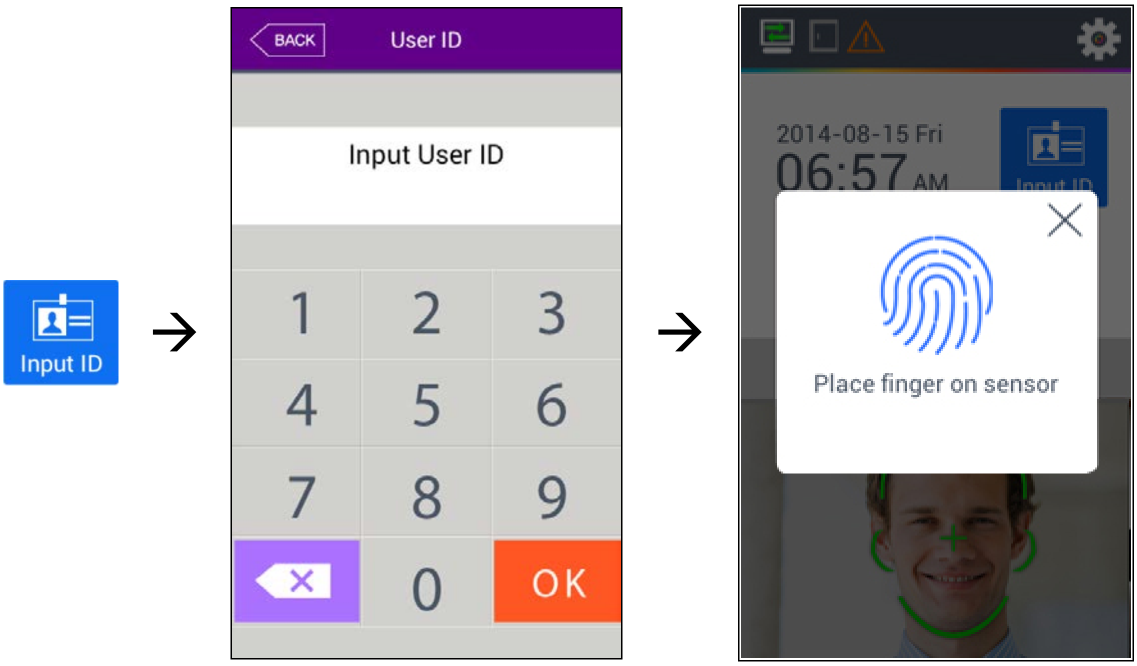
4.3.2. Fingerprint Verification

□ 1 to N identification

When fingerprint is placed on the fingerprint sensor in the main screen, buzzer sounds and the sensor lamp turns ON to receive fingerprint. Do not remove finger until lamp of the fingerprint sensor is completely OFF.

□ 1 to 1 verification

As shown in the figure below, press [ID input] button to input ID first, input fingerprint when fingerprint input window is displayed and fingerprint sensor lamp is ON. Do not remove finger until lamp of the fingerprint sensor is completely OFF and the following fingerprint input window is closed.



□ Authentication while loading fingerprint data

The saved fingerprint data of all users will be loaded to the memory for 1 to N identification during terminal booting. Progress will be displayed during loading in the top left of the screen as below.

Server 1 to N identification will be tried if server authentication is included among the authentication methods at the terminal when 1 to N fingerprint verification is requested by a user during loading.

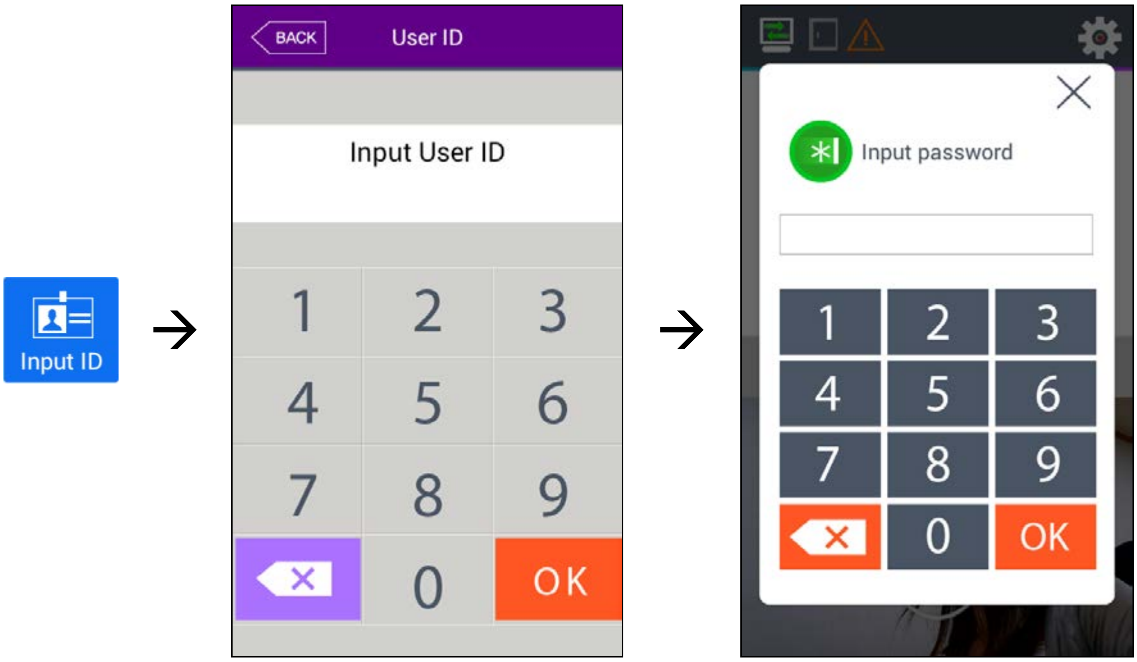
In case of authentication method by the terminal itself, ID input window will pop up to proceed with 1 to 1 verification.

5.3.1 Card Authentication

Put the card on the card input part in <Figure 4-1>.

5.3.2 Password Authentication

As shown in the figure below, press **[Input ID]** button to input ID first and then input password when password input window is displayed.



5.3.3 Multiple Authentication

In case of a user for whom more than 2 authentication methods such as card & fingerprint, card & fingerprint & face are required, if ID is input first, authentication will be processed in the order of (fingerprint → password → card → face). Multi authentication will be performed as well when face or fingerprint is authenticated first.

A. Glossary

- Admin, Administrator

  - A user can enter terminal menu mode. Administrator means a person who can register/modify/delete user and can change the setting of terminal.

  - If there is no a registered administrator for the terminal, anybody can access to terminal menu and change the setting. Hence, it is recommended that more than **1 person is registered as an administrator**

  - Since the administrator has authorization to change important configuration details of the fingerprint recognition device, great care is needed for registration and operation.

- 1 to 1 Verification

  - Method to authenticate fingerprint after user ID or card input

  - Compare only fingerprint of a registered user in user ID or card

- 1 to N Identification

  - Method to find the relevant user using only fingerprint.

  - Method to find same fingerprint with the input fingerprint among the registered fingerprints without inputting user ID or card. Hence, it is called as 1 to N identification.

- Authentication Level

  - Authentication level is a level which is used for fingerprint verification. It is displayed in 1~9 of steps according to match degree of fingerprint. Match degree between two fingerprints must be higher than setting authentication level to succeed authentication.

  - The higher authentication level, the higher security. However, relatively high match rate is needed. Therefore, probability of authentication failure becomes high during self-authentication.

  - 1 to 1 verification level: authentication level used for 1 to 1 Verification.

  - 1 to N identification level: authentication level used for 1 to N Identification.

- Authentication Method

  - Various types of authentication methods made of combination of each of Face (face) authentication, FP (fingerprint) authentication, RF (card) authentication.

    Ex) Face or FP: Use face or fingerprint for authentication.

- LFD (Live Finger Detection): function to prevent fake fingerprint

  - The function is to make to input only real fingerprints and to prevent input of fake fingerprints made of rubber, paper, film or silicon.

B. Declaration of Conformity

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
  - This device may not cause harmful interference.
  - This device must accept any interference received, including interference that may cause undesired operation.
- Changes or modifications not expressly approved by the party 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.

CAUTION: Exposure to radio frequency radiation

This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

C. Radio Equipment Directive (RED)

Rosslare hereby declares that the AY-B9350 is in compliance with essential requirements and other relevant provisions of Directive 2014/53/EU.

D. RoHS Directive

Under our sole responsibility that the following labeled AY-B9350 is tested to conform to the Restriction of Hazardous Substances (RoHS) directive – 2011/65/EU – in electrical and electronic equipment.

AY-B9350

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