

# FaceLite

## INSTALLATION GUIDE

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English  
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# Safety instructions

Please read this safety instructions before you use the product to prevent injury to yourself and others and to prevent property damage. The term 'product' in this manual refers to the product and any items provided with the product.

## Instructional icons



**Warning:** This symbol indicates situations that could result in death or severe injury.



**Caution:** This symbol indicates situations that may result in moderate injury or property damage.



**Note:** This symbol indicates notes or additional information.



## Warning

### Installation

**When using a high-capacity power supply, please pay special attention to avoid miswiring.**

- Miswiring may result in serious fire, electric shock, or product damage.

**Do not install or repair the product arbitrarily.**

- This may result in electric shock, fire, or product damage.
- Damages caused by any modifications or failure to follow installation instructions can void your manufacturer's warranty.

**Do not install the product in a location with heat from an electric heater.**

- This may result in fire due to overheating.

**Install the product in a dry location.**

- Humidity and liquids may result in electric shock or product damage.

**Do not install the product in a location where it will be affected by radio frequencies.**

- This may result in fire or product damage.

### Operation

**Keep the product dry.**

- Humidity and liquids may result in electric shock, fire, or product damage.

**Do not use damaged power supply adapters, plugs, or loose electrical sockets.**

- Unsecured connections may cause electric shock or fire.

**Do not bend or damage the power cord.**

- This may result in electric shock or fire.



## Caution

### **Installation**

Please read this manual before installing the product to ensure a safe and correct installation.

When wiring the power cable and other cables, make sure to connect them with the power turned off for all devices involved.

- The product may malfunction.

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

Do not install the product under direct sunlight or UV light.

- This may result in product damage, malfunction, discoloration, or deformation.

Do not install the power supply cable in a location where people pass by.

- This may result in injury or product damage.

Do not install the product near magnetic objects, such as a magnet, TV, monitor (especially CRT), or speaker.

- The product may malfunction.

Keep the minimum distance between products when installing multiple products.

- The product may be affected by radio frequencies emitted by other products and the product may malfunction.

Use the IEC/EN 62368-1 approved power adapter that supports higher power consumption than the product. It is highly recommended to use the power adapter sold by Suprema.

- If the right power supply is not used, the product may malfunction.
- Refer to the **Power** in the product specifications for maximum current consumption specifications.

Use a separate power supply for the Secure I/O 2, electric lock, and the product.

- If connecting and using the same power supply, the product may malfunction.



## Caution

### **Operation**

**Do not drop the product or cause impacts to the product.**

- The product may malfunction.

**Do not disconnect the power supply while upgrading the firmware of the product.**

- The product may malfunction.

**Do not disclose the password to others and change it regularly.**

- This may result in illegal intrusion.

**Do not press buttons on the product by force or do not press them with a sharp tool.**

- The product may malfunction.

**Do not store your product in very hot or very cold places. It is recommended to use your product at temperatures from -20°C to 50°C.**

- The product may malfunction.

**When cleaning the product, mind the following.**

- Wipe the product with a clean and dry towel.
- If you need to sanitize the product, moisten the cloth or the wipe with a proper amount of rubbing alcohol and gently clean all exposed surfaces. Use rubbing alcohol (containing 70 % Isopropyl alcohol) and a clean, non-abrasive cloth like lens wipe.
- Do not apply liquid directly to the surface of the product.

**Do not use the product for anything other than its intended use.**

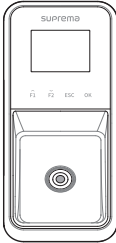
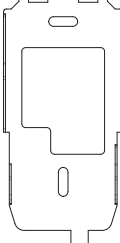
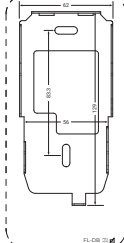
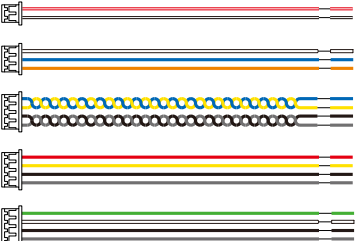





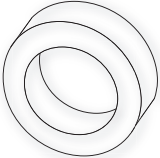
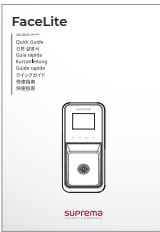

- The product may malfunction.

### **RTC Battery**

Use of an unapproved or incorrect type of battery may result in a risk of explosion. Discard the battery according to the appropriate regional or international waste regulations.

# Introduction

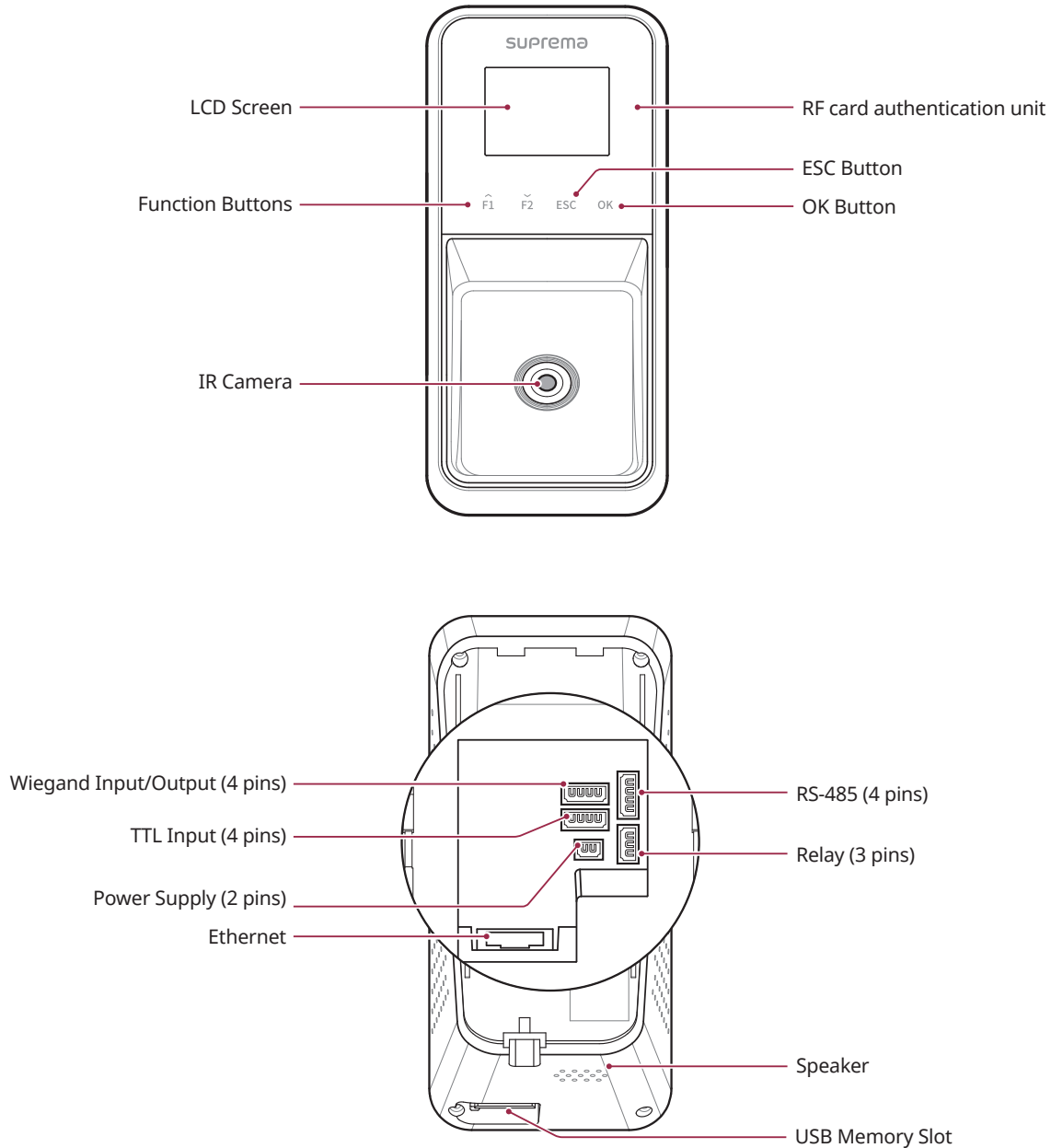
## Components

		
<p>FaceLite</p>	<p>Wall Bracket</p>	<p>Drilling Template</p>
		
<p>Connection Cables</p>	<p>Diode</p>	<p>120 Ω Resistor</p>
		
<p>PVC Anchor x2</p>	<p>Fixing Screw x2</p>	<p>Bracket Fixing Screw (Star Shaped)</p>
		
<p>Ferrite Core</p>	<p>Quick Guide</p>	<p>Open Source Software Guide</p>



- 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.
- For more details regarding the product, visit the Suprema website (<https://www.supremainc.com>) and refer to the user guide.

## Name and function of each part



Name	Description
LCD Screen	Provides UI for operation.
Function Buttons	Used for T & A key or entering characters. When entering characters, a short push of the function button moves left and right, and a long push moves up and down.
IR Camera	Capture the infrared face image.
OK Button	Used for selecting and setting T&A Mode. If a job code is set, you can change the job code of the user by pressing this button long.
ESC Button	Used for opening the menu, moving to the previous screen or canceling input.
RF card authentication unit	Part to scan the card for entrance.
Wiegand Input/Output (4 pins)	Connect the Wiegand input/output cable.
TTL Input (4 pins)	Connect the TTL input cable.
Power Supply (2 pins)	Connect the power supply cable.

Name	Description
Ethernet	Connect the Ethernet cable.
USB Memory Slot	Connect USB memory.
Speaker	Delivers sound.
Relay (3 pins)	Connect the relay cable.
RS-485 (4 pins)	Connect the RS-485 cable.

## Cables and connectors

### Power supply



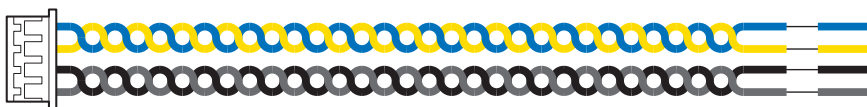
Pin	Name	Color
1	PWR +VDC	Red (white stripe)
2	PWR GND	Black (white stripe)

### 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



## TTL input



Pin	Name	Color
1	TTL IN0	Red
2	TTL IN1	Yellow
3	TTL GND	Black
4	SH GND	Gray

## Wiegand input and output



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

## Correct face enrollment and authentication method

### Cautions for enrolling a face

- When enrolling a face, maintain a distance of 40 cm to 80 cm between the device and the face.
- Be careful not to change the facial expression. (smiling face, drawn face, wink, etc.)
- If you do not follow the instructions on the screen, the face registration may take longer or may fail.
- Be careful not to cover the eyes or eyebrows.
- Do not wear hats, masks, sunglasses or eyeglasses.
- Be careful not to display two faces on the screen. Register one person at a time.
- It is recommended for a user wearing glasses to register both faces with and without glasses.

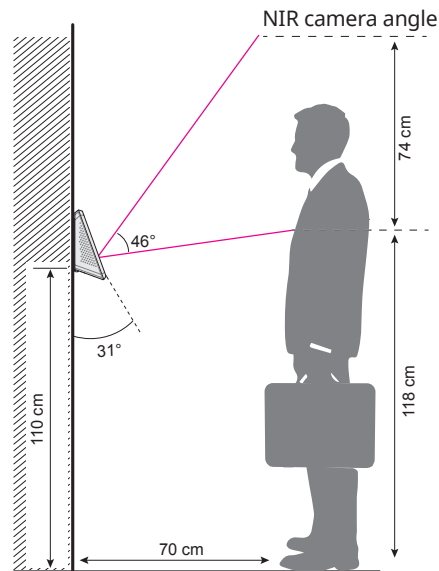
### Cautions for authenticating a face

- Ensure that the face appears inside the guideline displayed on the screen of the device.
- If glasses have been changed, authentication may fail. If the face without glasses has been registered, authenticate the face without glasses. If only the face with glasses has been registered, authenticate the face with the previously worn glasses again.
- If a part of the face is covered with a hat, a mask, an eye patch, or sunglasses authentication may fail. Do not cover the face; allow the device to recognize both the eyebrows and the face.

# Installation

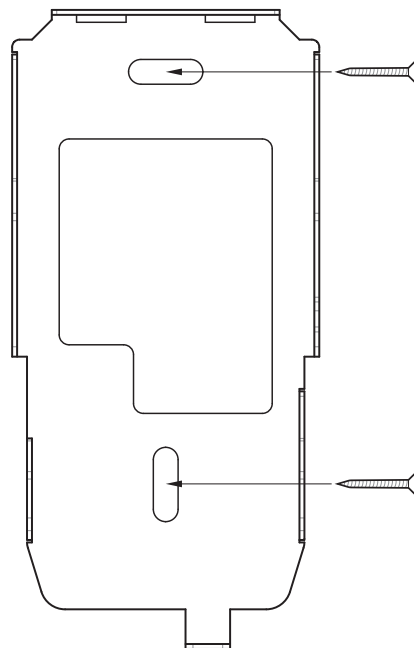
## Fixing the bracket and the product

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



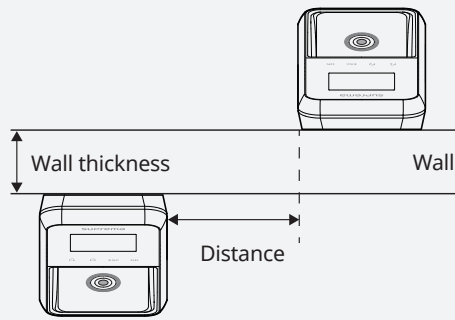
- The optimal height for installing device is 110 cm.
- Install the device where it does not reach the direct sunlight.
- Adjust the installation position so that the face is not exposed to direct sunlight when a user tries to authenticate.

2 Fix the bracket firmly using fixing screws through the bracket to the position where FaceLite will be installed.



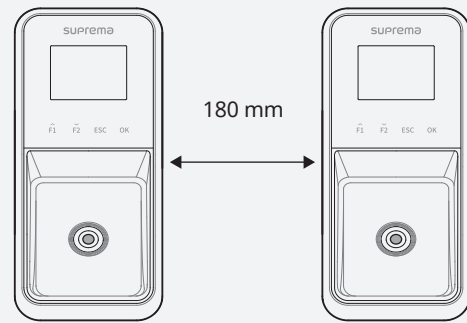


- If installing FaceLite on a concrete wall, drill holes, insert PVC anchors, and fix them with fixing screws.
- To avoid RF interference, a minimum separation distance must be maintained.

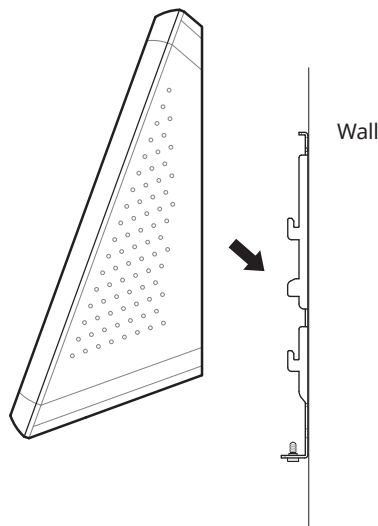


Wall thickness	Distance
100 mm	80 mm
120 mm	60 mm
150 mm	30 mm

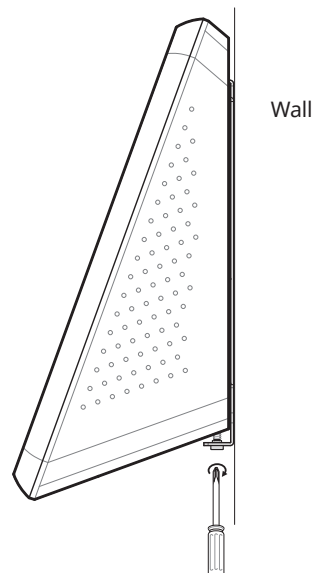
Wall



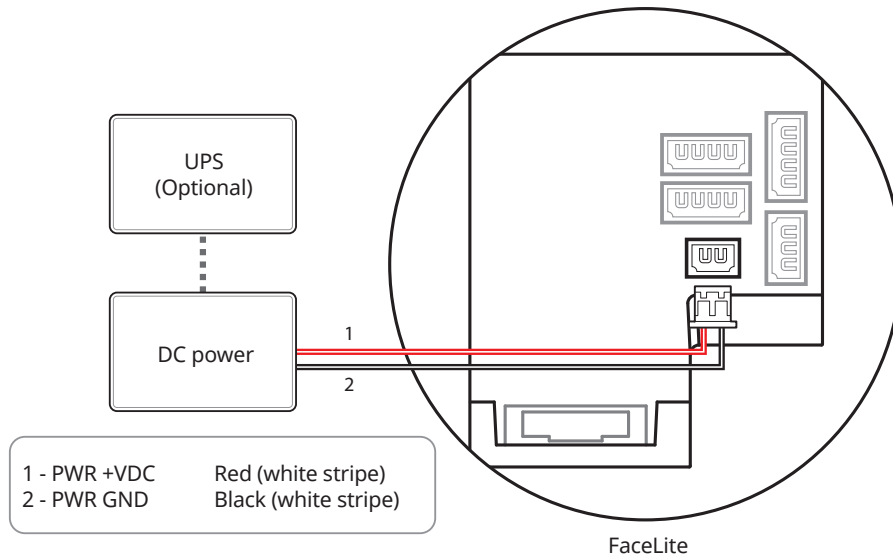
**3** Install FaceLite onto the fixed bracket.



**4** Connect FaceLite to the bracket by rotating the product fixing screw of FaceLite.



## Power supply connection



- 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.
- DO NOT extend the length of power cable when using the power adapter.
- 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.
- Be aware of the distance between the FaceLite and the power supply when using a separate power supply. The power supply should be installed as close as possible to the device. If not properly connected, the device may malfunction. We recommend that use 16 AWG or 18 AWG cables if the distance between the device and the power supply is too far. The distance that can be connected may vary depending on the cable specifications and installation environment.

Cable standard	Max. extended length
16 AWG	150 mm
18 AWG	136 mm
20 AWG	90 mm

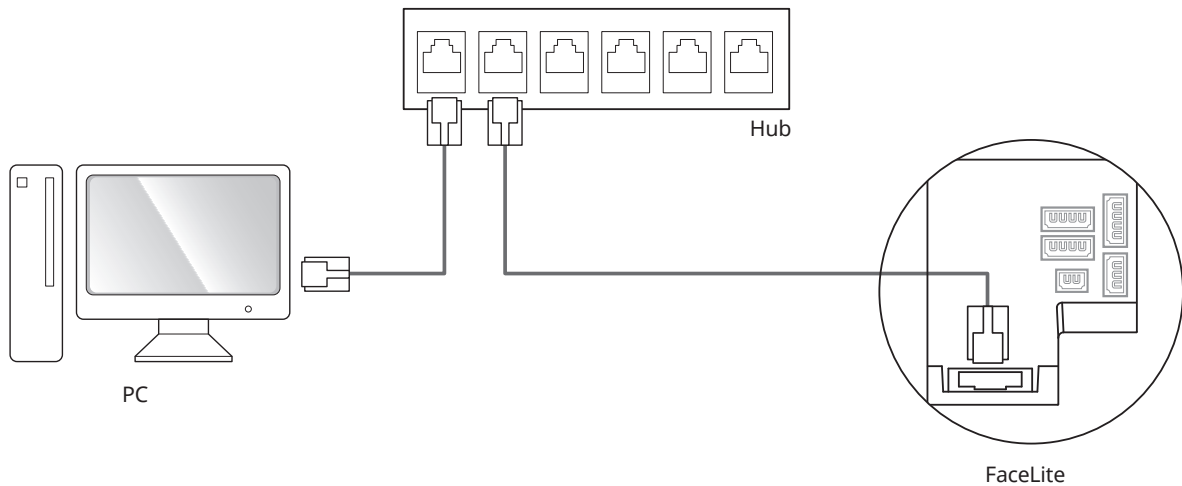
- DO NOT use the CAT5 UTP 2-Wire for power supply purpose.

## Network connection

### TCP/IP

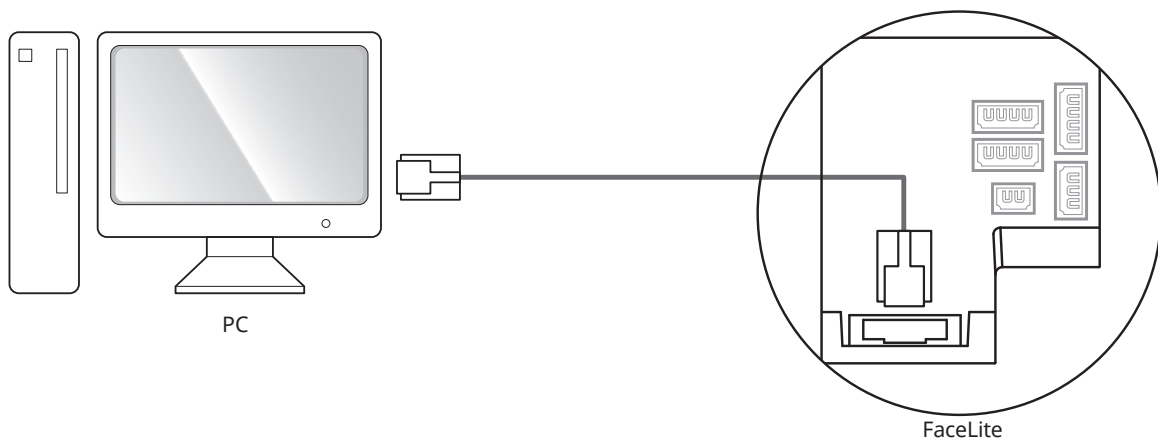
#### LAN connection (connecting to a hub)

You can connect the product to a hub using a general type CAT-5e cable.



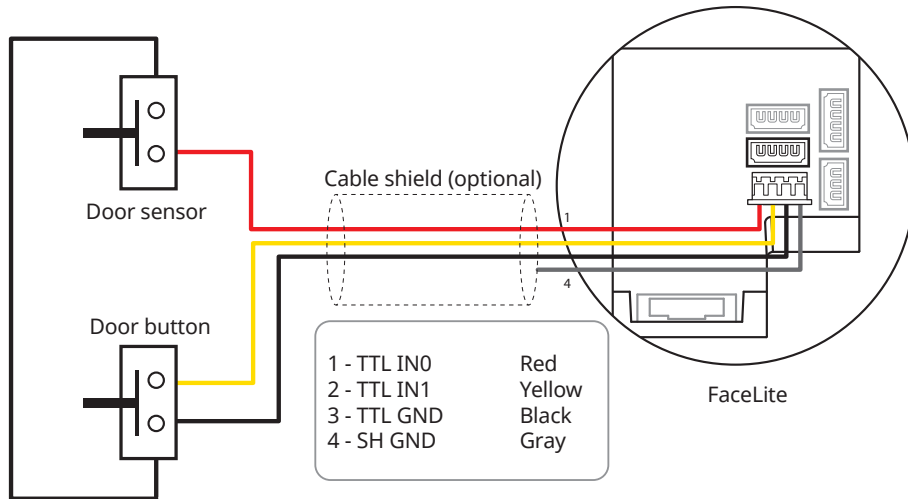
#### LAN connection (connecting to a PC directly)

FaceLite has an automatic MDI/MDIX function so that it can be connected to a PC directly using a normal straight type CAT-5e cable or a cross cable.



- When you use a gigabit network switch, please see below information.
  - Use a Cat5e UTP(Unshielded Twisted Pair) cable.
  - Use all 4 pairs (8 lines) of cable for network connection.
  - DO NOT use the pair of cable for other purpose.

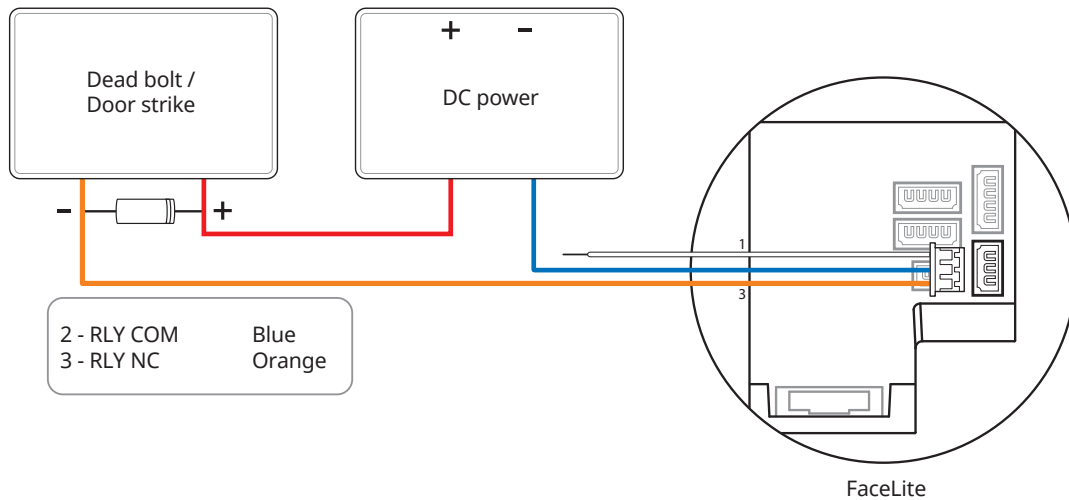
## TTL input connection



## 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.



- 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 FaceLite 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.

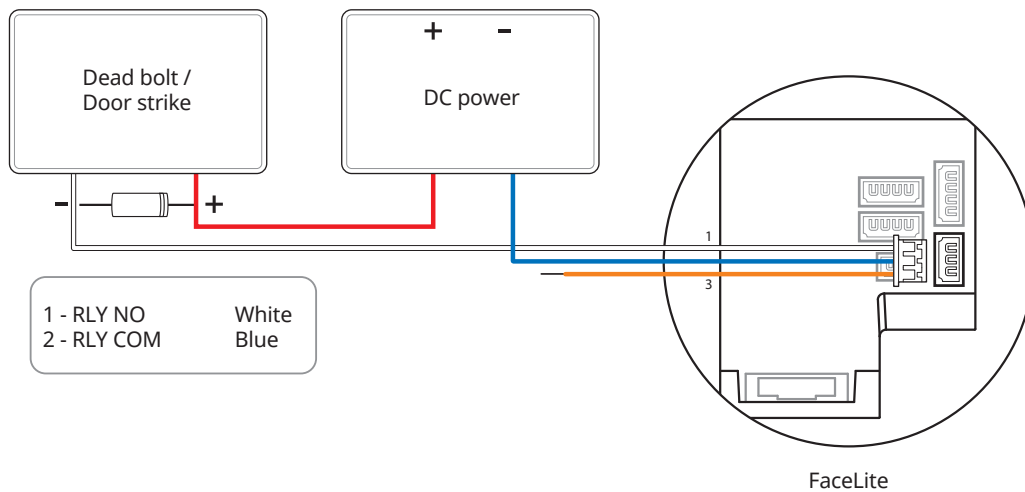


Take caution of the installation direction of the diode. Install the diode close to the door lock.



## 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.

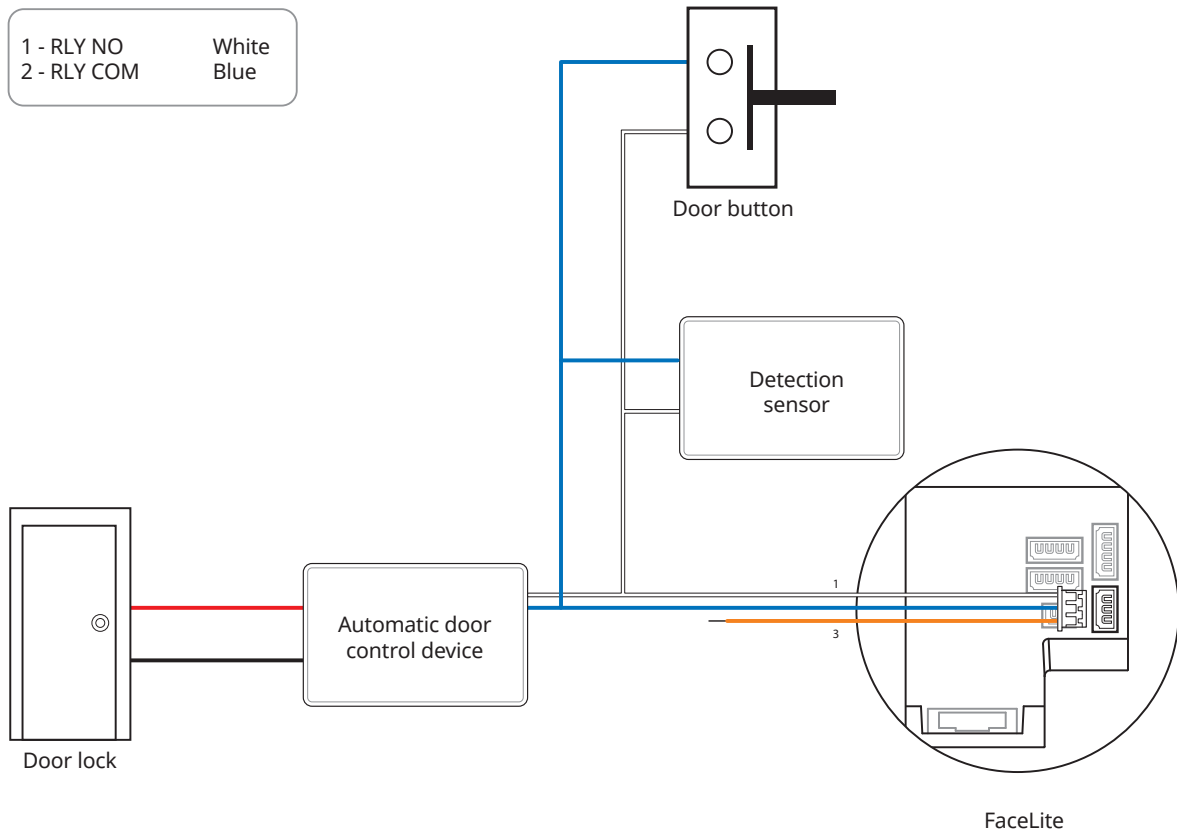


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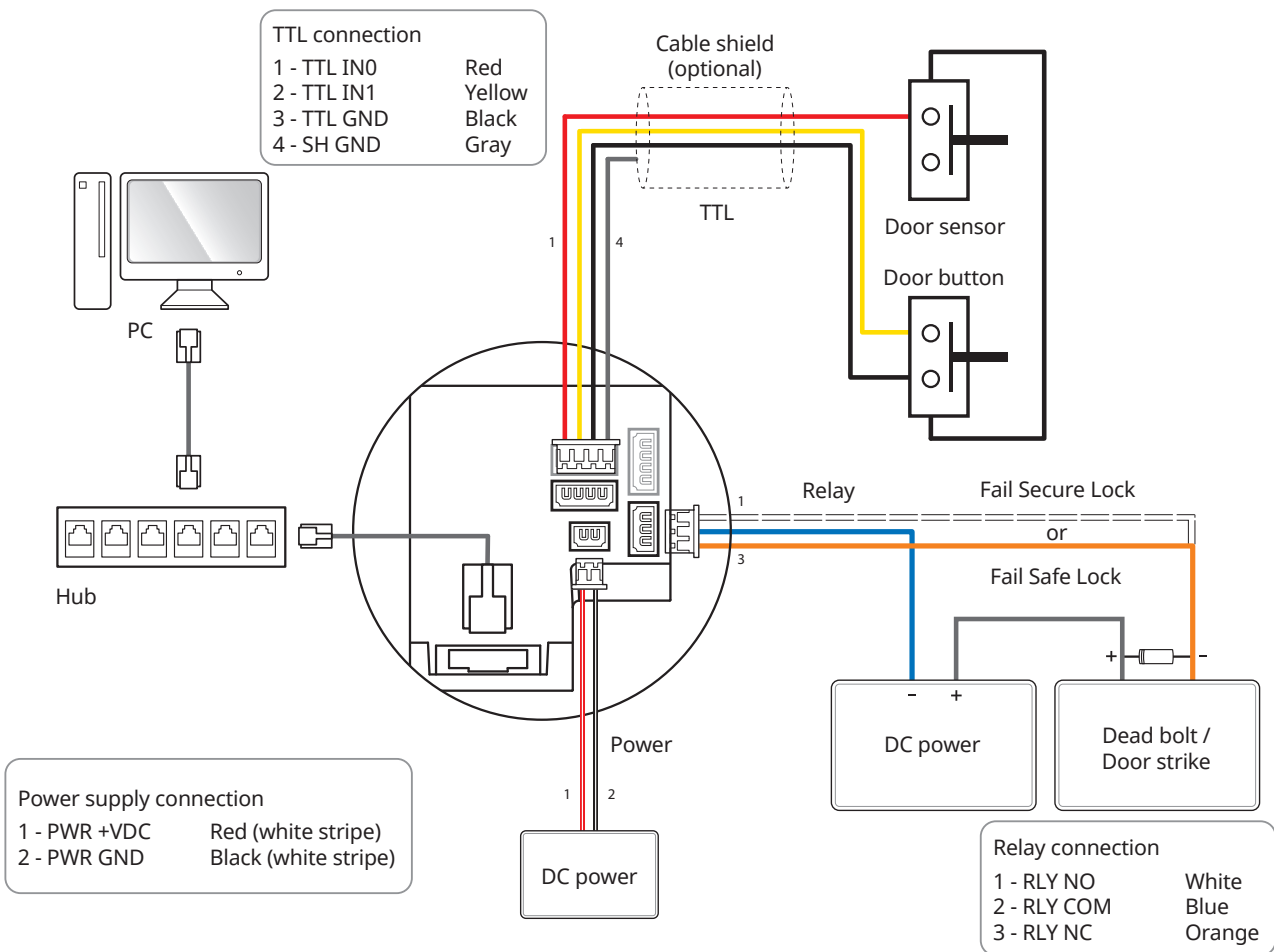
Take caution of the installation direction of the diode. Install the diode close to the door lock.

## Automatic door connection



## Connecting as a standalone

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



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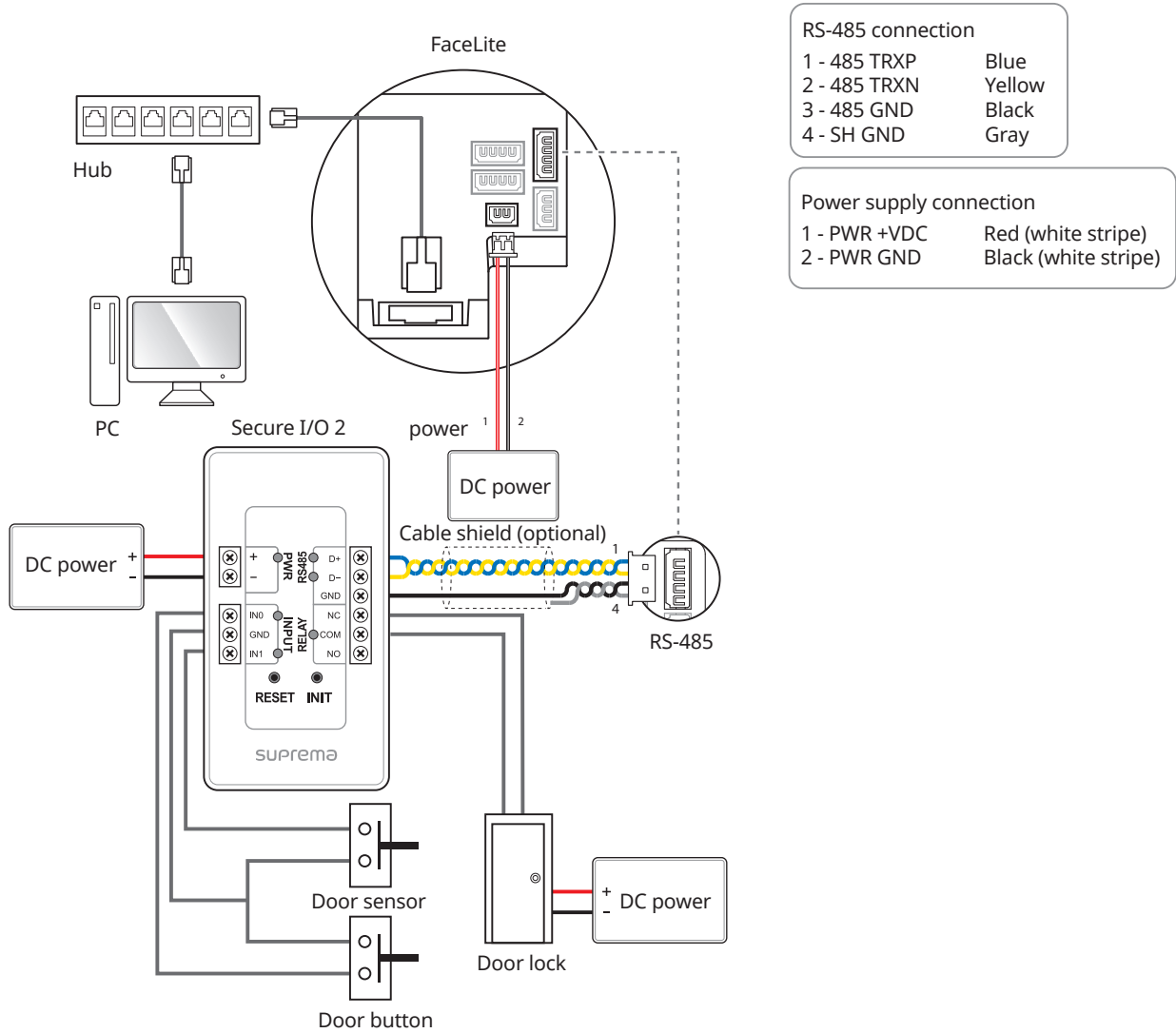


- FaceLite can be used as a multi-door controller with the slave devices with the RS-485 cable. The slave devices are used as dummy readers and authentication is performed in the master device.
- If a fingerprint authentication device is configured as a slave device in FaceLite, you cannot add another FaceLite as a slave device.
- If the fingerprint authentication device is the master device, FaceLite cannot be added as a slave device.
- When you connect FaceLite as a slave device while FaceLite is the master device, only one FaceLite can be added as a slave device.
- When FaceLite is the master device and another FaceLite is connected to it as a slave device, you can connect one additional Secure I/O 2 and DM-20 each.
- When FaceLite is the master device and another FaceLite is connected to it as a slave device, you cannot connect additional OM-120.
- 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 speed.
- A master device can control 31 slave devices. 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 (<https://support.supremainc.com>).

## Connecting to Secure I/O 2

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

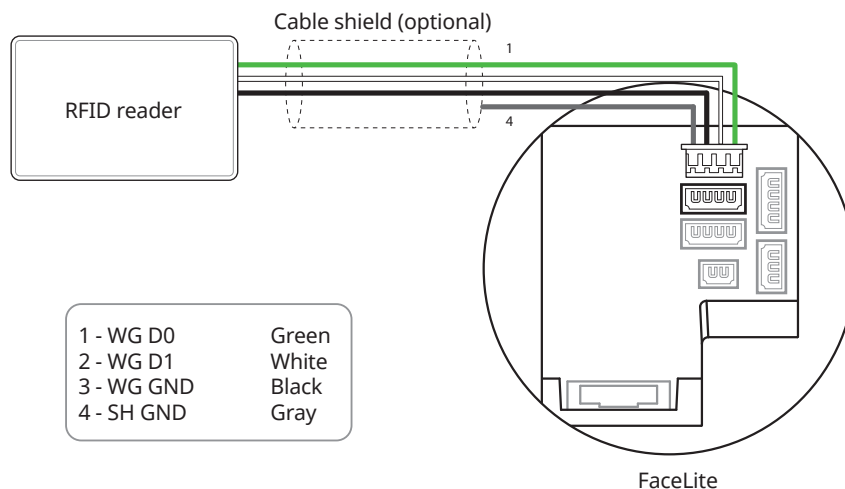




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## Wiegand connection

Use as a Wiegand input or output device



# Product specifications

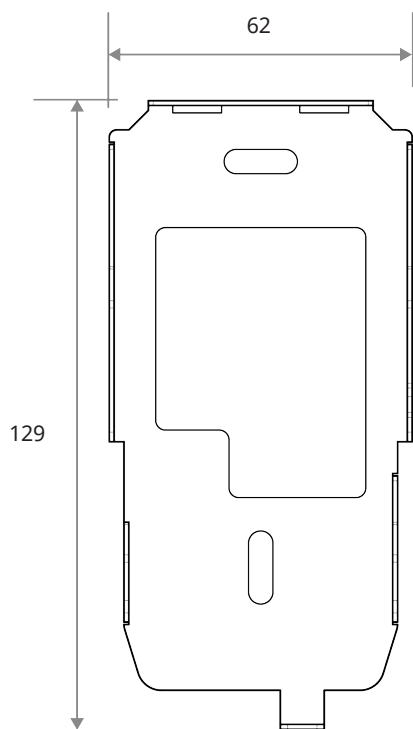
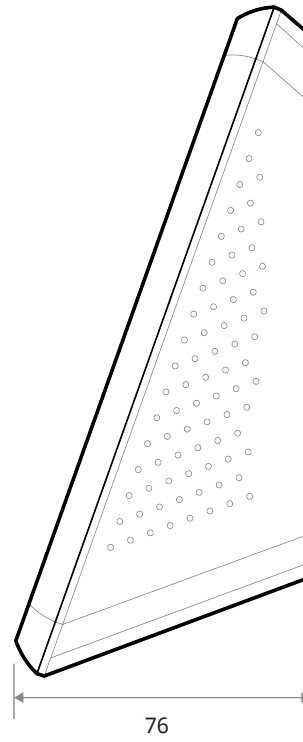
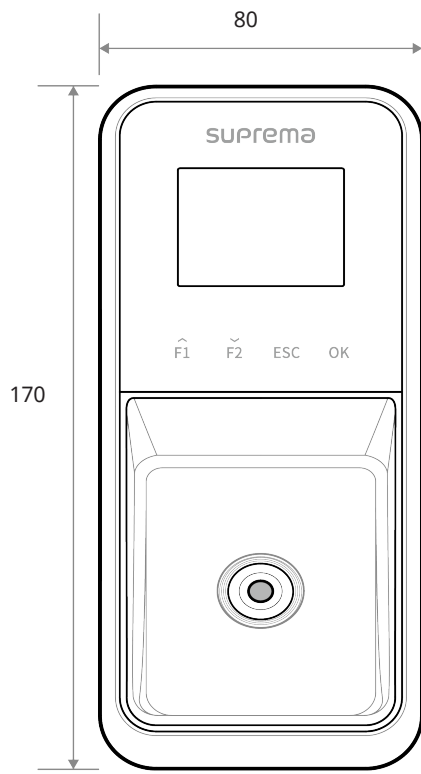
Category	Feature	Specification
Credential	Biometric	Face
	RF Option	<b>FL-DB:</b> 125 kHz EM & 13.56 Mhz MIFARE, MIFARE Plus, DESFire EV1/ EV2 <sup>1)</sup> , FeliCa
	RF Read Range <sup>2)</sup>	MIFARE/DESFire/BLE: 50 mm, EM/Felica: 30 mm
	Mobile	NFC, BLE
	Live Face Detection	Supported
General	CPU	1.2 GHz Quad-core
	Memory	8 GB Flash + 1 GB RAM
	Crypto Chip	Supported
	LCD Type	2" color TFT LCD
	LCD Resolution	320 x 240 pixels
	IR LED	8 ea (940 nm)
	Sound	24 bit DSP
	Operating Temperature	-20 °C ~ 50 °C
	Storage Temperature	-40 °C ~ 70 °C
	Operating Humidity	0 % ~ 80 %, non-condensing
	Storage Humidity	0 % ~ 90 %, non-condensing
	Camera	CMOS
	Camera Resolution	720 x 480 pixels
	Camera Angle	IR Lens: Diagonal 58°
	Dimension (W x H x D)	80 x 170 x 76 (mm)
Weight	<ul style="list-style-type: none"> <li>• Device: 296 g</li> <li>• Bracket (Including washer and bolt): 41 g</li> </ul>	
Certificates	CE, UKCA, KC, FCC, RCM, SIG, RoHS, REACH, WEEE	
Capacity	Max. User	30,000 <sup>3)</sup>
	Max. Credential (1:N)	<ul style="list-style-type: none"> <li>• Fingerprint: 30,000<sup>4)</sup></li> <li>• Face: 4,000</li> </ul>
	Max. Credential (1:1)	<ul style="list-style-type: none"> <li>• Fingerprint: 30,000<sup>4)</sup></li> <li>• Face: 30,000</li> <li>• Card: 30,000</li> <li>• PIN: 30,000</li> </ul>
	Max. Text Log	5,000,000
	Image Log	Not Supported

Category	Feature	Specification
Interface	Wi-Fi	Not Supported
	Ethernet	Supported (10/100 Mbps, auto MDI/MDI-X)
	RS-485	1 ch Master or Slave (Selectable)
	RS-485 Communication Protocol	OSDP V2 compliant
	Wiegand	1 ch Input or Output (Selectable)
	TTL Input	2 ch Inputs
	Relay	1 Relay
	USB	USB 2.0 (Host)
	Tamper	Supported
Electrical	Power	<ul style="list-style-type: none"> <li>Voltage: 24 Vdc</li> <li>Current: Max. 1.2 A</li> </ul>
	Switch Input VIH	<ul style="list-style-type: none"> <li>Min.: 3 V</li> <li>Max.: 5 V</li> </ul>
	Switch Input VIL	Max.: 1 V
	Switch Pull-up Resistance	4.7 k $\Omega$ (The input pots are pulled up with 4.7 k $\Omega$ .)
	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 k $\Omega$
Relay	2 A @ 30 VDC Resistive load 1 A @ 30 VDC Inductive load	

- 1) DESFire EV2 cards are supported by having backward compatibility of DESFire EV1 cards. CSN and smart card functions are compatible with FaceLite.
- 2) RF read range will vary depending on installation environment.
- 3) The number of users registered without having any credential data.
- 4) If a device with a fingerprint sensor is connected as a slave, the slave device can be used for fingerprint authentication.

# Dimensions

(Unit: mm)





## 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.



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

- This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.
- A minimum separation distance of 20 cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.

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- Bluetooth Transmit Power: -0.1 dBm
- Bluetooth Frequency: 2402~2480 MHz
- NFC Frequency: 13.56 MHz
- RFID Frequency: 13.56 MHz + 125 kHz

For more information, contact us at the following contact information.

Suprema Inc.

Website: <https://www.supremainc.com>

Address: 17F Parkview Tower, 248, Jeongjail-ro, Bundang- gu, Seongnam-si, Gyeonggi-do, 13554, Rep. of KOREA

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

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**Suprema Inc.**

17F Parkview Tower, 248, Jeongjail-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, 13554, Rep. of KOREA

Tel: +82 31 783 4502 | Fax: +82 31 783 4503 | Inquiry: sales\_sys@supremainc.com



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