CUBOX

SEEUFACE
User Guide

- Digital Zoom Camera
- Deep Learning Face Algorithm
- 20K Face Match Per 0.2-Sec
- Store Up To 20K Face

Contents

Use Symbol

The following symbols are used throughout this manual. Make sure that you fully understand the meaning of each symbol and follow the instructions accompanied.

Symbol	Name	Description
⚠	WARNING	Indicates information that should be followed with the utmost care. Failure to comply with a warning could cause severe damage to the equipment or injury to personnel.
⚠	CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
⊙	IMPORTANT	Emphasizes essential information required for user success.
📝	NOTE	Provides important supplemental information that might enhance users' understanding or alternative steps to accomplish their goals
💡	TIP	Provides optional information to help users be more successful in their tasks.

Safety Instruction

Follow the safety instructions to use the product safely and prevent any risk of personal injury or damage to the product.

⚠ **WARNING**

Choosing Location

• DO NOT expose the product to direct sunlight, excess heat, open flames, corrosive gasses, moisture, or dust. Doing so may cause electrical shock, electrical short, or fire.

• DO NOT install the product near heaters, air conditioners, electrical fans, refrigerators, or water. Doing so may create the risk of a short circuit or fire caused by water or condensation that may come into contact with the product.

• DO NOT install the product in an environment that is susceptible.

1

Operation

• DO NOT let any type of liquid, mists, or sprays get into the product. Doing so may   cause electrical shock, electrical short, or product damage.

• If smoke, odors or noise rise from the device, stop using the device immediately, disconnect the power cable, and contact our customer support.

Maintenance

• DO NOT attempt to dissemble, repair, or modify the device yourself. Opening or removing covers may expose you to electrical shock or other risks and may void your warranty. If the product does not work correctly, contact your dealer or our customer support.

⚠ CAUTION

Choosing Location

• Keep the front side of the device away from strong ambient light, direct sunlight, or both. Sunlight, halogen lamps or other strong illumination may degrade the performance of the device, that is, increase in failure-to-capture rates or occasional authentication problem.

• DO NOT install the product outdoors unless environmental factors such as water, temperature, or sunlight in the location are controlled by means of proper protection.

• DO NOT expose the product to high electro-magnetic radiation. Device failure or performance degradation may occur caused by electro-magnetic interference.

• DO NOT install the product next to devices that contain magnets or generate magnetic fields such as speakers. Device malfunction or performance degradation may occur caused by magnetic interference.

Safety Instruction

Installation

- DO NOT install the product on a surface subject to vibration or physical shock. Doing so can cause damage to the product.
- When you install the product on a wall, make sure that you secure the product with the provided fasteners. Dropping from the wall may cause damage to device casing, internal parts, or both.
- DO NOT install the power supply cable in a high-traffic area where people pass by. Doing so may create a trip hazard and cause the cable to become worn or frayed.
- Use only a power cord set complying with the national regulation of the countries intended for sale.
- Use only the power adapter which is either provided or approved by CUBOX for the product to operate properly and safely.
- DO NOT connect multiple devices to one power adapter. Overload on power adapter may cause over-heat or fire hazard.
- DO NOT use any type of extension cord to connect the product to a power supply.

Operation

- DO NOT use any sharp tools when pressing the buttons to prevent damage to the touch screen from scratches or cuts.

Maintenance

- When cleaning the product, wipe the product with a soft and dry cloth. Do not apply water, benzene, alcohol, or spray cleaner. These may cause product failure or fire.

Introduction to SEEUFACE

SEEUFACE is a face recognition terminal that provides face recognition in an embedded system with real-time subject finding and local authentication for high throughput access control and time & attendance applications.
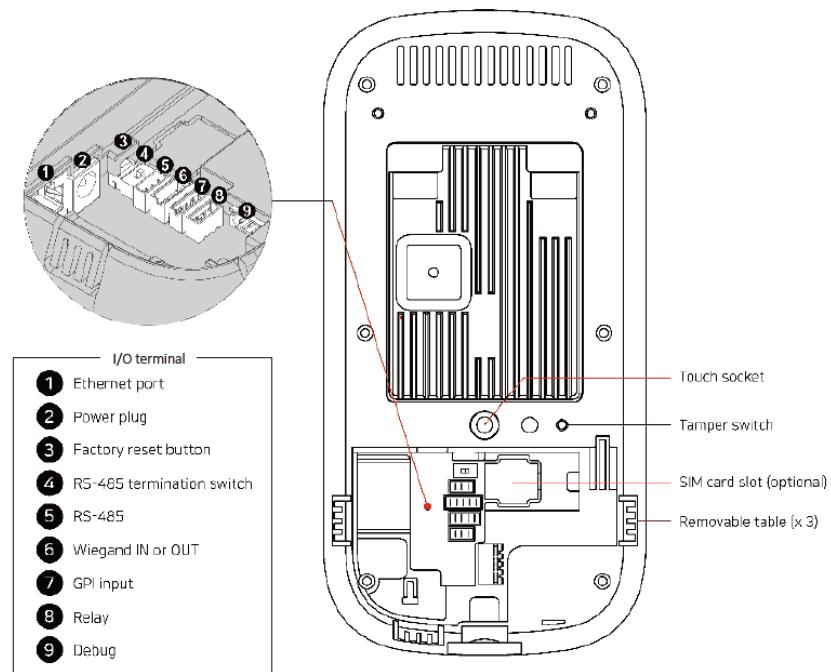
Features

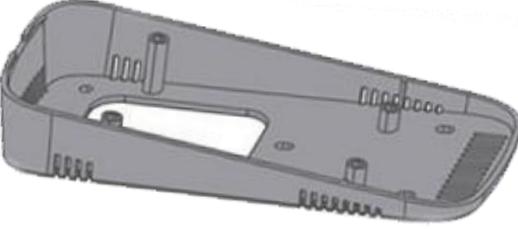| Features	Description
Advanced real time subject tracking with simple user instructions	SEEUFACE accurately locates the subject face in real time and tracks in 2 sides of angle to provides wider and deeper positioning.
Wide angle face imaging for outstanding capture volume	Allows height range of 145 to 210 cm
Utilization of ultra-high performance face matching engines	Advanced, dedicated co-processor allows utilization of latest and most powerful face algorithms.
Supplemental display of authorization results	Can display authorization decision when coupled to access control provisioning logic so that "subject recognized, but not granted permission" information can be displayed.
Supports multiple languages in GUI	English, Korean, Japanese, Spanish
Large on-board (embedded) face template database	Store up to 20,000 active face templates on-board in 1:1 recognition (verification) identification mode. Store up to 20,000 active face templates on-board in 1:N identification mode.
High speed face matching	Can provide up to 20,000 matches per second on-board.
Use in widest range of lighting conditions	Embedded illuminators in both white and NIR ranges expand use in adverse ambient light environments.
Standard multi-band RFID reader	MiFare, DesFire, FeliCa card support with standard embedded ISO/IEC 14443 reader.
Full range of deployment options	Standard connections in include selectable Wiegand IN or OUT, GPI, RS 485, and contact relay.
Fully compatibility with CUBOX CMID Manager v2 access control and T&A solution software	Supports full integration with CMID Manager for distributed access control and T&A solutions on single network.

Parts & Controls
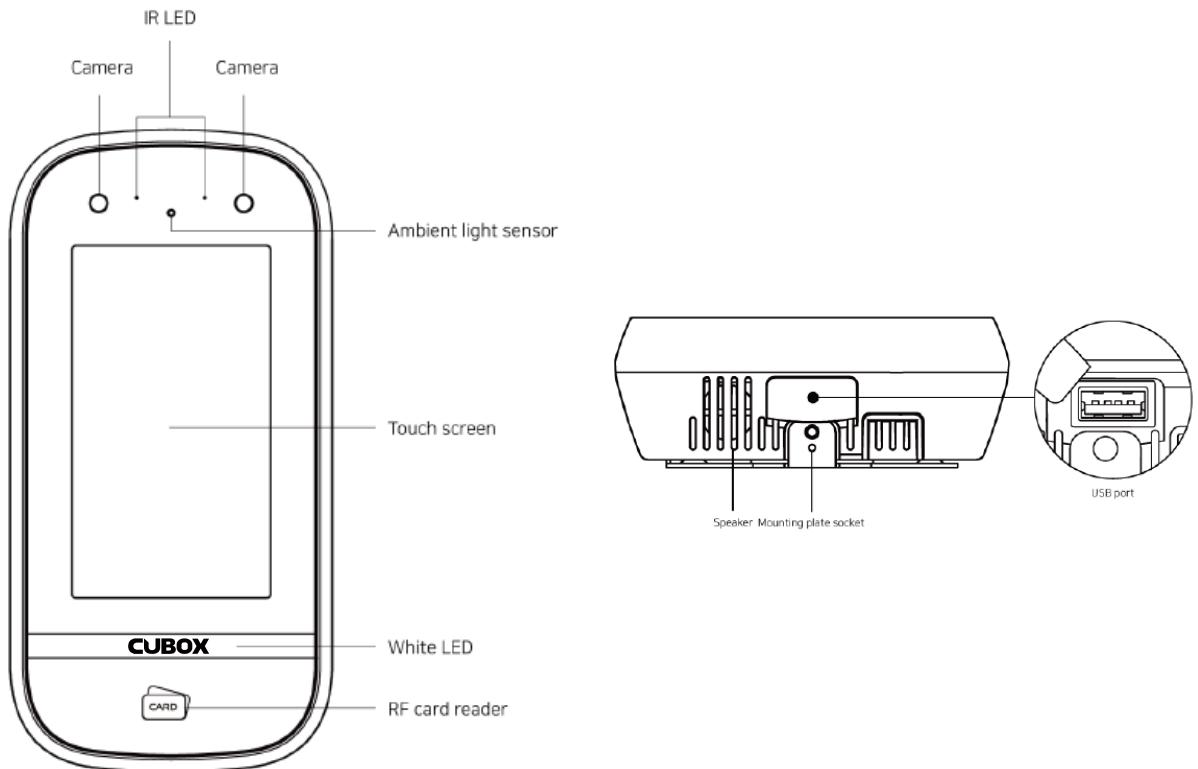
Name	Description	Note
Camera	Captures the face images	
IR LED	Illuminates the face using the NIR lighting when capturing the faces	
Touch screen	Shows preview images before capture and provides a graphical interface for enrollment and device configuration	
White LED	Gives supplemental light in dim light	
RF card reader	Indicates the area where RF cards can be read	
Ambient light sensor	Detects the changes of light in the surrounding environment	
Speaker	Delivers sound from device	
Mounting plate socket	Attaches the unit with the mounting plate	
USB port	Connects a USB flash drive	

Parts & Controls

I/O terminal

1. Ethernet port
2. Power plug
3. Factory reset button
4. RS-485 termination switch
5. RS-485
6. Wiegand IN or OUT
7. GPI input
8. Relay
9. Debug

Touch socket
Tamper switch
SIM card slot (optional)
Removable table (x 3)

Name	Description	Note
Tripod socket	Attaches the unit with a tripod that has the standard 1/4-20 UNC screw	
Tamper switch	Starts an alarm, if configured, when a physical tampering attempt is detected	
SIM card slot	Indicates the area where a SIM card can be connected Optional	
Removable tabs	Allow the wire routing and let cables go through the openings when removed	
Ethernet port	Connects an ethernet cable	
Power plug	Connects the power cable	
Factory reset button	Restores the device to its original manufacturer settings	
RS-485 termination switch	Provides termination when the device is located at the physical end of RS-485 wiring	
RS-485	Connects the RS-485 cable	
Wiegand input or output	Connects the Wiegand cable either as input or as output selectively	
GPI input	Connects the GPI cable	
Relay	Connect the relay cable	
Debug	Reserved for debugging purposes only	

SEEUFACE Configuration & Accessories

명칭	수량	설명	비고
Mounting bracket	1		
Secure I/O	1		
RF card writer	1	Duali RF card reader/writer	
RF card (A type)	1	MiFare, Desfire only (4k memory)	
RF card (B type)	1	MiFare, Desfire, Felica	General use

Environmental Requirements

This chapter gives the information about the requirements and the prerequisites for installing SEEUFACE and the installation procedures.

The SEEUFACE is designed and intended for indoor use only. The device is not weatherproof and must not be exposed to water, ice, extreme temperatures or other adverse weather conditions. If it is required to use the device in outdoor or extreme environments, contact local sales or cubox@cubox.aero for more information.

✓ Avoid the location that is exposed to backlight, direct sunlight, and other strong illumination.

✓ Choose the location with moderate ambient light.

✓ Determine the height at which you install the device

The recommended mounting height is 135 cm (53 inches) from the floor to the bottom of the device. It covers a person's height from 140 cm (55 inches) up to 210cm (85 inches).

Recommended mounting height

Default   Mounting bracket (optional)
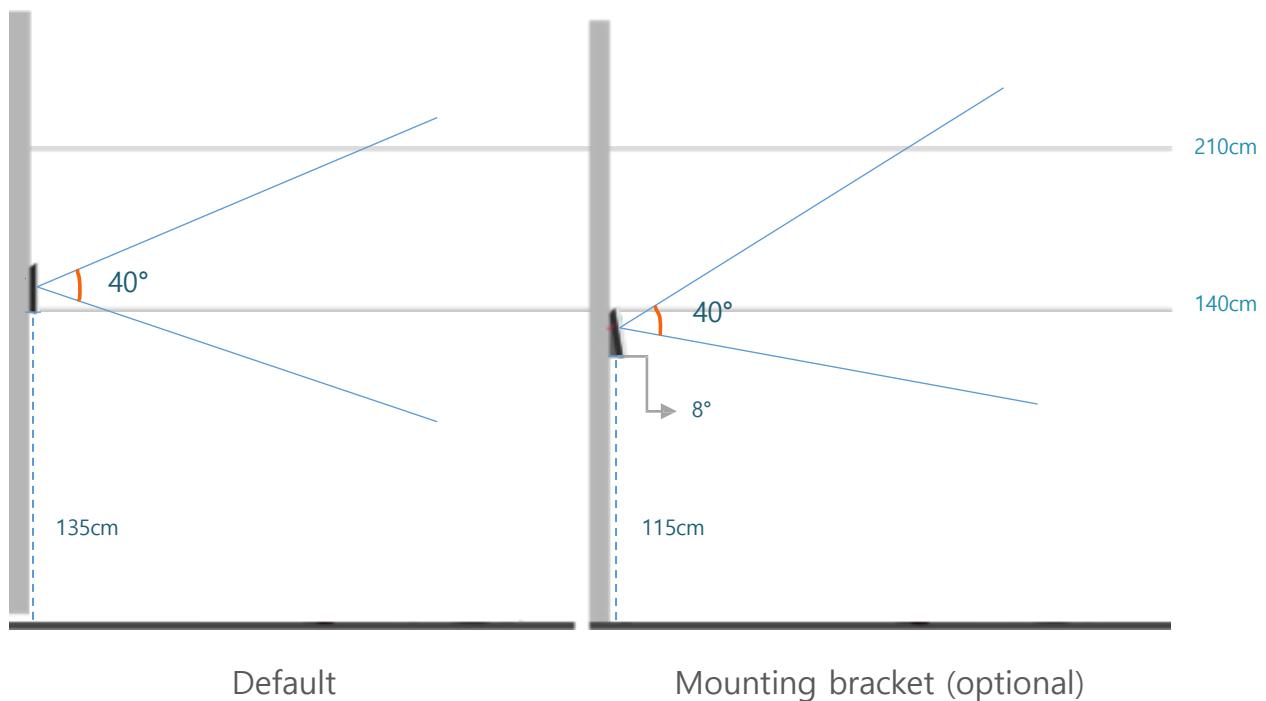
Electrical Requirements

✅ Use a stable power supply adapter of DC 15V (± 5%) with a minimum 2A.

✅ Make sure that the power cable is as short as possible and have correct wire gauge (22 AWG or smaller in number)

✅ Use CAT5 or later for ethernet cable.

Input voltage(V)	Wire gauge (AWG)	Power cable length(m)		Note
		Recommended	Maximum	
12	16	26.3	37.9	
	18	15.9	23.8	
	20	10.0	15.0	
15	22	6.3	9.4	Standard Configuration
	20	25.0	37.5	
	22	15.7	23.6	
24	20	70.1	105.1	
	22	44.0	66.0	

Tool Requirements

The following tools can be necessary for installation and are not supplied by default.

	Name	Figure	Note
General	Screw driver		Cross driver
	Tape ruler		For installation height measurement
	Cutting plier		
Concrete Wall mount	Electric drill		With a drill bit and anchor bolts
	Marker		
	Hammer		

Mounting Device (Wall Mount)

You can install the device onto a wall directly by using the mounting plate.

1. Remove the screw that attaches SEEUFACE to the mounting plate and disassemble the plate.
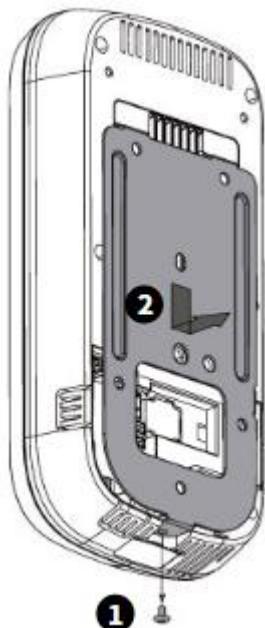
✓ Keep the screw because it will be used to attach them again

2. Put the mounting plate at the predetermined position and attach the plate onto the wall with the screws (M4 x 8)

Wall mounting points   📑 For concrete wall mount, do the steps that follow
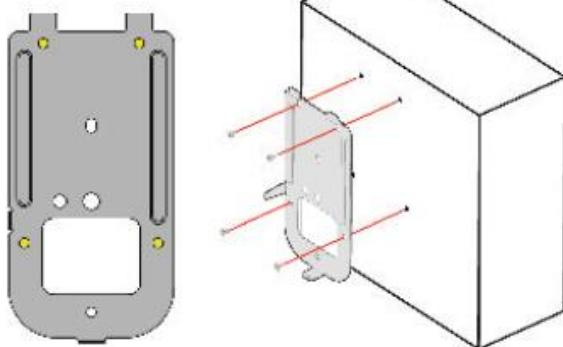
1. Put marks on the wall through the holes of plate by using a marker.

2. Drill the marked points by using a electric drill.

3. Attach the anchor bolts to the holes by using a hammer.

4. Attach the plate to the wall with the screws.

3. Connect the power cable and peripherals cables, if necessary, to the connectors in the rear panel.
   (See Connecting Cables for more information)

4. Remove one or more plastic tabs to allow the wire routing and let the cables go through the openings
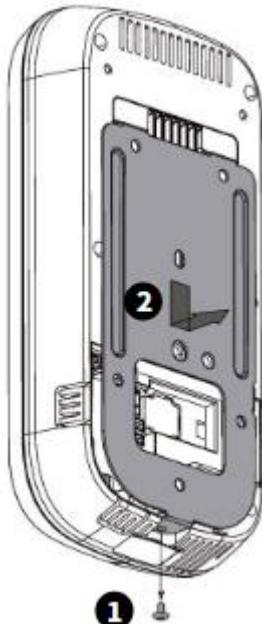
Removable tabs
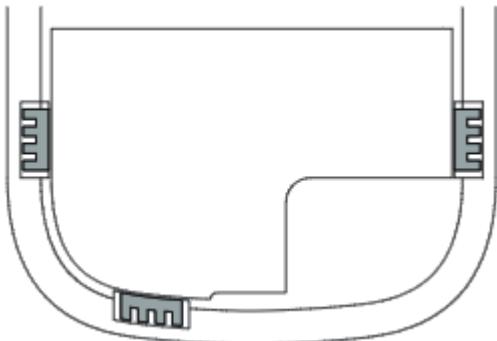
5. Put the device onto the installed plate, slide it downward, and attach them with the screw. (M3 x 6)

Mounting Device (Gang Box Mount)

You can also install the device on a gang box (outlet box) by using the mounting plate.
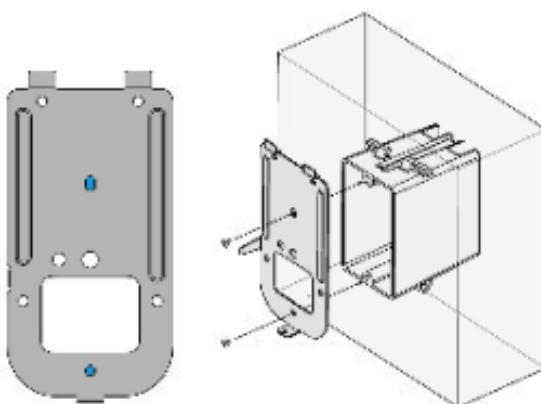
1. Remove the screw that attaches SEEUFACE to the mounting plate and disassemble them.

✅ Keep the screw because it will be used to attach them again

2. Put the mounting plate onto the gang box and attach it to the box with the screws (M4 x 8).

Gang box mounting points

✅ Make sure that the outgoing cables from the gang box go through the rectangular opening in the plate

3. Connect the power cable and peripherals cables, if necessary, to the connectors in the rear panel. (See Connecting Cables for more information)

4. Put the device onto the installed plate, slide it downward, and assemble them with the screw.
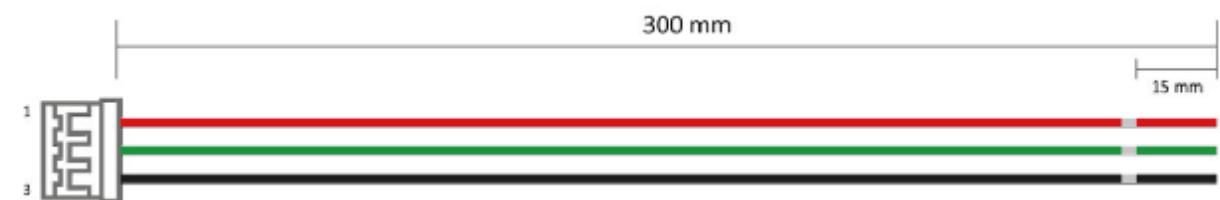 (M3 x 6)

Cables and Connectors

Relay
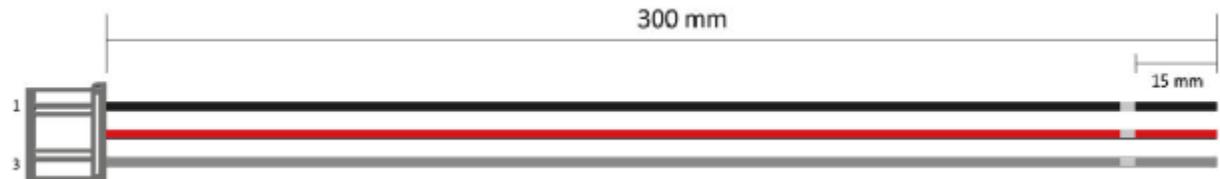
Pin	Name	Color	Wire Gauge
1	Normal Open (NO)	Black	
2	Common (COM)	Red	24 AWG
3	Normal Close (NC)	Gray	

GPI

Pin	Name	Color	Wire Guage
1	GPI 0	Red	
2	GPI 1	Green	
3	GPI 2	Yellow	24 AWG
4	Ground (GND)	Black	

RS-485

Pin	Name	Color	Wire Guage
1	DATA (-)	Red	
2	DATA (+)	Green	24 AWG
3	Black	Black	

Cables & Connectors

Wiegand IN/OUT

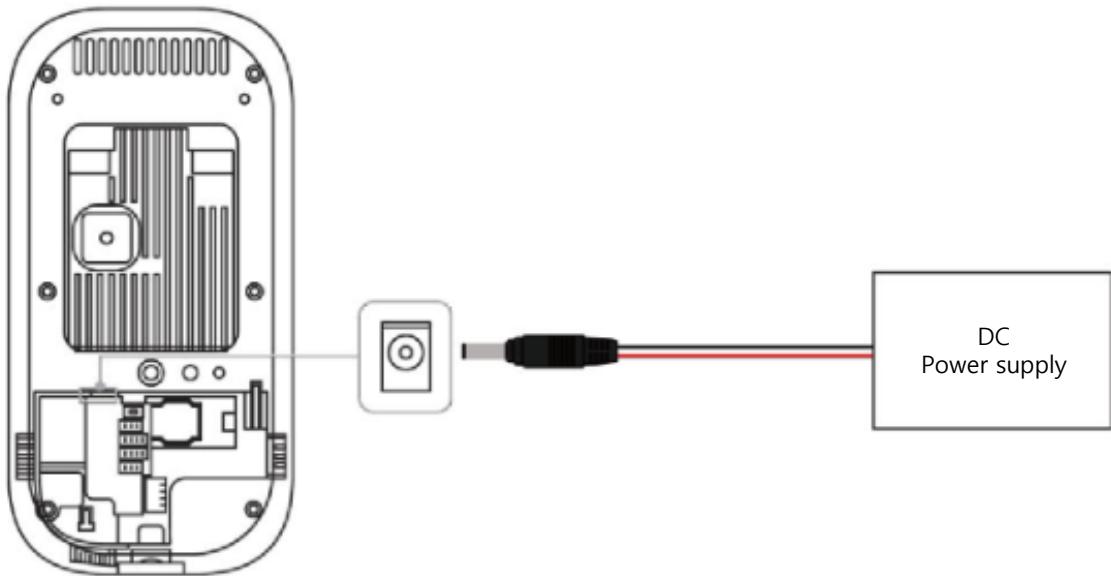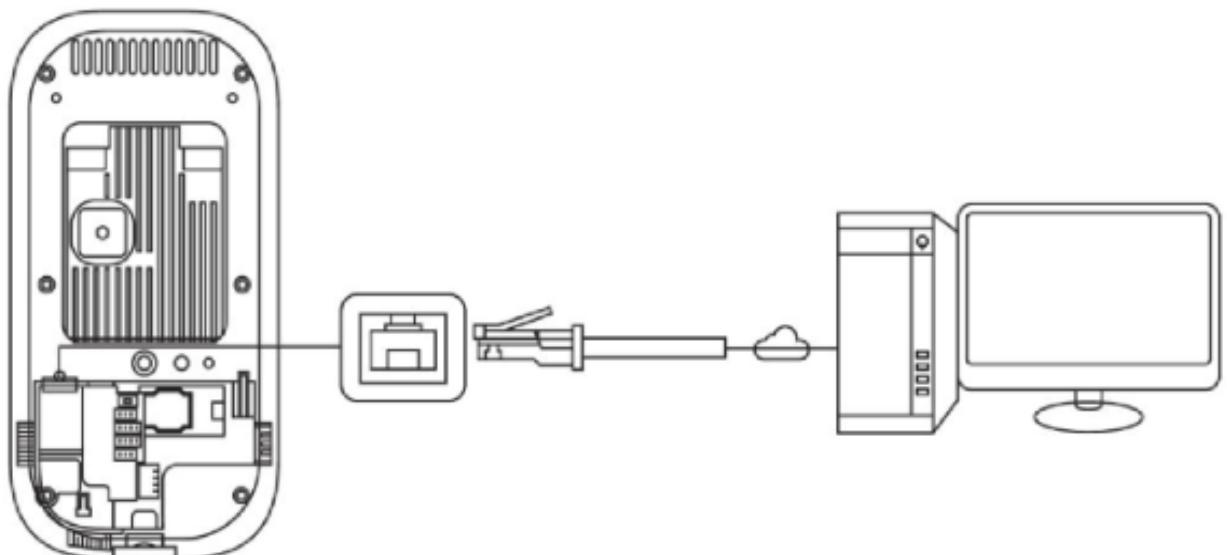| Pin	Name	Color	Wire Guage
1	IN DATA 0	Green	
2	IN DATA 1	White	
3	OUT DATA 0	Blue	24 AWG
4	OUT DATA 1	Gray	
5	Ground (GND)	Black	
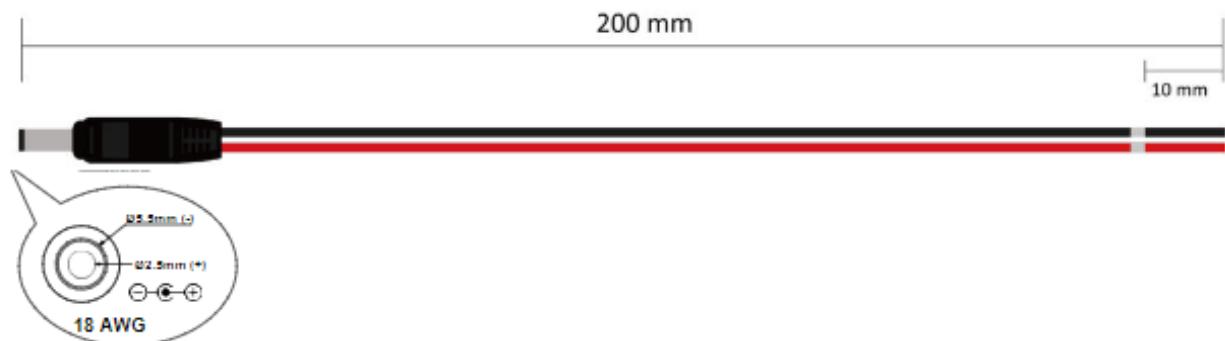
Power

Connecting Cables

Power Connection

Network Connection

RJ-45 connector for 10/100Base-T Ethernet communication, minimum CAT5 cable.

Relay Connection – Dead-Bolt Type Door Lock

There are two types of dead-bolt door lock connections and configuration supported – fail-safe and fail-secure.

- Use different power supplies for the SEEUFACE and the door lock.
- Install the diode at both ends of the circuit as shown in the figure below close to the door lock to protect the relay contact from the reverse current that occurs when the door lock works.
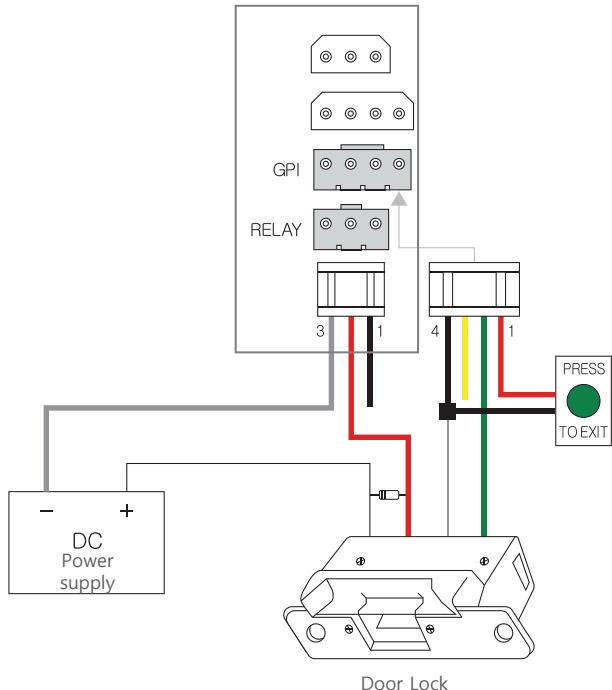- Make sure that the diode direction is correct.

Fail-Safe Configuration
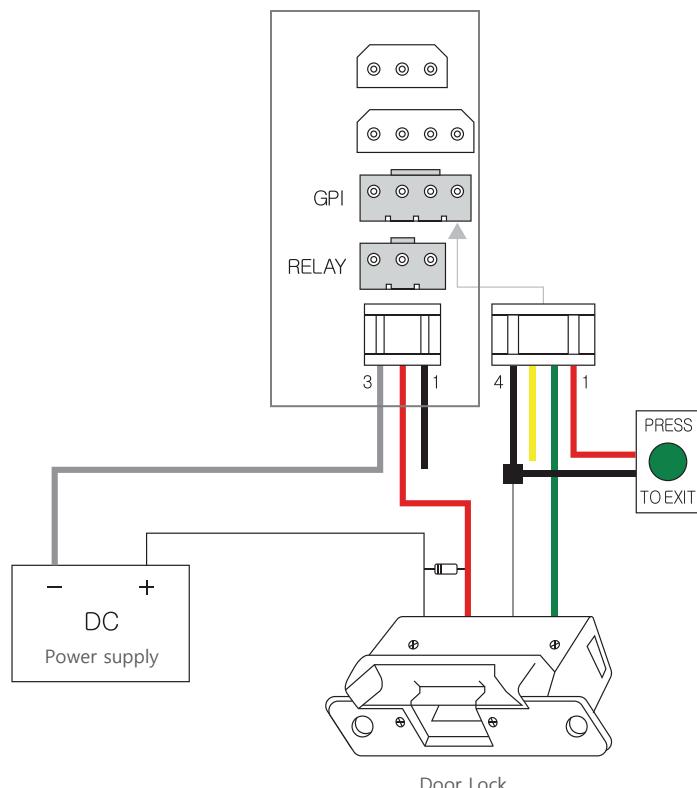
Door Lock

	Pin No.	Name
RELAY	1	Normal Open (NO)
	2	Common (COM)
	3	Normal Close (NC)
GPI	1	GPI 0
	2	GPI 1
	3	GPI 2
	4	Ground (GND)

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Fail-Secure Configuration

	Pin No.	Name
RELAY	1	Normal Open (NO)
	2	Common (COM)
	3	Normal Close (NC)
GPI	1	GPI 0
	2	GPI 1
	3	GPI 2
	4	Ground (GND)

GPI

RELAY

3   1   4   1

PRESS
TO EXIT

DC
Power
supply

−   +

Door Lock

Relay Connection – Automatic Door

RELAY

3   1

Automatic
Door

Door
Controller

PRESS
TO EXIT

Presence
Detector

18
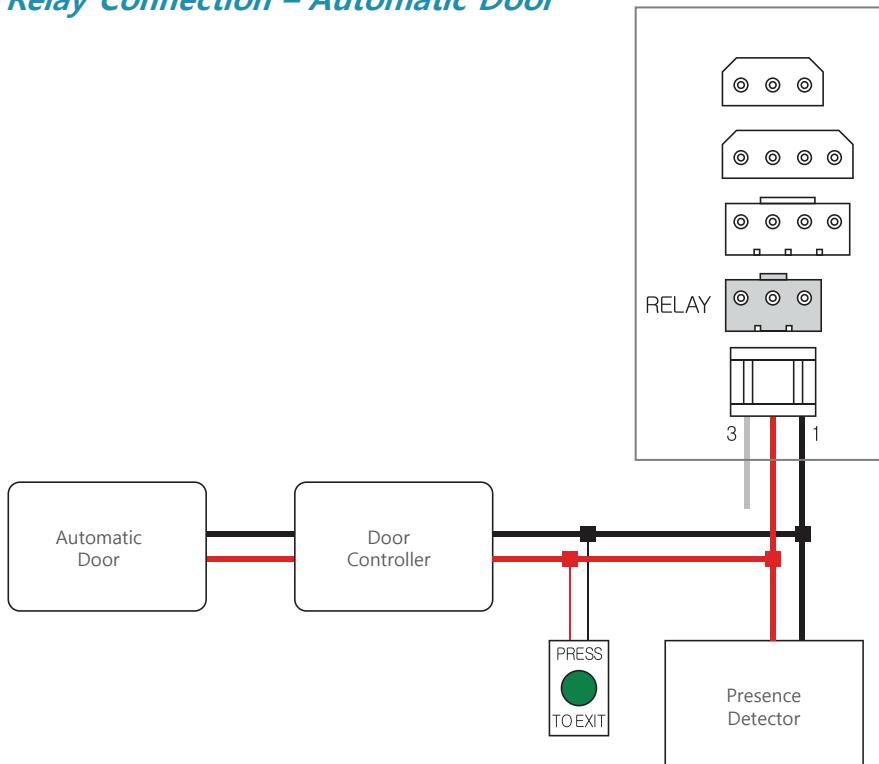
Relay Connection – Alarm Light
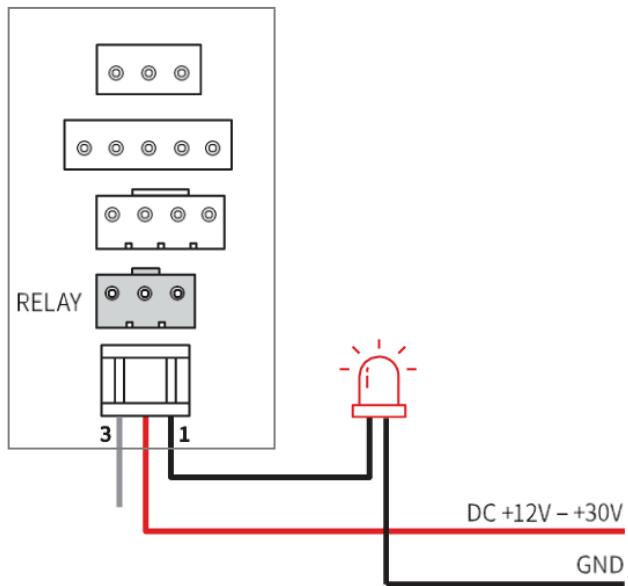
	Pin No.	Name
RELAY	1	Normal Open (NO)
	2	Common (COM)
	3	Normal Close (NC)

GPI Connection
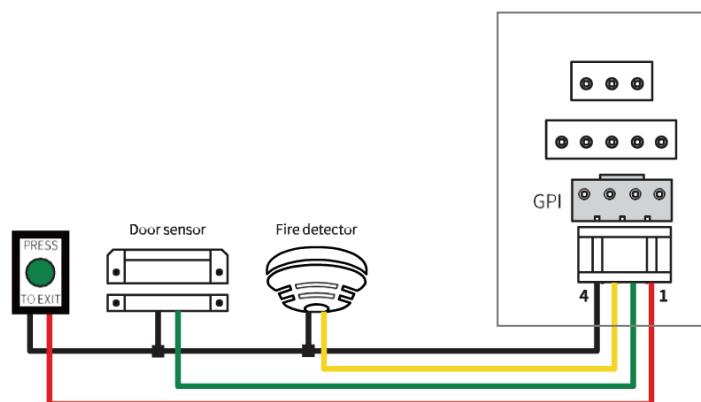
	Pin No.	Name
GPI	1	GPI 0
	2	GPI 1
	3	GPI 2
	4	Ground (GND)

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Wiegand IN Connection

	Pin No.	Name
	1	IN DATA 0
	2	IN DATA 1
Wiegand	3	OUT DATA 0
	4	OUT DATA 1
	5	Ground (GND)

WIEGAND

Wigand Reader (IN)
GND
DATA
DATA

5   1
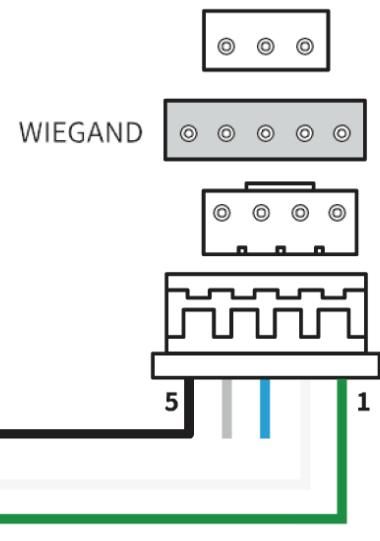
Wiegand OUT Connection

	Pin No.	Name
	1	IN DATA 0
	2	IN DATA 1
Wiegand	3	OUT DATA 0
	4	OUT DATA 1
	5	Ground (GND)

WIEGAND

Access Controller(OUT)
GND
DATA
DATA

5   1

20
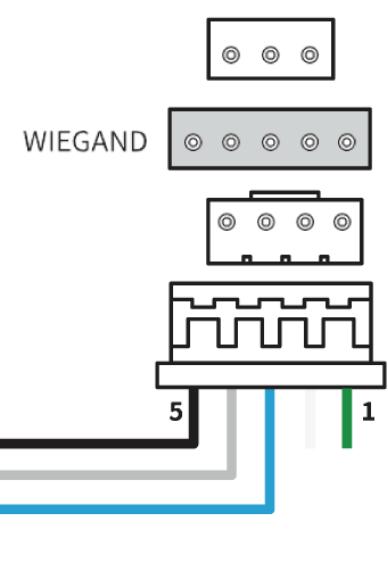
Using SEEUFACE

1. Press the User button ( ) on the main screen.
2. Press Enroll ( ) in the bottom.
3. Type ID and Name.
4. Press one or more credential type buttons (Face, Card) to add to the user.
    ・For **Face**, let the user stand in front of device and complete the face capture
    ・For **Card**, put the card on the device's card reader. When the CSN
   (card serial number) appears on the screen, press **OK**.

> Optionally, select **Bypass card** to allow the user to get access permission by using a registered card alone regardless of authentication mode.

5. Press **OK** to complete the enrollment.
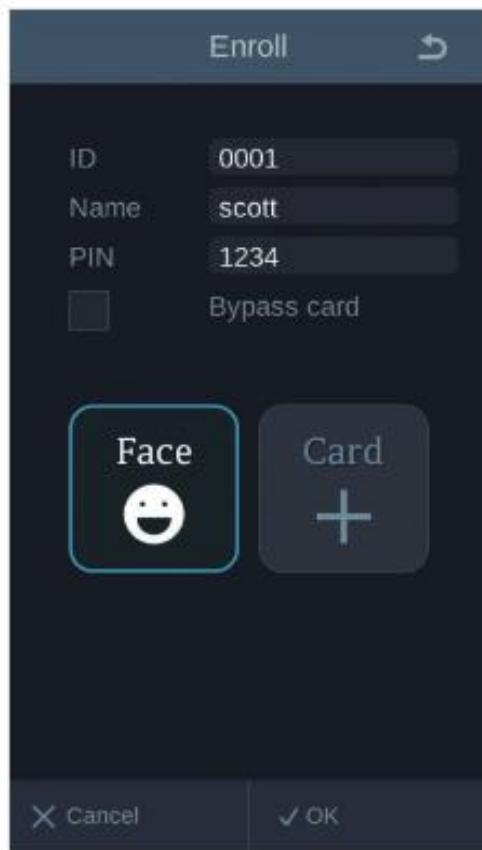
User authentication

SEEUFACE detects and displays the subject's face over 2.0 meters from the system on the high-resolution color display. The subject will simple and naturally walk toward the face capture range of 0.4 to 2.0 meter. Once the system recognizes the subject, the result will be displayed immediately with indication line over the subject's face image.
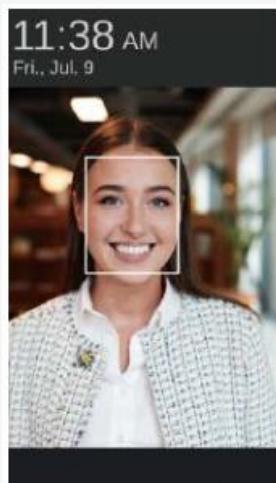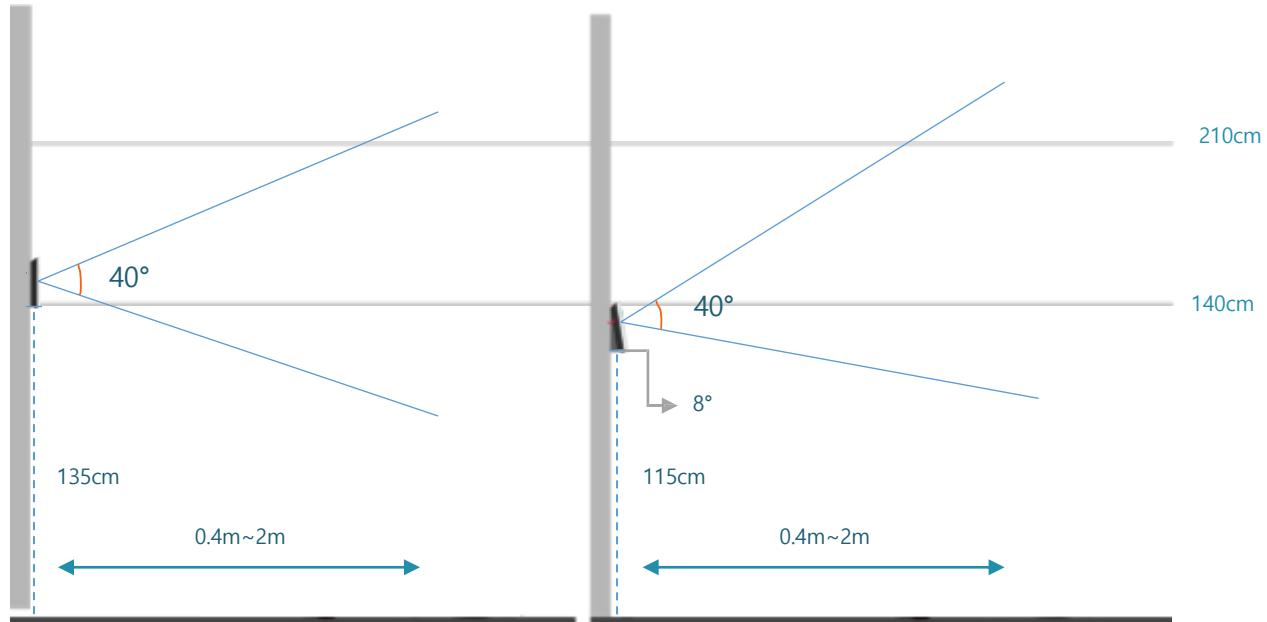
Go near and look at the device. White box appears around the face when your face is detected.
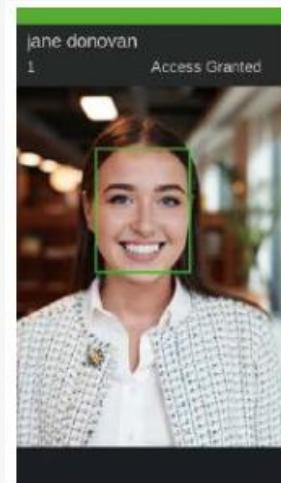
Authentication result is displayed on the top of the screen depending on whether your face is recognized successfully.

Delete User

1. On the main screen, press the user button (👤).

2. Click the delete button (🗑).

3. After selecting the user to be deleted, press the delete button (🗑) again.

🏠	User(1/20000)	↩
⌃		

0001
Robert

F C
P A

🏠	User(1/20000)	↩

⟶

⚪ 0001
Robert

F C
P A

🔍

⊕ Enroll   🗑 Delete

🔍

Cancel   Select all   Delete
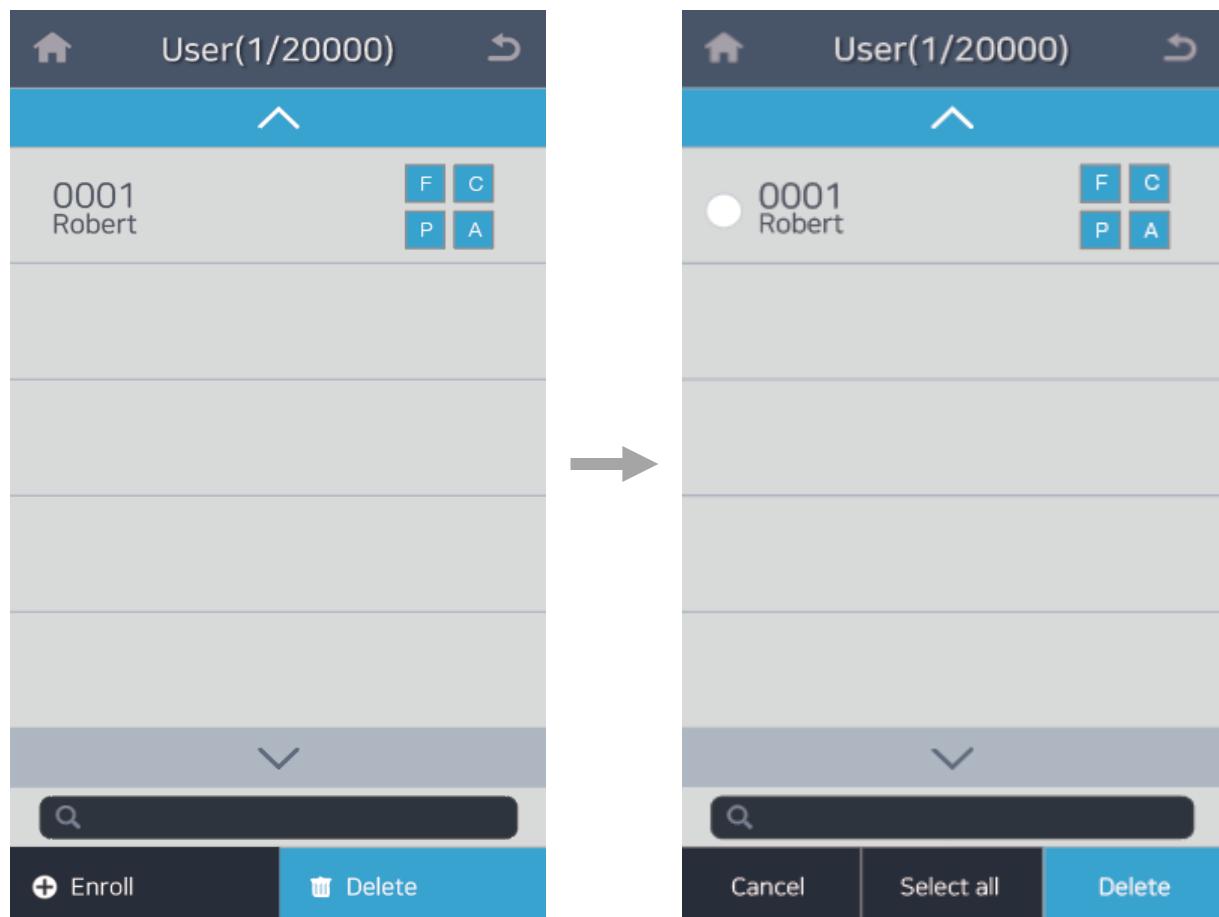
📝 When you click the delete button, an additional confirmation pop-up will not appear, so please delete carefully.

User Menu

This appendix gives the details about advanced setting menus of SEEUFACE device that appears when you press the Gear button (⚙) on the main screen.
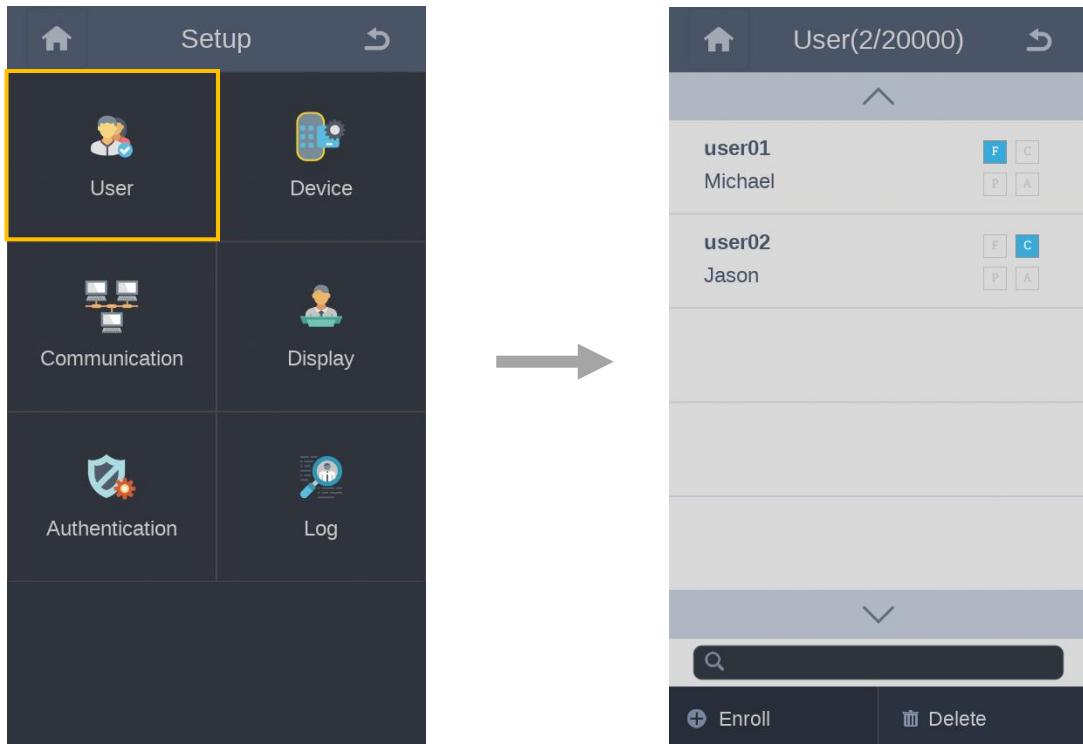
User

Name	Descrption
Enroll	Starts user enrollment
Delete	Delete users
Modify	Edits user information by pressing an registered user
Search	User search through ID input

Device Menu

This appendix gives the details about advanced setting menus of SEEUFACE device that appears when you press the Gear button (⚙) on the main screen.
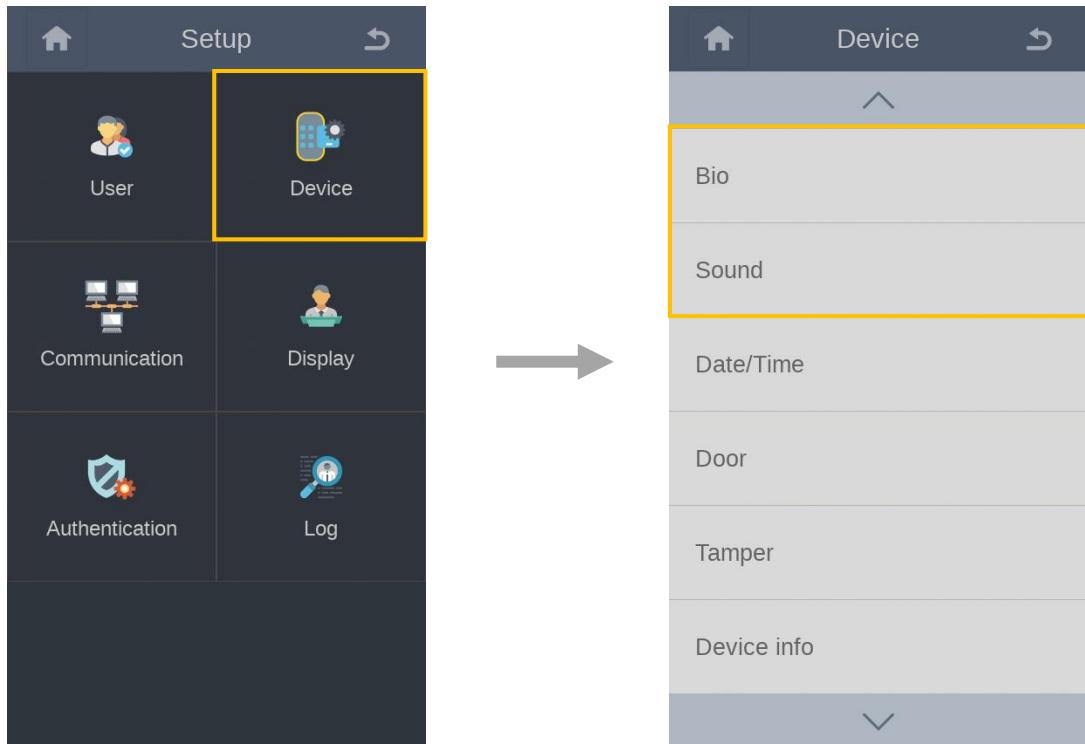

🗔 Device

Name	Find Print	Descrption
Bio	Fake face	Selects a fake face detect option
	Use mask	Selects whether to use mask detection
	Mask alarm	Selects the type of action that the device should take when no mask is detected(Not used, Warning message, Access deny)
	Face image log	Selects whether to show face image on event log
Sound	Speaker volume	Adjusts the speaker volume (0—10)

Menu
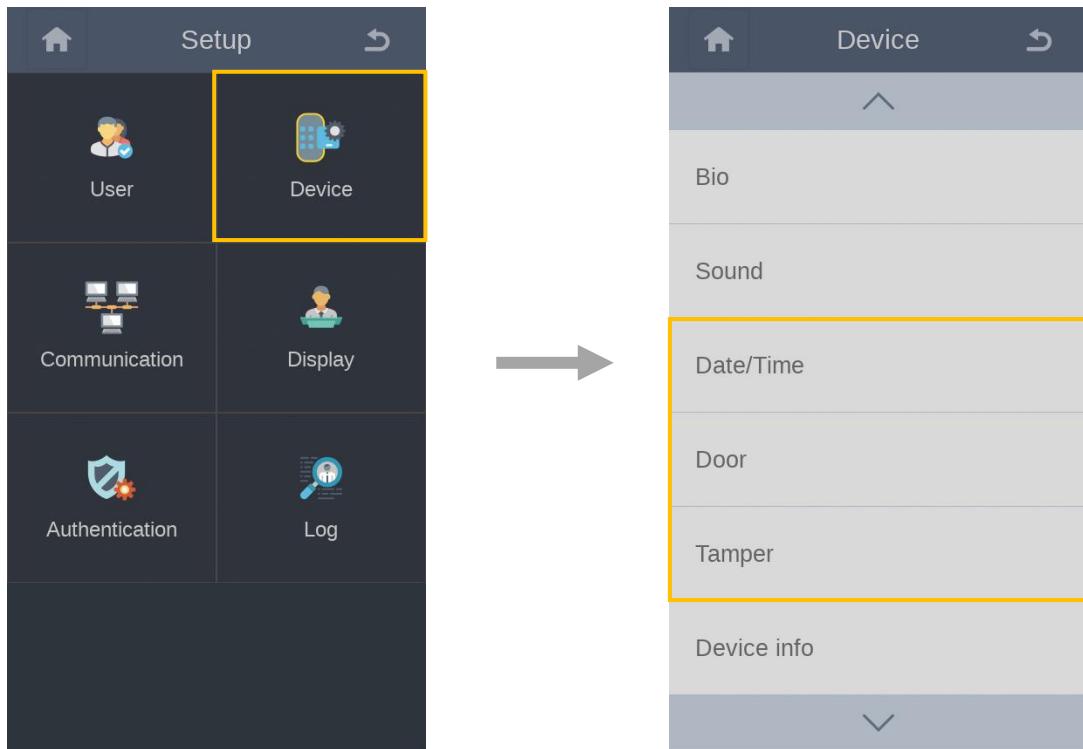
Device

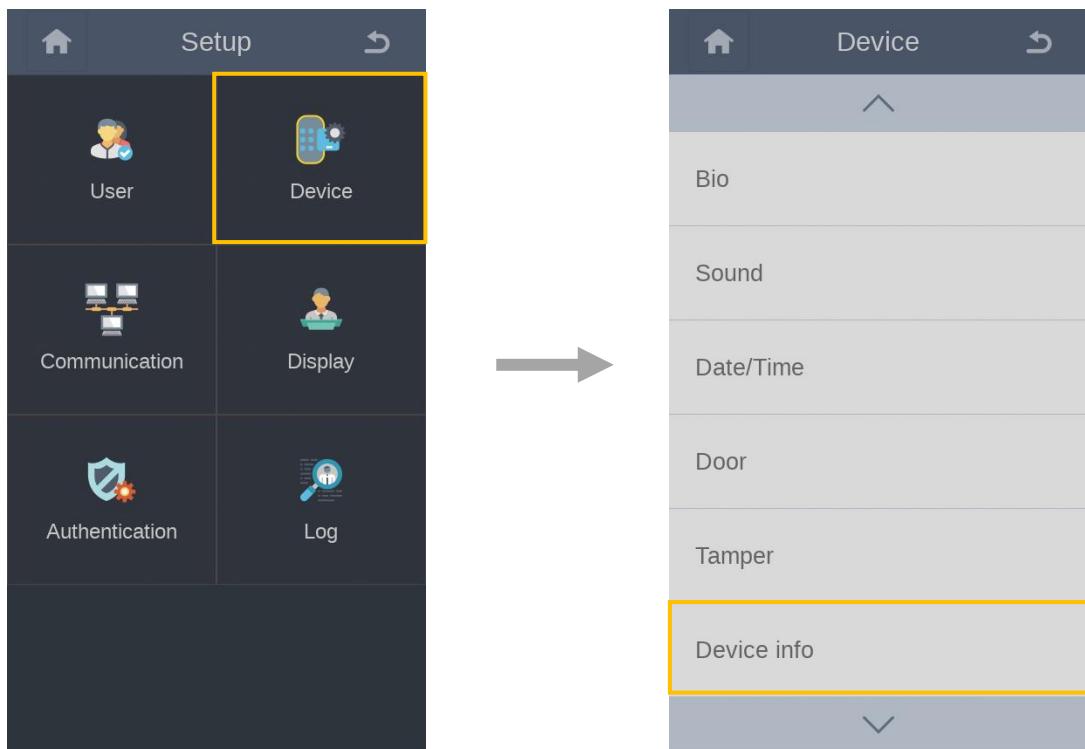| Name	Find Print	Description
Date/Time	Time settings	Set the device's date and time
Door	Relay	Relay settings
	Open duration	Set door open duration time
	Use exit	Selects a GPI port number connected to exit door button (Not used, GPI Port 1, GPI Port 2, GPI Port 3)
	Exit type	Selects contact state of the GPI port that exit door button uses (NC, NO)
	Use alarm	Selects a GPI port number connected to alarm sensor (Not used, GPI Port 1, GPI Port 2, GPI Port 3)
	Alarm type	Selects contact state of the GPI port that alarm sensor uses (NC, NO)
	Use sensor	Selects a GPI port number connected to sensor (Not used, GPI Port 1, GPI Port 2, GPI Port 3)
	Sensor type	Selects contact state of the GPI port that sensor uses (NC, NO)
	Held open duration	Types acceptable door held open period
Tamper	Mode	Selects a tamper protection mode (Not used, Beep mode, Secure mode)

Device

Name	Find Print	Description
Device info	Device name	Configures the device name
	Model	Shows the model name
	FW version	Shows the device firmware version
	APP version	Shows the application version
	MAC	Shows the MAC address
	S/N	Shows the serial number
	IO Micom version	Shows the IO Micom revision number
	H/W version	Shows the hardware revision number
	RF Micom version	Shows the RF Micom revision number
	Algo version	Shows the algorithm revision number

Menu
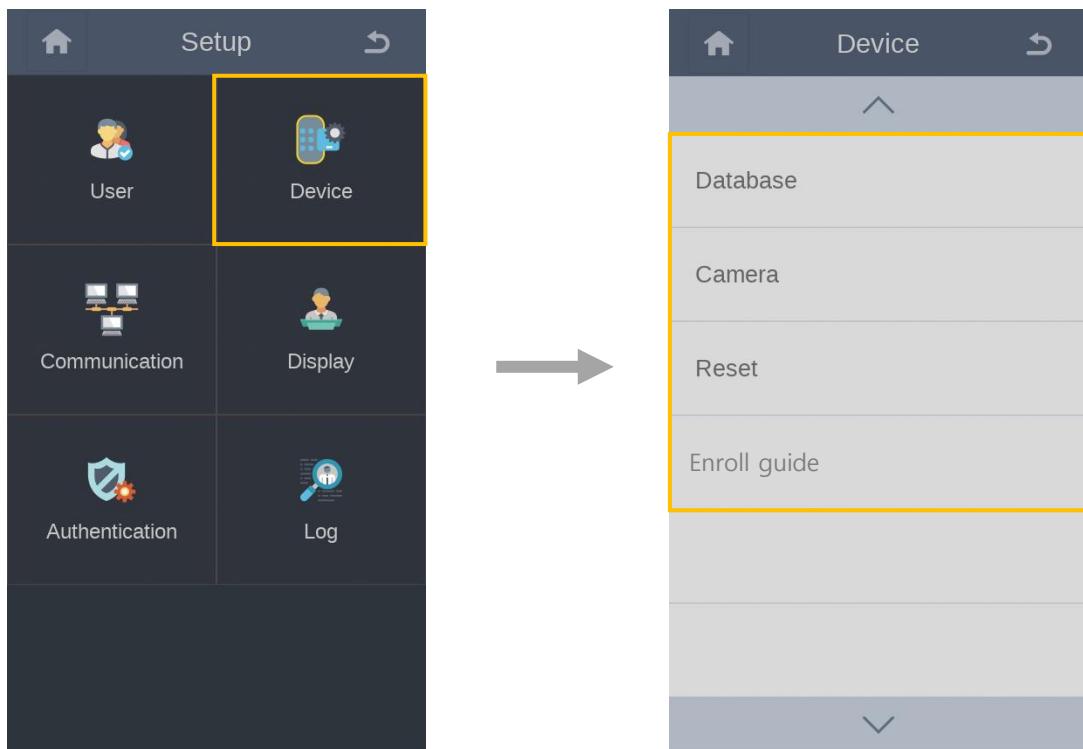
Device

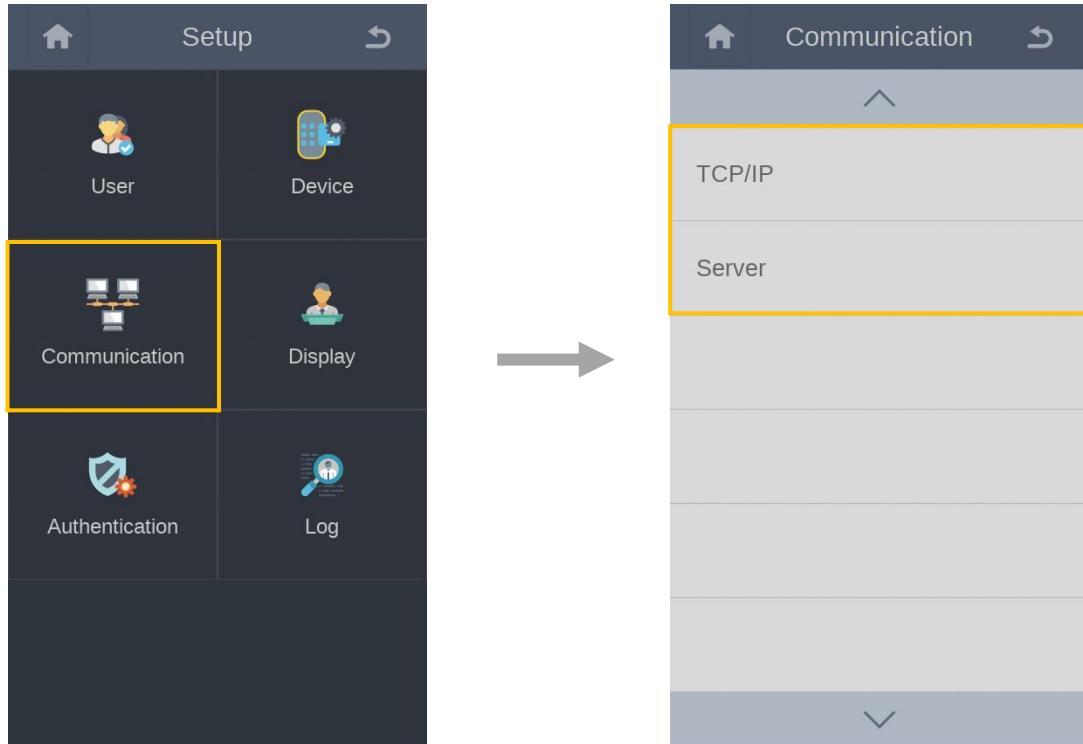| Name	Find Print	Description
Database	User import	Imports the user database from connected USB drive
	User export	Exports the user database to connected USB drive
	Debug export	Exports the debug data to connected USB drive
Camera	Camera mode	Configures the power supply frequency of an electric light where the camera is used (50Hz, 60Hz)
	Outdoor mode	Select whether to use face capture mode for outdoor environment under natural lighting
Reset	Device reboot	Restarts device
	Factory reset	Resets all configuration settings and deletes all user data
	Reset all config	Sets all configuration settings to default
	Reset all users	Deletes all user data
Enroll guide	Video exposure	Set whether or not to expose the timer screen for precautions when registering a face.

Communication Menu

Communication

Name	Find Print	Description
TCP/IP	User DHCP	Selects whether to use DHCP
	IP	Shows the device's IP address
	Subnet	Shows the subnet mask
	Gateway	Shows the gateway address
	DNS 1	Shows the DNS #1
	DNS 2	Shows the DNS #2
Server	User server	Selects whether to use server
	Server IP	Types the server's IP address
	Port	Types the server's port number
	Commute Uri	Type server URI to receive T&A event logs from device
	Sync Uri	Type server URI to receive T&A event logs backed up by device while server is offline
	Accept Uri	Type server URI where device sends request to check periodically if server is online

Display Menu
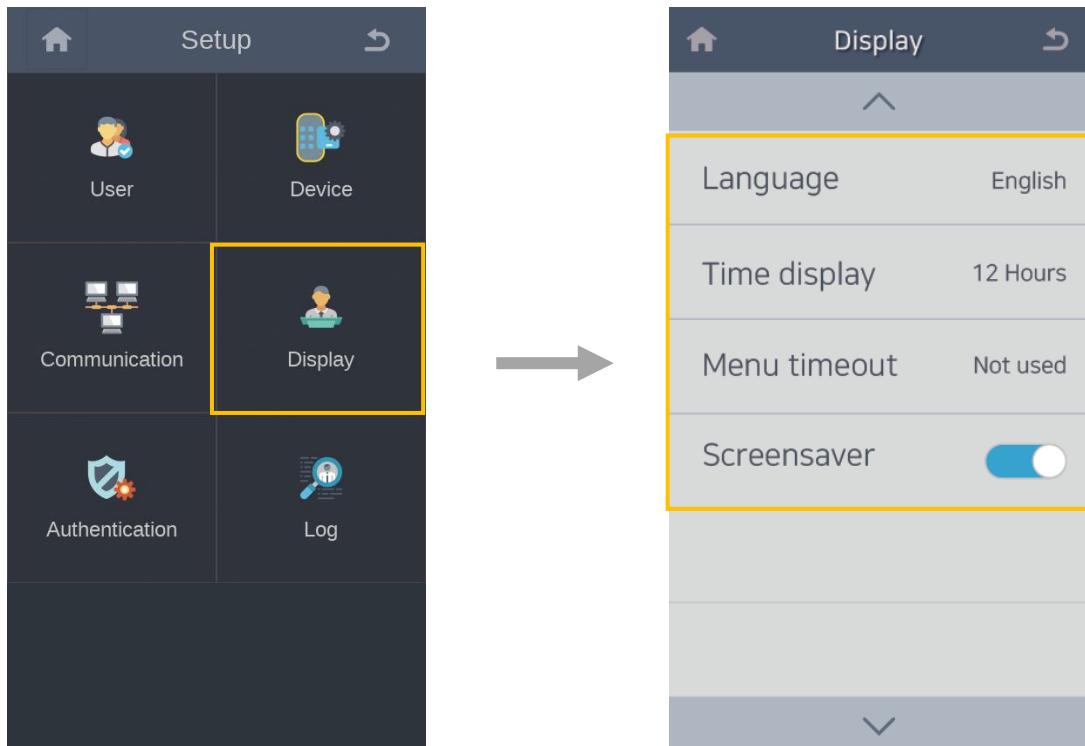
![Display icon] Display

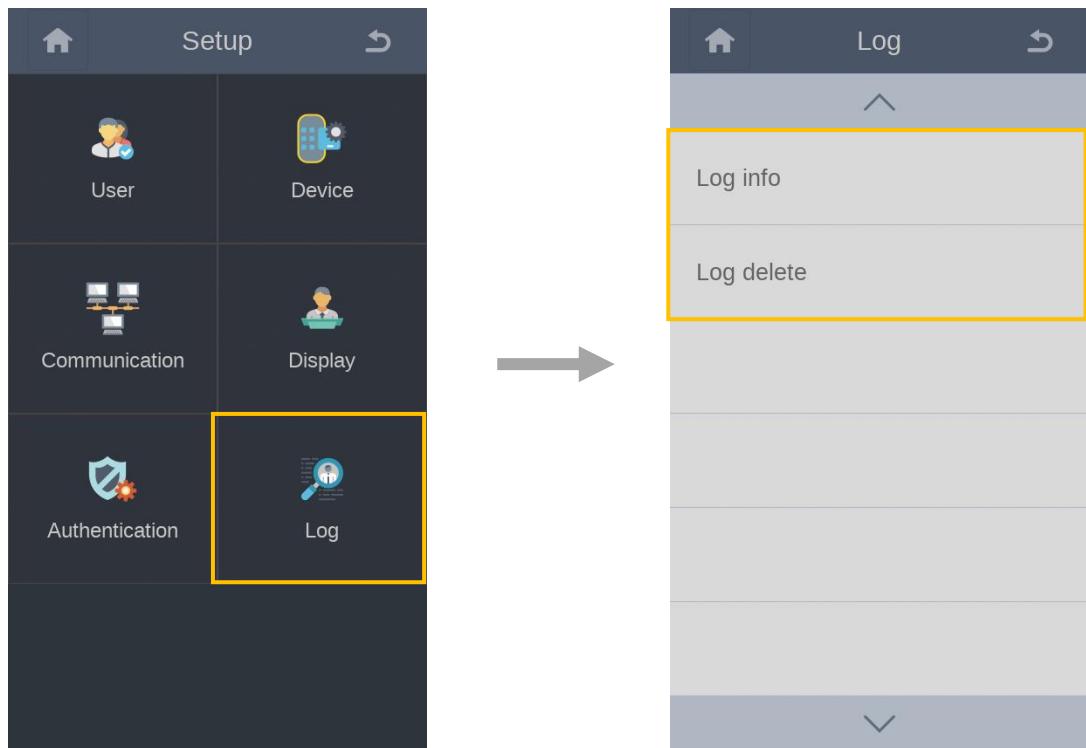| Name	Description
Language	Selects a display language
Time display	Selects time notation between 12-hour and 24-hour clock format (12 Hours, 24 Hours)
Menu timeout	Select timeout for auto exit from menu display after leaving it untouched
Screensaver	Selects whether to use screensaver

Authentication Menu
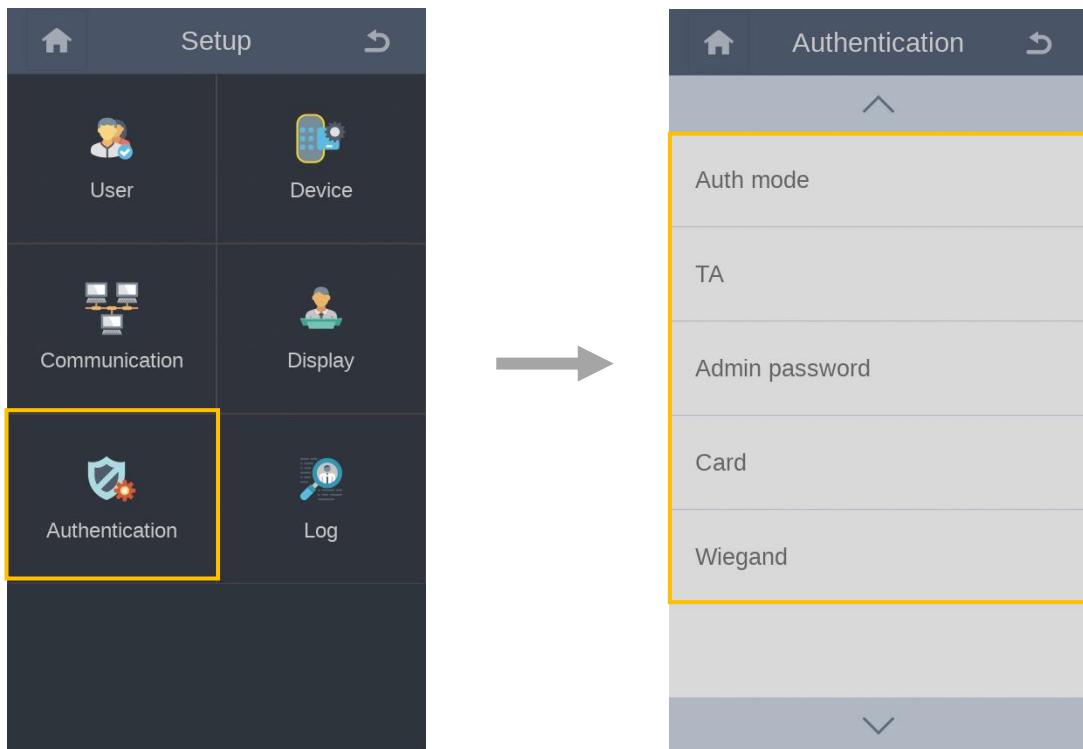
![Authentication] Authentication

Name	Find Print	Description
Auth mode	Mode	Selects a authentication mode (Face only, Face or card, Face and PIN, Card and face, Card an PIN)
	Bypass	Allows unregistered users to access
	Mask reject	Denies access if wearing a mask is deteced
	Touch start	Starts recognition by touching the screen
	Recog threshold	Adjusts match threshold (perimitted value range: 90—100)

📝 Increasing the value increases FRR(false rejection rate) whereas descreasing the value increases FAR(false acceptance rate).

Name	Find Print	Description
	Recog distance	Selects the distance from where the face detection starts
T/A	Use T&A	Selects whether to use T&A
Admin password	Use admin password	Selects whether to use T&A
	Password	비밀번호를 입력합니다.
Card	Use CSN	Selects whether to use card serial number
	CSN order	Selects CSN order on card reading (MSB, LSB)
Wiegand	Output type	Selects Wiegand output type (Wiegand, Card, ID)

Log Menu

 Log

Name	Find Print	Description
Log info	User DHCP	Shows the used space for logs in percent
	Total count	Show the total count of logs
Log delete	Delete log	Deletes all the logs

Standards

Product Dimension(mm)

Standard
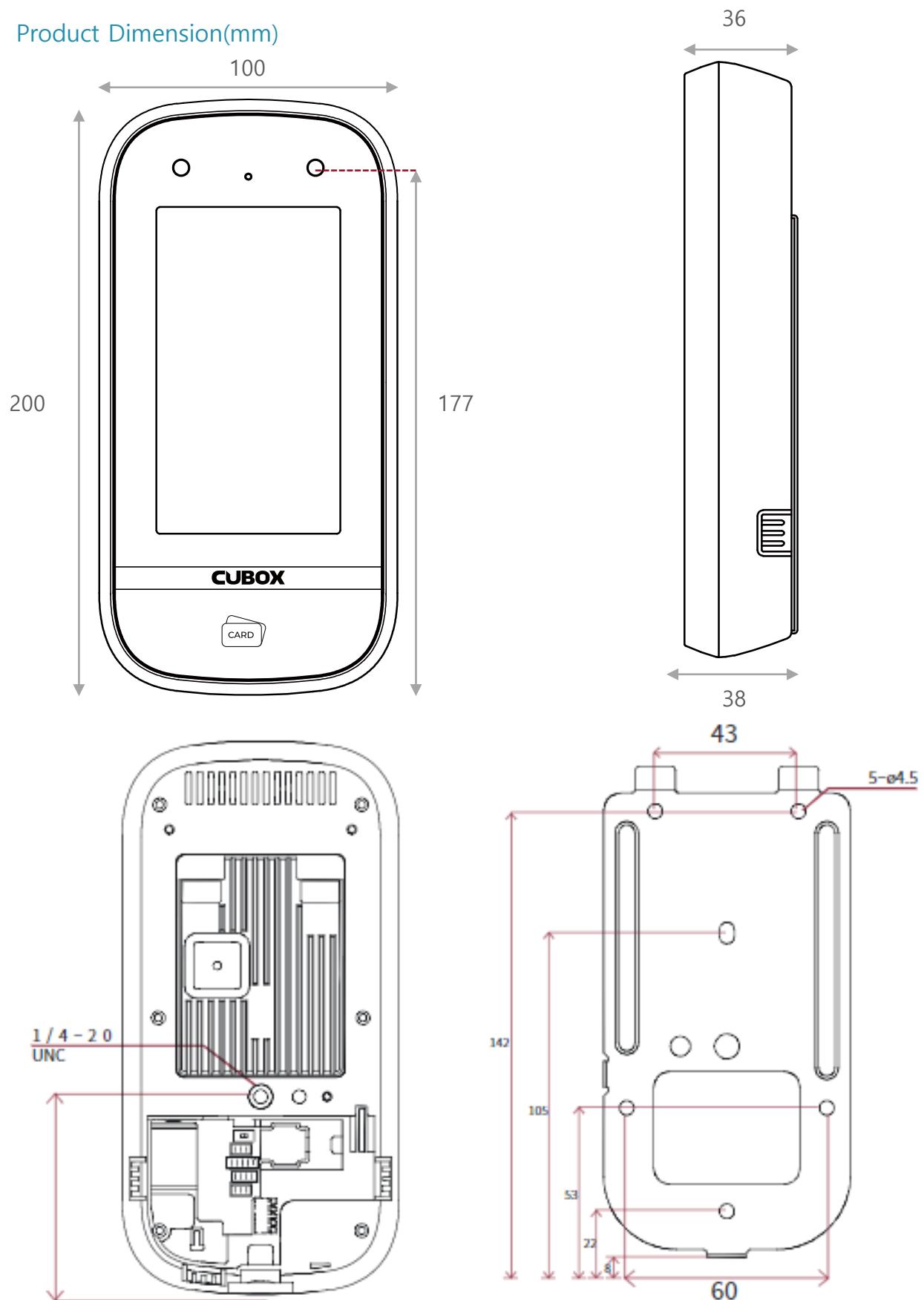
Technical specification

Type		SEEUFACE
General	CPU	Octa-Core
	LCD Type	5" LCD with Touch
	Sound	Built-in Speaker
	Operating Temperature	-20℃ ~ 50℃
	Operating Humidity	10% ~ 90%
	Dimension (W x H x D)	100 x 200 x 36 (mm)
	Weight	450g (Without Wall Mount Plate)
	Certificates	CE, FCC, KC, RoHS
	Power Supply	Voltage: DC 15V / Elec. Current: Max 3A
	Power Consumption	Max 24W
Credential	Biometrics	Face
	RF Card	ISO 14443 A/B, MiFare, DesFire, FeliCa
Face	Algorithm	Included
	Recognition Distance	0.4 ~ 2.0 (m)
	Recognition Height	1.4 ~ 2.1 (m) (Installed at a height 1.35m)
	Matching Speed	< 0.2sec
Capacity	Users (1:N)	20,000
	Text Log	5,000,000
	Image Log	10,000
Interface	Ethernet	10/100/1000 (RJ45 Connector)
	RS-485	1ch Master/Slave
	Wiegand	1ch Input/Output
	TTL Input	3ch Inputs
	Relay	1 Relay
	USB	USB 2.0
	Tamper	Supported
	SIM Socket	Optional

FCC compliance statement

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.

> This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this product not authorized by CUBOX could void the electromagnetic compatibility (EMC) and wireless compliance and negate your authority to operate the product. This product has demonstrated EMC compliance under conditions that included the use of compliant peripheral devices and shielded cables between system components. It is important that you use compliant peripheral devices and shielded cables between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices.

EU Declaration of Conformity(CE)

This product is CE marked according to the provisions of the RED (Radio Equipment Directive) Directive (2014/53/EU). CUBOX Co., Ltd. hereby declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. This device is a class 1 radio device according to the directive. For more information, contact us using the following contact information.

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