

# Secure I/O 2

## INSTALLATION GUIDE

Version 2.13

English

EN 101.00.SIO2 V2.13A

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# Safety information

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

**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 the manufacturer's warranty.

**Do not install the product in a place with direct sunlight, moisture, dust, soot, or a gas leak.**

- This may result in electric shock or fire.

**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**

**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.

**Secure I/O 2, the electrical locking device and access controller must use independent power source.**

**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.

### **Operation**

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

- The product may malfunction.

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

- The product may malfunction.

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

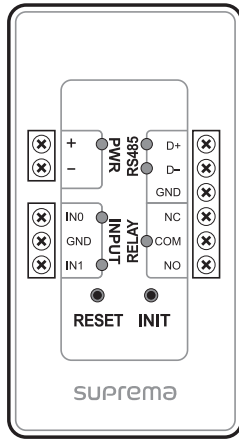
- Wipe the product with a clean and dry towel.
- If you need to sanitize the product, moisten the cloth or the wipe with a proper amount of rubbing alcohol and gently clean all exposed surfaces including the fingerprint sensor. Use rubbing alcohol (containing 70% Isopropyl alcohol) and a clean, non-abrasive 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.**

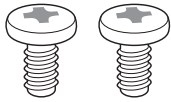
- The product may malfunction.

# Introduction

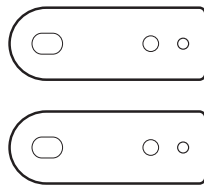
## Components



### Secure I/O 2



Fixing Screw x2



Wall Bracket x2



120  $\Omega$  Resistor

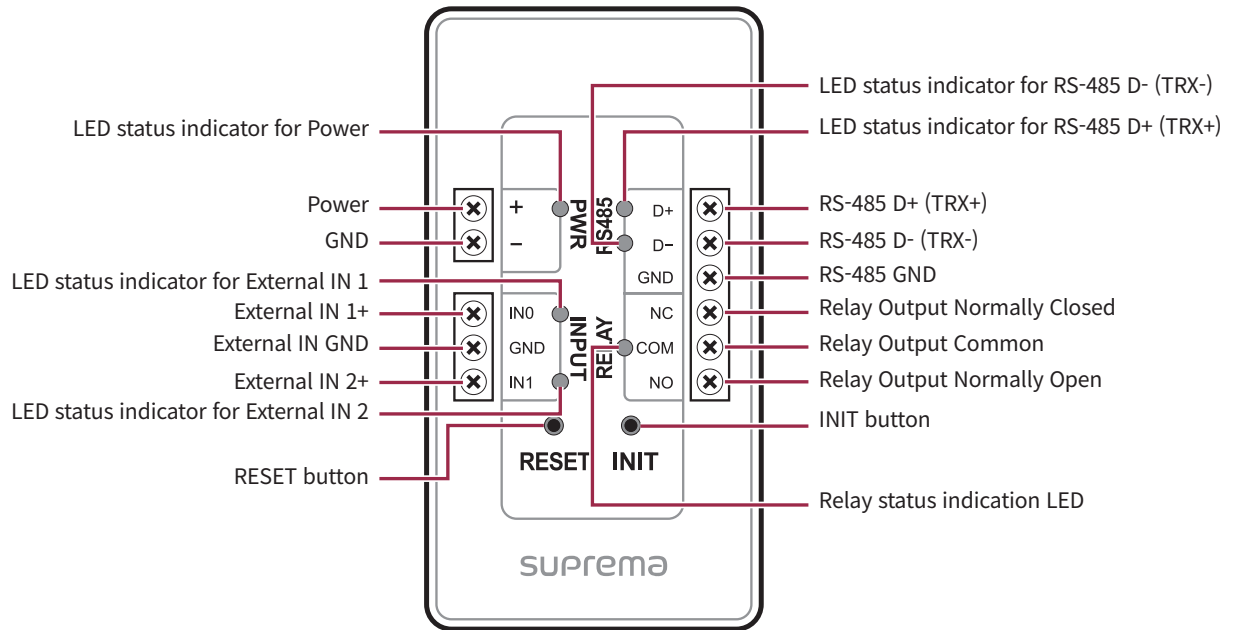


Diode



- Components may vary according to the installation environment.

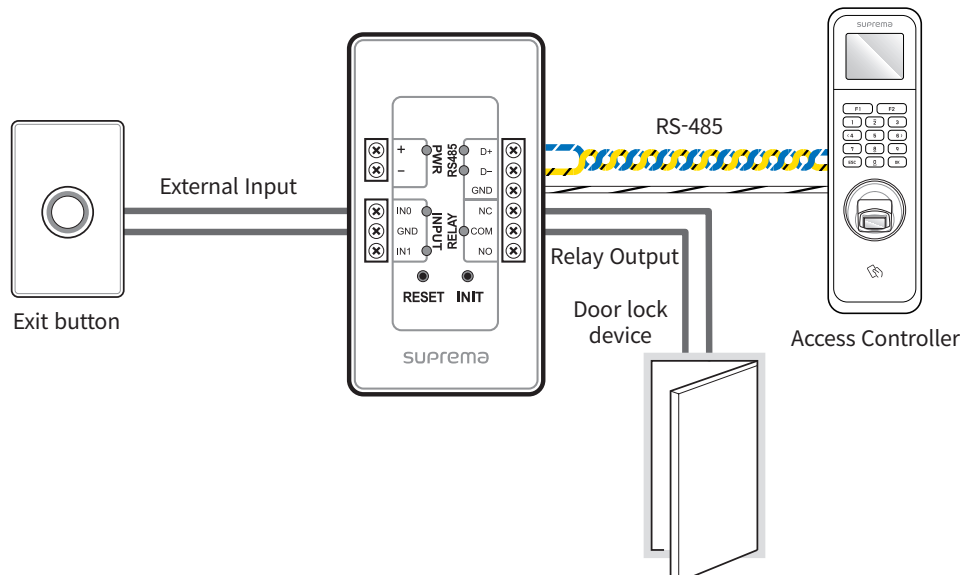
## Name of each part



- Press INIT button to reset Secure I/O 2 interworking with a device and then connect to another device.

## Installation Example

Secure I/O 2 is connected with RS-485 and can be installed anywhere due to its small size. It can be installed with a junction box or onto a wall control box already installed. It can be installed at the rear side of an Exit button.



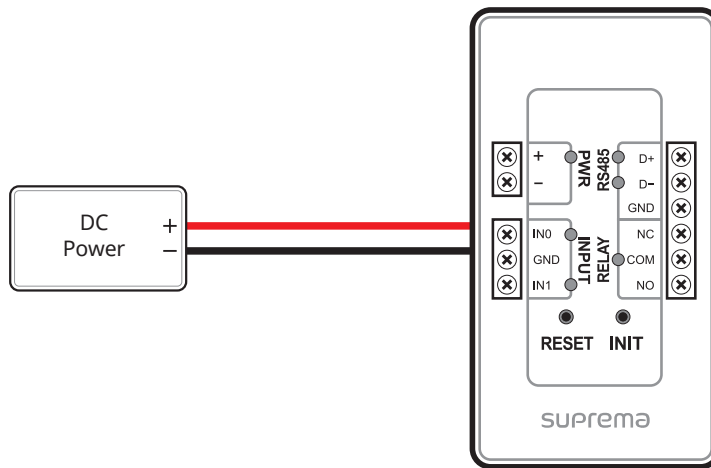
# Connections



- Cable should be AWG22–AWG16.
- To connect the cable to Secure I/O 2, strip off approximately 5–6 mm of the end of the cable and connect them.

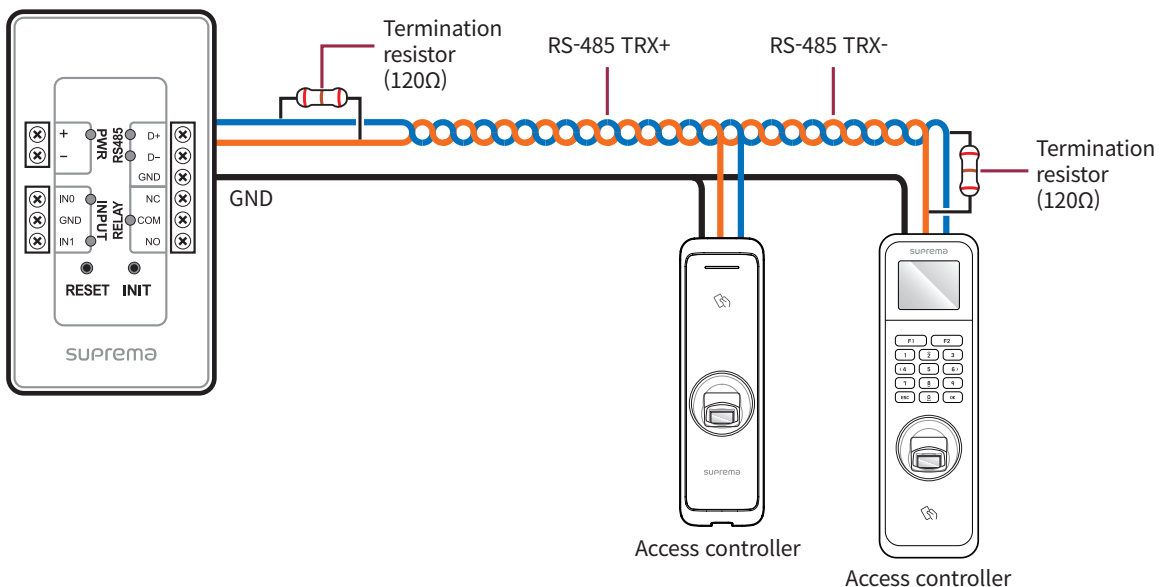
## Power

- Do not share the power with the access controller.
- 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.



## RS-485

- RS-485 should be twisted pair, and maximum length is 1.2 km.
- Connect a termination resistor (120Ω) to both ends of a RS-485 daisy chain connection. It should be installed at both ends of the daisy chain. If it is installed in the middle of the chain, the performance in communicating will deteriorate because it reduces the signal level.



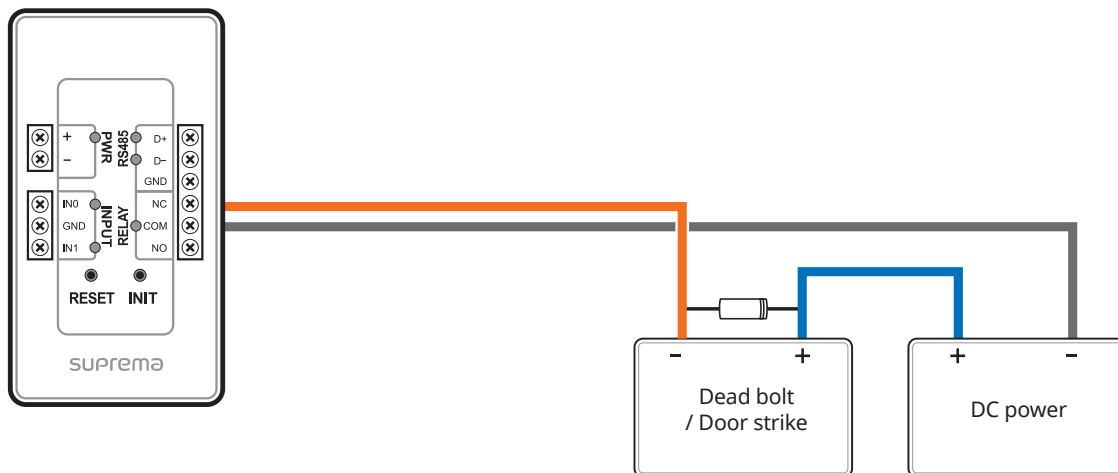
## Relay

### Fail Safe Lock

In order to use the Fail Safe Lock, connect the 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.



- Connect a diode to both ends of the power input as shown in the figure below when installing a deadbolt or a door strike. Make sure to connect the Cathode (direction to the stripe) to the + part of the power while paying attention to the direction of the diode.

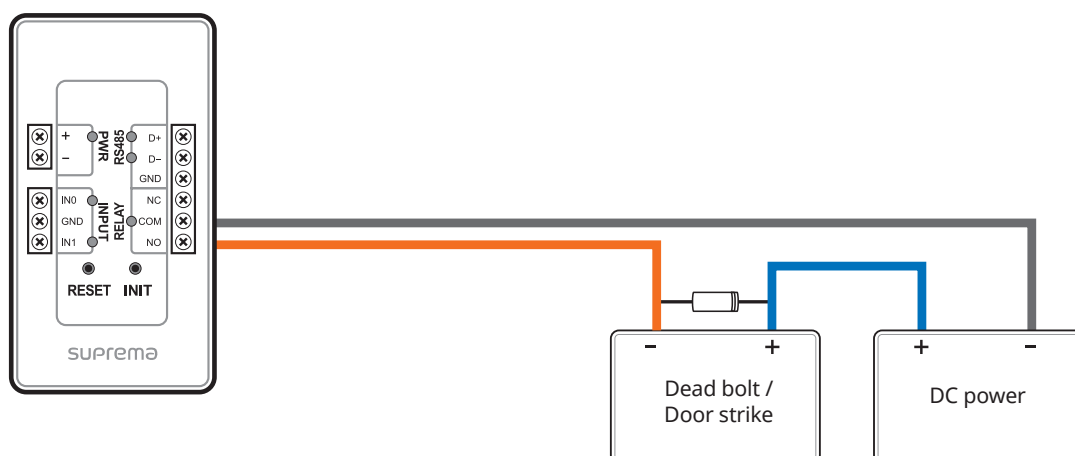


### Fail Secure Lock

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.

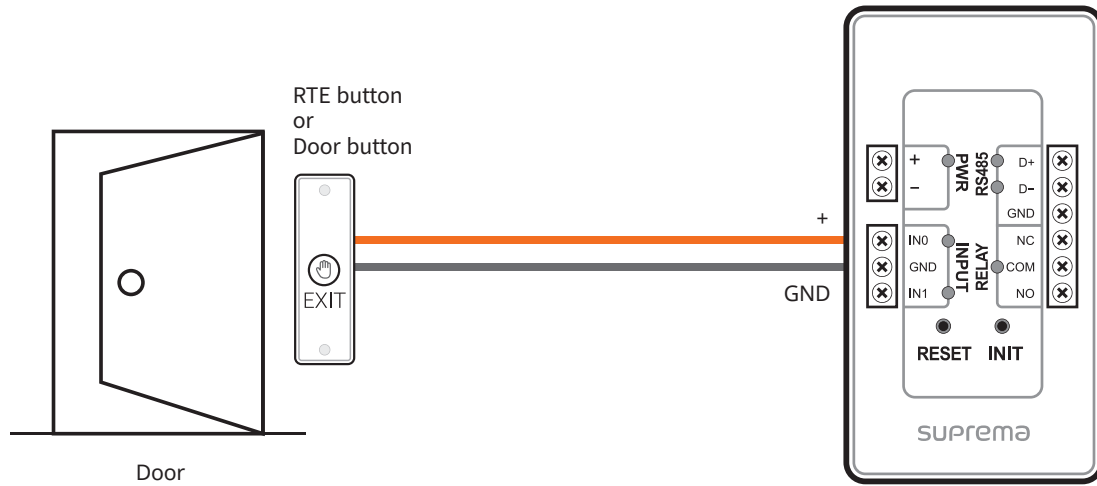


- Connect a diode to both ends of the power input as shown in the figure below when installing a deadbolt or a door strike. Make sure to connect the Cathode (direction to the stripe) to the + part of the power while paying attention to the direction of diode.

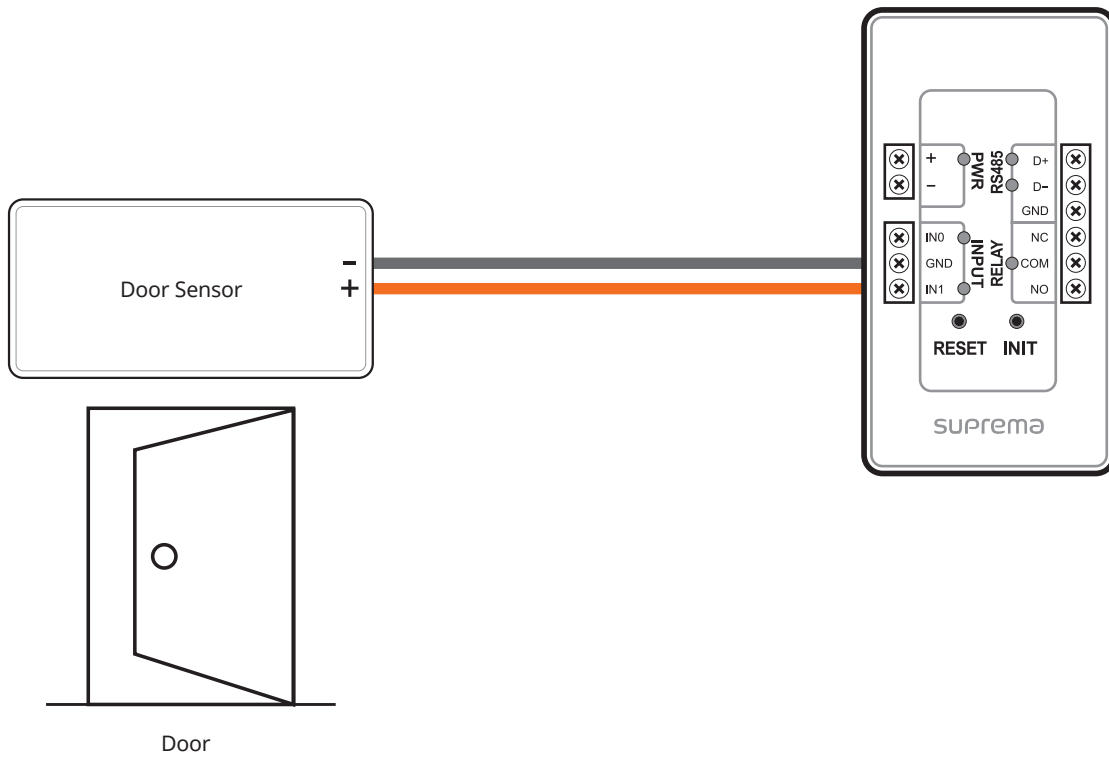




## Door button



## Door sensor



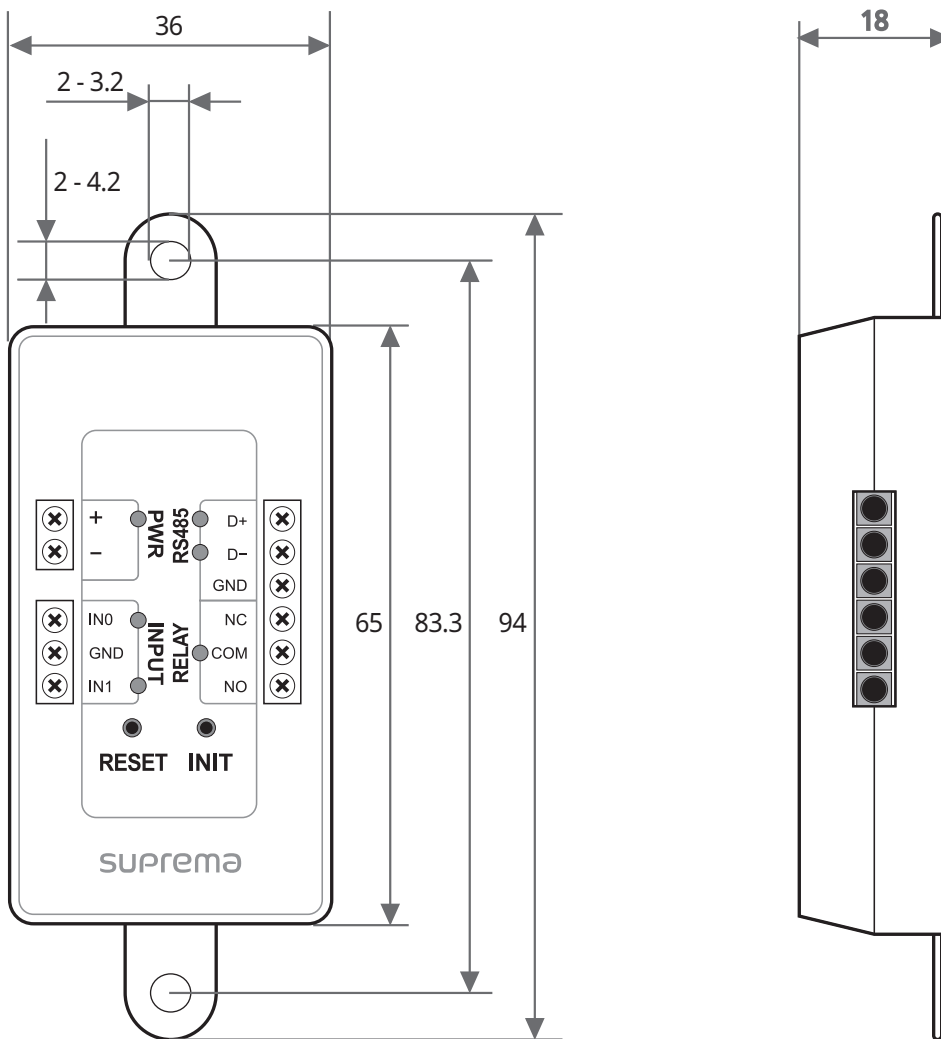
# Product Specifications

Category	Feature	Specification
General	Model	SIO2
	CPU	Cortex M3 72 MHz
	Memory	128 KB Flash + 20 KB RAM
	LED	Multi-color <ul style="list-style-type: none"> <li>• PWR</li> <li>• RS-485 TX/RX</li> <li>• IN1/IN2</li> <li>• RELAY</li> </ul>
	Operating temperature	-20 °C ~ 50 °C
	Storage temperature	-40 °C ~ 70 °C
	Operating humidity	0 % ~ 80 %, non-condensing
	Storage humidity	0 % ~ 90 %, non-condensing
	Dimension (W x H x D)	36 x 65 x 18 (mm)
	Weight	37 g
	Certificates	CE, UKCA, KC, FCC, RoHS, REACH, WEEE
Interface	RS-485	1 ch
	TTL Input	2 ch
	Relay	1 relay
Electrical	Power	<ul style="list-style-type: none"> <li>• Voltage: 12 Vdc</li> <li>• Current: Max. 0.5 A</li> </ul>
	Relay	2 A @ 30 VDC Resistive load 1 A @ 30 VDC Inductive load

# Dimensions

(Unit: mm)

\* The tolerance is  $\pm 0.3$  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 commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, it 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.
- **Modifications:** Any modifications made to this device that are not approved by Suprema Inc. may void the authority granted to the user by the FCC to operate this equipment.

# Appendices

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