FaceStation F2

USER GUIDE

Version 1.14

English
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suprema
SECURITY & BIOMETRICS

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Safety Instructions

Please read this safety instructions before you use the product to prevent injury to yourself and others and to prevent property damage.

The term ‘product’ in this manual refers to the product and any items provided with the product.

Compliance Information

Warning

Used to indicate warning information that could lead to serious injury or death if violated while using the product.

Caution

Used to indicate caution information that may result in minor injury or product damage if violated while using the product.

Info

Used to provide notes or additional information while using the product.

Note

Used to provide notes or additional information while using the product.

⚠ Warning

Install

Be especially careful of miswiring when using high-capacity power supplies.

- Serious fires, electric shocks, or product damage may occur due to miswiring.

Do not allow users to install or repair the product arbitrarily.

- Causes fire, electric shock, or injury.
- No free repair service will be provided if the product is damaged due to arbitrary installation or repair by the user.

Do not install the product in places exposed to direct sunlight, moisture, dust, or soot, or where gas may leak.

- May cause fire or electric shock.

When installing the product outdoors, make sure to install it in a shaded and well-ventilated area.

Do not use a completely sealed enclosure when installing the product outdoors.

- The internal temperature of the enclosure may rise due to direct sunlight, causing fire, electric shock, or product damage.

Do not install the product in places where heat is generated, such as near heaters.

- May cause fire or electric shock due to overheating.

Do not install in damp places.

- May cause electric shock or product damage due to moisture.

Do not install in places with electromagnetic interference.

- May cause electric shock or product damage.

Usage

Do not allow liquids such as water, beverages, or chemicals to enter the product.

- May cause fire, electric shock, or product damage.

Do not use damaged power adapters or plugs, or loose outlets.

- If connections are unstable, may cause fire or electric shock.

Do not bend or break the power cord excessively.

- May cause fire or electric shock.

⚠ Caution

Install

Read this manual carefully before installing the product to ensure safe and correct installation.

When wiring power cables and connectors, make sure to turn off the power to all devices you are connecting before wiring and connecting.

- Devices may malfunction.

Before connecting the power to the product, check the manual again to ensure that wiring is correct, then connect the power.

Do not install the product in places directly exposed to sunlight or ultraviolet light.

- May cause product damage, malfunction, discoloration, or deformation.

Do not leave power cables in passageways.

- May cause bodily injury or product damage.

Do not install near strong magnetic objects such as magnets, TVs, CRT monitors, or speakers.

- The device may malfunction.

When installing multiple devices, ensure the minimum spacing distance is observed.

- May affect the RF and BLE performance of other devices, causing them to malfunction.

Use a power adapter that has IEC/EN 62368-1 approval and is rated above the power consumption of the terminal device. It is recommended to use the power adapters sold by Suprema.

- Using an unsuitable power supply may cause devices to malfunction.
- Refer to the Power in the product specifications for maximum current consumption specifications.

Ensure that the product and Secure I/O 2, electric lock (electronic locking device) use separate power supplies.

- Devices may malfunction.

To meet IP65 standards, make sure to use a cable cover after connecting the product and cable. It is recommended to use an enclosure when installed outdoors with full exposure.

- Decreased waterproof and dustproof performance may cause malfunction.

Usage

Do not drop or subject the product to shock.

- The device may malfunction.

Ensure the power supply is not interrupted during firmware upgrades of the product.

- The device may malfunction.

Manage the password so others do not know it, and change it regularly.

- This may lead to unauthorized access.

Do not press the product's buttons (touchpad) forcefully or use sharp tools to press them.

- The device may malfunction.

Use the product within -20 °C to 50 °C and store it at appropriate temperatures, not too low or too high.

- The device may malfunction.

Be careful when cleaning the product.

- Gently wipe the product surface with a clean, dry cloth.
- If disinfecting the product, dampen a clean cloth with a suitable amount of disinfectant alcohol and gently wipe the product surface. Use disinfectant alcohol that contains 70-75% isopropyl alcohol and a clean, lint-free soft cloth.
- Do not spray disinfectant directly onto the product.

Do not use the product for purposes other than its intended use.

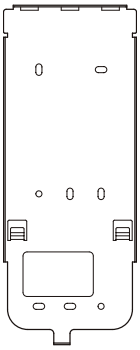
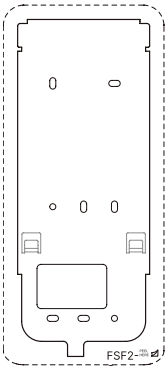
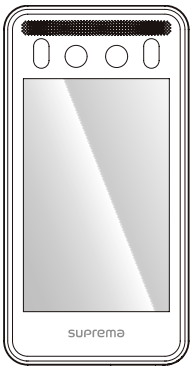
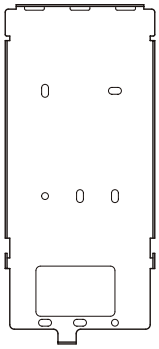
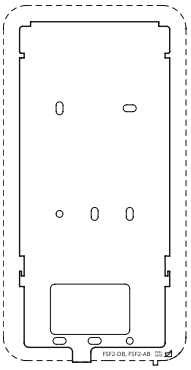
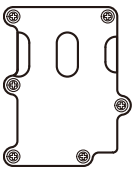
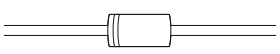
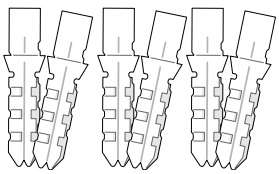
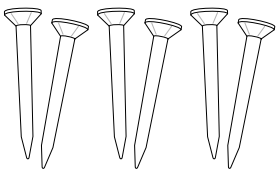
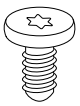
- The device may malfunction.

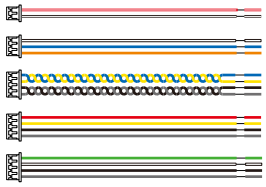
> **RTC Battery**
>
> Replacing with unauthorized or incorrect types of batteries may pose a risk of explosion. Dispose of batteries according to local or international waste regulations.

Getting Started

Provides initial procedures for getting started with the device.

Components

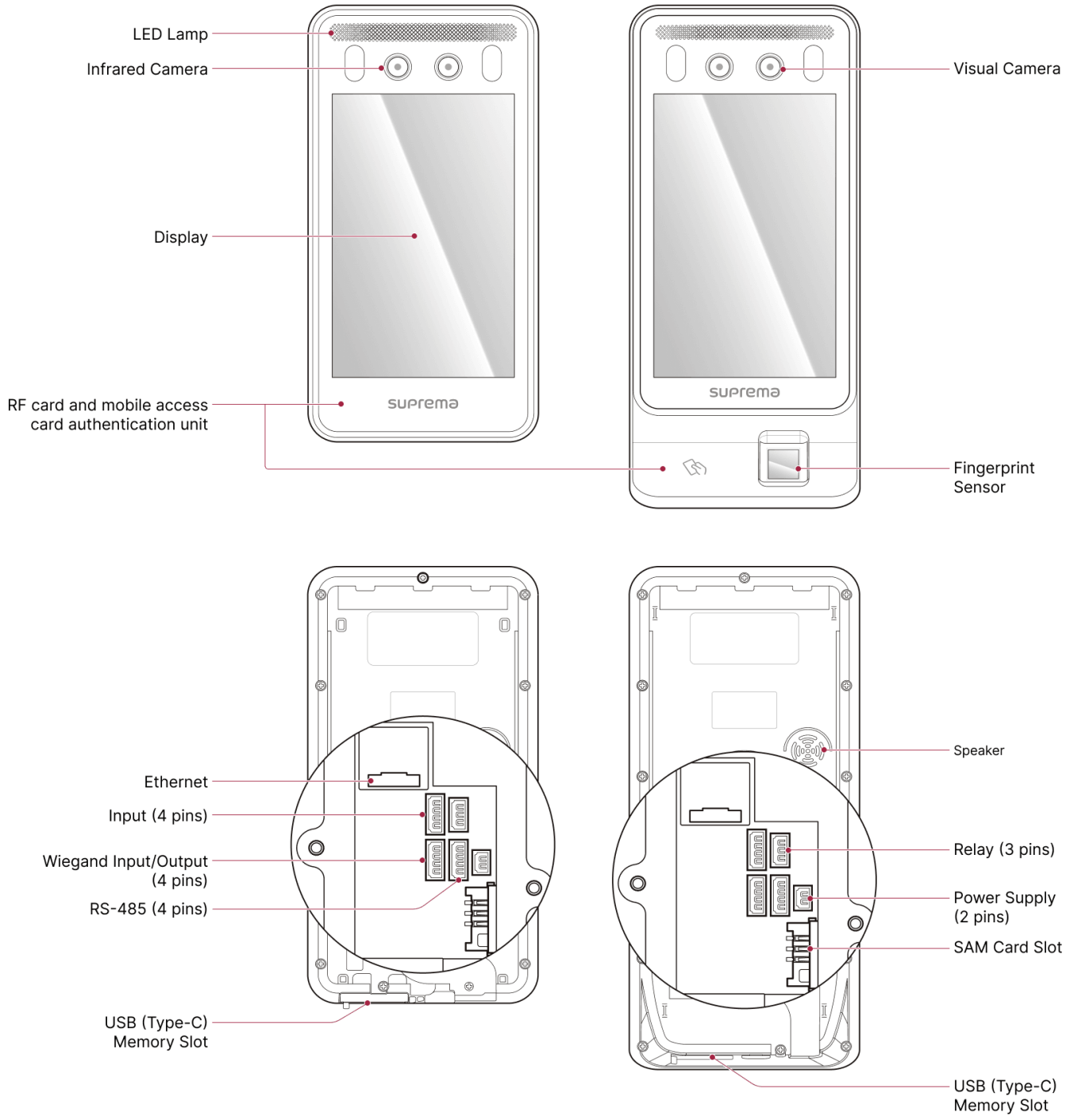
		
FaceStation F2 (FSF2-ODB)	Wall Bracket (FSF2-ODB)	Drilling Template (FSF2-ODB)
		
FaceStation F2 (FSF2-DB, FSF2-AB)	Wall Bracket (FSF2-DB, FSF2-AB)	Drilling Template (FSF2-DB, FSF2-AB)
		
Cable Cover	Diode	120 Ω Resistor
		
PVC Anchor x6	Fixing Screw x6	Bracket Fixing Screw (Star Shaped)

		
Connection Cables	Quick Guide	Open Source Software Guide

Info

- Components may vary according to the installation environment.
- When assembling the product with the bracket, you can use the included bracket fixing screw (Star Shaped) instead of the product fixing screw for enhanced security.

Name and function of each part



- **LED Lamp**: The LED lamp turns on when it detects a user in the dark.
- **Infrared Camera**: Capture the infrared face image.
- **Visual Camera**: Capture an actual face image.
- **Display**: Provides a UI for operation.

- **RF card and mobile access card authentication unit**: Part to scan a RFID card or mobile access card for entrance.
- **Fingerprint Recognition Unit**: FSF2-ODB The part that recognizes the fingerprint for access.
- **Ethernet**: Connect the Ethernet cable.
- **Input (4-pin)**: Connect the input cable.
- **Wiegand Input/Output (4-pin)**: Connect the Wiegand Input/Output cable.
- **RS-485 (4-pin)**: Connect the RS-485 cable.
- **Speaker**: Delivers sound.
- **Relay (3-pin)**: Connect the Relay cable.
- **Power Supply (2-pin)**: Connects the power supply cable.
- **SAM Card Slot**: A SAM card can be used.
- **USB (Type-C) Memory Slot**: Connects the USB memory.

Cables and connectors

Power



Pin	Name	Color
1	PWR +VDC	Red (White stripe)
2	PWR GND	Black (White stripe)

Relay



Pin	Name	Color
1	RLY NO	White
2	RLY COM	Blue
3	RLY NC	Orange

RS-485



Pin	Name	Color
1	485 TRXP	Blue
2	485 TRXN	Yellow
3	485 GND	Black
4	SH GND	Gray

Input



Pin	Name	Color
1	INPUT0	Red
2	INPUT1	Yellow
3	INPUT GND	Black
4	SH GND	Gray

Wiegand Input and Output



Pin	Name	Color
1	WG D0	Green
2	WG D1	White
3	WG GND	Black
4	SH GND	Gray

Correct face enrollment and authentication method

Cautions for enrolling a faces

- Keep the distance between the device and your face at 60-100 cm when enrolling your face.
- Do not change your face expression.
- Do not wear masks, hats, or eye patches.
- Do not enroll a face wearing a mask. It may increase the False Acceptance Rate (FAR) if both faces with and without a mask are enrolled.
- Do not raise head up or lower head.
- Do not wear thick makeup.
- Do not close your eyes.
- Make sure that both of your shoulders correctly appear on the screen.
- Stand still and enroll your face by staring at the screen.
- Be careful not to display two faces on the screen. Enroll one person at a time.
- If you do not follow the instructions on the screen, the face enrollment may take longer or may fail.

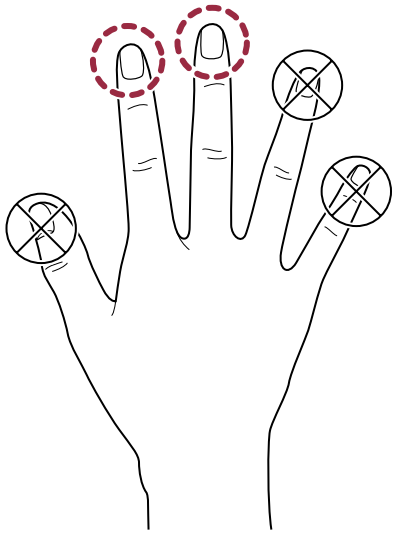
Cautions for authenticating a face

- Ensure that the face appears in the center of the device’s screen. When the guideline is displayed, follow the instructions shown on the screen to authenticate the face.
- If a part of the face is covered with a hat, a mask, an eye patch, or sunglasses authentication may fail. Do not cover the face; allow the device to recognize both the eyebrows and the face.
- Authenticate at a location 90-100 cm away from the device.
- Make sure that both of your shoulders correctly appear on the screen. Authentication may fail if your shoulders are not at the same height. Stand still, and then authenticate your face.

Correct fingerprint input method FSF2-ODB

In order to improve the fingerprint authentication rate, enroll the fingerprint correctly. This product can authenticate fingerprints even if the user's fingerprint input angle and position change. If you enroll the fingerprint with attention to the following matters, the authentication rate can be improved.

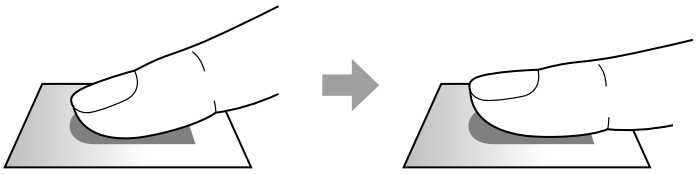
Selecting a finger for fingerprint input



- In preparation for the case that the fingerprint of a specific finger cannot be used, for example if the user is lifting a load with one hand or a finger gets hurt, up to 10 fingerprints for each user can be enrolled.
- In the case of a user whose fingerprint cannot be recognized well, the authentication rate can be improved by enrolling the same finger twice repeatedly.
- If a finger has a cut or the fingerprint is blurry, select another finger for the fingerprint.
- It is recommended to use the index finger or the middle finger when scanning the fingerprint. The authentication rate can be reduced if it is difficult to place another finger at the center of fingerprint sensor accurately.

Fingerprint enroll method

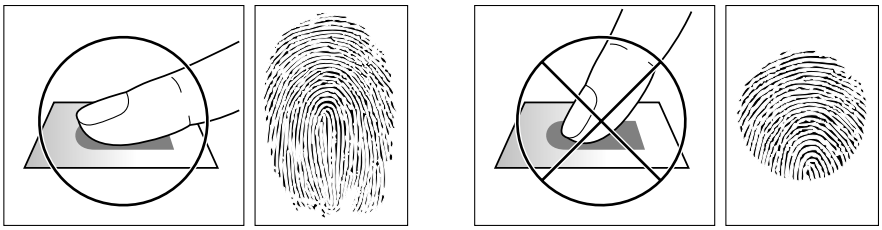
1. When the screen displays "Please input your fingerprint," place the finger you want to enroll on the fingerprint recognition unit and gently press it so that the fingerprint is authenticated well.



2. When the re-input screen is displayed after a beep sound, scan the fingerprint of the enrolled finger again. (scan the fingerprint of a finger to be enrolled twice)

Cautions for fingerprint enrollment

When a fingerprint is recognized, it is compared with the initially enrolled fingerprint, so the initial fingerprint enroll is the most important. Pay attention to the following matters when enrolling the fingerprint.



- Place the finger deep enough to contact with the sensor completely.
- Place the center of the fingerprint in the center of the sensor.
- If a finger has a cut or the fingerprint is blurry, select another finger for the fingerprint.
- Scan the fingerprint correctly without moving according to the instruction on the screen.
- If you make the finger upright so that the contact area with the sensor is decreased or the angle of finger is warped, fingerprint authentication may not be performed.

If fingerprint authentication does not work well

This product can authenticate fingerprints regardless of seasonal changes or changes in the condition of the fingers. However, the authentication rate may vary according to the external environment or fingerprint input method. If the fingerprint authentication cannot be done smoothly, it is recommended to take the following measures.

- If the finger is smeared with water or sweat, dry off the finger and then scan the finger.
- If the finger is too dry, blow your breath on the fingertips and then scan the finger.
- If the finger has a cut, enroll the fingerprint of another finger.
- Since the initially enrolled fingerprint is often not input correctly, please re-enroll the fingerprint according to the Cautions for fingerprint enrollment.

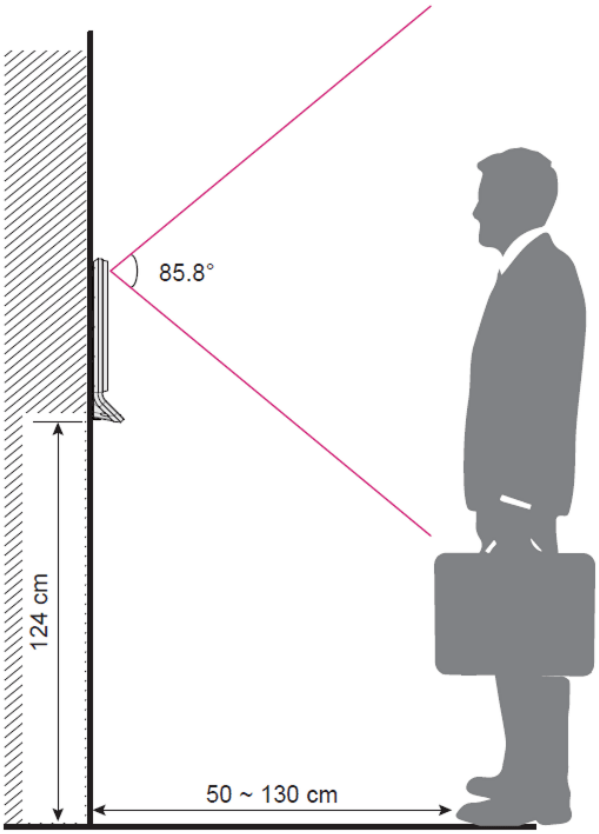
Installation

Provides the complete installation procedures and connection examples required for the device.

Fixing the bracket and the product

> **Info**
> This document describes the installation method based on the FSF2-ODB model shape. Use the same method to install the FSF2-DB and FSF2-AB models.

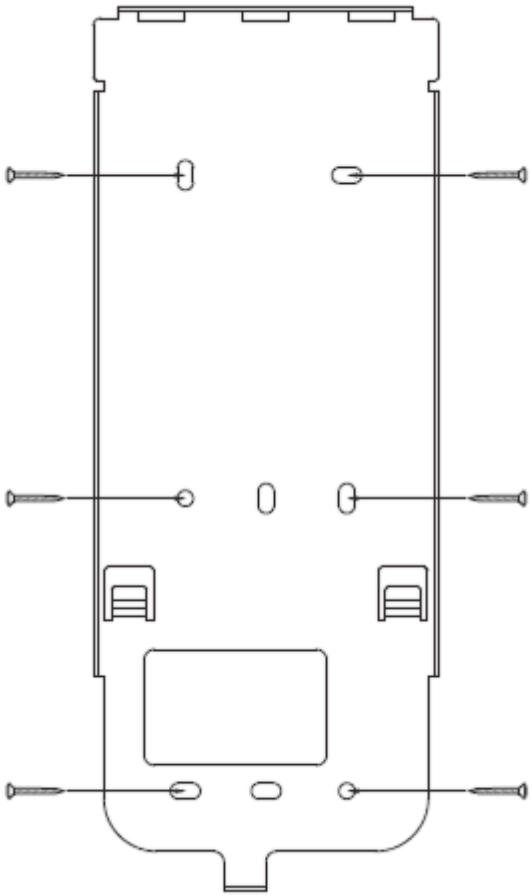
1. Determine the correct position to install the bracket using the provided drilling template.



Info

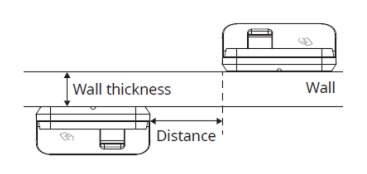
- The optimal height to install the device is as follows.
  - FSF2-ODB: 124 cm
  - FSF2-DB, FSF2-AB: 127 cm
- Install the device where it does not reach the direct sunlight or UV light.
- Adjust the installation position so that the face is not exposed to direct sunlight when a user tries to authenticate.

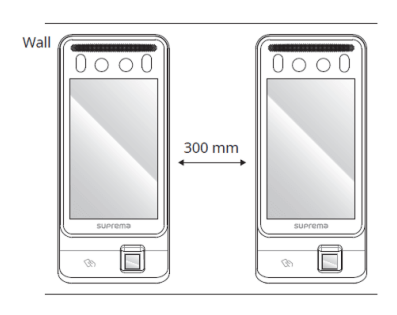
2. Secure the bracket tightly using the fixing screws at the location where the product will be mounted.



Info

- If installing the product on a concrete wall, drill a hole, insert a PVC anchor, and secure it with a fixing screw.
- To avoid RF interference, a minimum separation distance must be maintained.

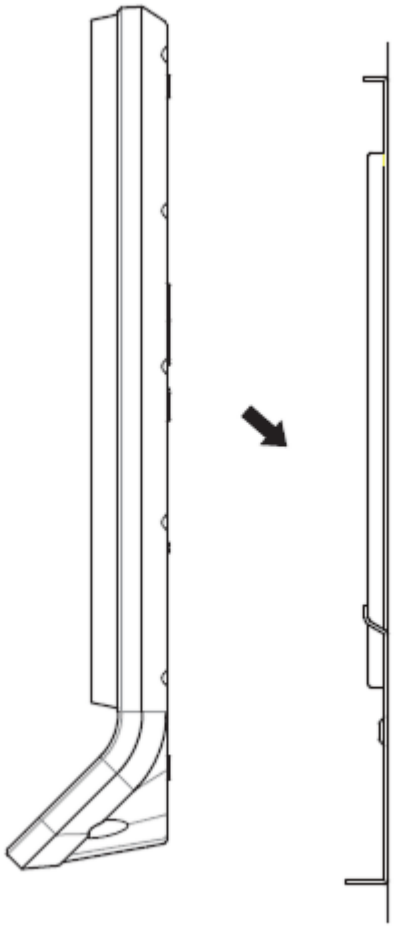




Wall thickness	Distance
100 mm	200 mm
120 mm	180 mm
150 mm	150 mm

- When using a mobile access card, install devices maintaining a minimum distance of 1 m between devices to avoid BLE interference.

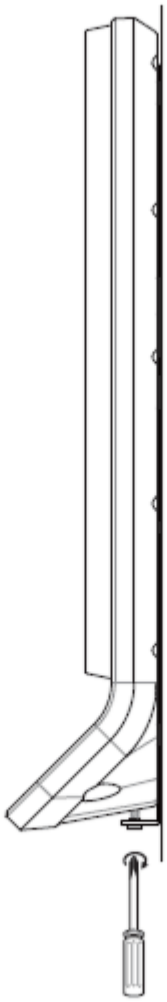
3. After installing the cable cover, tighten the six screws in the cover firmly, and mount the product on the fixed bracket.



Info

Make sure that the cable cover is completely closed after connecting it to the product to maintain the water-resistant and dust-resistant features (IP65 rating).

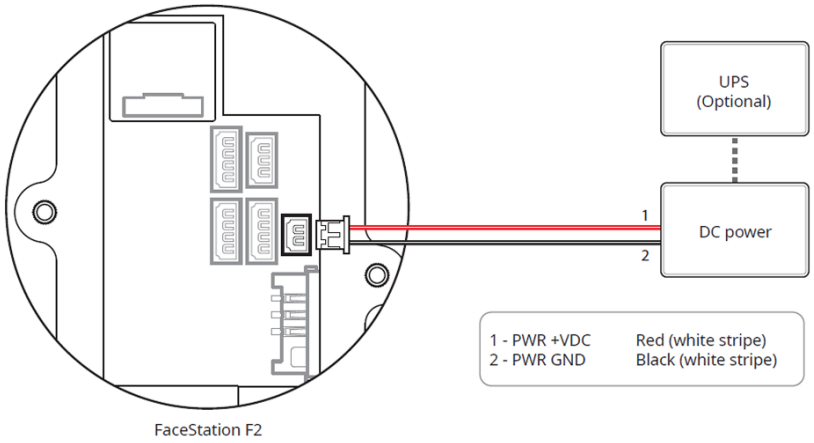
4. Rotate the fixing screws to assemble the product with the bracket.



Info

When assembling the product with the bracket, you can use the included bracket fixing screw (Star Shaped) instead of the product fixing screw for enhanced security.

Power supply connection



Caution

- Use the IEC/EN 62368-1 approved power adapter that supports higher power consumption than the product. If you wish to connect and use another device to the power supply adapter, you should use an adapter with a current capacity which is the same or larger than the total power consumption required for the terminal and another device.
  - Refer to the Power in the product specifications for maximum current consumption specifications.
- Use a separate power supply for Secure I/O 2, the electric lock, and the product respectively. If connecting and using the power supply to these devices together, the devices may malfunction.
- When connecting the power supply, be aware of the distance between the device and the power supply. The device should be connected as close as possible to the power supply so that the length of the connecting cable is kept to a minimum. If cable connections are made improperly it may cause the device to malfunction. It is recommended to use a 16 AWG or 18 AWG cable if the product is far from the power supply. The connection distance may differ depending on the standard of the cable used and the installation environment. This product supports both DC 24 V and DC 12 V power, so check the maximum length according to the cable specification to ensure that the unit is properly powered.

Cable standard	Max. extended length	
	DC 12V	DC 24V
16 AWG	50 m	150 m
18 AWG	30 m	136 m
20 AWG	20 m	90 m

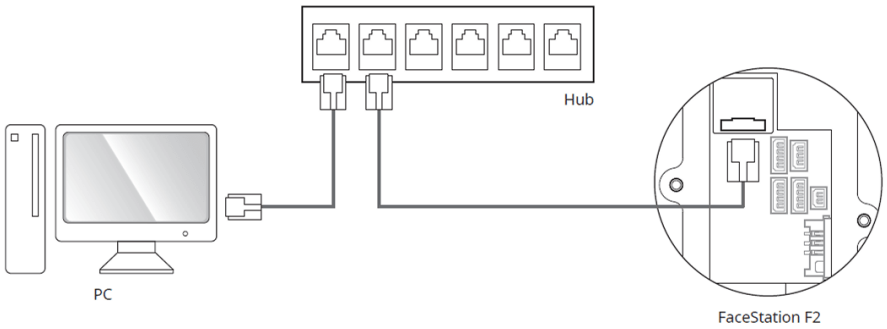
- DO NOT extend the length of power cable when using the power adapter.
- DO NOT use the CAT5 UTP 2-Wire for power supply purpose.

Network Connection

TCP/IP

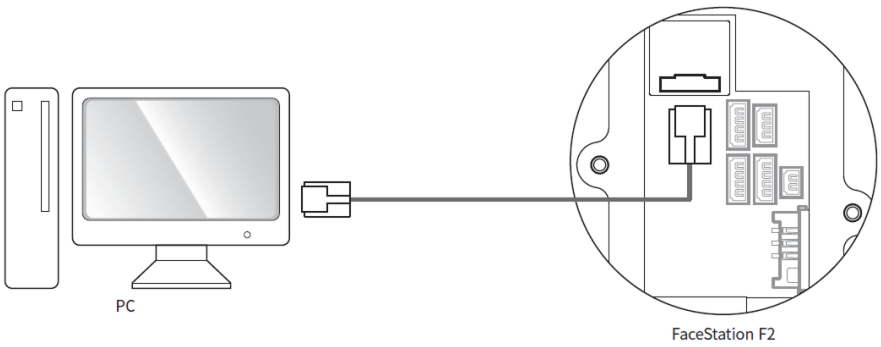
LAN connection (connecting to a hub)

You can connect to a hub using a standard CAT-5 or higher cable.



LAN connection (connecting to a PC directly)

This product supports automatic MDI/MDIX, so it can connect directly to a PC using either a crossover cable or a standard straight CAT-5 or higher cable.



Info

For a gigabit Ethernet switch, check the following information.

- Use a CAT-5e UTP (unshielded twisted pair) cable.
- Use all 4 pairs (8 wires) for the network connection.
- Do not use any pairs or wires in the network cable for other purposes.

Network ports and services

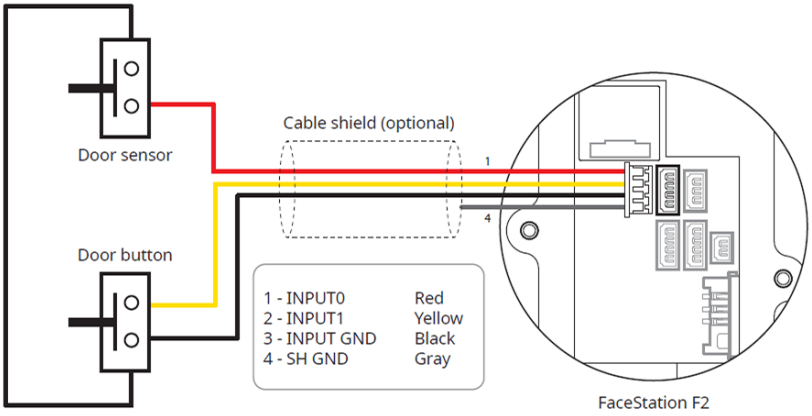
This device uses the following ports for network communication and stable service operation.

Protocol	Service
TCP	Used for communication services between the server and the device, and for the device operation status switching service.
UDP	Used for the device discovery service to search for devices on the network.

Info

These ports provide the product's normal network features. When configuring firewall rules or network security settings, allow these ports.

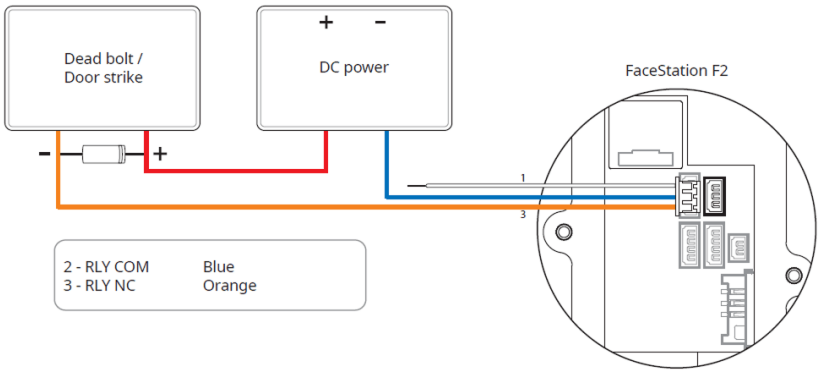
Input connection



Relay Connection

Fail Safe Lock

In order to use the Fail Safe Lock, connect N/C relay as shown in the figure below. There is normally a current flowing through the relay for the Fail Safe Lock. When the relay is activated, blocking the current flow, the door will open. If the power supply to the product is cut off due to a power failure or an external factor, the door will open.



Caution

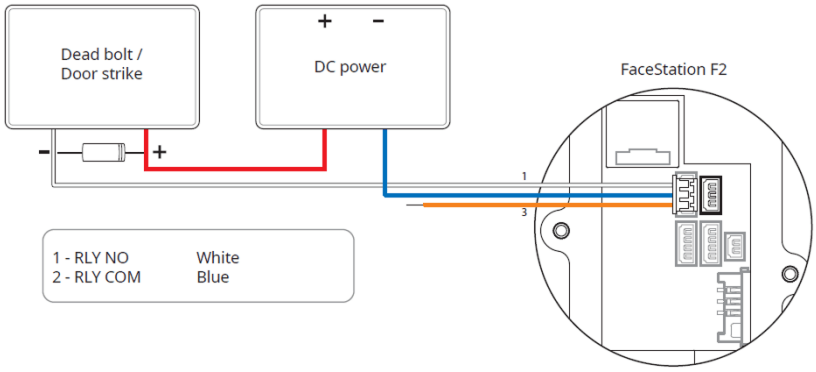
- Install a diode at both sides of the door lock wire as shown in the figure to protect the relay from the reverse current, which occurs when the door lock operates.
- Use a separate power supply for the product and the door lock.
- Suprema's standalone intelligent readers contain internal relays that can directly lock/unlock doors without external controllers for added convenience. For access control applications in need of security, however, it is NOT recommended to use the internal relay of a reader to prevent any tampering attacks which can potentially trigger the door unlock. For such applications, it is highly recommended to use a separate relay unit for a lock control such as Suprema's Secure I/O 2, DM-20 or CoreStation installed at a secure side of a door.

Info

Take caution of the installation direction of the diode. Install the diode close to the door lock.

Fail Secure Lock

In order to use the Fail Secure Lock, connect N/O relay as shown in the figure below. There is normally no current flowing through the relay for the Fail Secure Lock. When the current flow is activated by the relay, the door will open. If the power supply to the product is cut off due to a power failure or an external factor, the door will lock.



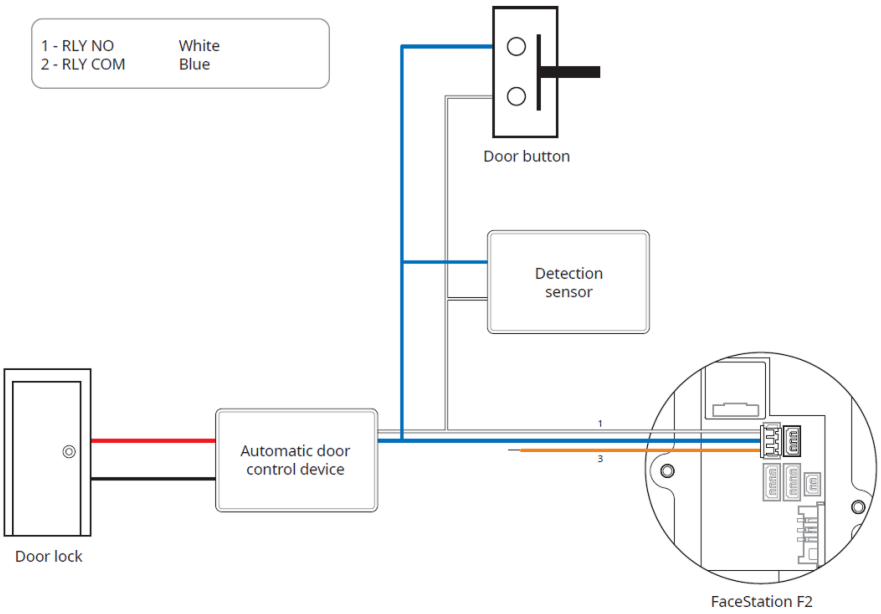
Caution

- Install a diode at both sides of the door lock wire as shown in the figure to protect the relay from the reverse current, which occurs when the door lock operates.
- Use a separate power supply for the product and the door lock.
- Suprema's standalone intelligent readers contain internal relays that can directly lock/unlock doors without external controllers for added convenience. For access control applications in need of security, however, it is NOT recommended to use the internal relay of a reader to prevent any tampering attacks which can potentially trigger the door unlock. For such applications, it is highly recommended to use a separate relay unit for a lock control such as Suprema's Secure I/O 2, DM-20 or CoreStation installed at a secure side of a door.

Info

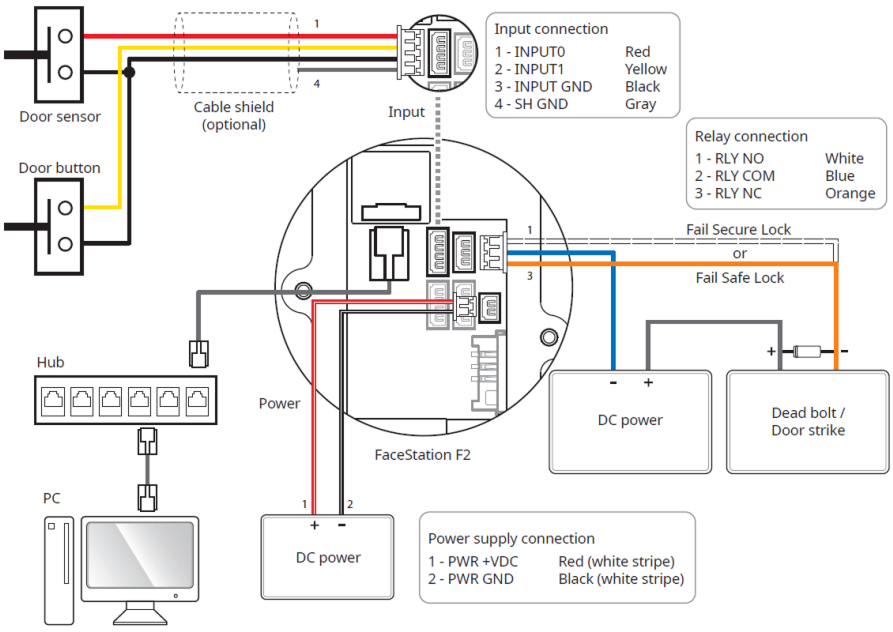
Take caution of the installation direction of the diode. Install the diode close to the door lock.

Automatic door connection



Connecting as a Standalone

The product can be connected to the door lock, door button, and door sensor directly without connecting a separate I/O device.



Caution

Suprema's standalone intelligent readers contain internal relays that can directly lock/unlock doors without external controllers for added convenience. For access control applications in need of security, however, it is NOT recommended to use the internal relay of a reader to prevent any tampering attacks which can potentially trigger the door unlock. For such applications, it is highly recommended to use a separate relay unit for a lock control such as Suprema's Secure I/O 2, DM-20 or CoreStation installed at a secure side of a door.

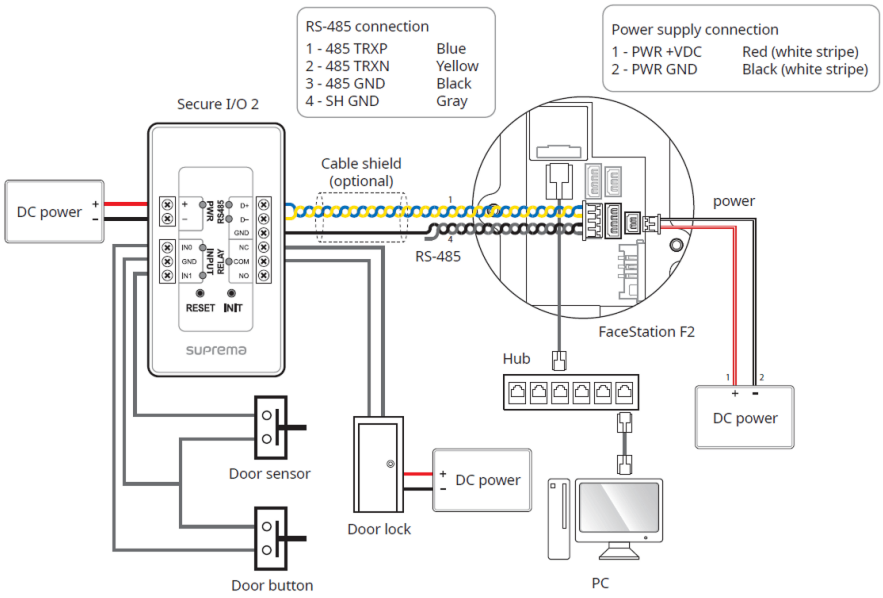
Info

- The device can be used as a multi-door controller with the slave devices with the RS-485 cable. The slave devices are used as dummy readers and authentication is performed in the master device.
- If a fingerprint authentication device is configured as a slave device in FaceStation F2, you cannot add another FaceStation F2 as a slave device.
- If the fingerprint authentication device is the master device, FaceStation F2 cannot be added as a slave device.
- When you connect FaceStation F2 as a slave device while FaceStation F2 is the master device, only one FaceStation F2 can be added as a slave device.
- When FaceStation F2 is the master device and another FaceStation F2 is connected to it as a slave device, you can connect one additional Secure I/O 2 and DM-20 each.
- When FaceStation F2 is the master device and another FaceStation F2 is connected to it as a slave device, you cannot connect additional OM-120.
- FaceStation F2 cannot be used as a slave device when BioStation 3 is the master device, and vice versa.
- The maximum number of slave devices available to connect varies according to the authentication method, number of users, and number of devices. Also note that the number of slave devices affects the authentication performance.
- Connect up to 31 slave devices to a master device. The bandwidth of RS-485 allows for up to 7 fingerprint authentication devices to be connected.
- For more information, contact the Suprema Technical Support Team.

Connecting to Secure I/O 2

Secure I/O 2 is an I/O device, can be connected to the product with the RS-485 cable. Security can be maintained even if the connection between the product and Secure I/O 2 has been lost or the power supply to the product has been shut off due to external factors.

- Use an AWG24 twisted pair with a maximum length of 1.2 km for the RS-485 cable.
- It is recommended to use RS-485 cables with a characteristic impedance of 120 Ω.
- If connecting with a RS-485 daisy chain, connect the termination resistor (120 Ω) to both ends of the daisy chain connection. If connected to the middle line, the signal level becomes smaller and the communication performance will deteriorate. Make sure to connect it to both ends of the daisy chain connection.

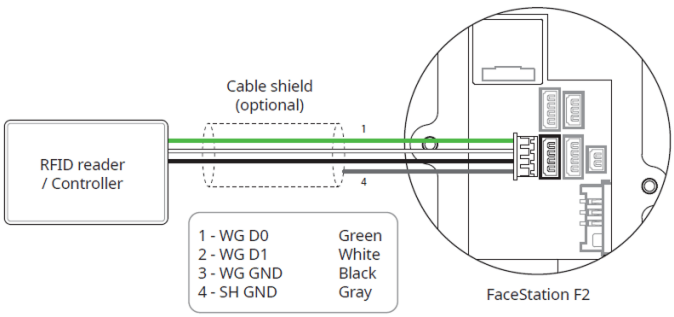


Info

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- If a fingerprint authentication device is configured as a slave device in FaceStation F2, you cannot add another FaceStation F2 as a slave device.
- If the fingerprint authentication device is the master device, FaceStation F2 cannot be added as a slave device.
- When you connect FaceStation F2 as a slave device while FaceStation F2 is the master device, only one FaceStation F2 can be added as a slave device.
- When FaceStation F2 is the master device and another FaceStation F2 is connected to it as a slave device, you can connect one additional Secure I/O 2 and DM-20 each.
- When FaceStation F2 is the master device and another FaceStation F2 is connected to it as a slave device, you cannot connect additional OM-120.
- FaceStation F2 cannot be used as a slave device when BioStation 3 is the master device, and vice versa.
- The maximum number of slave devices available to connect varies according to the authentication method, number of users, and number of devices. Also note that the number of slave devices affects the authentication performance.
- Connect up to 31 slave devices to a master device. The bandwidth of RS-485 allows for up to 7 fingerprint authentication devices to be connected.
- For more information, contact the Suprema Technical Support Team.

Wiegand Connection

Use as a Wiegand input or output device.



How to Use

Provides guidance on how to use the main features of the device effectively.

Admin Menu

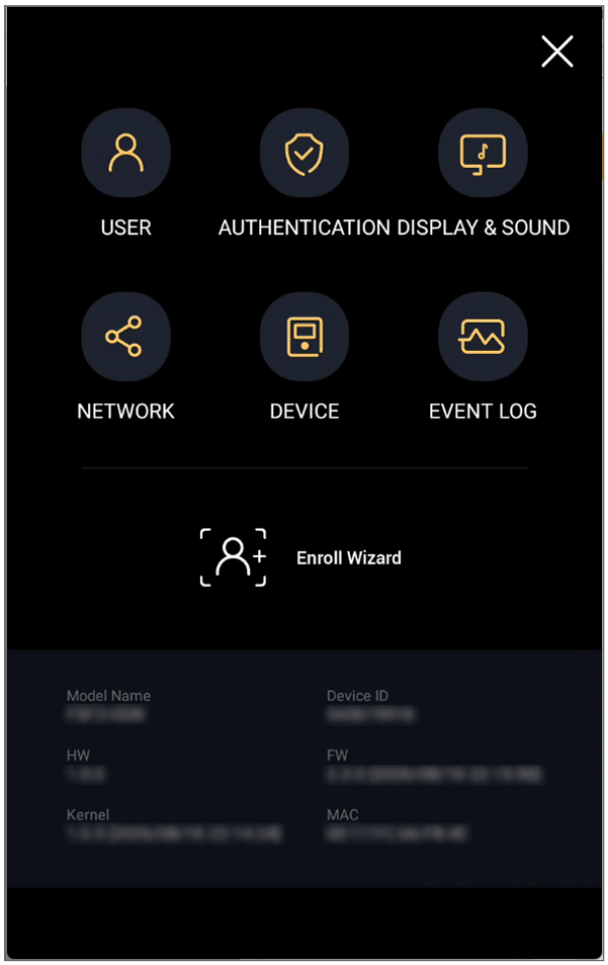
Provides guidance on the main menus and features accessible with administrator privileges.

Full menu

1. Press and authenticate with the Admin level credential.

   On the menu screen, check the device information or press **Enroll Wizard** to enroll a user right away.

2. Select your desired menu.



Info

If no administrator is designated, click to display the menu screen.

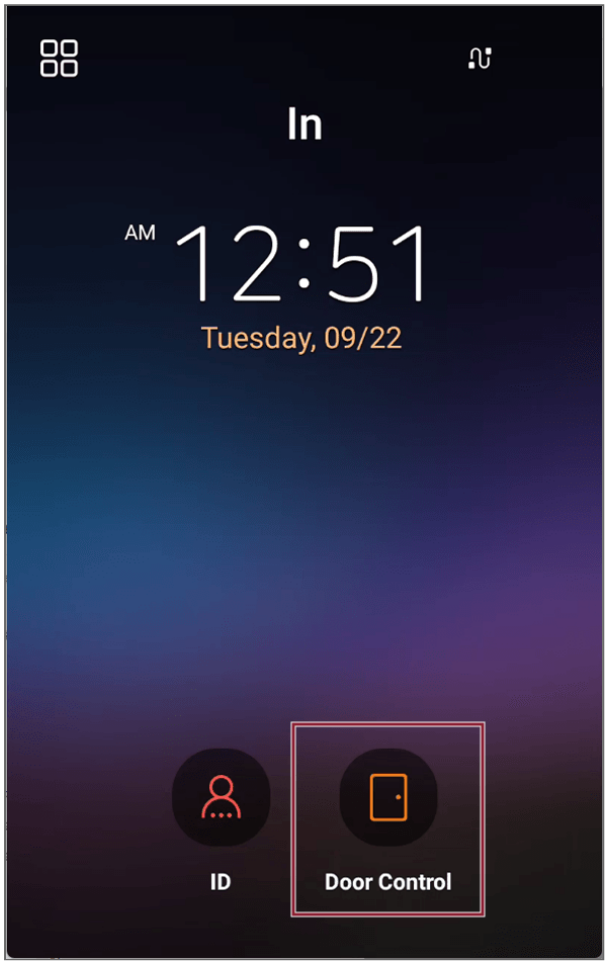
Door Control

You can manually open, lock, or unlock the connected door.

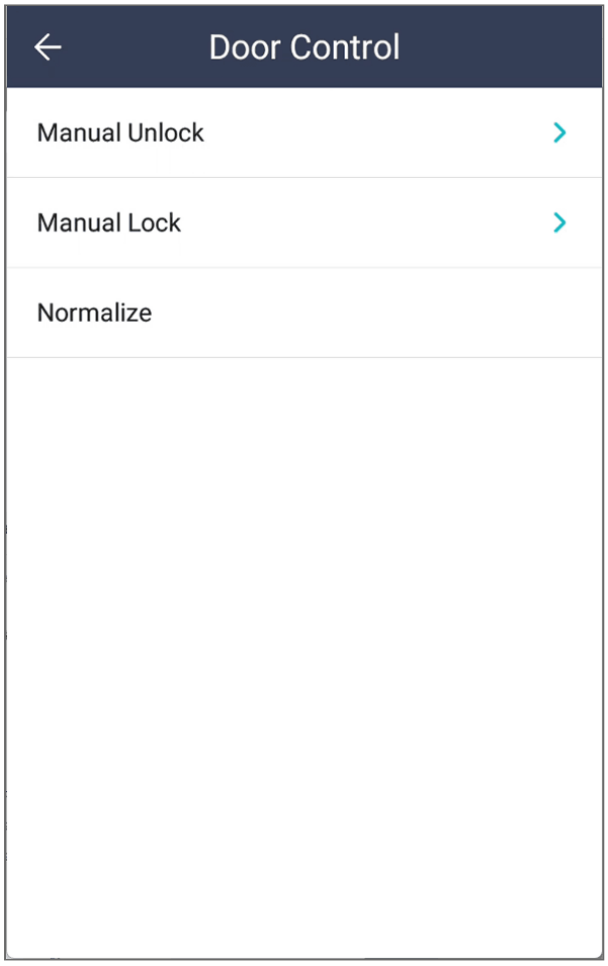
Info

- You can control the door only when the device is configured as the master device.
- Use **Administrator** or **Configuration** to control the door.

1. Select **Door Control** on the main screen.



2. Authenticate using administrator privilege method.
3. Choose the desired door control method.



- **Manual Unlock**: Set the time for immediate door opening or to keep the door open.
- **Manual Lock**: Set the time for immediate locking or to keep the door locked.
- **Normalize**: Cancel manual opening or manual lock hold.

> **Info**
> Set the manual open and manual lock-hold times from 1 to 86,400 seconds.

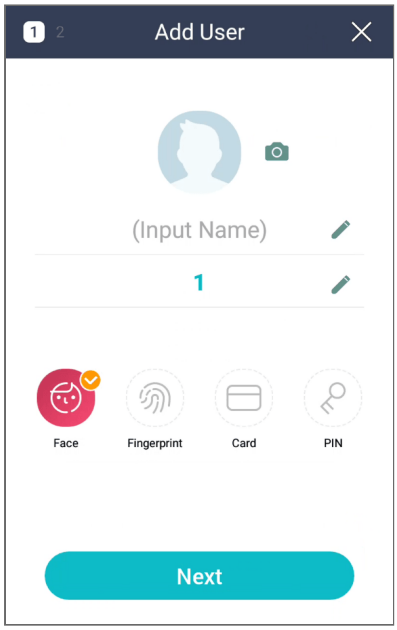
User

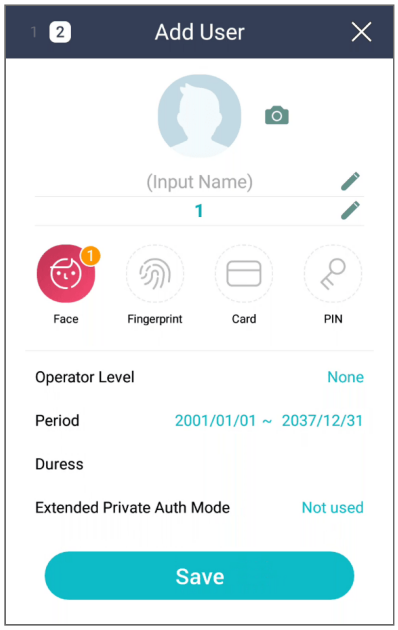
Describes how to register, edit, delete, and manage users.

Registering user information

You can register user information that includes biometric authentication data.

1. Press and authenticate with the Admin level credential.
2. Select **USER** → and set the desired items. User usage information appears.





- : You can register a user photo.
- **Name**: Enter a user name. Enter up to 48 characters, including special symbols (~ ! @ # $ % ^ & ( ) - _ = + [ ] { } ; . '). However, names starting with & @ ~ are not allowed.
- **ID**: Enter a number between 1 and 4294967295 to register a user ID. If **User ID Type** is set to **Alphanumeric**, enter up to 32 characters using alphanumerics and certain symbols (_ - .). IDs cannot include spaces. Periods (.) are allowed, but the ID cannot be a single period (.) or two periods (..).
- **Face**: You can enroll a face for user authentication. Press **Face** → **Next** and follow the instructions on the screen to enroll your face. To enroll more faces, click . Please refer to Enrolling user faces to learn more about face enrollment.
- **Fingerprint**: FSF2-ODB You can enroll a fingerprint for user authentication. Press **Fingerprint** → **Next** and follow the on-screen instructions to enroll a fingerprint. To enroll more fingerprints, press . For more information on fingerprint registration, refer to User fingerprint enrollment.
- **Card**: You can enroll a card for user authentication. Press **Card** → **Next** and scan the card to assign to the user in the RF card authentication section. To enroll more cards, click .
- **PIN**: You can enter the PIN you want to use. Press **PIN** → **Next** and enter the PIN you want to use. For confirmation, enter the PIN once more and then press **OK**. To prevent leaks, input a PIN of 4 to 16 digits.
- **Operator Level**: You can select permissions to assign to the user.

> **Info**
> Available menus vary according to the set user level.
> - **None**: This is a general user level, and the menu is not available.
> - **Administrator**: You can use all menus.
> - **Configuration**: You can use the menus **AUTHENTICATION**, **DISPLAY & SOUND**, **DEVICE**, **NETWORK**, **EVENT LOG**.
> - **User Management**: You can use the menus **USER**, **EVENT LOG**.

- **Period**: You can set the duration for using the user account.
- **Duress**: FSF2-ODB Select to enroll a duress fingerprint. If you are coerced by someone or need to open the door forcefully, authenticating with this fingerprint can send an alarm signal to BioStar X.
- **Extended Private Auth Mode**: You can set the extended personal authentication mode. Using the extended personal authentication mode, you can combine methods of authentication including face and fingerprint for each user. Otherwise, you can use the device's basic authentication mode.

> **Info**
> Fingerprint registration is only available on the FSF2-ODB product.

3. Press **Save** to complete the registration of user information.

Enrolling user faces

1. Press and authenticate with the Admin level credential.
2. Select **USER** → .
3. Press **Face** → **Next**.
4. Adjust a distance between the face and screen and look straight at the camera of the device.
5. After the shooting is complete, press **OK** → **Save**. To retake your face picture, press **Re-Shot**.

> **Info**
>
> - The visual face data of this product are not compatible with face templates of FaceStation 2 or FaceLite.
> - Enroll a user's face not only on the device, but also in bulk on BioStar X by uploading a photo or importing a CSV file. Send a face enrollment link to a user to let them enroll their face on their personal mobile device. For detailed information on each enrollment method, please refer to the BioStar X Administrator Guide.
> - To use a Visual Face feature correctly, take a picture by following instructions below.
>   - Keep the distance between the device and your face at 60-100 cm when enrolling your face.
>   - Do not change your face expression.
>   - Do not wear masks, hats, or eye patches.
>   - Do not enroll a face wearing a mask. It may increase the False Acceptance Rate (FAR) if both faces with and without a mask are enrolled.
>   - Do not raise head up or lower head.
>   - Do not wear thick makeup.
>   - Do not close your eyes.
>   - Make sure that both of your shoulders correctly appear on the screen.
>   - Stand still and enroll your face by staring at the screen.
>   - Be careful not to display two faces on the screen. Enroll one person at a time.
>   - If you do not follow the instructions on the screen, the face enrollment may take longer or may fail.

User fingerprint enrollment FSF2-ODB

1. Press and authenticate with the Admin level credential.
2. Select **USER** → .
3. Press **Fingerprint** → **Next**.
4. After scanning the fingerprint of the finger to be enrolled, scan the same finger's fingerprint again.

Info

- Fingerprint registration is only available on the FSF2-ODB product.
- Place the finger deep enough to contact with the sensor completely.
- Place the center of the fingerprint in the center of the sensor.
- If a finger has a cut or the fingerprint is blurry, select another finger for the fingerprint.
- Enter accurately according to the on-screen instructions when authenticating fingerprints.
- If you make the finger upright so that the contact area with the sensor is decreased or the angle of finger is warped, fingerprint authentication may not be performed.

Modifying User Information

User Management or Administrator can modify the registered user information. Add the user's face, fingerprint, or card, and modify the PIN and level.

1. Press and authenticate with the Admin level credential.
2. Click **USER** → .
3. Select your search terms. You can search for users using **All**, **User ID**, **Name**, **Face**, **Fingerprint**, **Card**.
4. Select the user to modify.
5. Modify the information by referring to Registering user information and press **OK**.
   - To delete a user, select and then press **OK**.

Info

- Fingerprint searching is only available on the FSF2-ODB product.
- **Access Group** can be registered in BioStar X. For detailed information on registering an Access Group, please refer to the BioStar X Administrator Guide.

Delete All Users

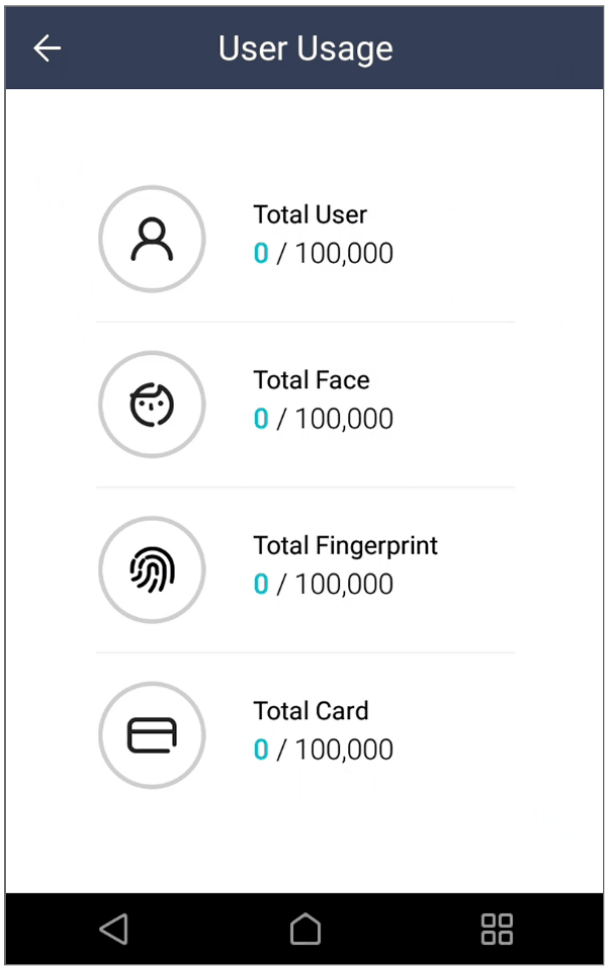
You can delete all registered users at once.

1. Press and authenticate with the Admin level credential.
2. Select **USER** → .
3. Select **Delete All** to check, then press **OK**.
4. To delete all users, press **OK**.

View User Usage

View the number of enrolled users, faces, fingerprints, and cards at a glance.

1. Press and authenticate with the Admin level credential.
2. Press **USER** → . User usage information appears.



> **Info**
> The number of fingerprints can only be checked on the FSF2-ODB product.

Authentication

Describes the supported authentication methods and authentication procedures.

Authentication mode

Set the authentication mode. You can use face, fingerprint, PIN, card, and ID in combination as authentication modes, and you can also set the schedule for each authentication mode.

> **Info**
> Fingerprint authentication is only available on the FSF2-ODB product.

Registering auth mode

1. Press and authenticate with the Admin level credential.
2. Press **AUTHENTICATION** → **Auth Mode** → .
3. Select and choose the authentication method you want to use. To set an additional authentication method, select it in the same way and combine it.
4. Set **Schedule**.

> **Info**
> - You can combine selected authentication methods to authenticate all in order or choose to authenticate only some of the selected methods. For example, when combined as + + , you must authenticate the card, face, and PIN; when combined as + / , you must authenticate the card and then enter the face or PIN.
> - **Schedule** can be configured in BioStar X. If there is no schedule set, only **Not Use** and **Always** can be selected.
> - For more information about the **Schedule** settings, please refer to the BioStar X Administrator Guide.

5. To save the settings, press **OK**.

Modifying auth mode

1. Press and authenticate with the Admin level credential.
2. Press **AUTHENTICATION** → **Auth Mode**.
3. Select the authentication mode to modify.
4. Modify the authentication mode by referring to Registering auth mode and press **OK**.

Delete auth mode

1. Press and authenticate with the Admin level credential.
2. Press **AUTHENTICATION** → **Auth Mode**.
3. Press and select the authentication mode to delete. You can select multiple options.

4. To delete the selected item, press **OK**, then press **OK**. Press **Cancel** to return to the previous screen.

Server matching

You can set up server matching. Using server matching means that user authentication is performed on BioStar X, not on the device. Server matching can be useful when there is too much user information on the device or when the device is installed outside the entrance door.

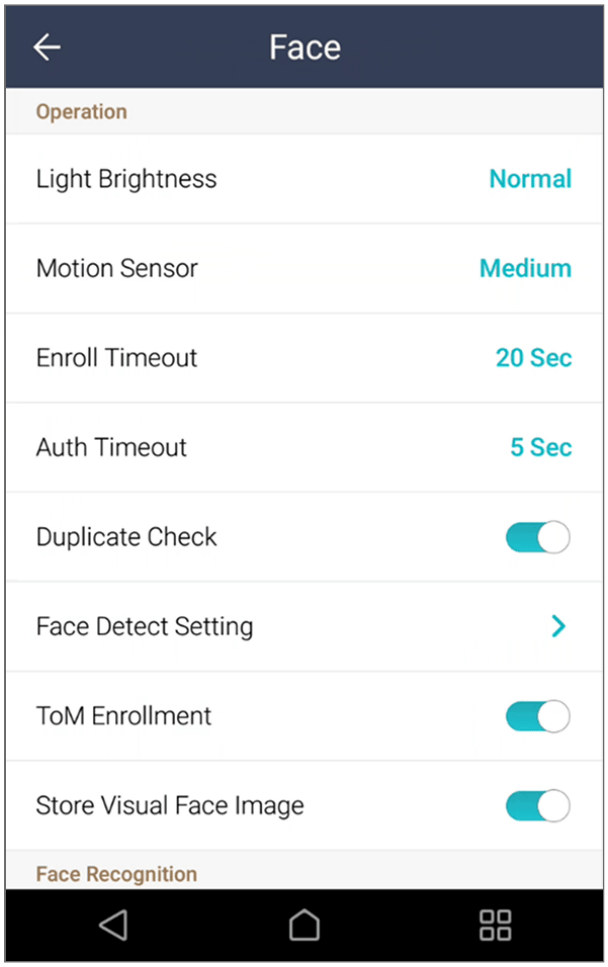
1. Press and authenticate with the Admin level credential.
2. Press **AUTHENTICATION** then enable **Server Matching**.
   - FSF2-ODB: **Server Matching (Fingerprint, Card, ID)**
   - FSF2-DB, FSF2-AB: **Server Matching (Card, ID)**

> **Info**
>
> - **Server Matching** can only use fingerprint, card, and ID.
> - If you use **Server Matching**, you must enable server matching on both the device and BioStar X. For more information on BioStar X server matching settings, please refer to the BioStar X Administrator Guide.

Face

You can change the configuration for facial authentication.

1. Press and authenticate with the Admin level credential.
2. Select **AUTHENTICATION** → **Face**.
3. Change the desired item.



- **Light Brightness**: You can manually adjust the brightness of the device light. Set the brightness with **Normal** or **High** or select **Not Use** to turn the light off.
- **Motion Sensor**: Set the sensitivity to detect motion around the device. When **Motion Sensor** is set to **OFF**, touch the screen to authenticate your face.
- **Enroll Timeout**: If the face is not enrolled within the set time, the face registration will be canceled.
- **Auth Timeout**: If authentication is not completed within the set time, authentication fails.
- **Duplicate Check**: You can check for duplicate faces during face registration.
- **Face Detect Setting**: Set the position and size of the area where the device detects faces during face authentication.

> **Info**
> For optimal performance, it is recommended to use default settings for the sub-options of **Face Detect Setting**. The default values of each option are as follows:
> – Maximum Head Pose Angle: 15
> – Detection Distance: Min 30 cm, Max 100 cm
> – Wide Search: Deactivated

- **ToM Enrollment**: By activating **ToM Enrollment**, you can enroll the **Template on Mobile** issued by BioStar X. **Template on Mobile** allows biometric authentication without storing user data on the BioStar X server, Airfob Portal, or device by storing the user's biometric template on a mobile access card.

> **Info**
> For more information about **Template on Mobile**, please refer to the BioStar X Administrator Guide.

- **Store Visual Face Image**: You can set to store both the actual images and templates in Visual Face, or to store only the templates without saving the actual images. If disabled, all stored images of visual faces will be deleted, and newly enrolled visual faces will store templates excluding images.

> **Info**
> After disabling this setting, connect to BioStar 2 v2.9.7 or later or BioStar X.

- **Security Level**: You can set the security level for 1:N authentication.
- **Operation Mode**: You can set the operating mode of the device for face authentication.
  - **Fusion Matching**: Both visual and infrared matching work to increase the accuracy of face authentication.
  - **Fast Matching**: Users can perform rapid authentication while walking within the device's authentication range.
- **Fake Detection**: You can prevent user authentication with spoofed faces such as photos. Activated when **Operation Mode** is set to **Fusion Matching**.

> **Info**
> In strong sunlight, it is recommended to use the **Fake Detection** function as **Normal**.

- **Advanced Settings**: You can change advanced settings for face authentication, such as mask detection and thermal imaging camera functions.
  - **Check Mode**: You can set the confirmation mode according to the purpose.

> **Info**
> When using **Mask Detection** or **Thermal Camera**, you can set **Check Mode** according to the device's purpose.
>
> - **Check After Authentication**: After authentication, check whether the user is wearing a mask or measure temperature.
> - **Check Before Authentication**: After checking whether the user is wearing a mask or measuring temperature, perform authentication. When using this mode, users without masks or exceeding the standard temperature cannot perform authentication.
> - **Check Only**: The device can only be used for checking whether a mask is worn or for measuring temperature. When using this mode, users wearing masks or below the standard temperature can enter regardless of authentication.

  - **Authentication Fail Sound**: You can set the notification status for authentication failures due to no mask worn or exceeding the standard temperature.
  - **Mask Detection**: You can set whether to use mask detection.
    - **Enabled (Hard)**: Users without masks will be denied authentication, and maskless events will be recorded

in the logs.

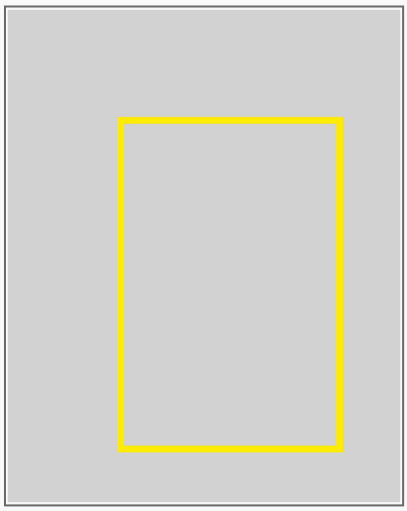
  - **Enabled (Soft)**: Users without masks can still authenticate, but a maskless event will be logged.

- **Thermal Camera**: You can set whether to use the thermal camera.
  - **Enabled (Hard)**: Users exceeding the standard temperature range will be denied authentication, and the event will be logged as exceeding the standard temperature.
  - **Enabled (Soft)**: Users exceeding the standard temperature range can still authenticate, but the event will be logged as temperature exceeding the standard.

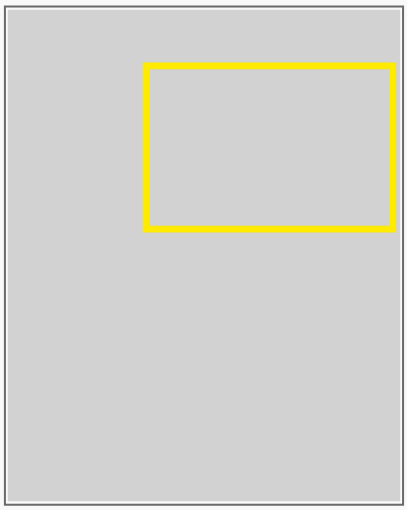
Info

- When **Thermal Camera** is set to **Enabled**, advanced setting options for thermal imaging cameras are activated.
  - **Celsius/Fahrenheit**: You can set the temperature display unit.
  - **Low Threshold Temperature**: You can set the minimum reference temperature to restrict access. Users with surface temperatures lower than **Low Threshold Temperature** will be denied authentication. **Low Threshold Temperature** can be set in the range of 1℃~45℃ and cannot be set higher than **High Threshold Temperature**.
  - **High Threshold Temperature**: You can set the maximum reference temperature to restrict access. Users with surface temperatures higher than **High Threshold Temperature** will be denied authentication. **High Threshold Temperature** can be set in the range of 1℃~45℃ and cannot be set lower than **Low Threshold Temperature**.
  - **Save Temperature Data**: You can set whether to save the user's temperature log. Using this option, both the success of authentication and the user's temperature value will be saved in the log; if not used, only the success of authentication will be logged.
  - **Show Thermal Infrared Image**: Set whether to display infrared video on the device screen.
  - **Dynamic ROI**: Set the device to automatically detect the area of interest (ROI) for measuring the user's temperature. For example, if there are other lights installed nearby, this option allows the thermal imaging camera to detect and measure the user's temperature instead of that lighting.
  - **Camera Configuration**: Set detailed options for the camera for accurate measurement.

- When **Thermal Camera** is set to **Enabled**, you can set detailed options for the thermal imaging camera for accurate measurement according to the installation environment.
  - **Distance(cm)**: Set the distance between the user and the thermal camera.
  - **Emissivity**: Set the infrared emissivity.
  - **ROI X(%)**, **ROI Y(%)**, **ROI Width(%)**, **ROI Height(%)**: You can set the ROI (Region of Interest) manually when **Dynamic ROI** is set to **Not Use**. Adjust the ROI location and size to specify the area where the thermal camera will measure temperature. **ROI X(%)** indicates the left and right positions of the region of interest, and the larger this value, the further the region moves to the right of the screen. **ROI Y(%)** indicates the top and bottom positions of the region of interest, and the larger this value, the further the region moves up. **ROI Width(%)** and **ROI Height(%)** indicate the size of the region of interest; as both values increase, the area for measuring temperature widens. For example, if the values of **ROI X(%)**, **ROI Y(%)**, **ROI Width(%)**, **ROI Height(%)** are changed from default values to 40, 15, 70, 40 respectively, the region of interest will change as shown below.



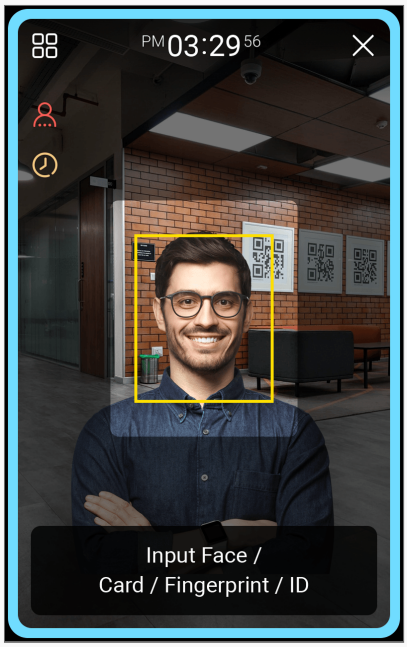
If the ROI is set to the default value



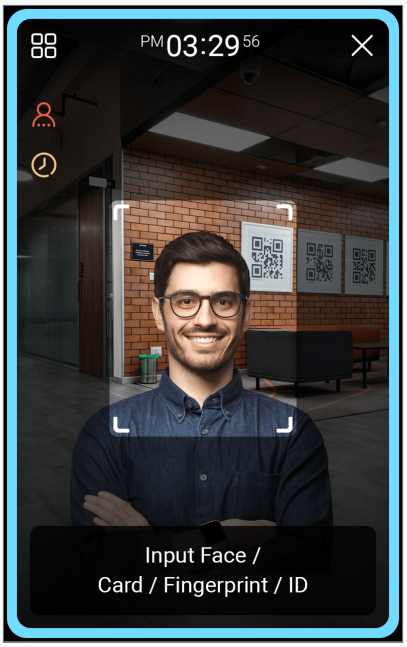
ROI X(%), ROI Y(%), ROI width(%), ROI height(%) When the values are changed to 40, 15, 70, and 40, respectively

  - **Skin Temperature Compensation**: You can set the thermal imaging camera to correct the temperature autonomously, considering the environmental usage of the device and the surrounding temperature.
  - **Skin Temperature Correction**: Depending on the product usage environment, you can adjust the temperature measures to be increased or decreased by a constant value. For example, if the temperature reading is always measured 0.1℃ higher, set the temperature correction value to -0.1.
  - **FW**: If the thermal imaging camera is properly connected, the firmware version of that camera will be displayed.
- For optimal performance, it is recommended to use default settings for the sub-options of **Camera Configuration**. The default values of each option are as follows:
  - **Distance(cm)**: 100
  - **Emissivity**: 0.98
  - **ROI X(%)**: 30
  - **ROI Y(%)**: 25
  - **ROI Width(%)**: 50
  - **ROI Height(%)**: 55

When using the ROI as the default setting, a yellow guide will be displayed in the ROI area of the screen during authentication as shown below. When the user's face is aligned within that area during authentication, accurate temperature measurements can be made. When manually changing the settings or using dynamic ROI, the yellow guide is not displayed.



If the ROI is set to the default value



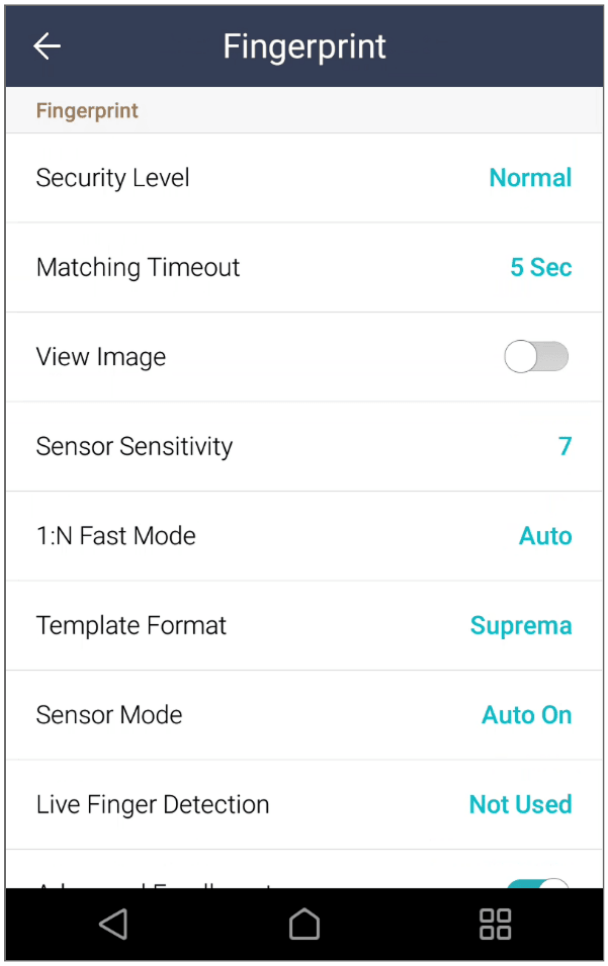
When changing ROI settings or using dynamic ROI

- Mask authentication and thermal imaging camera functions are not available on slave devices.
- The thermal imaging camera supports TCM10-FSF2.

Fingerprint FSF2-ODB

You can change the settings for fingerprint authentication.

1. Press and authenticate with the Admin level credential.
2. Select **AUTHENTICATION** → **Fingerprint**.
3. Change the desired item.

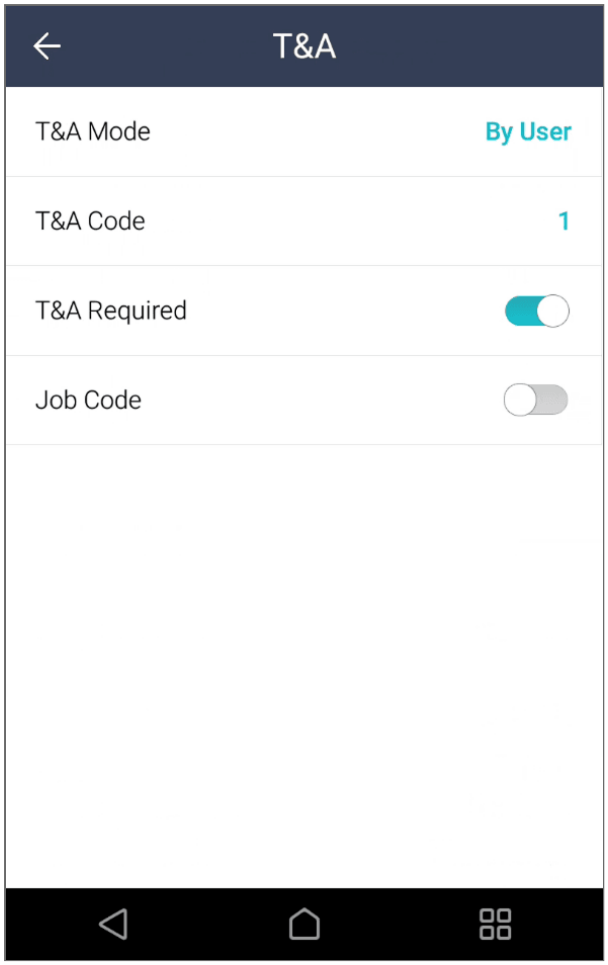


- **Security Level**: You can set the security level for 1:N authentication.
- **Matching Timeout**: Set the wait time for fingerprint matching. If authentication is not completed within the specified time, it will fail.
- **View Image**: The original image of the scanned fingerprint can be viewed.
- **Sensor Sensitivity**: Set the sensitivity of the fingerprint recognition sensor. Set the sensitivity higher to obtain precise fingerprint information.
- **1:N Fast Mode**: Set the speed of fingerprint authentication. When you select **Auto**, authentication speed is set according to the total number of fingerprint templates enrolled in the device.
- **Template Format**: Set the fingerprint template format. **SUPREMA** is set as default. Changing the template format will make all previously saved fingerprints unusable, so take care when changing.
- **Sensor Mode**: Set to **Auto On** to turn on the fingerprint sensor when it detects the user's finger. When set to **Always On**, the sensor remains on even when not scanning fingerprints.
- **Live Finger Detection**: Set the fake fingerprint detection level. Higher levels for fake fingerprint detection may also increase rejection rates for actual people's fingerprints.
- **Advanced Enrollment**: Assess the quality of scanned fingerprints to save high-quality fingerprint information. Enable to notify the user when fingerprint quality is low, helping them scan fingerprints correctly.
- **Duplicate Check**: Check for duplicate fingerprints when enrolling.

T&A (Time and Attendance)

You can set how to register T&A mode.

1. Press and authenticate with the Admin level credential.
2. Select **AUTHENTICATION** → **T&A Mode**.
3. Change the desired item.

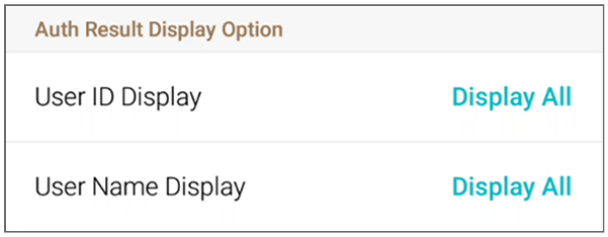


- **T&A Mode**: Set how to use attendance mode.
- **T&A Code**: Register T&A events. To register attendance events, select **T&A Code** → and then set the icon to display on the screen, T&A Event Name, and Schedule.
- **T&A Required**: Set to require a user to select a T&A event when authenticating. Available when **T&A Mode** is set to **By User**.
- **Fixed T&A Key**: Set to use only a T&A event selected by the administrator. Available when **T&A Mode** is set to **Fixed**.
- **Job Code**: Set whether to use the job code.

Auth result display option

You can set the auth result display option.

1. Press and authenticate with the Admin level credential.
2. Select **AUTHENTICATION**.
3. Set the desired items in **Auth Result Display Option**.



- **User ID Display**: You can select how the user ID is displayed on the authentication result screen of the device.
  - **Display All**: Displays the entire user ID.
  - **Mask All but First Letter**: Displays only the first letter of the user ID.
  - **Hide All**: Do not display the user ID.
- **User Name Display**: You can select how the user name is displayed on the authentication result screen of the device.
  - **Display All**: Displays the entire user name.
  - **Mask All but First Letter**: Displays only the first letter of the user name.
  - **Hide All**: Do not display the user name.

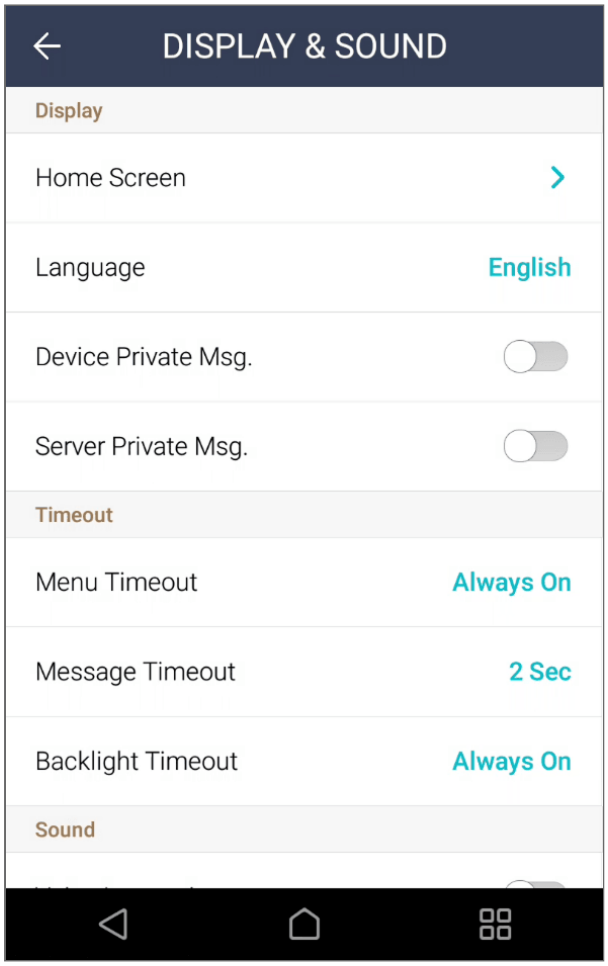
Settings

Provides instructions on how to set system and device configurations.

Display & Sound

You can change the display and sound settings of the device.

1. Press and authenticate with the Admin level credential.
2. Click **DISPLAY & SOUND**.
3. Change the desired item.



- **Home Screen**: You can choose items to display in the background of the home screen.
- **Language**: You can select the language that will be displayed on the screen.
- **Device Private Msg.**: Set whether to use a Private Message, which will be displayed on the screen when the user authenticates. The **Device Private Msg.** can be set using the BioStar Device SDK. If not set, does not display a message when authentication is successful even if **Device Private Msg.** is enabled on the device.
- **Server Private Msg.**: Set whether to use a Private Message, which will be displayed on the screen when the user authenticates. **Server Private Msg.** can be set using the BioStar X API. If not set, does not display a message when authentication is successful even if **Server Private Msg.** is enabled on the device.
- **Screen Saver**: Set whether the screen saver is enabled or not. It reduces unnecessary energy consumption by lowering the brightness of the screen when the device is not in use.
- **Menu Timeout**: Set the time (sec) for the menu screen to disappear automatically. If there is no button input during a set time, the screen will return to the home screen.
- **Message Timeout**: Set the time (sec) for a setting complete message or notification message to disappear automatically.
- **Backlight Timeout**: Set the time (sec) to turn off the lighting of the screen.
- **Voice Instruction**: You can use voice guidance instead of notification tones.
- **Volume**: Set the volume.

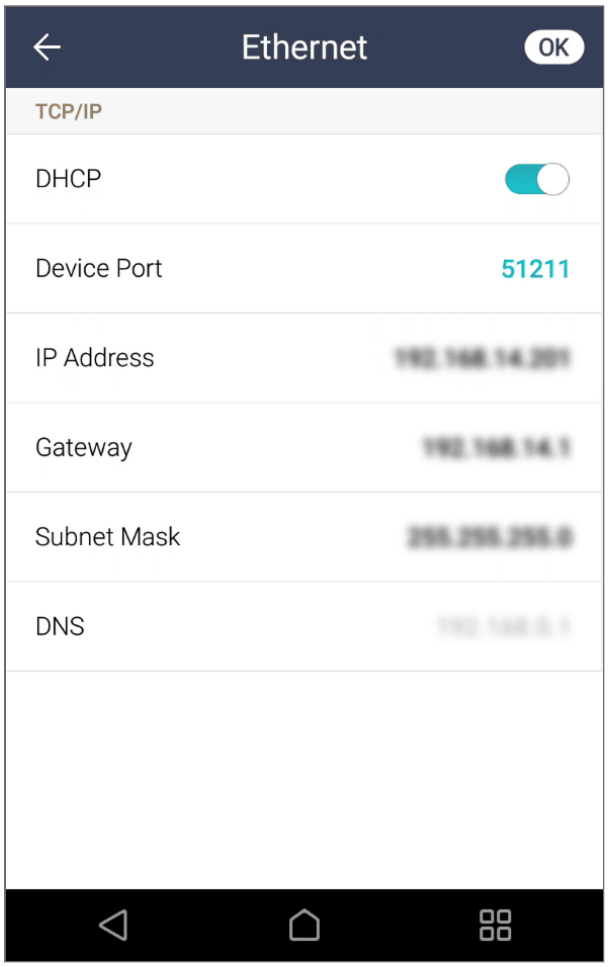
> **Info**
> For more information on the BioStar Device SDK, refer to the BioStar Device SDK page on the Suprema Knowledge Base.

Communication Settings

You can change the network settings of the device, such as Ethernet, server, OSDP, etc.

Ethernet

1. Press and authenticate with the Admin level credential.
2. Select **NETWORK** → **Ethernet**.
3. Change the desired item.



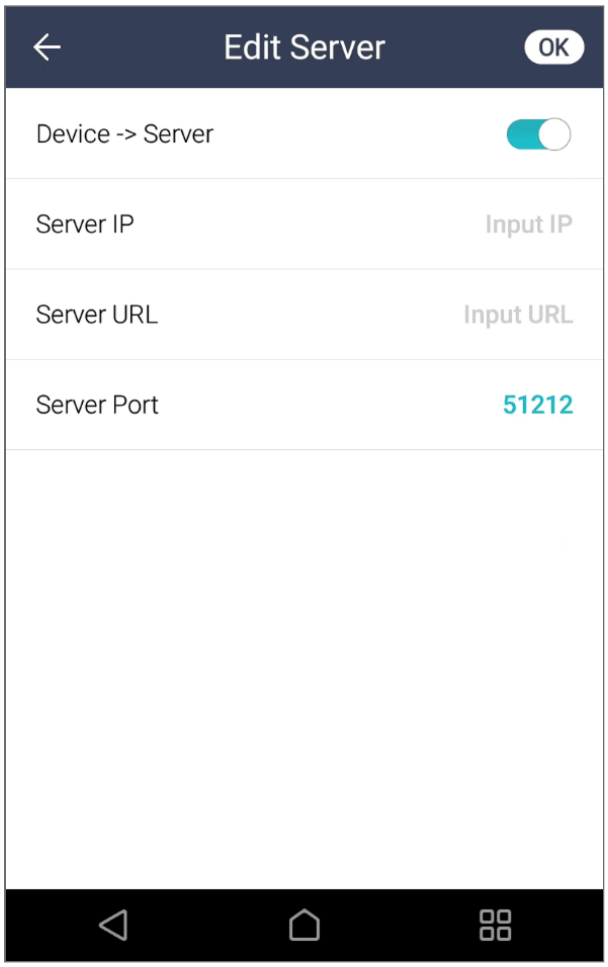
- **DHCP**: Set whether to use DHCP. If you disable the DHCP setting, users will be able to modify **Device Port**, **IP Address**, **Gateway**, and **Subnet Mask**.
- **Device Port**: Set the device's port.
- **IP Address**: You can check the device's IP address. To modify, disable DHCP setting.
- **Gateway**: You can check the device's gateway. To modify, disable DHCP setting.

- **Subnet Mask**: You can check the device's subnet mask. To modify, disable DHCP setting.
- **DNS**: Set the DNS server address.

4. To save the settings, press **OK**.

Server

1. Press and authenticate with the Admin level credential.
2. Select **NETWORK** → **Server**.
3. Change the desired item.



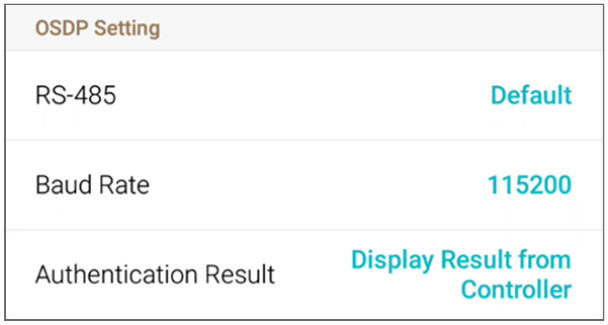
- **Device → Server**: You can send a connection signal from the device to a server with the input information directly. When **Device → Server** is enabled, the user can input **Server IP**, **Server URL**, and **Server Port**.
- **Server IP**: Enter the IP address of the PC on which BioStar X is installed.
- **Server URL**: You can enter **Server URL** instead of **Server IP**.
- **Server Port**: Enter the port of the PC on which BioStar X is installed.

4. To save the settings, press **OK**.

OSDP settings

1. Press and authenticate with the Admin level credential.

2. Select **NETWORK**.
3. Set the desired item in **OSDP Setting**.



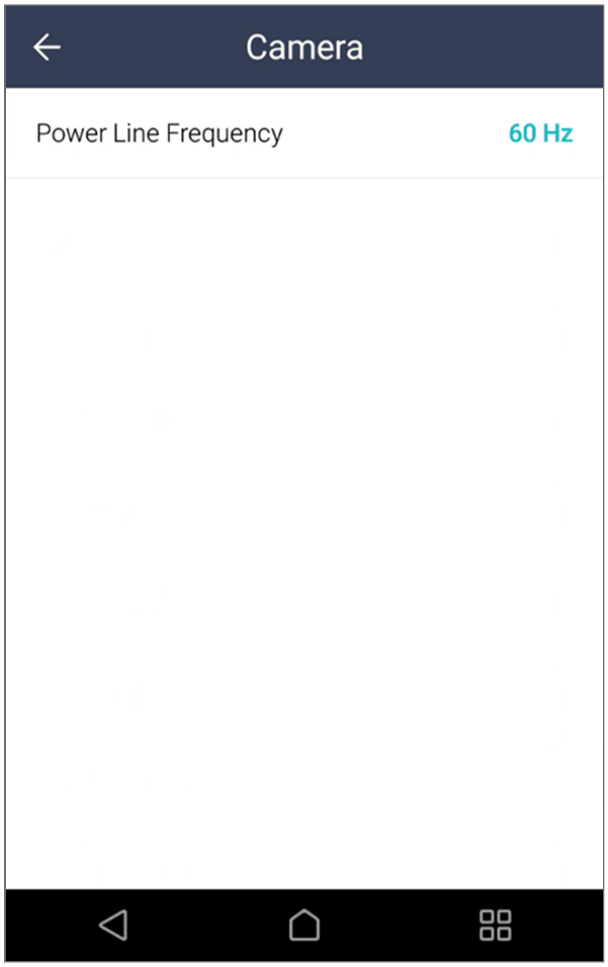
- **RS-485**: Select the RS-485 mode.
- **Baud Rate**: Select the desired baud rate.
- **Authentication Result**: When using **Intelligent Slave**, select to display the authentication results of 3rd party controllers or devices on the screen. This option can be used when **RS-485** mode is set to **Default** or **Slave**.

Device

Camera

You can set the frequency to prevent the video from flickering.

1. Press and authenticate with the Admin level credential.
2. Press **DEVICE** → **Camera**.

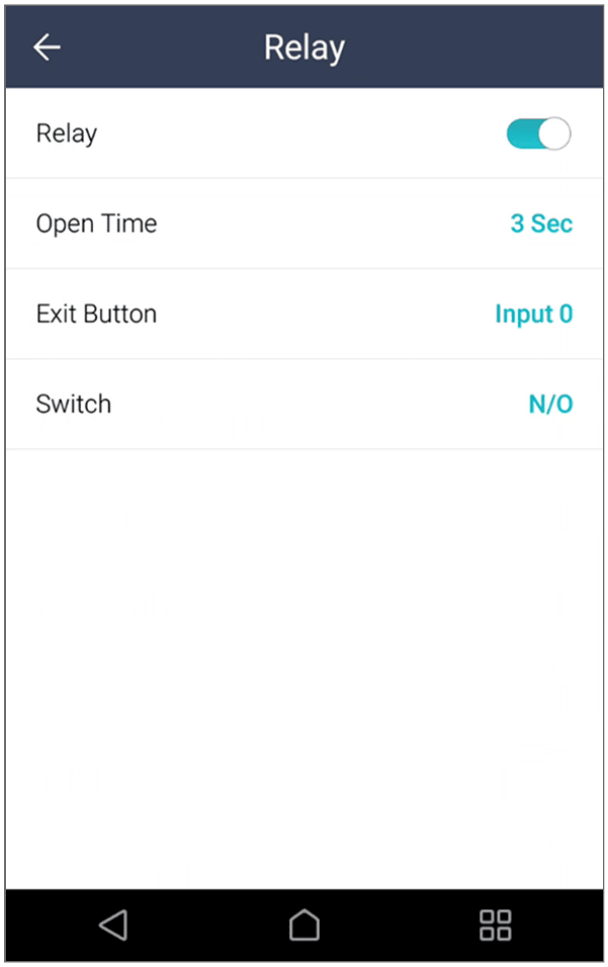


- **Power Line Frequency**: You can set the frequency to 50 Hz or 60 Hz to prevent the video from flickering depending on the ambient lighting conditions.

Relay

You can set the input ports of **Open Time** and **Exit Button** on the device.

1. Press and authenticate with the Admin level credential.
2. Click **DEVICE** → **Relay**.

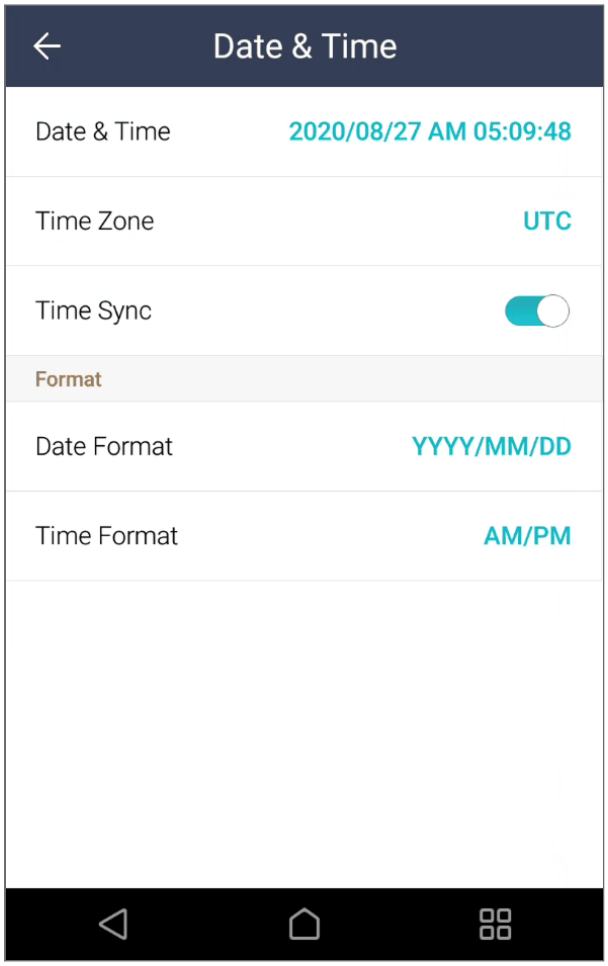


- **Relay**: You can set whether relay is enabled or not. Enabling relay settings will allow you to configure **Open Time** and **Exit Button**.
- **Open Time**: Set the duration for the door to remain open when standard user authentication has been carried out.
- **Exit Button**: Select the input port connected to the exit button.
- **Switch**: Select relay type (N/O or N/C).

Date & Time

You can set date and time. Set the date and time accurately in order to collect accurate log data.

1. Press and authenticate with the Admin level credential.
2. Click **DEVICE** → **Date & Time**.
3. Change the desired item.

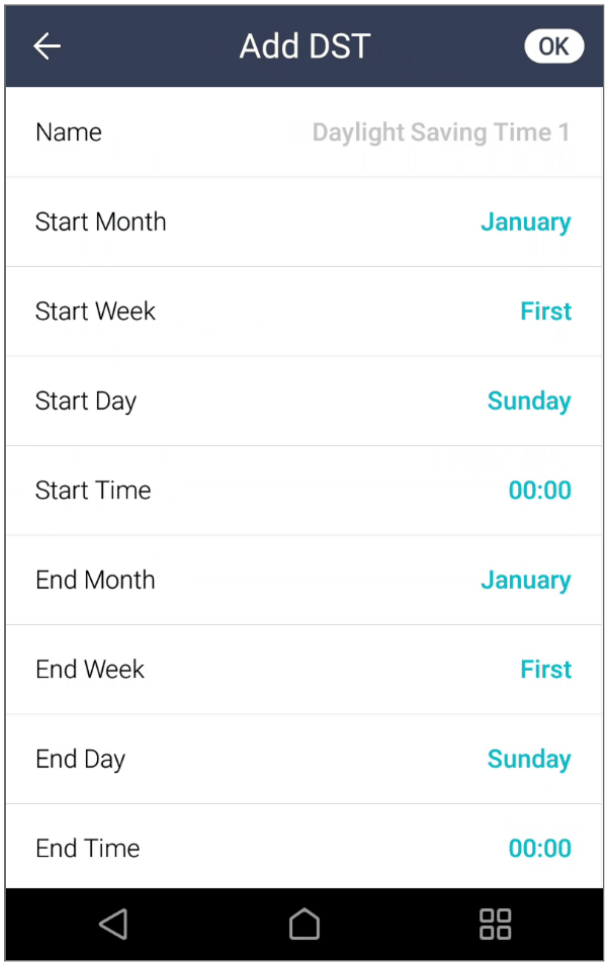


- **Date & Time**: Check the current date and time. To modify it manually, disable **Time Sync**.
- **Time Zone**: Set the time reference of the current location.
- **Time Sync**: Synchronize the server and the time. If you wish to synchronize the server and the time, enable **Time Sync**.
- **Date Format**: You can set the date format. You can select **YYYY/MM/DD**, **MM/DD/YYYY**, and **DD/MM/YYYY**.
- **Time Format**: You can set the time format. Select **AM/PM** and **24-Hour**.

Daylight saving time

You can use the device by applying daylight saving time. Set the start and end time correctly.

1. Press and authenticate with the Admin level credential.
2. Click **DEVICE** → **Daylight Saving Time**, then press to add daylight savings time.
3. Change the desired item.



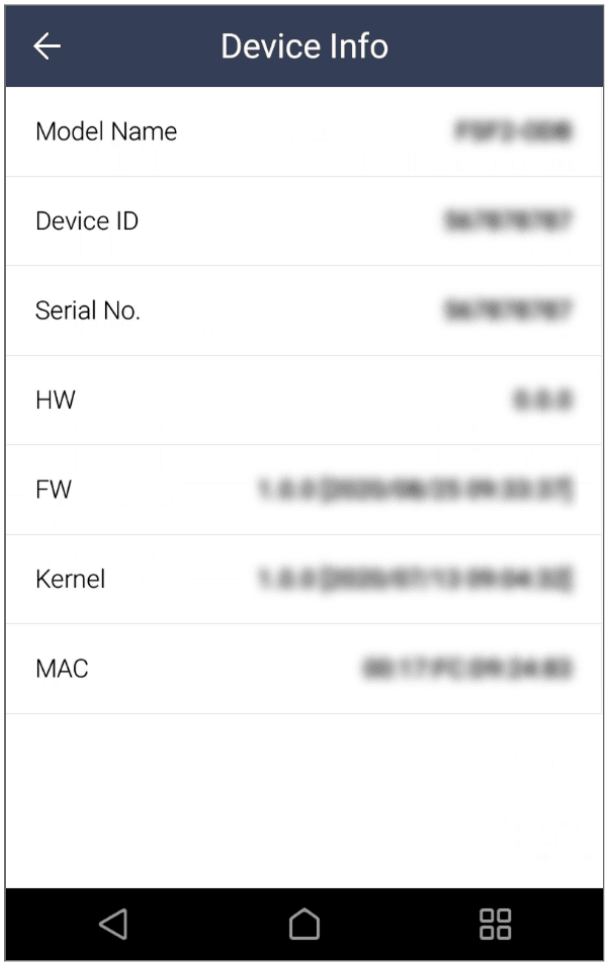
- **Name**: Set the name of daylight-saving time.
- **Start Month** / **Start Week** / **Start Day** / **Start Time**: Set details of when daylight-saving time begins.
- **End Month** / **End Week** / **End Day** / **End Time**: Set details of when daylight-saving time ends.

4. To save the settings, press **OK**.

Device Information

You can view the model name, device ID, serial number, device and firmware version, kernel, and MAC address.

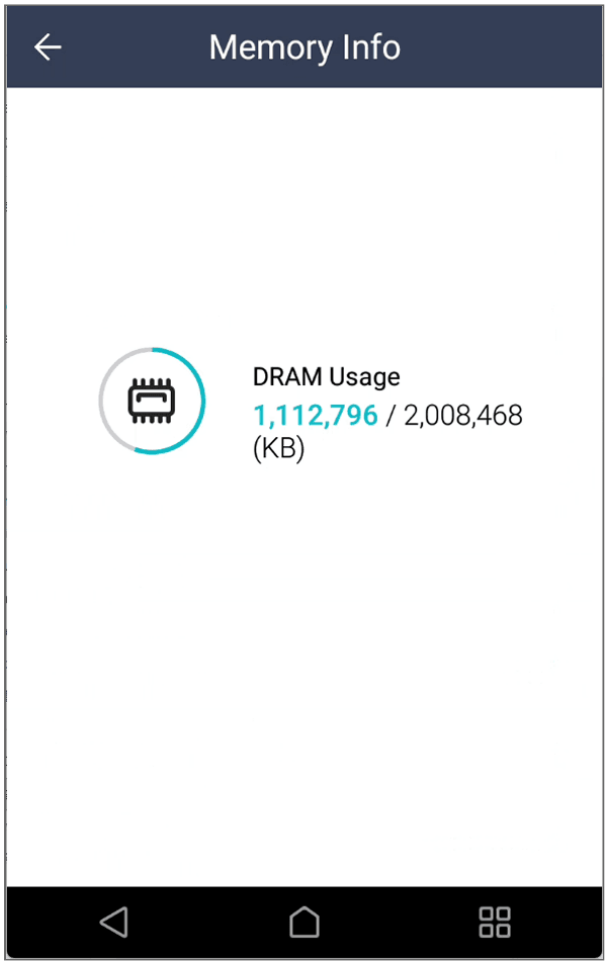
1. Press and authenticate with the Admin level credential.
2. Select **DEVICE** → **Device Info**. You can check the information of **Model Name**, **Device ID**, **Serial No.**, **HW**, **FW**, **Kernel**, **MAC**.



Memory information

View the status of memory usage.

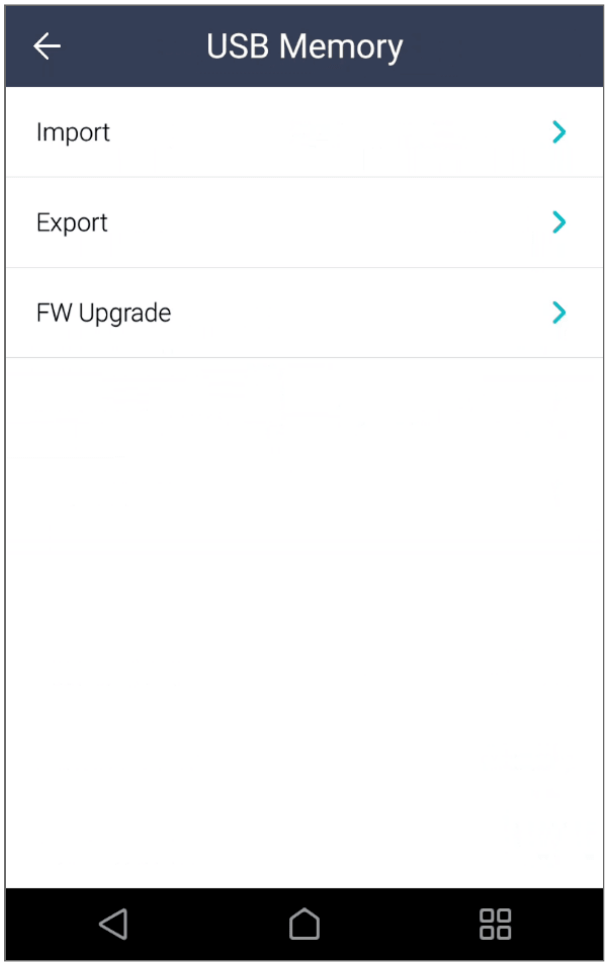
1. Press and authenticate with the Admin level credential.
2. Select **DEVICE** → **Memory Info**. You can view the memory usage status of the device.



USB memory

Connect USB Memory and import user information to the device or export log and user information from the device. You can also upgrade the firmware.

1. Press and authenticate with the Admin level credential.
2. Select **DEVICE** → **USB Memory**.
3. Select the desired item and change the setting.



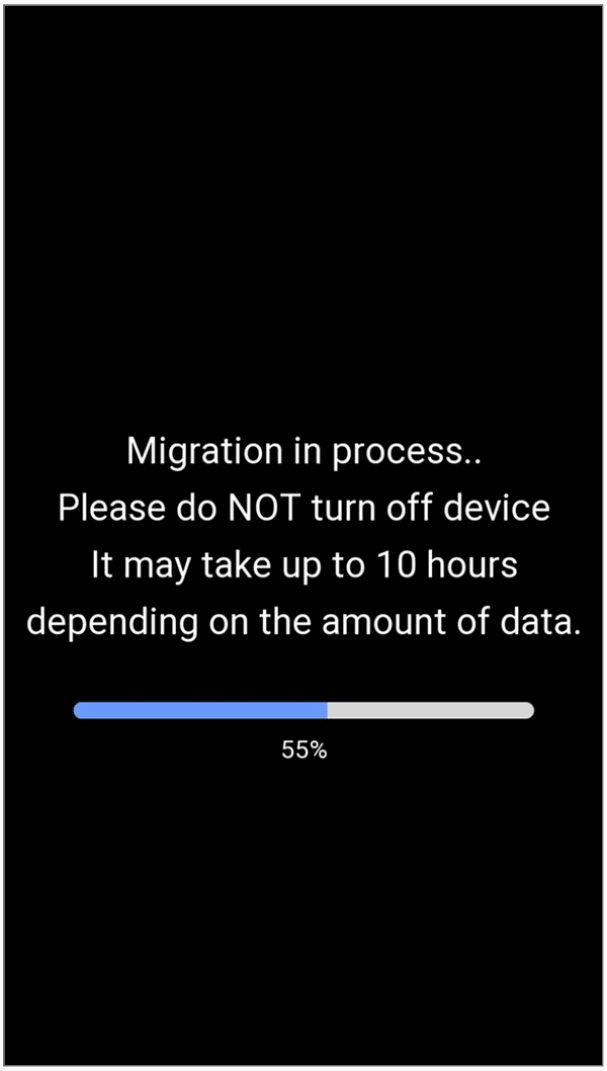
- **Import**: Import user information from the connected USB memory.
- **Export**: Select information you wish to export to the connected USB memory.
- **FW Upgrade**: Upgrade the firmware if the firmware files are saved in the connected USB memory.

Caution

- Do not disconnect the power supply while upgrading the firmware of the device. The device may malfunction.
- Use BioStar X or BioStar Device SDK to upgrade firmware from v1.x.x to v2.x.x.
- When upgrading firmware using a USB drive, first set **DISPLAY & SOUND** menu to **Menu Timeout Always On** and then proceed with the upgrade. Also, do not remove the USB drive even if a failure message appears during the upgrade process; wait until a success message is displayed. Once the upgrade is completed, the device will automatically restart.

Info

- When upgrading firmware from version 1.0.5 or lower to version 1.1.0 or higher, a migration will take place to extract the previously enrolled facial templates, and this process may take up to 10 hours depending on the number of registered users.



- It is recommended to use a USB flash drive formatted in exFAT. USB flash drives in FAT32 format may malfunction when more than 50,000 face credentials are stored.
- Check the amount of free space on your USB flash drive. To save 100,000 face credentials, a minimum of 15 GB of free space is required.

Secure Tamper

You can set whether to use security tamper. When the tamper is turned on, you can set to delete the entire user, the entire log, and the security key.

1. Press and authenticate with the Admin level credential.
2. Select **DEVICE**.
3. Activate **Secure Tamper** to delete data of all registered users, all logs, and secure keys when a temper event occurs.

Restart device

The user can restart the device.

1. Press and authenticate with the Admin level credential.
2. Select **DEVICE** → **Restart Device**.
3. Press **OK** to restart the device. Press **Cancel** to return to the previous screen.

Restore default

Device settings, network settings, and operator levels will be reset.

1. Press and authenticate with the Admin level credential.
2. Select **DEVICE** → **Restore Default**.
   - **All settings**: Initializes all settings stored on the device. Press **OK** to initialize all device settings. Press **Cancel** to return to the previous screen.
   - **Keep Network Settings**: Initializes all settings except for network settings. Press **OK** to initialize all settings except for network settings. Press **Cancel** to return to the previous screen.
   - **Factory Default**: Deletes all information saved in the device and the root certificate, restoring settings to default.
   - **Delete the Root Certificate**: Deletes the root certificate saved in the device.
3. If you proceed with **Restore Default**, the device will restart.

> **Info**
>
> - When you reset, the operator level will be reset as well. After resetting, make sure to set the operator level again.
> - Language setting will not change after resetting.
> - The **Factory Default** menu can be used when the root certificate is saved in the device.
> - The **Delete the Root Certificate** menu can be used only when the root certificate is saved in the device and an administrator has been designated.

User ID type

Select the type of user ID to register to the device.

1. Press and authenticate with the Admin level credential.
2. Select **DEVICE** → **User ID Type**.
   - **Number**: You can enter a user ID with numbers only.
   - **Alphanumeric**: Enter a user ID using alphanumeric characters and certain symbols (`_` , `-` , and `.`).
3. After changing to the desired item, press **OK**.

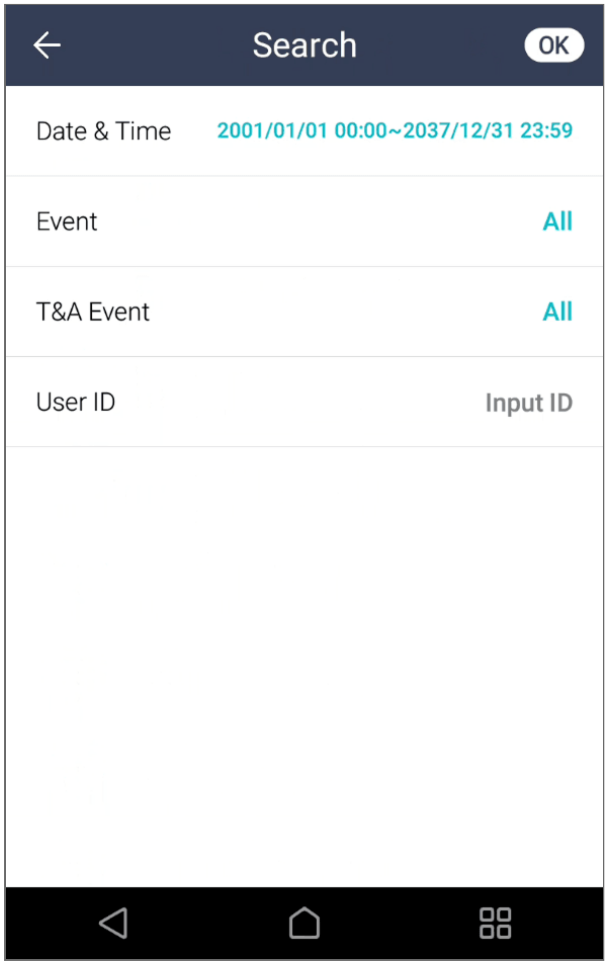
Event Logs

Describes how to view event logs generated by the device.

Search event logs

Set conditions to search logs.

1. Press and authenticate with the Admin level credential.
2. Select **EVENT LOG**. All event logs appear.
3. Press to search a specific log and change the condition.



4. Set the search criteria and click **OK** to display logs that match the criteria.

Delete all logs

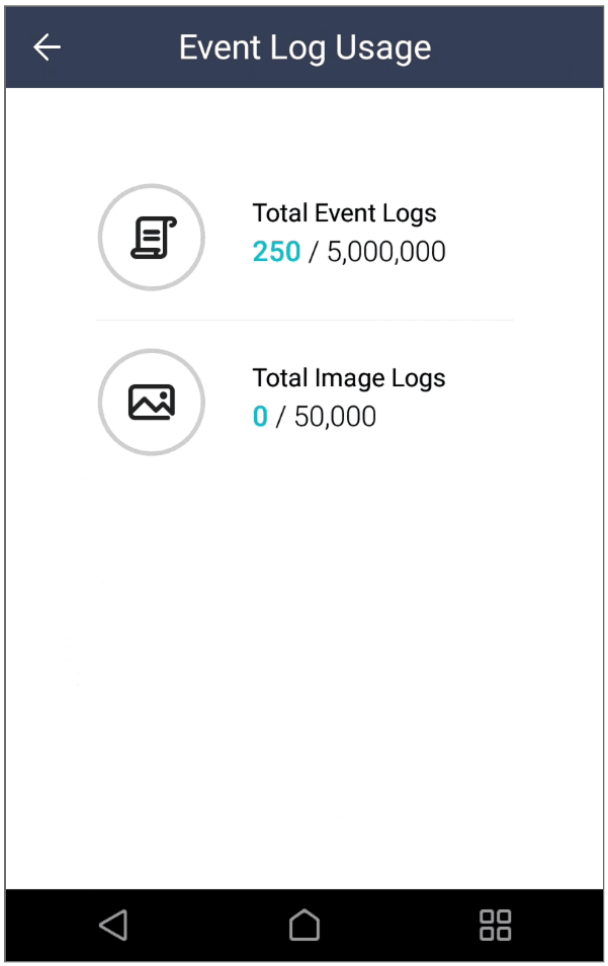
You can delete all saved logs.

1. Press and authenticate with the Admin level credential.
2. Select **EVENT LOG**.
3. To delete all logs, select and click **OK**. Press **Cancel** to return to the previous screen.

View log usage

You can check the status of log usage.

1. Press and authenticate with the Admin level credential.
2. Click **EVENT LOG** → . Check the device's event log and image log usage.



Troubleshooting

This document provides information to solve unexpected issues that you may encounter when using the device.

Check items before reporting a malfunction

This document provides information to solve unexpected issues that you may encounter when using the device.

Power

Q. The power is being supplied but the device does not operate.

- If the terminal and the bracket are far away from each other, the device may not operate due to the temper switch.
- Check the adaptor or the power cable.

PIN

Q. I lost my PIN.

- For a normal user PIN, request it from the administrator and enter it again.
- If you have lost the Admin PIN, contact the installation company.

Q. I entered my PIN and pressed the OK button, but I still cannot open the door.

- Check if you have entered the registered PIN correctly.
- Check if you have changed the PIN recently.
- If you cannot remember the PIN, request it from the administrator and enter it again.

Face

Q. The face has been registered but face authentication cannot be done smoothly, and errors occur frequently.

- Check Cautions for enrolling a faces and enroll the face again.
- If there are many enrolled faces, change **Matching Timeout** and try again.

Q. Face authentication has suddenly stopped working.

- Check Cautions for authenticating a face and try again.

Q. Mask Detection is set to Enabled, but face authentication cannot be done smoothly when wearing a mask.

- Authenticate your face twice with the mask pull down on the tip of your nose. Then, authenticate your face again wearing a mask that covers your nose completely. If the problem persists, contact the installation company.

Q. The thermal camera fails to measure temperature.

- Check if the thermal camera is properly connected to the terminal.
- Measure the temperature again without covering your forehead. If the problem persists, contact the installation company.

Q. The thermal camera measures lower temperature than actual temperature.

- If a user measures the temperature after being exposed to cold temperatures for a long time, the temperature may be measured lower than the actual temperature. Wait for 1 to 2 minutes indoors and try again. If the problem persists, contact the installation company.

Fingerprint

Q. The fingerprint has been enrolled but fingerprint authentication cannot be done smoothly and errors occur frequently.

- Check Correct fingerprint input method and enroll the fingerprint again.
- If your fingerprint has a cut, the device may recognize your fingerprint as someone else's fingerprint.
- If there are many enrolled fingerprints, change **Matching Timeout** and try again.
- The authentication rate may vary for each fingerprint due to different characteristics. Enroll the fingerprint of another finger.

Q. Suddenly fingerprint authentication cannot be done.

- Check if the finger or the fingerprint sensor is smeared with sweat, water or dust, and wipe the finger or the fingerprint sensor clean.
- Wipe your finger and the fingerprint sensor with a dry towel and then try again.
- If the fingerprint of your finger is too dry, blow on the fingerprint and then try again.

Q. The fingerprint sensor does not turn on.

- When **Sensor Mode** is set to **Auto On**, the sensor will only turn on when you place finger on the fingerprint sensor. If you want the fingerprint sensor to always be on, set **Sensor Mode** to **Always On**.

Door lock

Q. The door cannot be locked when I close the door.

- The electric lock may be malfunctioning. Have an inspection through the installation company.

Time

Q. Suddenly the time has become incorrect.

- The device is equipped with a built-in battery but if power is not supplied for a long time, the built-in battery may die, causing the time to become incorrect. You can correct the time by referring to Date & Time.

Admin access

Q. I lost my Admin PIN, so I cannot access the Admin mode.

- The administrator grants an access permission in the device, so only the administrator can access the Admin menu.
- If you have lost the Admin PIN, contact the installation company.

Product Specifications

Provides key specifications of the product, including size, features, and performance.

Credentials

Biometric	**Face** • Authentication Distance[1]:0.3 ~ 1.3 m • Authentication Height:1.4 ~ 1.9 m • Matching Speed:Within 0.5 seconds • Live Face Detection:Supported **Fingerprint** FSF2-ODB • Image Dimension:300 x 400 pixels • Resolution:500 dpi • Template:SUPREMA / ISO19794-2 / ANSI-378 • Extractor / Matcher:MINEX certified and compliant • Sensor Certificates:FBI PIV and FBI Mobile ID FAP20 • Live Fingerprint Detection:Supported (SW-based)	
RF Card	FSF2-DB, FSF2-ODB	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3[2], FeliCa
	FSF2-AB	125kHz EM, HID Prox & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3[2], FeliCa, iCLASS SE/SR/Seos
RF Read Range[3]	EM/MIFARE/DESFire/HID iCLASS: 50 mm, HID Prox/FeliCa: 30 mm	
Mobile	NFC, BLE	

General

Model Name	FSF2-DB, FSF2-AB, FSF2-ODB
CPU	1.8 GHz Dual Core + 1.4 GHz Quad Core
Memory	16 GB Flash + 2 GB RAM

Crypto Chip	**Supported**	
Display	**7" IPS color LCD**	
Display Resolution	**800 x 1280 pixels**	
Sound	**16 bit**	
Operating Temperature	**-20 °C ~ 50 °C**	
Storage Temperature	**-40 °C ~ 70 °C**	
Operating Humidity	**0 % ~ 80 %, non-condensing**	
Storage Humidity	**0 % ~ 90 %, non-condensing**	
Camera	• **IR: 2M pixels** • **Visual: 2M pixels**	
Dimensions (W x H x D)	**Device**	• **FSF2-DB, FSF2-AB: 119.8 x 233 x 23.5 (mm)** • **FSF2-ODB: 119.8 x 268.3 x 23.5 (Top) / 49.6 (Bottom) (mm)**
	Bracket	• **FSF2-DB, FSF2-AB: 98.4 x 223.3 (mm)** • **FSF2-ODB: 98.4 x 251.4 (mm)**
Weight	**Device**	• **FSF2-DB, FSF2-AB: 585 g** • **FSF2-ODB: 670 g**
	Bracket	• **FSF2-DB, FSF2-AB: 181 g (including washers and bolts)** • **FSF2-ODB: 205 g (including washers and bolts)**
IP Rating	**IP65**	
Authentication	**CE, UKCA, KC, FCC, IC, RCM, BIS, ANATEL, SIG, RoHS, REACH, WEEE**	

Capacity

Max. User	**100,000**[4)]

Max. Credentials (1:N)	**FSF2-DB, FSF2-AB**	**Face: 50,000**
	FSF2-ODB	• **Face: 50,000** • **Fingerprint: 100,000**
Max. Credentials (1:1)	**FSF2-DB, FSF2-AB**	• **Face: 100,000** • **Card: 100,000** • **PIN: 100,000**
	FSF2-ODB	• **Face: 100,000** • **Fingerprint: 100,000** • **Card: 100,000** • **PIN: 100,000**
Max. Text logs	**5,000,000**	
Max. Image logs	**50,000**	

Interface

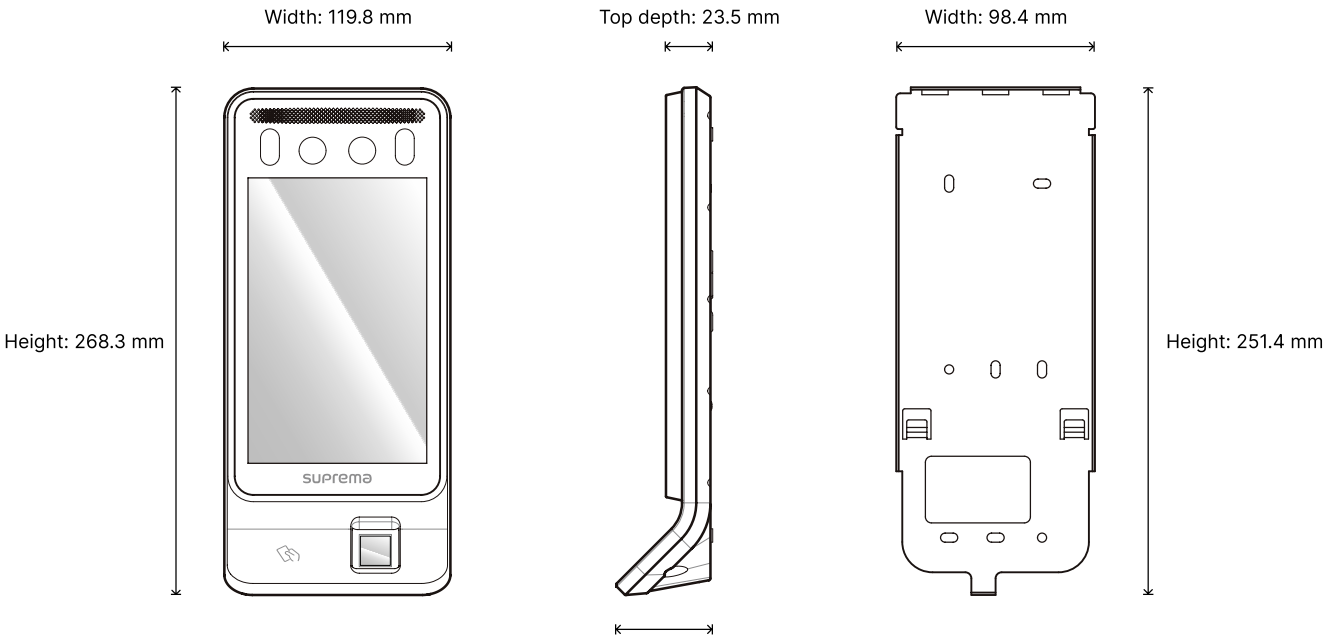
Ethernet	**Supported (10/100 Mbps, auto MDI/MDI-X)**
Network Protocol	**TCP, UDP**
RS-485	**1 ch Master / Slave (Selectable)**
RS-485 Communication Protocol	**OSDP V2 compliant**
Wiegand	**1 ch Input / 1 ch Output (Selectable)**
Input	**2 ch Inputs**
Relay	**1 relay**
USB	**USB 2.0 (Host)**
Tamper	**Supported**

Electrical

Power	**12 Vdc**	**Current: Max. 2.1 A**
	24 Vdc	**Current: Max. 1 A**
Switch Input VIH	• **Min.: 3 V** • **Max.: 5 V**	
Switch Input VIL	**Max.: 1 V**	
Switch Pull-up Resistance	**4.7 kΩ (The input ports are pulled up with 4.7 kΩ.)**	
Wiegand Output VOH	**More than 4.8 V**	
Wiegand Output VOL	**Less than 0.2 V**	
Wiegand Output Pull-up Resistance	**Internally pulled up with 1 kΩ**	
Relay	• **2 A @ 30 VDC Resistive load** • **1 A @ 30 VDC Inductive load**	

Dimensions and Weight

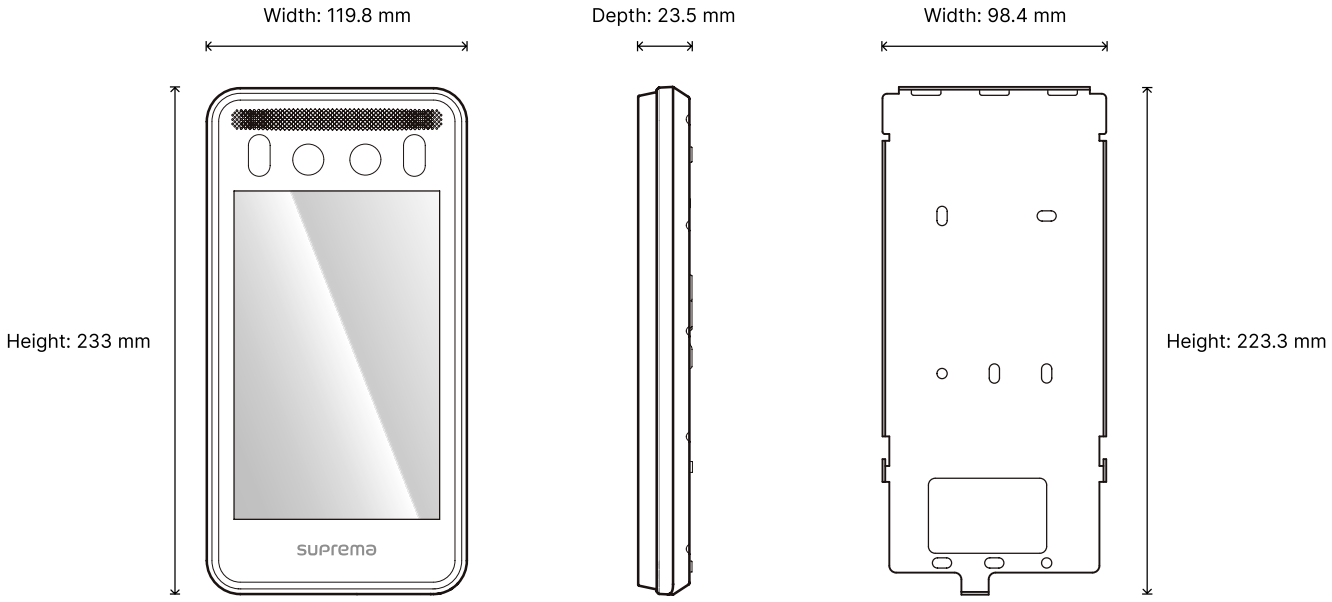
FSF2-ODB



Weight: 670 g

Weight: 205 g
(Including washer and bolt)

FSF2-DB, FSF2-AB



Weight: 585 g

Weight: 181 g
(Including washer and bolt)

1) The minimum facial authentication distance indicated is the default setting for the product, and the recommended facial authentication distance is 0.5-1.3 m.

2) DESFire EV2/EV3 cards are backward compatible with DESFire EV1 cards, supporting CSN and smart card features, including those of the DESFire EV1 card.

3) The RF detection range may vary depending on the installation environment.

4) The number of users registered without having any credential data.

Info

- Product specifications are subject to change without notice for performance improvement.
- When FSF2-DB, FSF2-AB is the master, a slave equipped with a fingerprint sensor authenticates fingerprints.
  - Max. Fingerprint Credentials (1:N): 100,000
  - Max. Fingerprint Credentials (1:1): 100,000

Regulatory Information

Provides information on regulations and certifications complied with by the product.

FCC Compliance Information

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.

Operation is subject to the following two conditions:

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

> **Info**
>
> This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
>
> Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
>
> This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
>
> This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. Do not install or operate this device and its antenna in conjunction with any other antenna or RF transmission device.

IC information

This device complies with Industry Canada's licence-exempt RSSs.

Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage ;
2. l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le

fonctionnement.

EU Declaration of Conformity (CE)

This product is CE marked according to the provisions of the Radio Equipment Directive (RED) 2014/53/EU.

Hereby, Suprema Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of Radio Equipment Directive (RED) 2014/53/EU and is marked with the CE mark. This device is a Class 1 radio device according to the instructions.

- Bluetooth transmit power: -0.1 dBm
- Bluetooth frequency: 2402~2480 MHz
- NFC frequency: 13.56 MHz
- RFID frequency: 13.56 MHz + 125 kHz

For more information, please contact us via the contact details below.

Suprema Inc.

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Tel: +82-31-783-4502 / Fax: +82-31-783-4503

Appendices

Includes legal notices contained in the product.

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- Contact Suprema Technical Support Team to download the modified Linux kernel 4.x-based source and the BoringSSL, OpenSSL, Original SSLeay, and AOSP libraries included in this product.

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