BioStation 2a

USER GUIDE

Version 1.04

English
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suprema
SECURITY & BIOMETRICS

CONTENTS

Safety Instructions 4

Compliance Information 4

Getting Started 8

Components 8

Name and function of each part 9

Cables and connectors 11

Correct fingerprint input method 17

Installation 19

Fixing the bracket and the product 19

Power supply connection 21

Network Connection 22

Input connection 23

Relay Connection 24

Connecting as a Standalone 26

Connecting to Secure I/O 2 28

Wiegand Connection 29

How to Use 30

Admin Menu 30

User 32

Authentication 35

Settings 41

Event Logs 54

Troubleshooting 56

Check items before reporting a malfunction 56

Product Specifications 58

Credentials 58

General 58

Capacity 59

Interface 60

Electrical 60

Dimensions and Weight 61

Regulatory Information 62

FCC Compliance Information 62

EU Declaration of Conformity (CE) 62

Appendices 63

Disclaimers 63

Copyright Notice 64

Open Source License 64

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.

Do not connect the power supply and PoE power together.

- 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 ~ 60 °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.

This product uses a capacitive button. If the weather is rainy or there is a lot of moisture on the product surface, wipe it with a dry cloth before use.

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

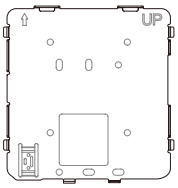
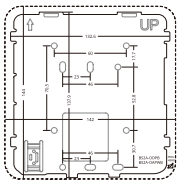
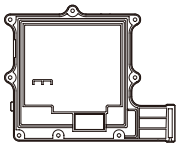
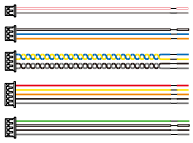
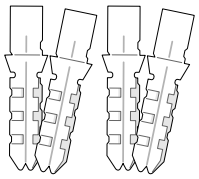
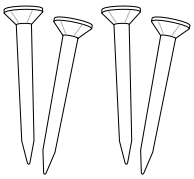
- The device may malfunction.

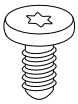
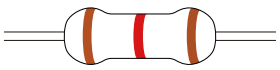
> **RTC Battery**
>
> Replacing with unauthorized or incorrect types of batteries may pose a risk of explosion. Dispose of batteries according to local or international waste regulations.

Getting Started

Provides initial procedures for getting started with the device.

Components

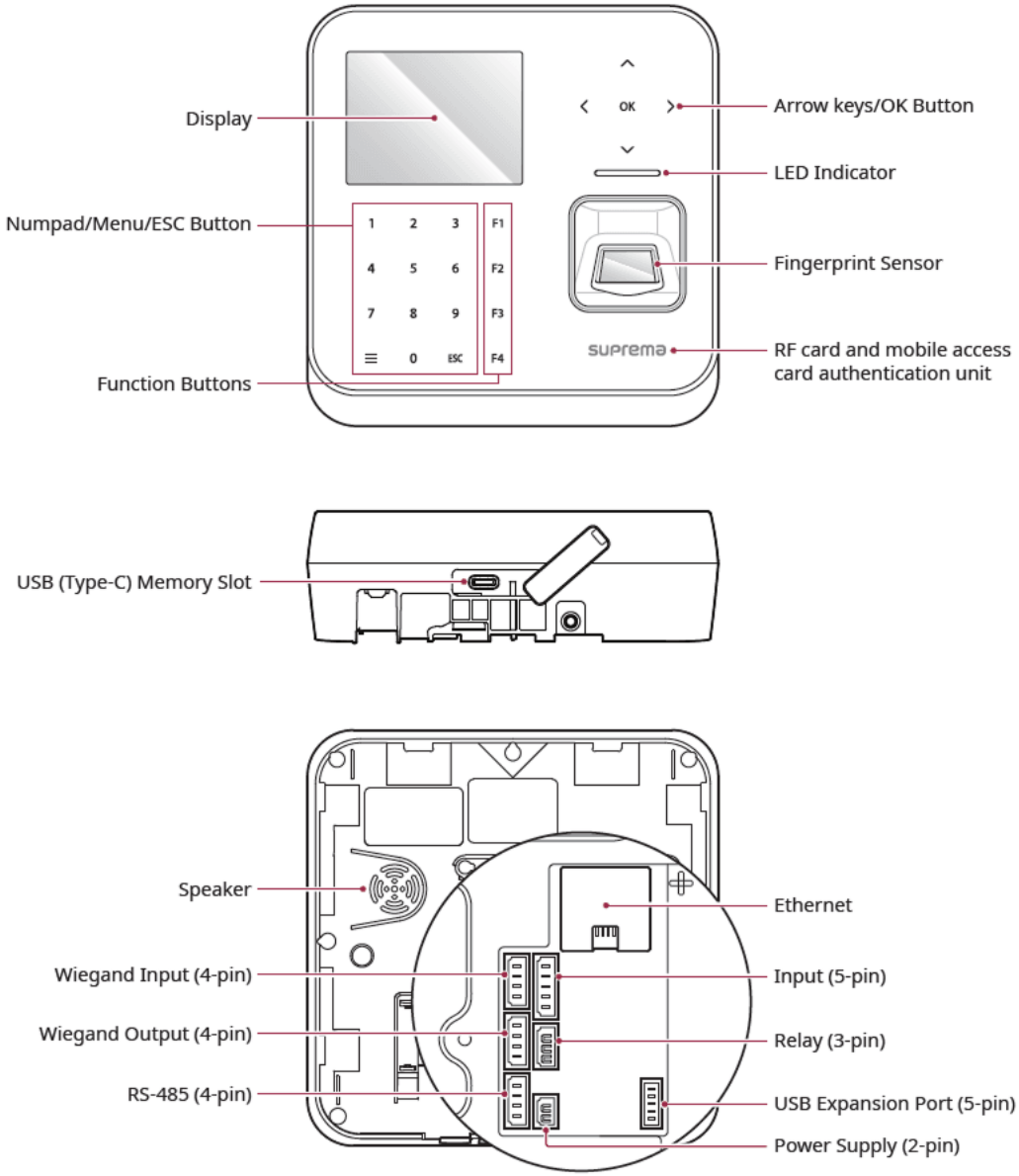
			
BioStation 2a	Wall Bracket	Drilling Template	Cable Cover
			
Connection Cables	Quick Guide	PVC Anchor x4	Fixing Screw x4

		
Bracket Fixing Screw (Star Shaped)	120 Ω Resistor	Diode

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



- **Display**: Provides a UI for operation.
- **Number/Menu/ESC Button**
  - **0-9**: Input numbers/characters, select menus
  - ☰: Enter menu
  - **ESC**: Go back to the previous screen, cancel input
- **Function Button**: Used as a time attendance functional key or to select submenu.
- **Direction/OK Button**
  - ^: Change character type, set guard start/stop
  - v: Change character type, select attendance event for registration

  - ‹ : Delete numbers/characters, authenticate using ID
  - › : Insert symbol, set item, select operation code
  - **OK**: Select item/save setting, activate key menu
- **LED Indicator**: Indicates the operational status of the device with the color of the LED.
  - Green: Authentication success.
  - Red: Authentication failure.
  - Blue: Normal operation.
  - Blue/Green blinking:
    - When setting **DHCP** to use, unable to retrieve IP address.
    - When in **Slave** mode, the connection to the master device is disconnected.
  - Red/Purple blinking: Device is locked.
  - Yellow blinking: Waiting for input.
- **Fingerprint Recognition Unit**: The part that recognizes the fingerprint for access.
- **RF card and mobile access card authentication unit**: Part to scan a RFID card or mobile access card for entrance.
- **USB (Type-C) Memory Slot**: Connects the USB memory.
- **Speaker**: Delivers sound.
- **Wiegand Input (4-pin)**: Connect the Wiegand Input cable.
- **Wiegand Output (4-pin)**: Connect the Wiegand Output cable.
- **RS-485 (4-pin)**: Connect the RS-485 cable.
- **Ethernet**: Connect the Ethernet cable.
- **Input (5-pin)**: Connect the input cable.
- **Relay (3-pin)**: Connect the Relay cable.
- **USB Expansion Port (5-pin)**: Connect other accessory products.
- **Power Supply (2-pin)**: Connects the power supply cable.

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	INPUT2	Orange
4	INPUT GND	Black
5	SH GND	Gray

Wiegand input



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

Wiegand output



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

Set Up Master Administrator CE-oriented products

The **Master Admin** feature enhances the overall admin privileges of the device to improve device security and prevent unauthorized access and configuration changes. This feature applies only to **CE-oriented products** for the EU region, and **Master Administrator enrollment is required** on **CE products**. Only the enrolled master administrator can access the administrator menu and change device settings.

Info

- This feature is a required policy introduced to enhance security for **CE-oriented products** in the EU region, and it is not supported on **Global (Non-CE) products**.
- The master admin cannot delete directly and will be deleted only during **Factory Default**.

Master administrator support policy CE products vs Global (Non-CE) products

The **Master Admin** feature is activated only on **CE products with a label that has the CE mark**.

Use the sticker on the back label to identify **CE products** and **Global (Non-CE) products**. The feature works differently as follows.

- **CE products**: CE mark present
- **Global (Non-CE) products**: CE mark absent

Category	CE-oriented products	Global (Non-CE) products
Master Admin	Enabled (cannot disable)	Not supported
Admin 2-step Authentication	Required	Not supported
Minimum PIN length	At least 8 digits	At least 4 digits

When connected to BioStar X (or BioStar 2), the Master Admin setting changes based on device support, and the enablement of the Admin 2-step Authentication menu syncs automatically.

Behavior Logic During Firmware Upgrade

When you upgrade the firmware of an existing device, support for **Master Admin** and **Admin 2-step Authentication** can vary based on the combination of the **version before upgrade** and the **target version**.

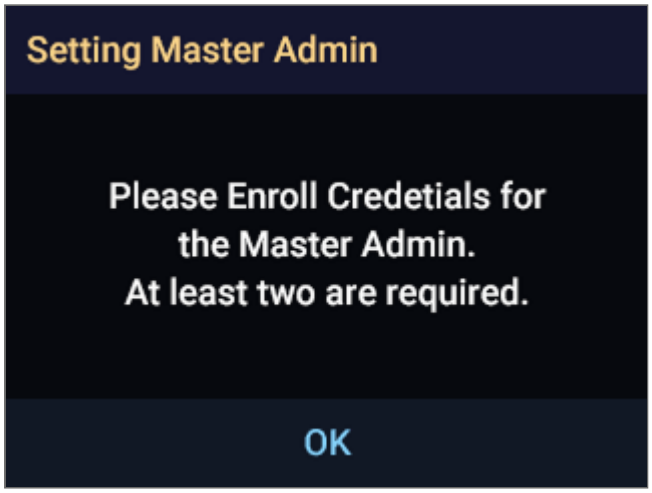
Contact Suprema Global Technical Support Team for detailed version support availability.

Register master admin on a new device

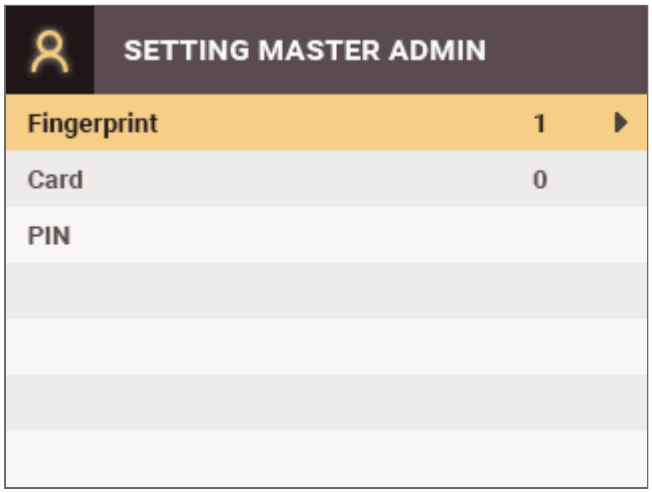
On a new device for CE products, you must enroll **Master Admin** from the start. If you do not enroll it, device use is restricted.

> **Info**
>
> - At first boot, the **Master Admin** enrollment screen appears. If you do not complete enrollment, you cannot move to the next screen.
> - Even if you connect to BioStar X (or BioStar 2) and assign a device-wide administrator, you must enroll **Master Admin** directly on the device to use all features.
> - New devices cannot perform firmware downgrades.

1. When the new device is booted for the first time, the **Master Admin** registration screen will appear. Press **OK** to start enrollment.



2. According to EU security policy, **Master Admin** must enroll credentials of at least two types. Select and enroll two desired credentials.



The credentials that can be enrolled for **Master Admin** are as follows.

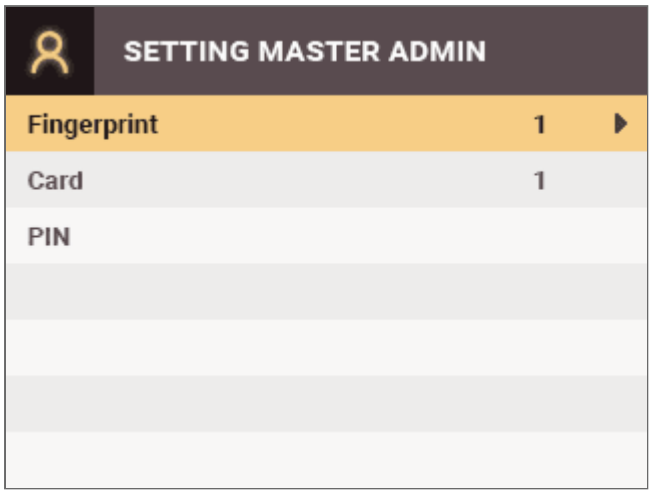
Credential type	Number of enrollments	Conditions

Card	Up to 4	Supports only CSN and Wiegand types Duplicate enrollment within the same type is not allowed
Face	Up to 2	Enroll only on devices with the same algorithm
Fingerprint	Up to 2	-
PIN	1	At least 8 digits long (CE regulation applies)

Enrollment conditions

- You must enroll at least two types of credentials.
- All credentials supported by the device can be used as authentication means.

3. After enrolling two or more types of credentials, press **OK** to complete **Master Admin** enrollment.



Additional Information

- **When enrolling PIN through BioStar software**

  Global (Non-CE) products that do not support the master administrator can enroll a PIN of at least 4 digits directly on the device. However, when enrolling users through BioStar X (or BioStar 2), the following versions require a PIN with at least 8 digits.

  – BioStar 2 v2.9.11 or later

  – BioStar X v1.0.0 to v1.0.2

  Users enrolled with a 4-digit PIN in the versions above cannot be assigned as device administrators.

- **Manual Device Hash Key Change**

  When manually changing the device hash key, a warning message will indicate that Master Admin PINs will be deleted. Please confirm the message before proceeding.

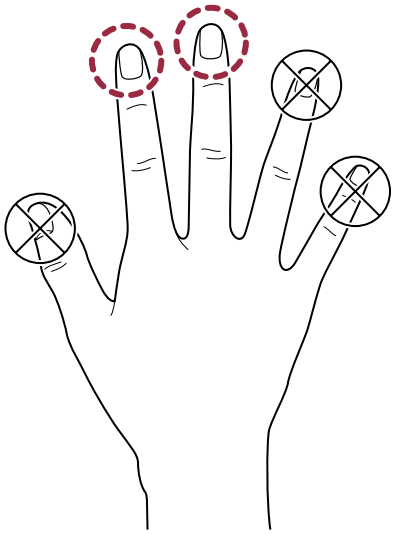
- **RS-485 Biometric Image Transmission Restriction**

  Biometric credential images are not transmitted over RS-485 communication, so substitute images appear when viewing the registered Master Admin face on slave devices.

Correct fingerprint input method

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.

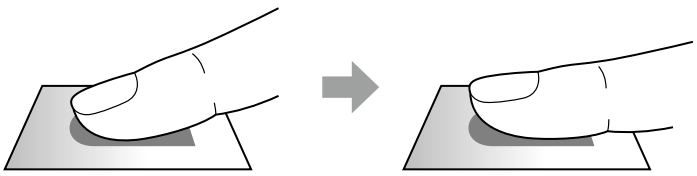
Selecting a finger for fingerprint input



- 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

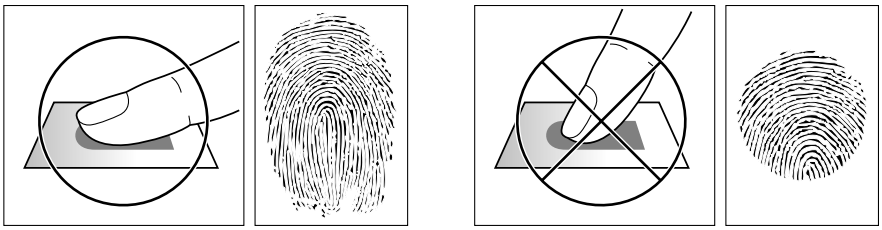
1. When the screen displays "Please input your first fingerprint," place the finger you want to enroll on the fingerprint recognition unit and gently press it so that the fingerprint is authenticated well.



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.

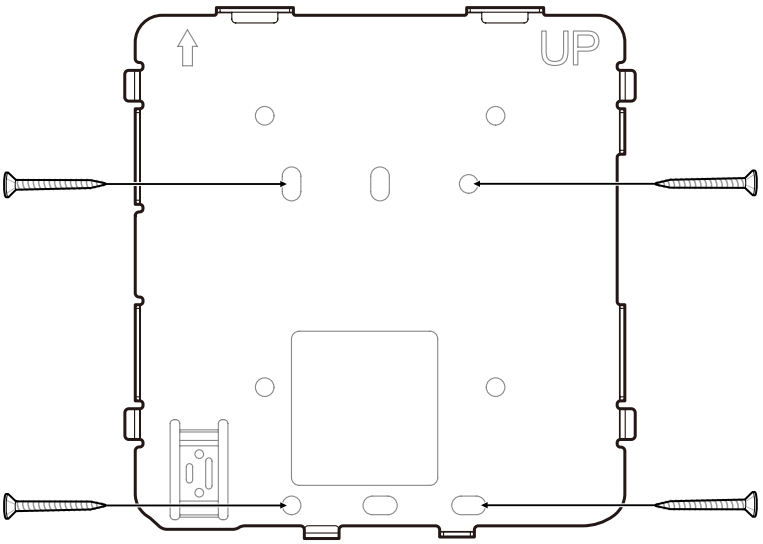
- If the finger is smeared with water or sweat, dry off the finger and then scan the finger.
- If the finger is too dry, blow your breath on the fingertips and then scan the finger.
- If the finger has a cut, enroll the fingerprint of another finger.
- Since the initially enrolled fingerprint is often 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.

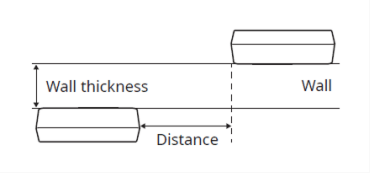
Fixing the bracket and the product

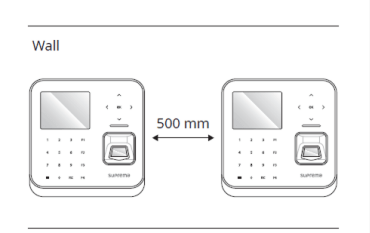
1. Determine the correct position to install the bracket using the provided drilling template. Secure the bracket tightly using the fixing screws at the location where the product will be mounted.



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.

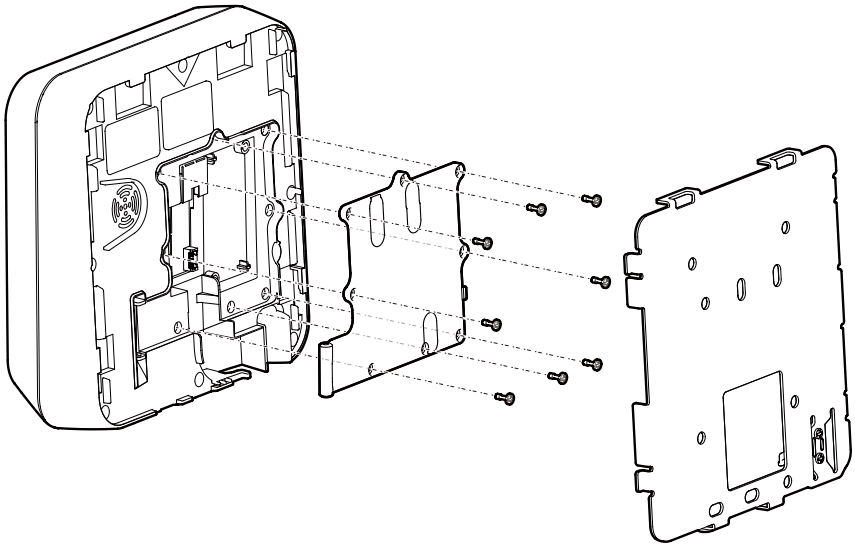




Wall thickness	Distance
100 mm	500 mm
120 mm	400 mm
150 mm	300 mm

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

2. Assemble the cable cover then mount the product on the secured bracket.



Info

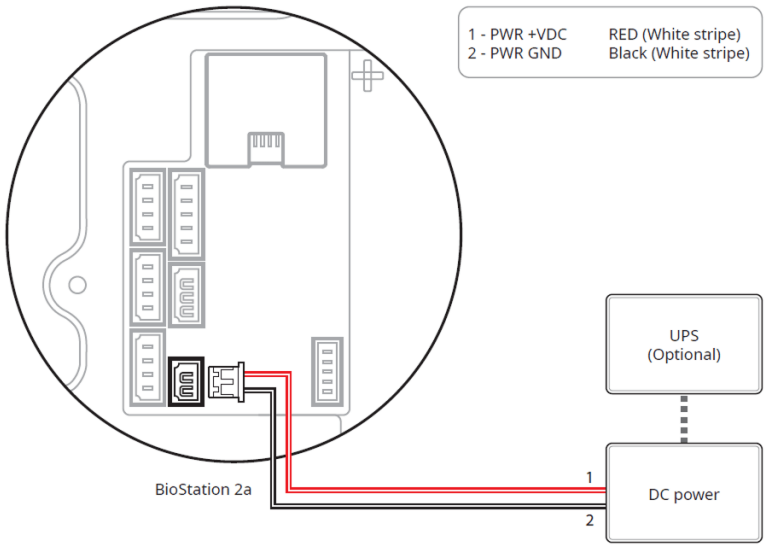
To meet the IP65 waterproof and dustproof ratings, it is essential to use the cable cover after connecting the product and cables.

3. 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

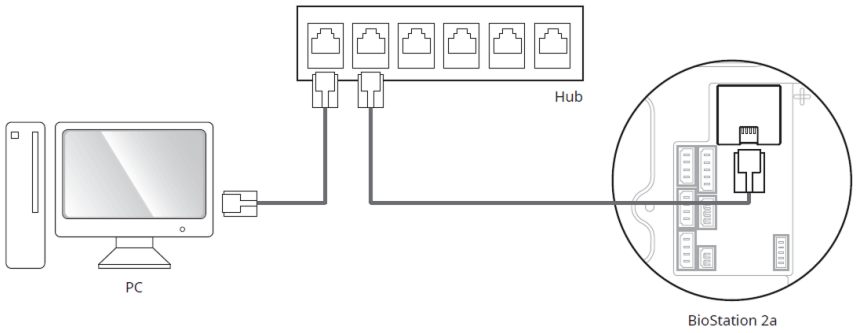
- DO NOT connect the device to the DC power supply (or adapter) and PoE power supply at the same time.
- Use the IEC/EN 62368-1 approved power adapter that supports higher power consumption than the product. If you wish to connect and use another device to the power supply adapter, you should use an 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.
- DO NOT extend the length of power cable when using the power adapter.

Network Connection

TCP/IP

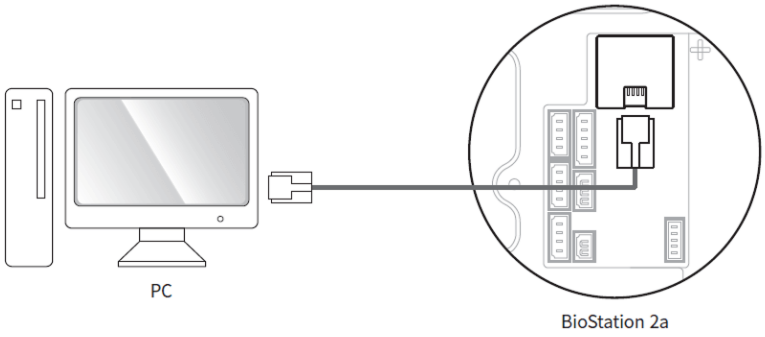
LAN connection (connecting to a hub)

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.



Network ports and services

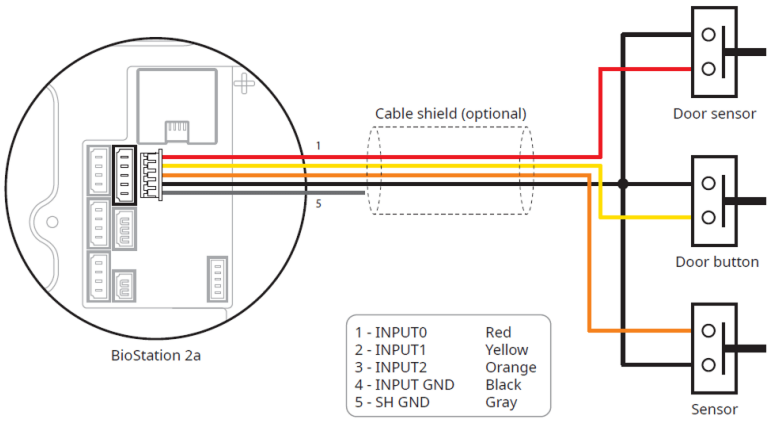
This device uses the following ports for network communication and stable service operation.

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.

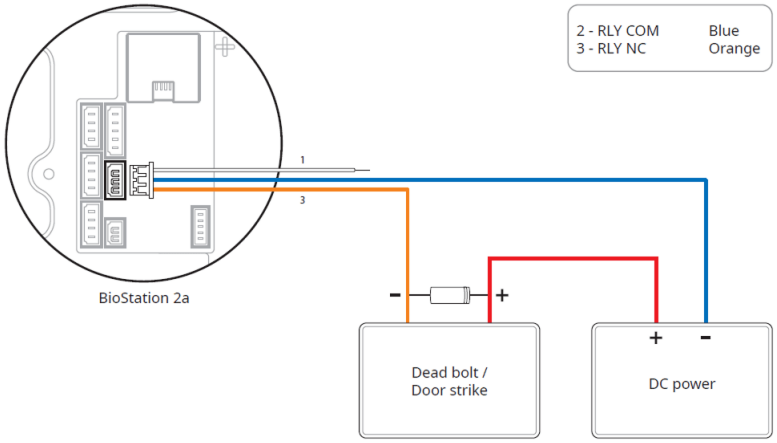
Input connection



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

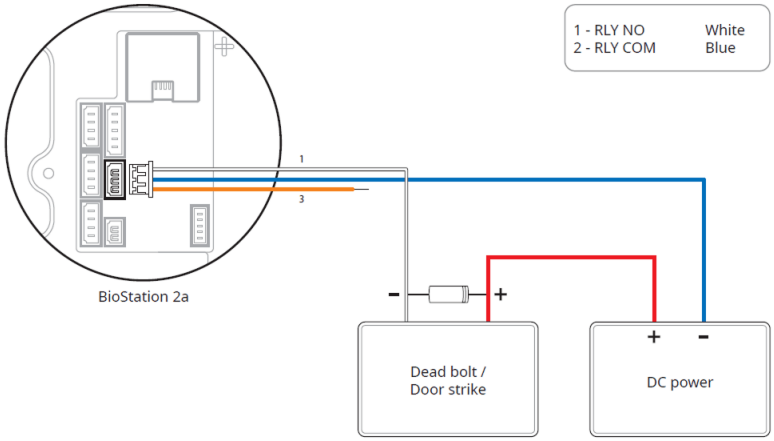
- Install a diode at both sides of the door lock wire as shown in the figure to protect the relay from the reverse current, which occurs when the door lock operates.
- Use a separate power supply for the product and the door lock.
- Suprema's standalone intelligent readers contain internal relays that 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.



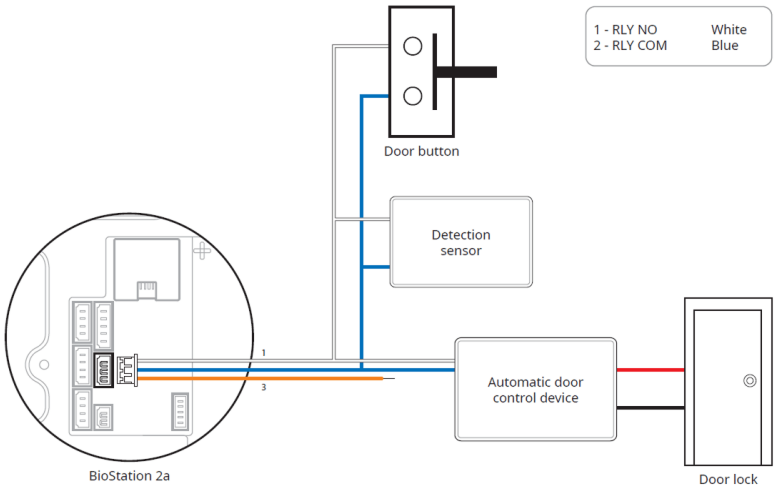
Caution

- 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.
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Info

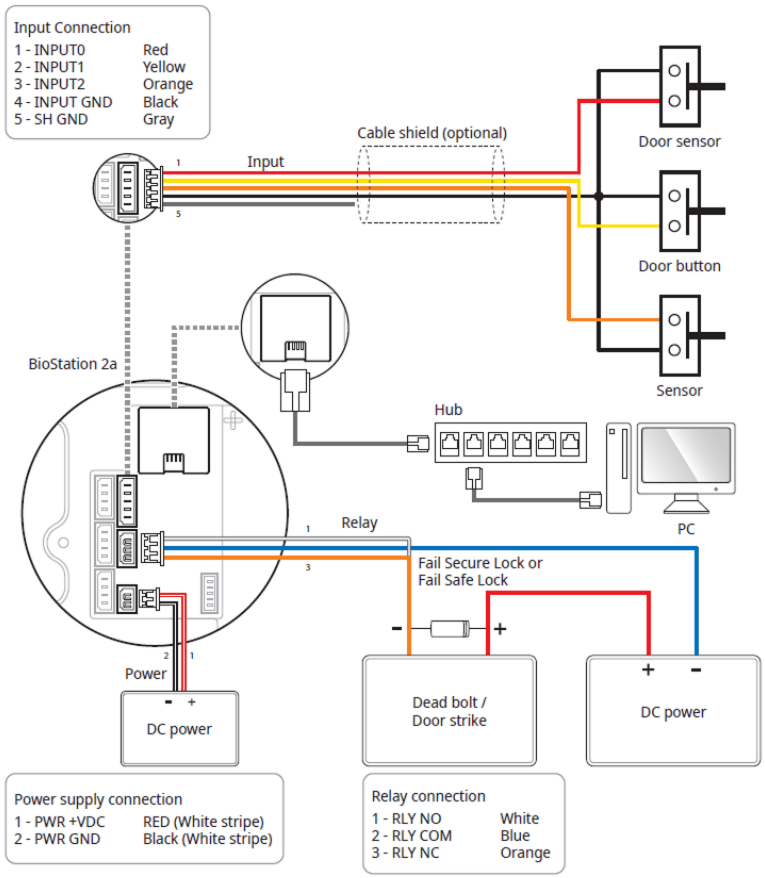
Take caution of the installation direction of the diode. Install the diode close to the door lock.

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.

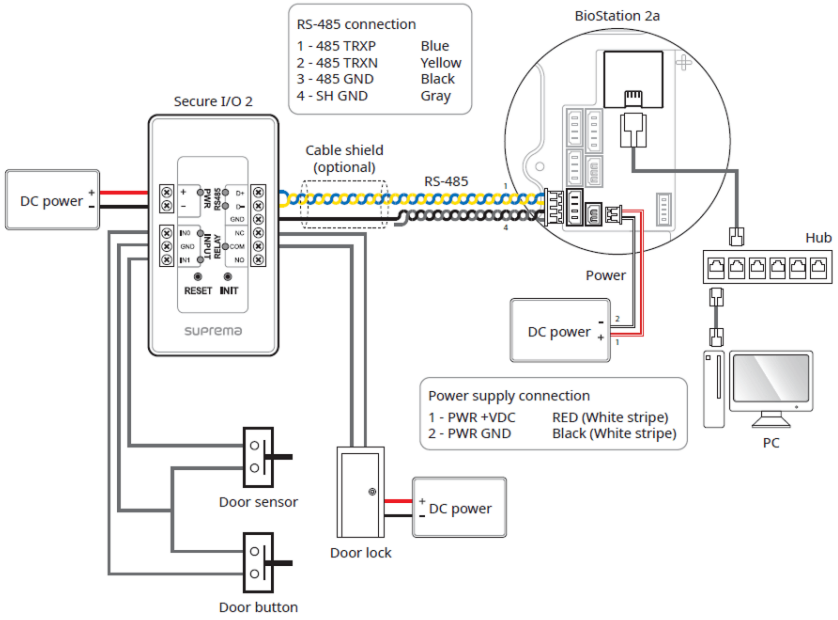
Info

- 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 XPass or XPass 2 is connected to the master device, only card authentication can be used.
- 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.

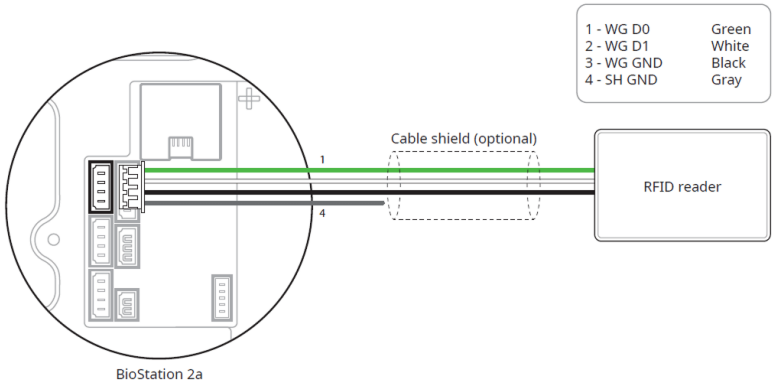


Info

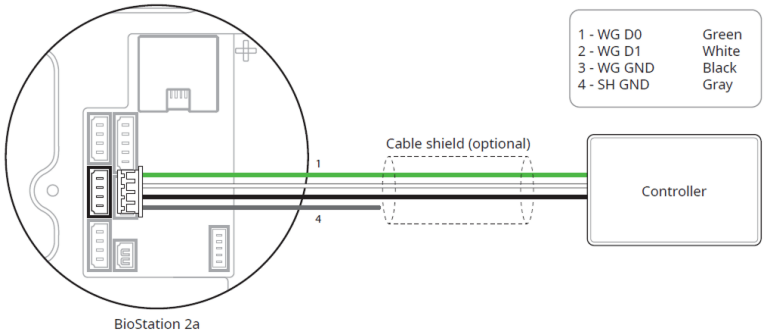
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- For more information, contact the Suprema Technical Support Team.

Wiegand Connection

Used as a Wiegand input device.



Used as a Wiegand 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

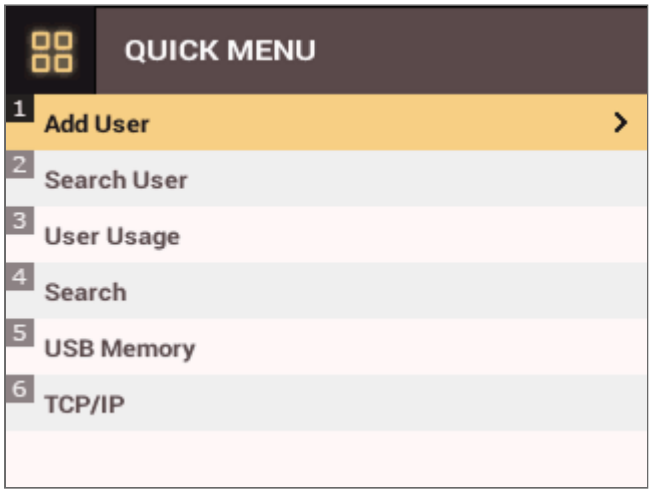
1. Press ☰ and authenticate with the administrator credential.
2. Select your desired menu.



> **Info**
> If no administrator is designated, pressing ☰ will display the menu screen.

Quick Menu

1. Press and hold ☰ for more than 1 second, then release it. Authenticate using administrator privilege method.
2. Select your desired menu.

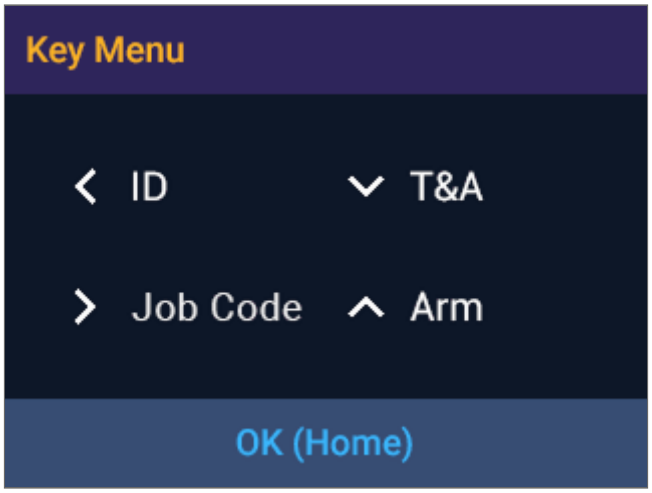


Info

If no administrator is designated, pressing and holding ☰ will show the quick menu screen.

Key Menu

Press the **OK** button to display the key menu screen. You can enter by pressing **Key Menu** or the directional button corresponding to the desired menu on the home screen.



- **ID**: ID authentication can be performed as set in **ID**.
- **T&A**: Select a T&A event to authenticate.
- **Job Code**: You can select the user's job code.
- **Arm**: You can start/stop security.

Info

If in the **Arm** state, you cannot enter **Key Menu**. You can disable security by pressing the ^ button on the home screen.

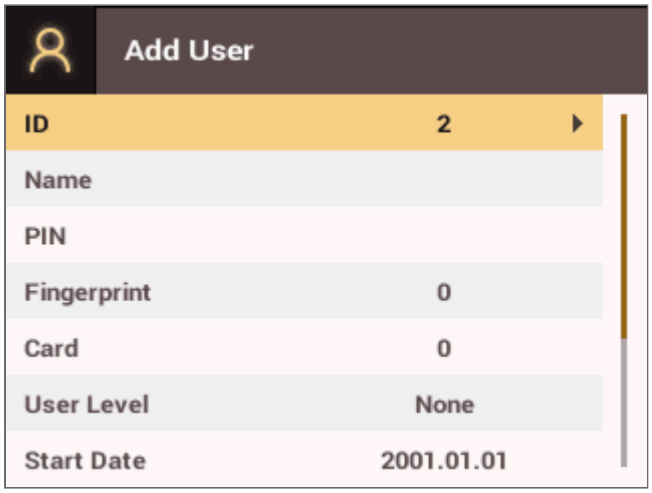
User

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 administrator credential.
2. Select **USER** → **Add User** and then press **OK**.



3. Select the desired item and press the › button. After configuring the item, press **OK** to register user information.
   - **ID**: Enter a number between 1 and 4294967295 to register a user ID. If **User ID Type** is set to **Alphanumeric**, you can use a combination of alphanumeric characters and symbols _ - as the ID, with a maximum of 32 characters.
   - **Name**: You can enter the user name using the numeric buttons. Press the ^ / v buttons to select letters or numbers, and press **F1/F2** to see more characters.
   - **PIN**: You can enter the PIN you want to use. Enter the PIN and press **OK**. To confirm, enter the PIN again and press **OK**. To prevent leaks, input a PIN of 4 to 16 digits.

     > **Info**
     > When using **Master Admin** feature, enter at least an 8-digit number.

   - **Fingerprint**: You can enroll a fingerprint for user authentication. After scanning the fingerprint of the finger to be enrolled, scan the same finger's fingerprint once more.
   - **Card**: You can enroll a card for user authentication. Scan the card to assign to the user.
   - **User Level**: You can select permissions to assign to the user.

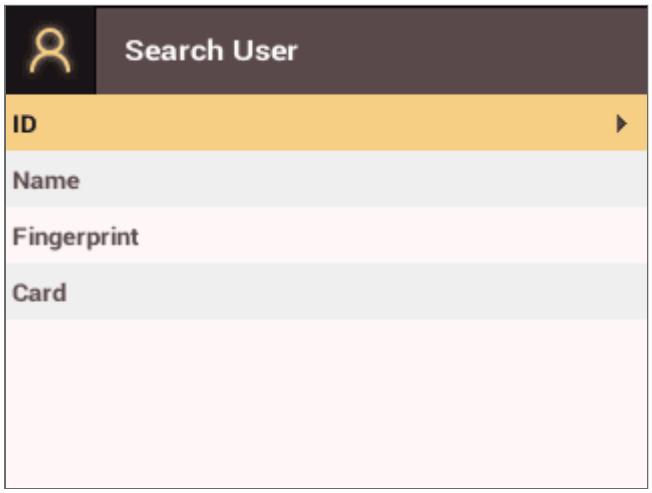
> **Info**
> Available menus vary according to the set user level.
> – **None**: This is a general user level, and the menu is not available.
> – **Administrator**: You can use all menus.
> – **Configuration**: You can use the menus **AUTHENTICATION**, **DISPLAY & SOUND**, **DEVICE**, **NETWORK**, **EVENT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

- **Start Date**: You can set the date to start using the user account. Press the numeric buttons to enter the date. Use the ‹ button to delete the entered date, and the › button to insert a separator.
- **Expiration Date**: You can set the date to stop using the user account. Press the numeric buttons to enter the date. Use the ‹ button to delete the entered date, and the › button to insert a separator.
- **Security Level**: You can set the security level for 1:1 authentication.
- **Duress**: 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.
- **Private Auth Mode**: You can change the authentication method for each user. Select the desired item and change the setting with the ‹ / › buttons.

Modifying User Information

The user administrator or super administrator can modify registered user information. You can add the user's fingerprint or card and modify the PIN and permissions.

1. Press ☰ and authenticate with the administrator credential.
2. Select **USER** → **Search User** and then press **OK**.



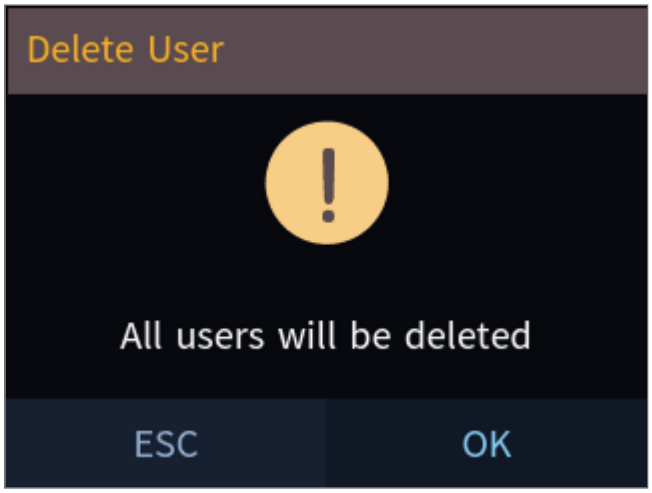
3. Select the search method to use and press the › button. You can search for users with **ID**, **Name**, **Fingerprint**, **Card**.
   - If you press **OK** without selecting a search method, the entire user list will appear.
4. Select the user you wish to modify and press **F2**. Refer to Registering user information to modify the information.
   - To delete a user, press **F3** and then **OK**.

> **Info**
>
> **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 administrator credential.
2. Select **USER** → **Delete User** and then press **OK**.

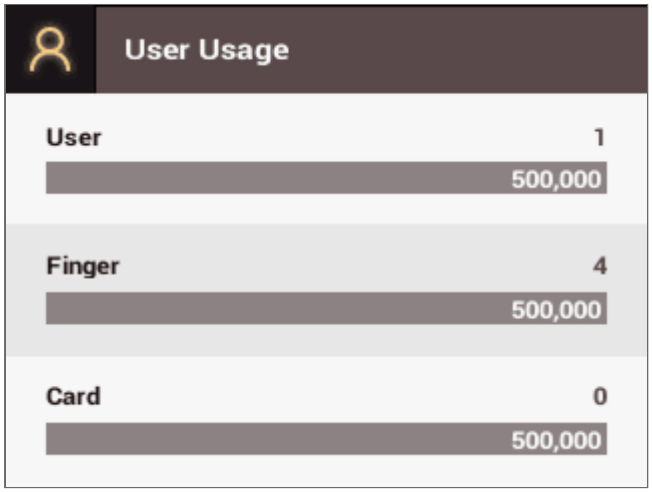


3. Press **OK** to delete all users. Press **ESC** to return to the previous screen.

View User Usage

You can view the number of enrolled users, fingerprints, and cards at a glance.

1. Press ☰ and authenticate with the administrator credential.
2. Select **USER** → **User Usage** and then press **OK**. User usage information appears.



Authentication

Describes the supported authentication methods and authentication procedures.

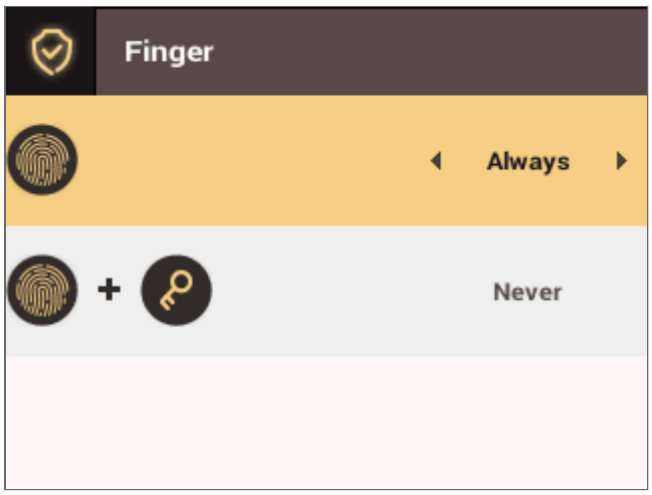
Authentication mode

Set the authentication mode. You can combine **Fingerprint**, **PIN**, **Card**, and **ID** for authentication mode, and you can also set schedules for each authentication mode.

Fingerprint authentication mode

You can set schedules for each authentication method that uses fingerprints.

1. Press ☰ and authenticate with the administrator credential.
2. Select **AUTHENTICATION** → **Auth Mode** → **Finger** and then press **OK**.



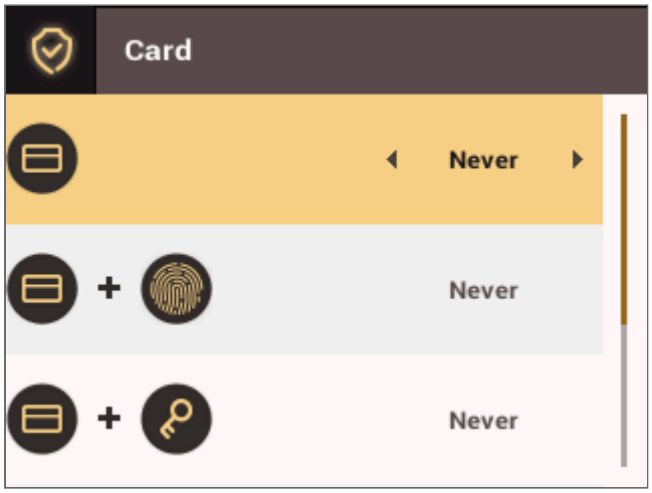
3. Select the desired item and press < / > to set the schedule.
   - : Mode that uses only fingerprints.
   - + : Mode that authenticates using fingerprints followed by entering PIN.
4. Press **OK** to save the settings.

> **Info**
>
> - **Schedule** can be set in BioStar X. If no schedule is set, only **Always** can be selected.
> - For more information about the **Schedule** settings, please refer to the BioStar X Administrator Guide.

Card Authentication Mode

You can set schedules for each authentication method that uses cards.

1. Press ☰ and authenticate with the administrator credential.
2. Select **AUTHENTICATION** → **Auth Mode** → **Card** and then press **OK**.



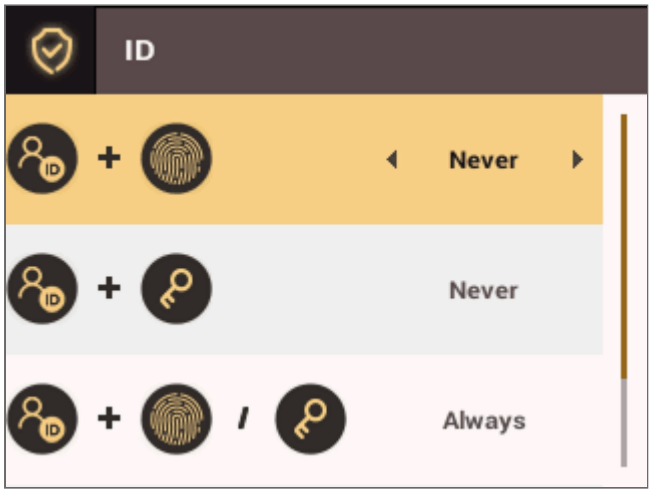
3. Select the desired item and press < / > to set the schedule.
   - : Mode that uses only cards.
   - + : Mode that authenticates using cards followed by fingerprints.
   - + : Mode that authenticates using cards followed by entering PIN.
   - + / : Mode that authenticates using cards followed by either fingerprints or entering PIN.
   - + + : Mode that uses both fingerprint authentication and PIN entry after using a card.
4. Press **OK** to save the settings.

> **Info**
>
> - **Schedule** can be set in BioStar X. If no schedule is set, only **Always** can be selected.
> - For more information about the **Schedule** settings, please refer to the BioStar X Administrator Guide.

ID Authentication Mode

You can set schedules for each authentication method that uses IDs.

1. Press and authenticate with the administrator credential.
2. Select **AUTHENTICATION** → **Auth Mode** → **ID** and then press **OK**.



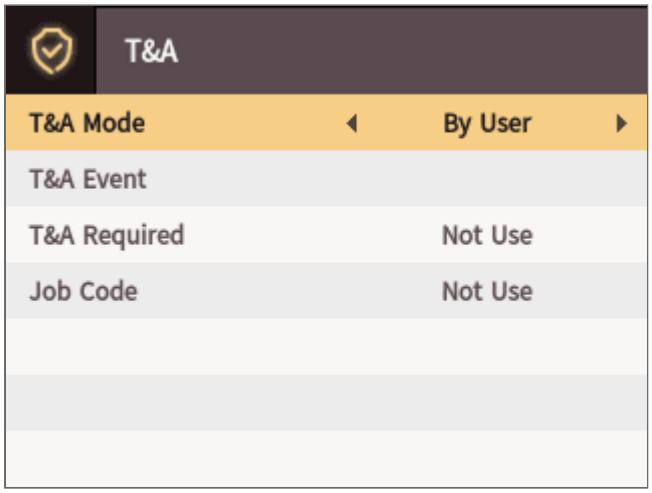
3. Select the desired item and press < / > to set the schedule.
   - + : Mode that authenticates using ID followed by fingerprints.
   - + : Mode that authenticates using ID followed by entering PIN.
   - + / : Mode that authenticates using ID followed by either fingerprints or entering PIN.
   - + + : Mode that uses both ID authentication and PIN entry after using a fingerprint.
4. Press **OK** to save the settings.

> **Info**
>
> - **Schedule** can be configured in BioStar X. If no schedule is set, only **Always** can be selected.
> - For more information about the **Schedule** settings, please refer to the BioStar X Administrator Guide.

Attendance Mode

You can set how to register T&A mode.

1. Press ☰ and authenticate with the administrator credential.
2. Select **AUTHENTICATION** → **T&A**, then click **OK**.

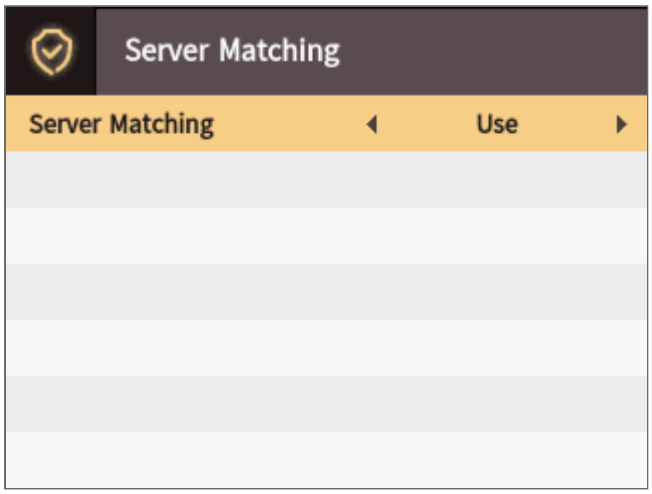


3. Select the desired item and press < / > to change the settings.
   - **T&A Mode**: Set how to use attendance mode.
   - **T&A Event**: You can check attendance events.
   - **T&A Required**: Set to require a user to select a T&A event when authenticating.
   - **Job Code**: Set whether to use the job code.
4. Press **OK** to save the settings.

Server matching

You can set up server matching. When server matching is used, authentication is performed on BioStar X without authentication on the device. It can be used when the device has too much user information or when the device is installed outside.

1. Press ☰ and authenticate with the administrator credential.
2. Select **AUTHENTICATION** → **Server Matching** and then press **OK**.



3. Press < / > to change the settings.
4. Press **OK** to save the settings.

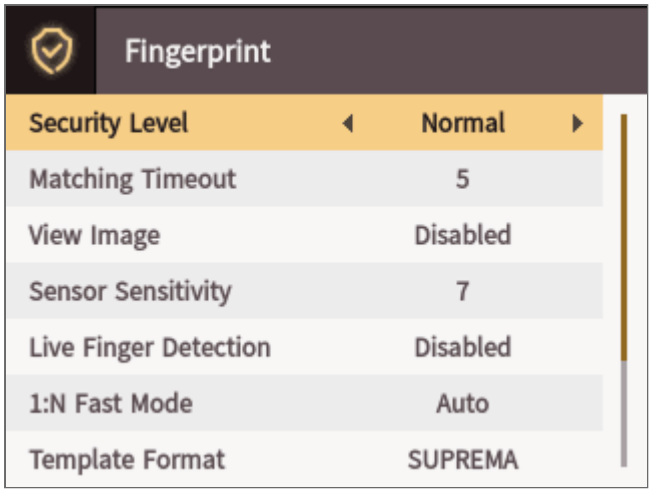
Info

- You can only use **Server Matching** with **Fingerprint**, **Card**, and **ID**.
- If using **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.

Fingerprint Settings

You can change the settings for fingerprint authentication.

1. Press ☰ and authenticate with the administrator credential.
2. Select **AUTHENTICATION** → **Fingerprint** and then press **OK**.



3. Select the desired item and press < / > to change the settings.
   - **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.
   - **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.
   - **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.

     Info

     Delete all user fingerprint information and then change the template format. If user fingerprint information is enrolled, you cannot change the template format.

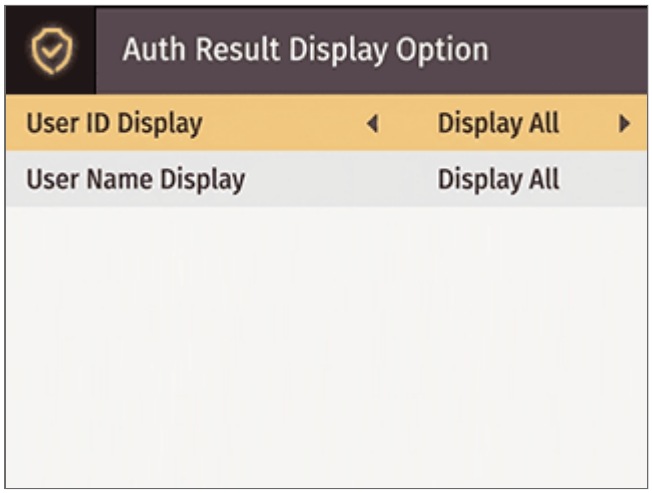
- **Sensor Mode**: Set to **Auto On** to turn on the fingerprint sensor when it detects the user's finger. When set to **Always On**, the sensor remains on even when not scanning fingerprints.
- **Advanced Enrollment**: Assess the quality of scanned fingerprints to save high-quality fingerprint information. Enable to notify the user when fingerprint quality is low, helping them scan fingerprints correctly.
- **Duplicate Check**: Check for duplicate fingerprints when enrolling.

4. Press **OK** to save the settings.

Auth result display option

You can set the auth result display option.

1. Press ☰ and authenticate with the administrator credential.
2. Select **AUTHENTICATION** → **Auth Result Display Option** and press **OK**.



3. Select the desired item and press < / > to change the settings.
   - **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.
4. Press **OK** to save the settings.

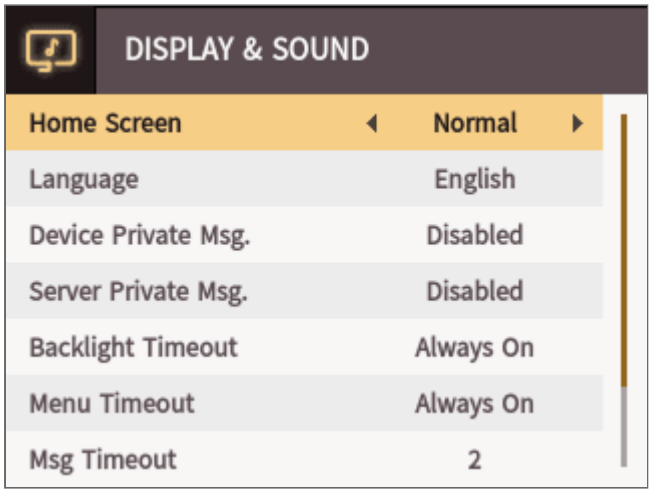
Settings

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 administrator credential.
2. Select **DISPLAY & SOUND** and then press **OK**.



3. Select the desired item and press < / > to change the settings.
   - **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.
   - **Backlight Timeout**: Set the time (sec) to turn off the lighting of the screen.
   - **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.
   - **Msg Timeout**: Set the time (sec) for a setting complete message or notification message to disappear automatically.
   - **Voice Instruction**: You can use voice guidance instead of notification tones.
   - **Volume**: Set the volume.
4. Press **OK** to save the settings.

Info

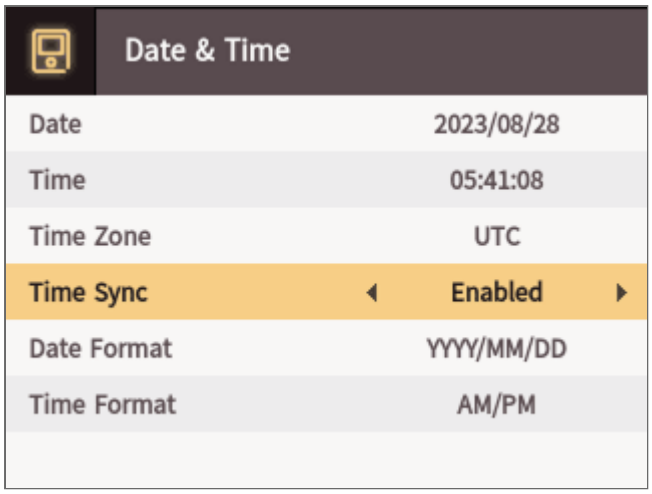
For more information on the BioStar Device SDK, refer to the BioStar Device SDK page on the Suprema Knowledge Base.

Device

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 administrator credential.
2. Select **DEVICE** → **Date & Time** and then press **OK**.



3. Select the desired item and press < / > to change the settings.
   - **Date**: You can check the current date. To modify it manually, disable **Time Sync**.
   - **Time**: You can check the current 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. You can select **AM/PM** and **24-Hour**.
4. Press **OK** to save the settings.

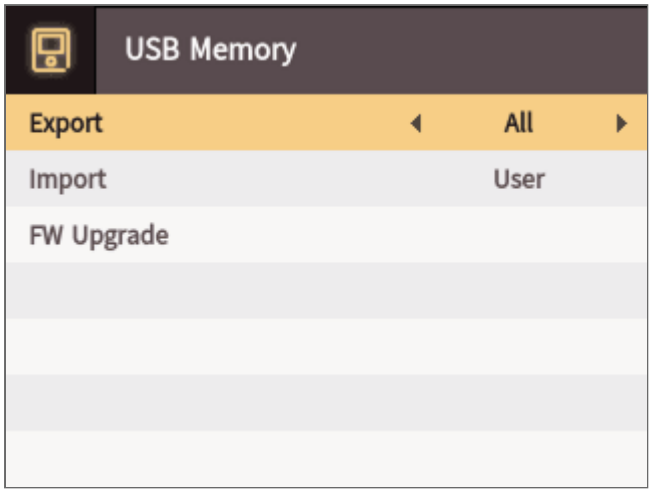
Info

You can enter the date and time by pressing the numeric buttons. You can delete the entered value with the < button and enter the delimiter with the > button.

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 administrator credential.
2. Select **DEVICE** → **USB Memory** and then press **OK**.



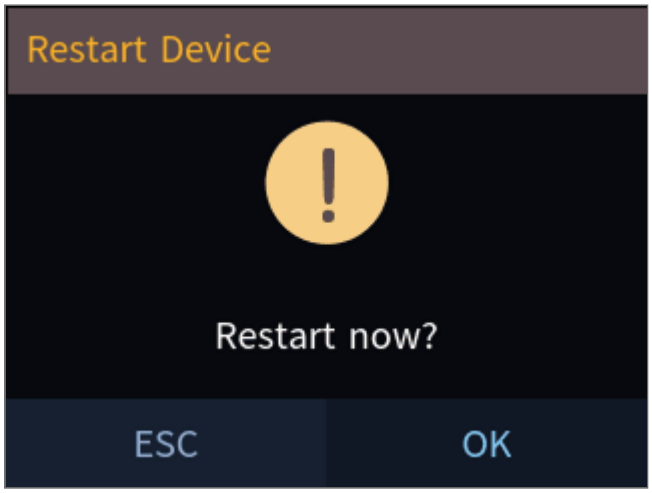
3. Select the desired item to proceed.
   - **Export**: Select information you wish to export to the connected USB memory. Select the item and then press **OK**.
   - **Import**: Import user information from the connected USB memory. Select the item and then press **OK**.
   - **FW Upgrade**: If the firmware file is saved on the connected USB memory, you can press **OK** to upgrade the firmware.

> ⚠ **Caution**
> Do not disconnect the power supply while upgrading the firmware of the device. The device may malfunction.

Restart device

The user can restart the device.

1. Press ☰ and authenticate with the administrator credential.
2. Select **DEVICE** → **Restart Device** and then press **OK**.

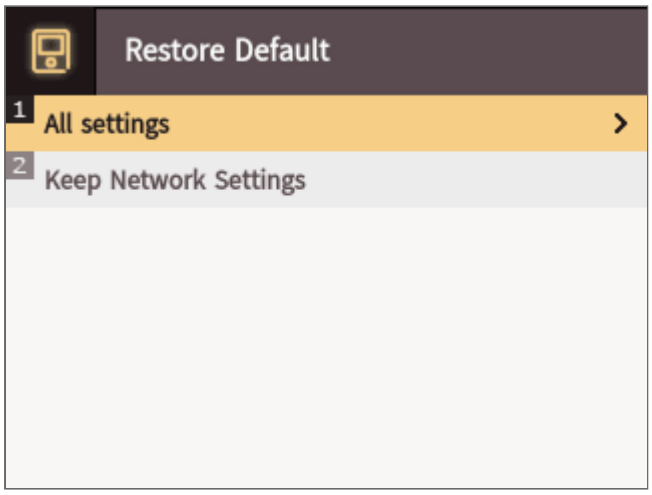


3. Press **OK** to restart the device. Press **ESC** to return to the previous screen.

Reset

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

1. Press ☰ and authenticate with the administrator credential.
2. Select **DEVICE** → **Restore Default** and then press **OK**.



3. Select the desired item to proceed.
   - **All settings**: Initializes all settings stored on the device. Press **OK** to initialize all device settings. Press **ESC** 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 **ESC** 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.
4. Executing **Restore Default** will restart the device.

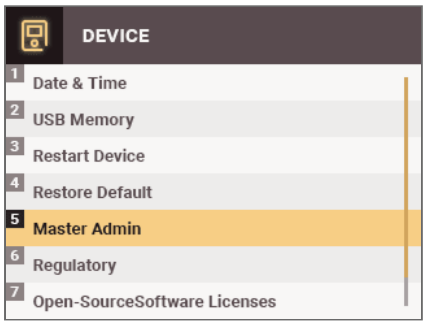
Info

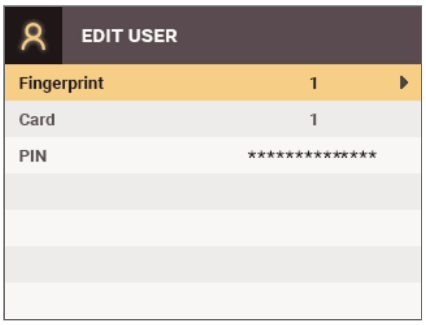
- When you reset, the operator level will be reset as well. After resetting, make sure to set the operator level again.
- Language setting will not change after resetting.
- The **Factory Default** menu can be used when the root certificate is saved in the device.
- The **Delete the Root Certificate**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

Master administrator CE-oriented products

You can change the authentication method of the Master Admin.

1. Press ☰ and authenticate with the administrator credential.
2. Select **DEVICE** → **Master Admin**.
3. Configure the desired authentication methods.





Info

- You must enroll at least two types of credentials.
- This feature is available only on new devices running firmware v1.2.0 or higher.

Administrator two-factor authentication CE-oriented products

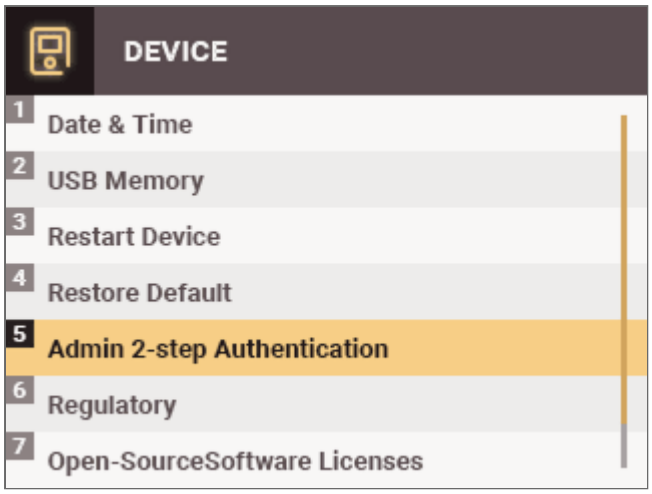
A CE product that has been upgraded from firmware does not provide **Master Admin** settings, but you can use the **Admin 2-step Authentication** option to enhance overall administrator privileges and improve device security.

Info

- **Admin 2-step Authentication** can be activated only if all enrolled administrators have at least two types of credentials.
  - PIN cannot be used as a standalone credential, so the ID + PIN combination is not supported.
- The firmware upgrade device cannot be downgraded to a lower version after upgrading the firmware.

1. Press ☰ and authenticate with the administrator credential.

2. Select **DEVICE** → **Admin 2-step Authentication**.

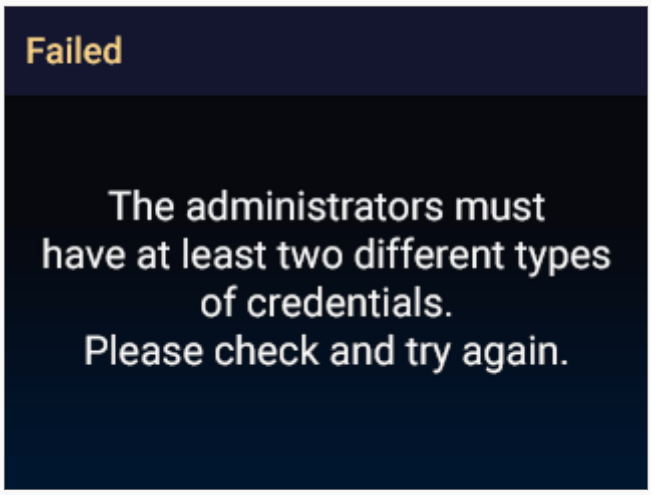


Info

If there are not two types of credentials enrolled for all administrators, activation fails and an error message is displayed.

Enroll two types of credentials for all administrators and try again.

- PIN cannot be used as a standalone credential, so the ID + PIN combination is not supported.



Caution

If you enable **Admin 2-step Authentication** and delete all administrators' credentials to fewer than two types, you cannot access the administrator menu when BioStar X or BioStar 2 is unavailable. Therefore, you need to be particularly careful when deleting administrator credentials.

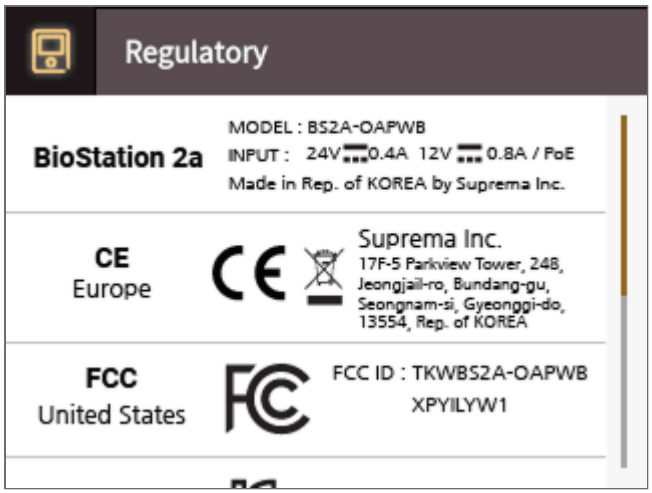
Regulatory

You can check the regulatory certifications and compliance marks on the product.

- CE / FCC / KC / UKCA / RCM

1. Press ☰ and authenticate with the administrator credential.

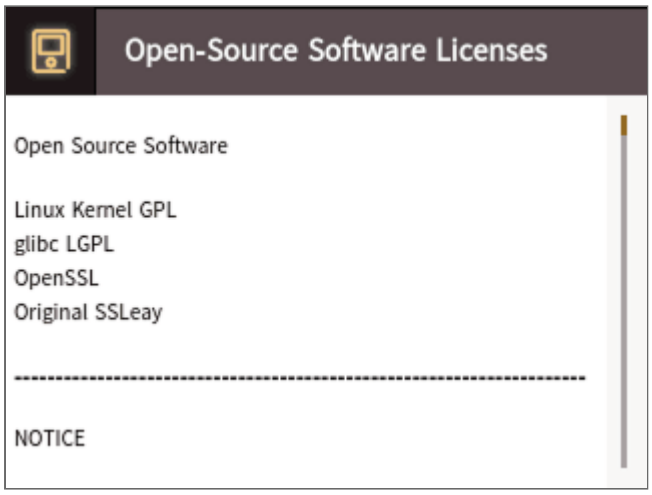
2. Select **DEVICE** → **Regulatory** and then press **OK**. You can check the regulatory certifications.



Open Source Software License

You can check the license on the product.

1. Press ☰ and authenticate with the administrator credential.
2. Select **DEVICE** → **Open-Source Software Licenses** and then press **OK**. You can check the license.

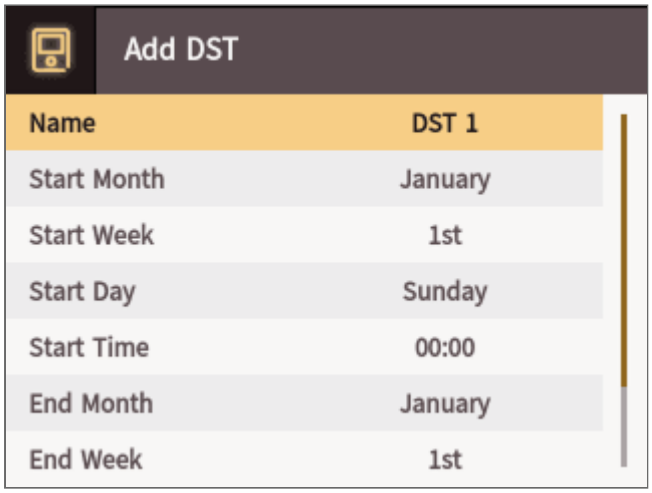


Other settings

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 administrator credential.
2. Select **DEVICE** → **More Settings** → **Daylight Saving Time** and then press **OK**.
3. Select **Add DST** and then press **OK**.

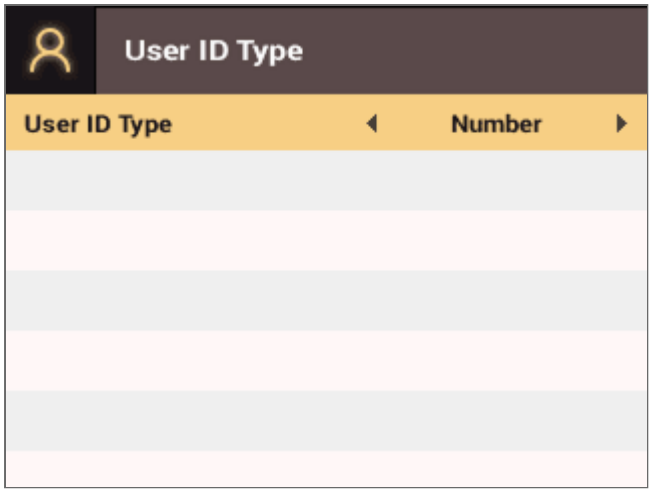


4. Select the desired item and press < / > to change the settings.
   - **Name**: Set the name of daylight-saving time.
   - **Start Month** / **Start Week** / **Start Day** / **Start Time**: Set details of when daylight-saving time begins.
   - **End Month** / **End Week** / **End Day** / **End Time**: Set details of when daylight-saving time ends.
5. Press **OK** to save the settings.

User ID type

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

1. Press ☰ and authenticate with the administrator credential.
2. Select **DEVICE** → **More Settings** → **User ID Type** and then press **OK**.

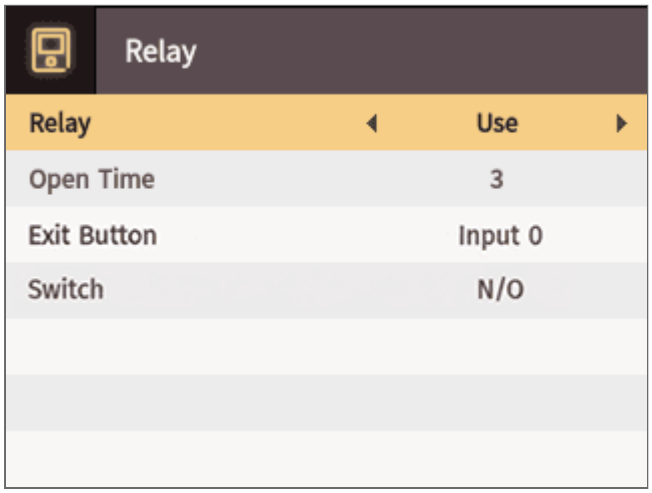


3. Press < / > to change the settings.
   - **Number**: You can enter a user ID with numbers only.
   - **Alphanumeric**: You can enter a user ID using alphanumeric characters and certain symbols _ -.
4. Press **OK** to save the settings.

Relay

You can set the input ports of **Open Time** and **Exit Button** on the device. Useful when used as a standalone.

1. Press ☰ and authenticate with the administrator credential.
2. Select **DEVICE** → **More Settings** → **Relay** and then press **OK**.



3. Press < / > to change the settings.
   - **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 the type of switch (**N/O** or **N/C**) for the Exit Button's input port.
4. Press **OK** to save the settings.

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 administrator credential.
2. Select **DEVICE** → **More Settings** → **Secure Tamper** and then press **OK**.

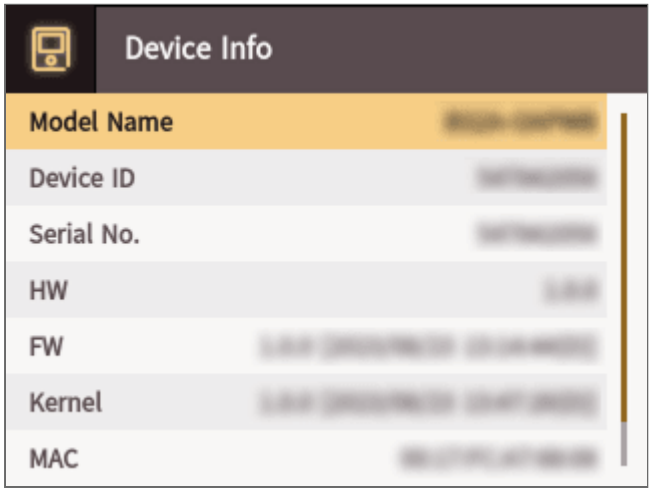


3. To set it to delete all users, logs, and secure keys when a tamper event occurs, press < / > and set **Enabled**.
4. Press **OK** to save the settings.

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 administrator credential.
2. Select **DEVICE** → **More Settings** → **Device Info** and then press **OK**. You can view the information for **Model Name**, **Device ID**, **Serial No.**, **HW**, **FW**, **Kernel**, **MAC**, and **WiFi MAC**.

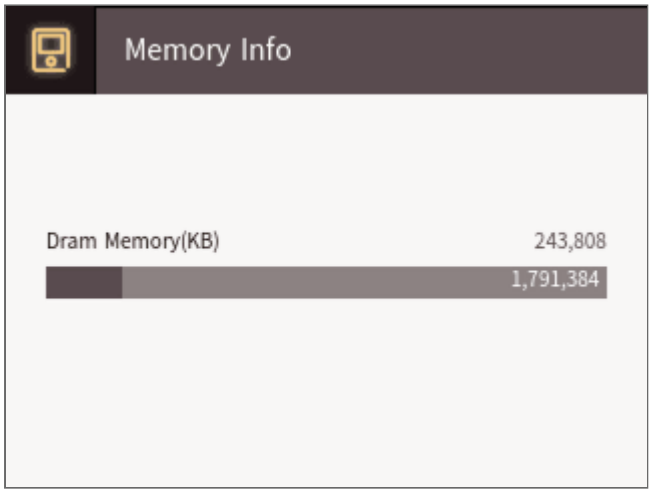


> **Info**
> **WiFi MAC** is available only on the BS2A-OAPWB model.

Memory information

View the status of memory usage.

1. Press ☰ and authenticate with the administrator credential.
2. Select **DEVICE** → **More Settings** → **Memory Info** and then press **OK**. You can view the memory usage status of the device.



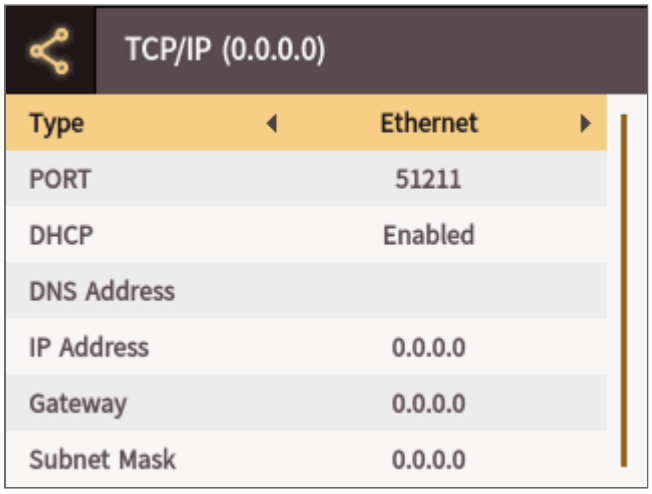
Network

You can change the communication settings of devices such as Ethernet, server, and serial communication.

TCP/IP

Ethernet

1. Press ☰ and authenticate with the administrator credential.
2. Select **NETWORK** → **TCP/IP** and then press **OK**.
3. Press < / > in **Type** and select **Ethernet**.



4. Change the desired item.
   - **PORT**: You can set the ports of the device.
   - **DHCP**: Set whether to use DHCP. If DHCP setting is disabled, the user can modify **IP Address**, **Gateway**, and **Subnet Mask**.
   - **DNS Address**: You can set the DNS address.
   - **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.

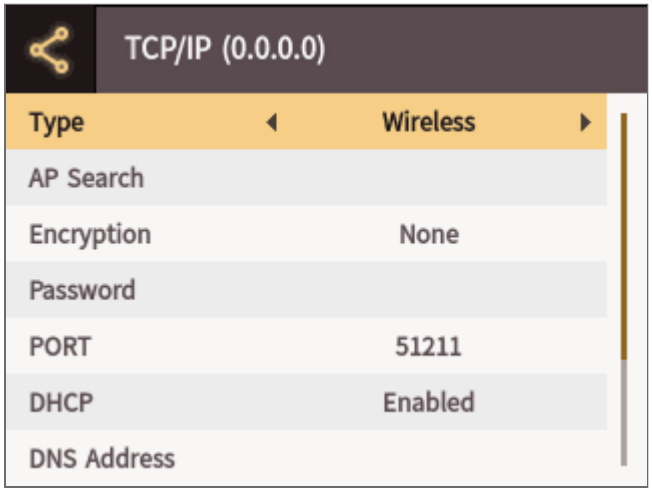
- **Subnet Mask**: You can check the device's subnet mask. To modify, disable DHCP setting.

5. Press **OK** to save the settings.

> **Info**
>
> - **Ethernet** cannot be used with **Wireless**.
> - **IP Address**, **Gateway**, **Subnet Mask** can be entered by pressing the numeric buttons. You can delete the entered value with the ‹ button and enter the delimiter with the › button.

Wireless LAN

1. Press ☰ and authenticate with the administrator credential.
2. Select **NETWORK** → **TCP/IP** and then press **OK**.
3. Press ‹ / › in **Type** and select **Wireless**.



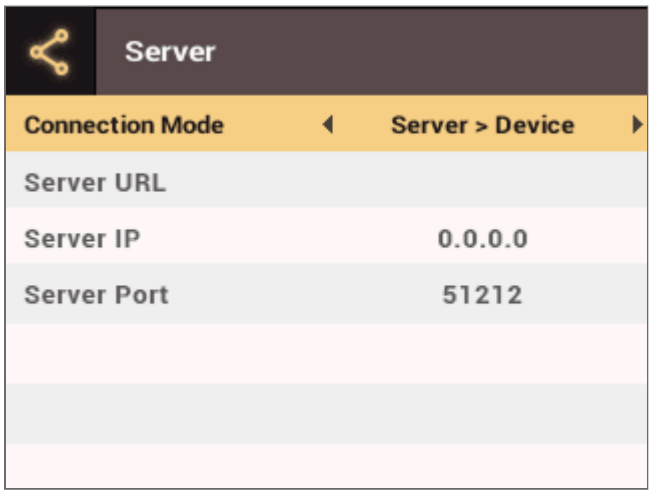
4. Change the desired item.
   - **AP Search**: Select the AP you wish to connect to.
   - **Encryption**: The encryption method configured on the AP is displayed.
   - **Password**: Enter the access password for the AP.
   - **PORT**: You can set the ports of the device.
   - **DHCP**: Set whether to use DHCP. If DHCP setting is disabled, the user can modify **IP Address**, **Gateway**, and **Subnet Mask**.
   - **DNS Address**: You can set the DNS address.
   - **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.
5. Press **OK** to save the settings.

Info

- **Wireless** is only available for the BS2A-OAPWB model.
- **Wireless** cannot be used with **Ethernet**.
- **IP Address**, **Gateway**, **Subnet Mask** can be entered by pressing the numeric buttons. You can delete the entered value with the ‹ button and enter the delimiter with the › button.
- To connect to **Wireless**, a wireless router is required. For content regarding the installation and configuration of wireless router, refer to the user's manual of the wireless router.

Server

1. Press ☰ and authenticate with the administrator credential.
2. Select **NETWORK** → **Server** and then press **OK**.



3. Press ‹ / › to change the settings.
   - **Connection Mode**: Selecting **Device > Server** will send a connection signal directly to a server with the input information from the device. When the **Device > Server** setting is enabled, the user can enter **Server URL**, **Server IP**, **Server Port**.
   - **Server URL**: You can enter **Server URL** instead of **Server IP**.
   - **Server IP**: Enter the IP address of the PC on which BioStar X is installed.
   - **Server Port**: Enter the port of the PC on which BioStar X is installed.
4. Press **OK** to save the settings.

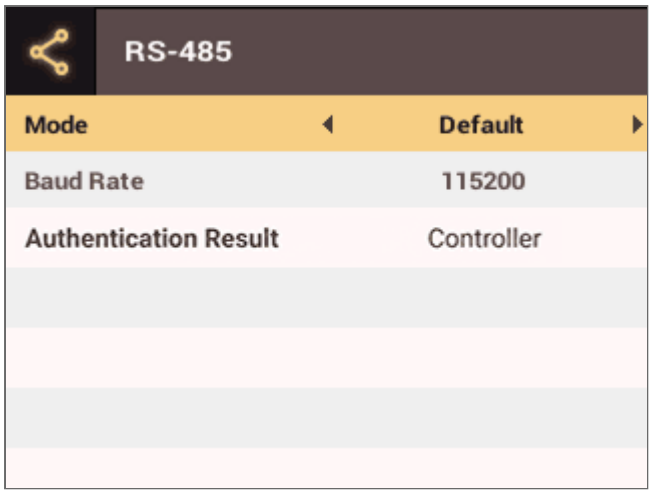
Info

Server IP, **Server Port** can be entered by pressing the numeric buttons. You can delete the entered value with the ‹ button and enter the delimiter with the › button.

RS-485

1. Press ☰ and authenticate with the administrator credential.

2. Select **NETWORK** → **RS-485** and then press **OK**.



3. Select the desired item and press < / > to change the settings.
   - **Mode**: You can select the RS-485 operation mode.
   - **Baud Rate**: You can select the desired communication performance.
   - **Authentication Result**: When using **Intelligent Slave**, select to display the authentication results of 3rd party controllers or devices on the screen. Available when **Mode** is set to **Default** or **Slave**.
4. Press **OK** to save the settings.

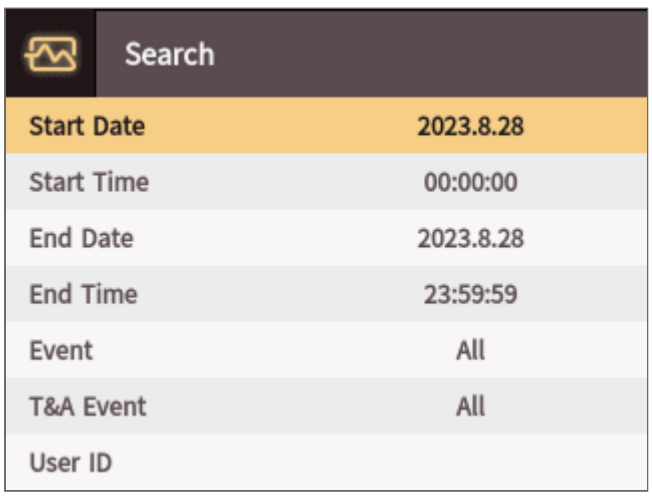
Event Logs

Describes how to view event logs generated by the device.

Search event logs

Set conditions to search logs.

1. Press ☰ and authenticate with the administrator credential.
2. Select **EVENT LOG** → **Search** and then press **OK**.

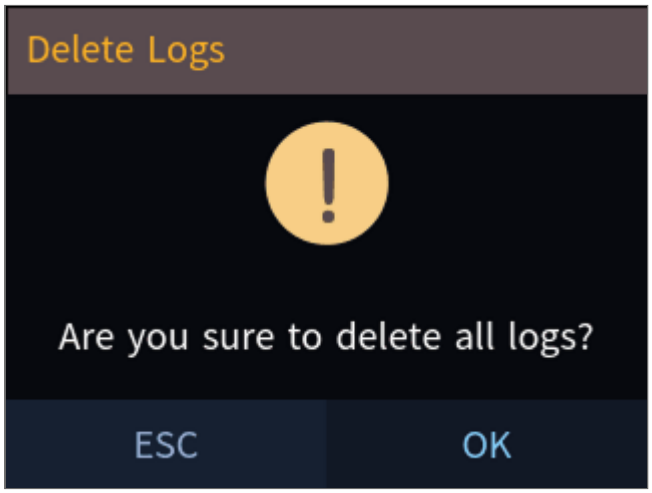


3. Select the desired item and press < / > to change the settings. When you press **OK**, logs matching the conditions appear on the screen.
4. Press **ESC** to return to the previous screen.

Delete all logs

You can delete all saved logs.

1. Press ☰ and authenticate with the administrator credential.
2. Select **EVENT LOG** → **Delete All** and then press **OK**.

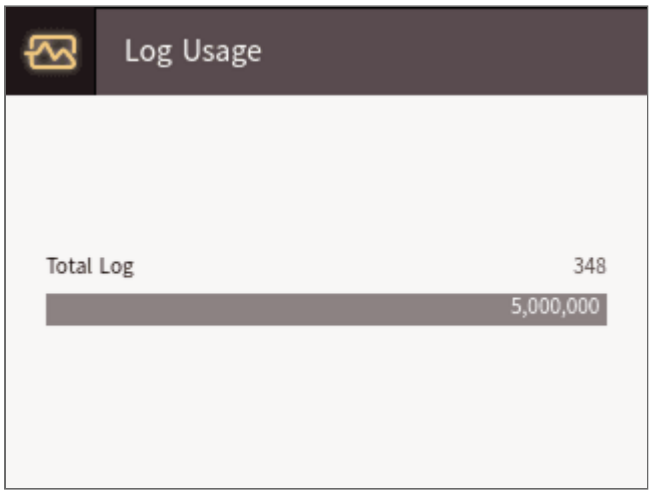


3. Press **OK** to delete all logs. Press **ESC** to return to the previous screen.

View log usage

You can check the status of log usage.

1. Press ☰ and authenticate with the administrator credential.
2. Select **EVENT LOG** → **Log Usage** and then press **OK**. You can check the log usage of the device.



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.

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.

Master Administrator (CE-oriented products)

Q. Is Master Administrator setup supported after a firmware upgrade from an existing device?

- **Master Administrator** is **supported only on CE-oriented products with a CE-marked label**. Use the label sticker on the back of the product to identify **CE-oriented / global (Non-CE)** products. For details, see Master Administrator support policy.

Product Specifications

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

Credentials

Biometric	**Fingerprint** • **Image Dimension:272 x 320 pixels** • **Image Bit Depth:8 bits, 256 grayscale** • **Resolution:500 dpi** • **Template:SUPREMA / ISO19794-2 / ANSI-378** • **Extractor / Matcher:MINEX certified and compliant** • **Live Fingerprint Detection:Supported (SW-based)**	
RF Card	**BS2A-ODPB**	**125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3, FeliCa**
	BS2A-OAPWB	**125kHz EM, HID Prox & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3, FeliCa, iCLASS SE/SR/Seos**
RF Read Range[1)]	**EM/MIFARE/DESFire/HID iCLASS: 50 mm, HID Prox/FeliCa: 30 mm**	
Mobile	**NFC, BLE**	

General

Model Name	**BS2A-ODPB, BS2A-OAPWB**
CPU	**1.5 GHz Quad Core**
Memory	**16 GB Flash + 2 GB RAM**
Crypto Chip	**Supported**
Display	**2.8" color TFT LCD**
Display Resolution	**320 x 240 pixels**

LED	**Multi-color**	
Sound	**16 bit**	
Operating Temperature	**-20 °C ~ 60 °C**	
Storage Temperature	**-40 °C ~ 70 °C**	
Operating Humidity	**0 % ~ 80 %, non-condensing**	
Storage Humidity	**0 % ~ 90 %, non-condensing**	
Dimensions (W x H x D)	**Device**	**142 x 144 x 37.8 (Top) / 45 (Bottom) (mm)**
	Bracket	**132.1 x 137.9 (mm)**
Weight	**Device**	**429 g**
	Bracket	**142 g (including washers and bolts)**
IP Rating	**IP65**	
Authentication	**CE, UKCA, KC, FCC, RCM, SIG, RoHS, REACH, WEEE**	

Capacity

Max. User	**500,000**[2)]
Max. Credentials (1:N)	**Fingerprint: 100,000**
Max. Credentials (1:1)	• **Fingerprint: 500,000** • **Card: 500,000** • **PIN: 500,000**
Max. Text logs	**5,000,000**

Interface

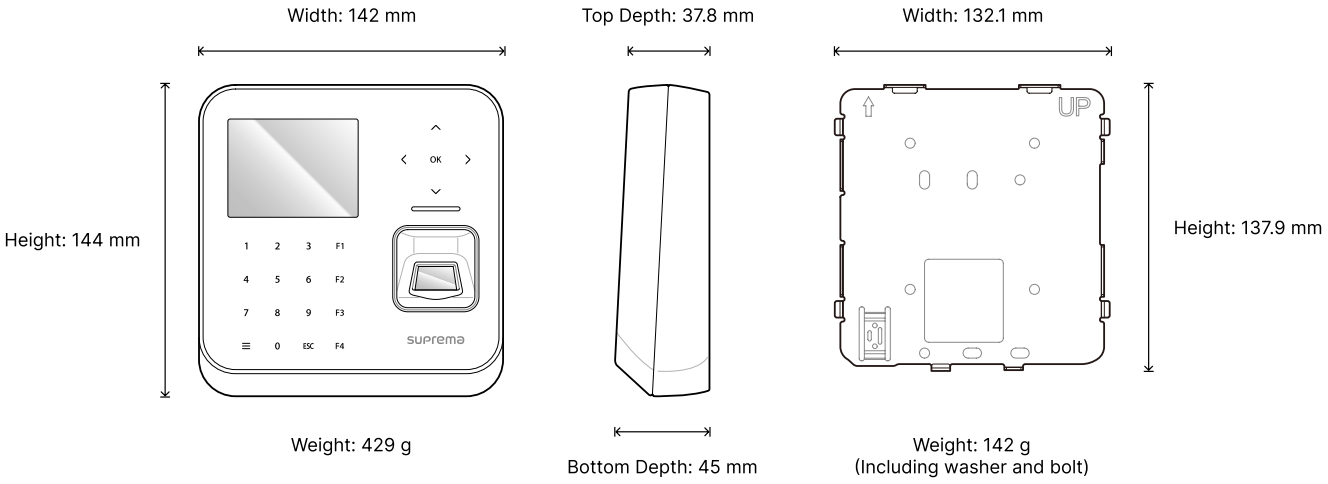
Ethernet	**Supported (10/100 Mbps, auto MDI/MDI-X)**	
Wi-Fi	**BS2A-ODPB**	**Not supported**
	BS2A-OAPWB	**Supported (802.11 b/ g/ n 2.4 GHz)**
Network Protocol	**TCP, UDP**	
RS-485	**1 ch Master / Slave (Selectable)**	
RS-485 Communication Protocol	**OSDP V2 compliant**	
Wiegand	**1 ch Input, 1 ch Output**	
Input	**3 ch Inputs**	
Relay	**1 relay**	
USB	**USB 2.0 (Host)**	
USB Expansion Port	**Supported**	
PoE	**Supported (IEEE 802.3af compliant)**	
Tamper	**Supported**	

Electrical

Power	**12 Vdc**	**Current: Max. 0.8 A**
	24 Vdc	**Current: Max. 0.4 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



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

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

Info

Product specifications are subject to change without notice for performance improvement.

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.

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.

- 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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