Output Module

INSTALLATION GUIDE

Version 1.03
English
EN 101.00.OM-120 V1.03A

suprema
SECURITY & BIOMETRICS

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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.

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 disconnect the power supply while upgrading the firmware of 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.

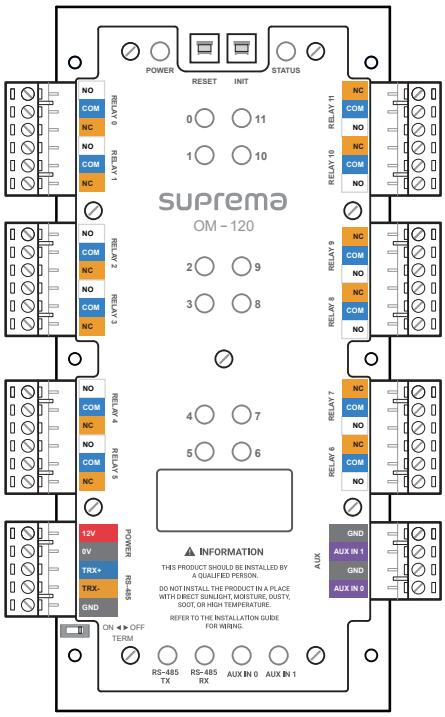
- Wipe the product with a clean and dry towel.
- If you need to sanitize the product, moisten the cloth or the wipe with a proper amount of rubbing alcohol and gently clean all exposed surfaces including the fingerprint sensor. Use rubbing alcohol (containing 70% Isopropyl alcohol) and a clean, non-abrasive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

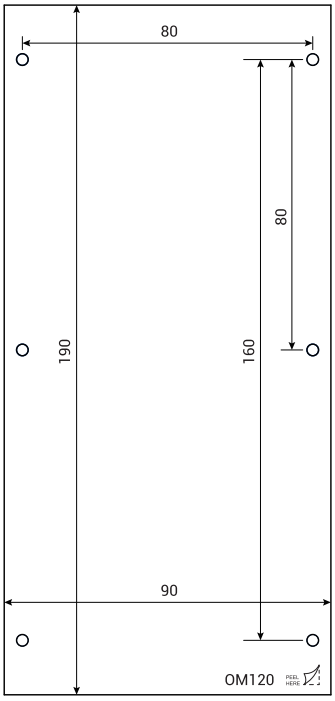
- The product may malfunction.

Introduction

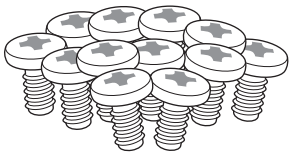
Components



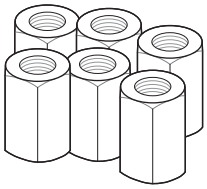
Output Module (OM-120)



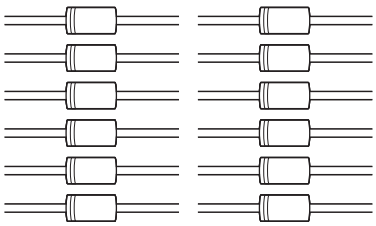
Drilling Template



Fixing Screw x12



Spacer x6

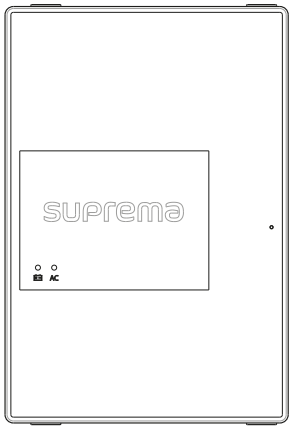


Diode x12

Components may vary according to the installation environment.

Accessory

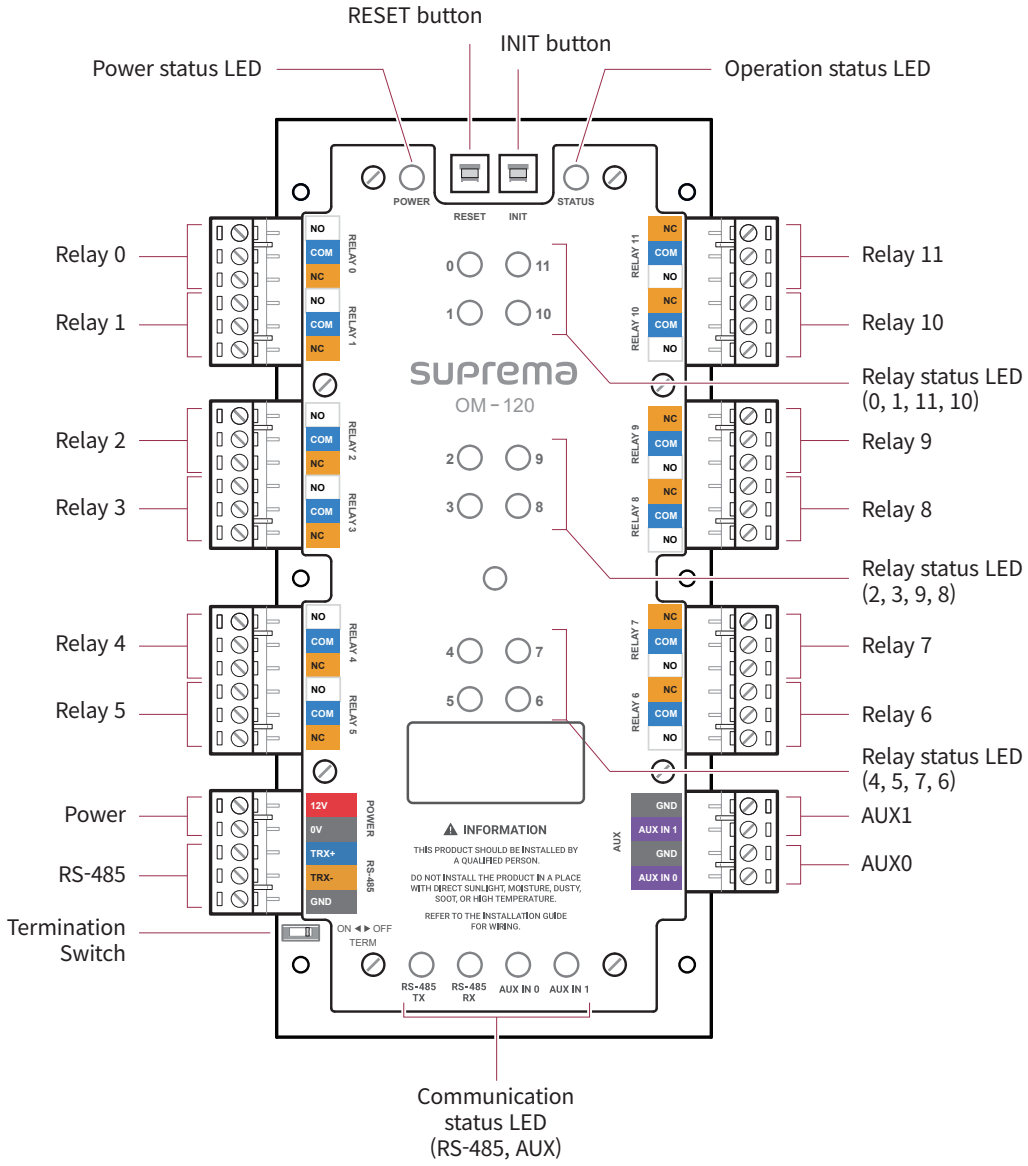
You can use the Output Module with the enclosure (ENCR-10). The enclosure is sold separately, and you can install two Output Modules in one enclosure. The enclosure includes a power status LED board, power distribution board, power supply, and tamper. To learn how to install the Output Module in the enclosure, refer to Using the Output Module with the enclosure.



ENCR-10

- There is no optimal height for installing ENCR-10 on the wall. Install it to a safe and convenient location for you to use.
- Fixing screws for the enclosure, the device, and the power supply cable are included in the ENCR-10 package. Use each screw correctly by following the details below.
  - Fixing screws for the enclosure (diameter: 4 mm, length: 25 mm) x 4
  - Fixing screws for the device (diameter: 3 mm, length: 5 mm) x 6
  - Fixing screws for the power supply cable (diameter: 3 mm, length: 8 mm) x 1

Name of each part



- Press INIT button to reset Output Module interworking with a device and then connect to another device.

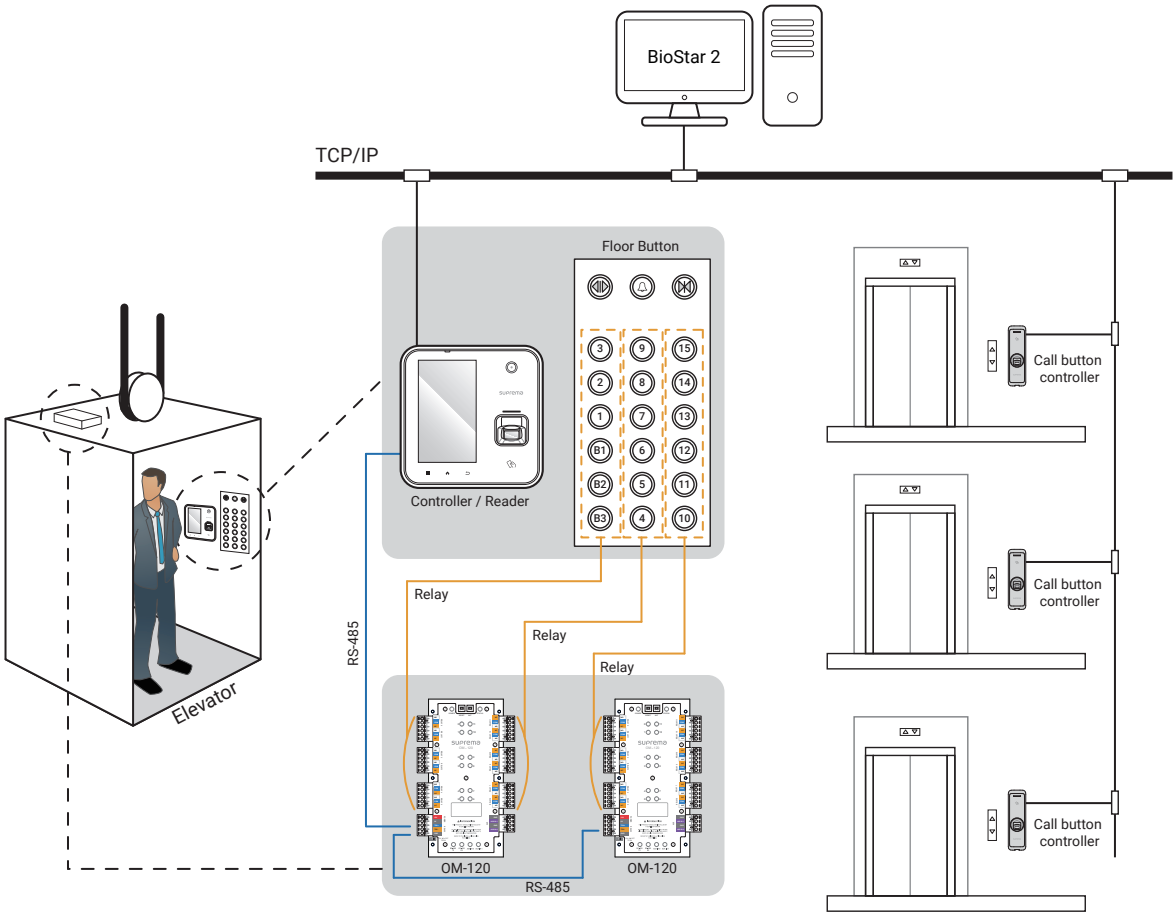
LED Indicator

You can check the status of the device by the color of the LED indicator.

Item	LED	Status
POWER	Solid red	Power on
STATUS	Solid green	Connected with the secure session
	Solid blue	Disconnected from a master device
	Solid pink	Upgrading the firmware
	Solid yellow	RS-485 communication error due to different encryption key or OSDP packet loss
	Solid sky blue	Connected without the secure session
RELAY (0 - 11)	Solid red	Relay operation
RS-485 TX	Blinking orange	Transmitting RS-485 data
RS-485 RX	Blinking green	Receiving RS-485 data
AUX IN (0, 1)	Solid orange	Receiving an AUX signal

Installation example

OM-120 is an expansion module for floor access control. Combined with Suprema device and BioStar 2, a single module can control 12 floors. When the OM-120 is connected as daisy chain via RS-485, you can control up to 192 floors per elevator.



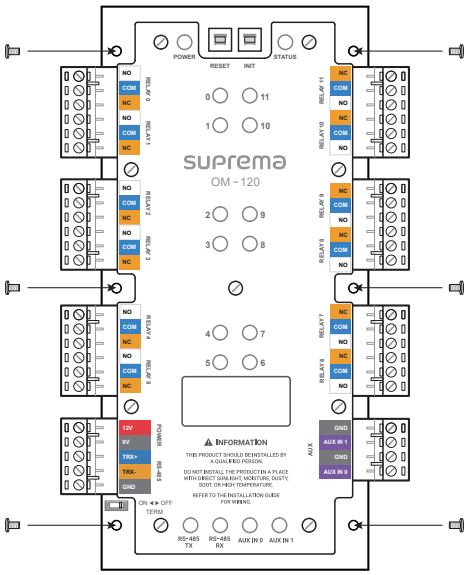
Installation

Output Module can be mounted in the enclosure or elevator control panel.

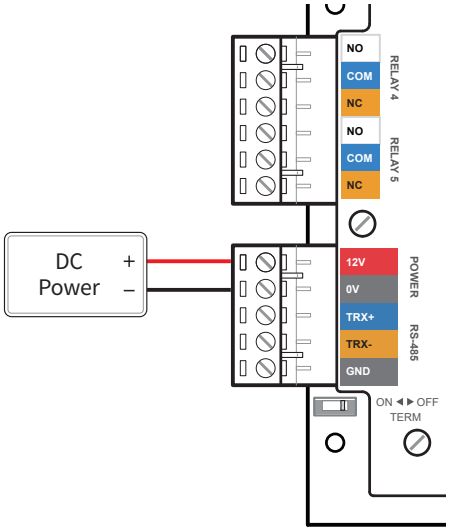
- To learn how to install the Output Module in the enclosure, refer to Using the Output Module with the enclosure.

1 Fix a spacer on the position to mount Output Module using a fixing screw.

2 Fix the product on top of the fixed spacer firmly using a fixing screw.



Power Connection

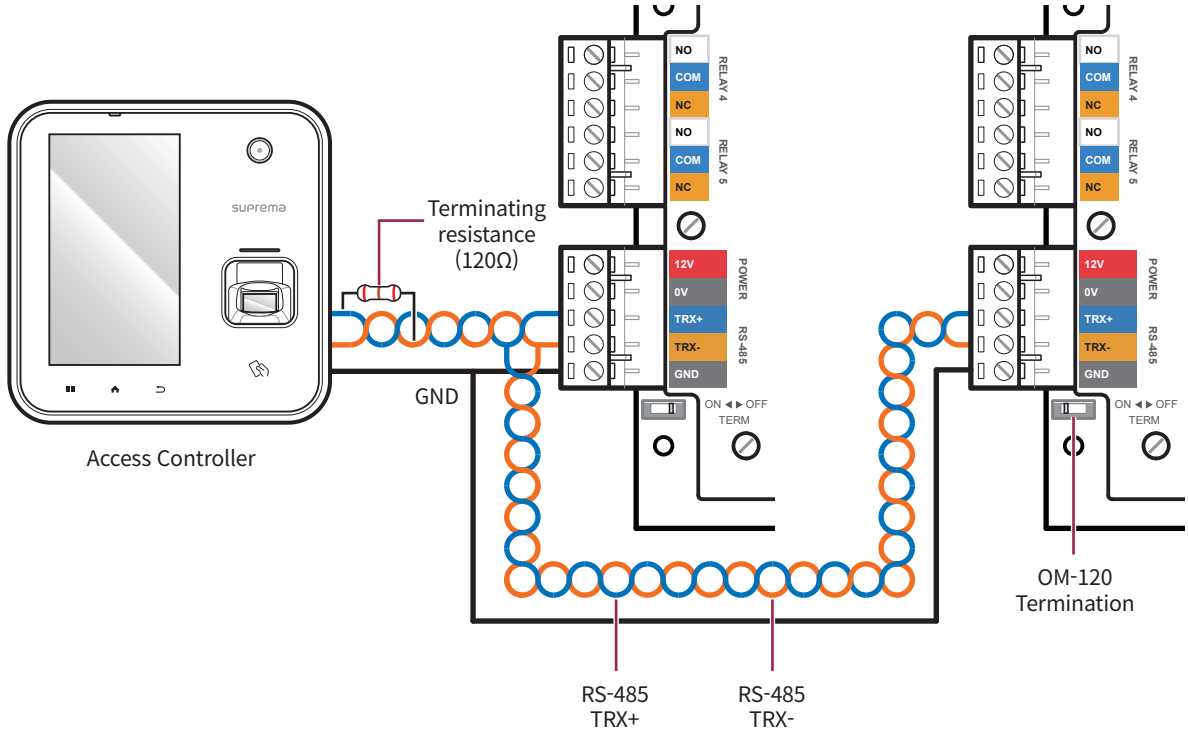


- Make sure to use separate power for the access control device and Output Module.
- Use the IEC/EN 62368-1 approved power adapter that supports higher power consumption than the product. If you wish to connect and use another device to the power supply adapter, you should use an adapter with a current 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.

- It is recommended to connect and use an Uninterruptible Power Supply (UPS) to prevent power failure.

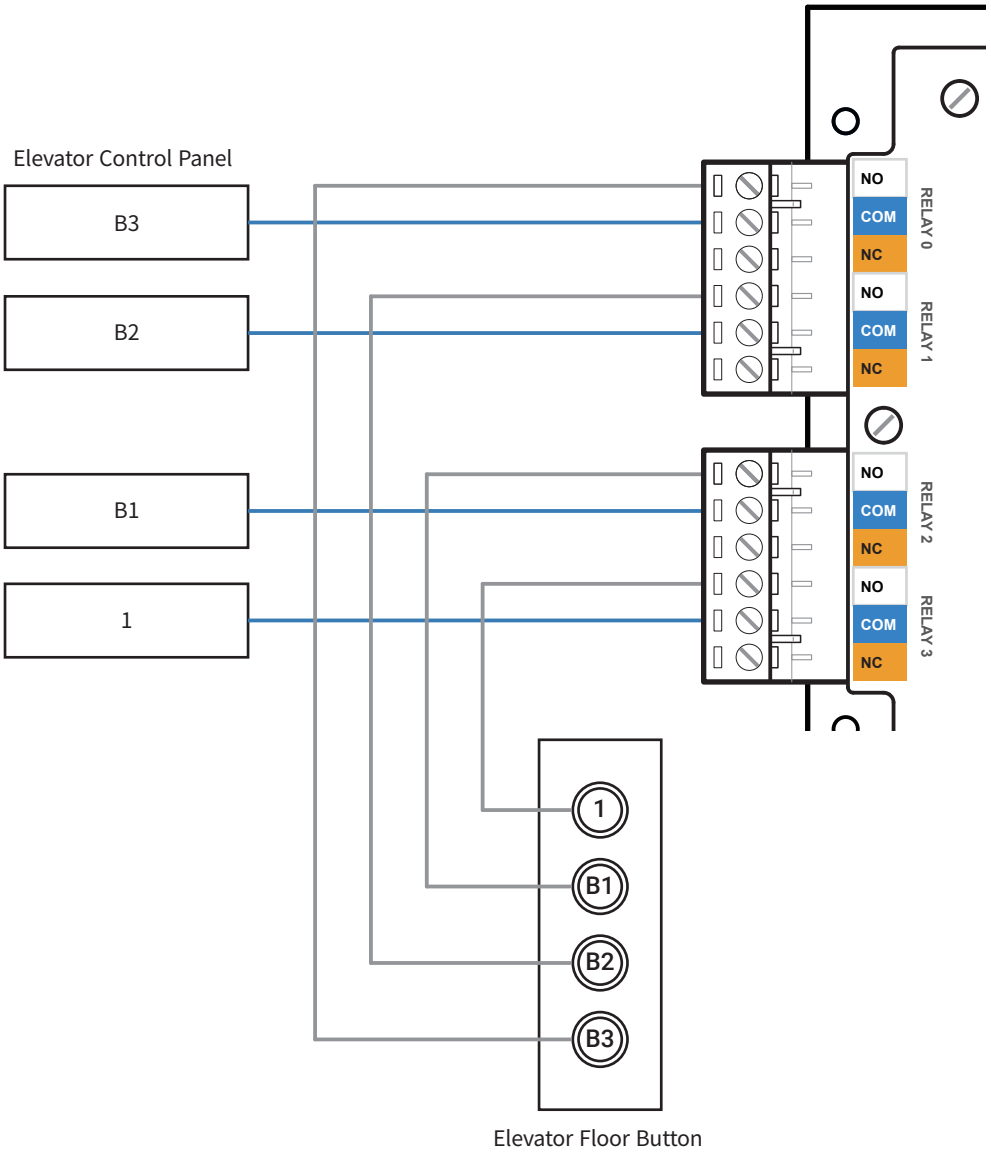
RS-485 Connection

- RS-485 should be AWG24, 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.
- Up to 31 modules can be connected to the master device.



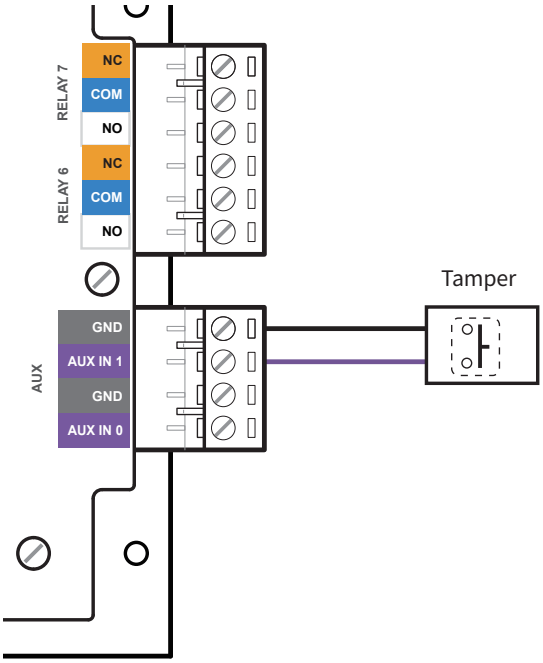
Relay Connection

- Relay connection may vary depending on the elevator. Please consult your elevator installer for details.
- Each relay has to be connected to the corresponding floor.
- Use the figure below as an example.



AUX

The dry contact output or tamper can be connected.

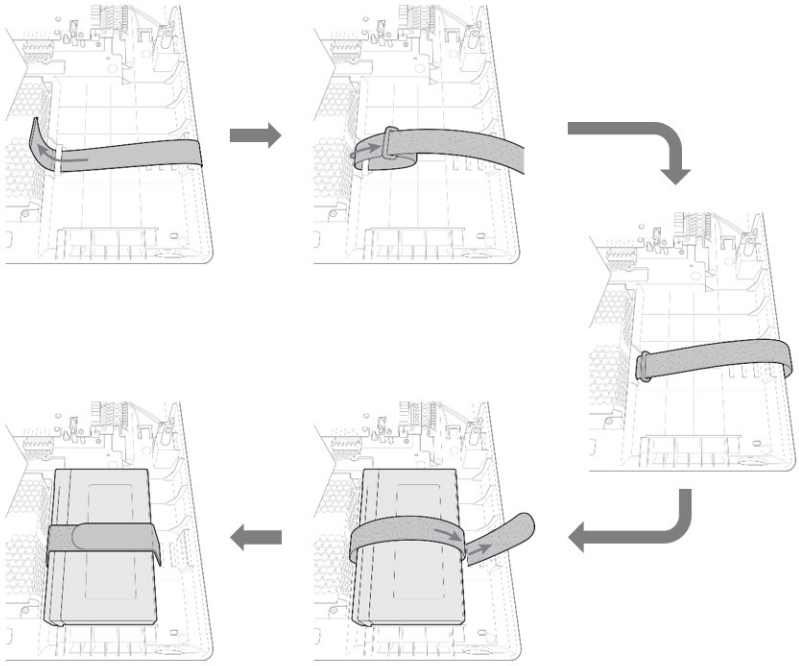


Using the Output Module with the enclosure

The Output Module can be installed inside the enclosure (ENCR-10) for physical and electrical protection. The enclosure includes a power status LED board, power distribution board, power supply, and tamper. The enclosure is sold separately.

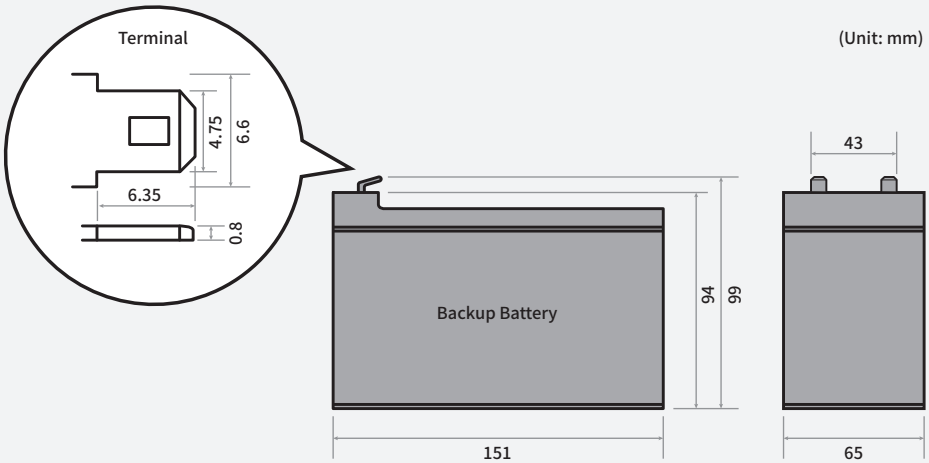
Securing the battery

Insert the battery velcro strap into the enclosure and secure the battery.



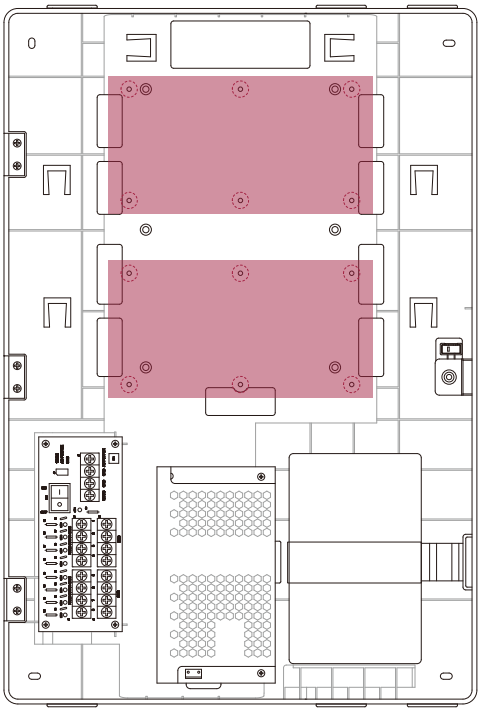
- Use a backup battery with 12 VDC and 7 Ah or higher. This product was tested with 'ES7-12' battery of 'ROCKET'. It is recommended to use a battery corresponding to 'ES7-12'.

- The battery is sold separately.
- If the dimension of the backup battery is larger than the recommended specification, it may not be able to be mounted in the enclosure or the enclosure may not close after it is mounted. Also, if the shape and dimension of the terminals are different, the battery cannot be connected using the cable provided.

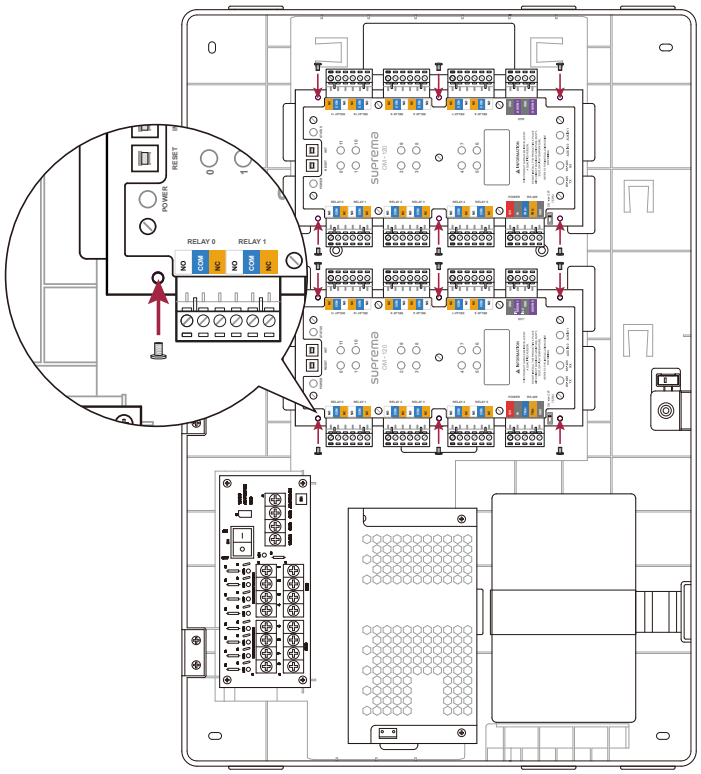


Installing the Output Module in the enclosure

1 Check the position to install the Output Module in the enclosure. You can install two Output Modules in one enclosure.

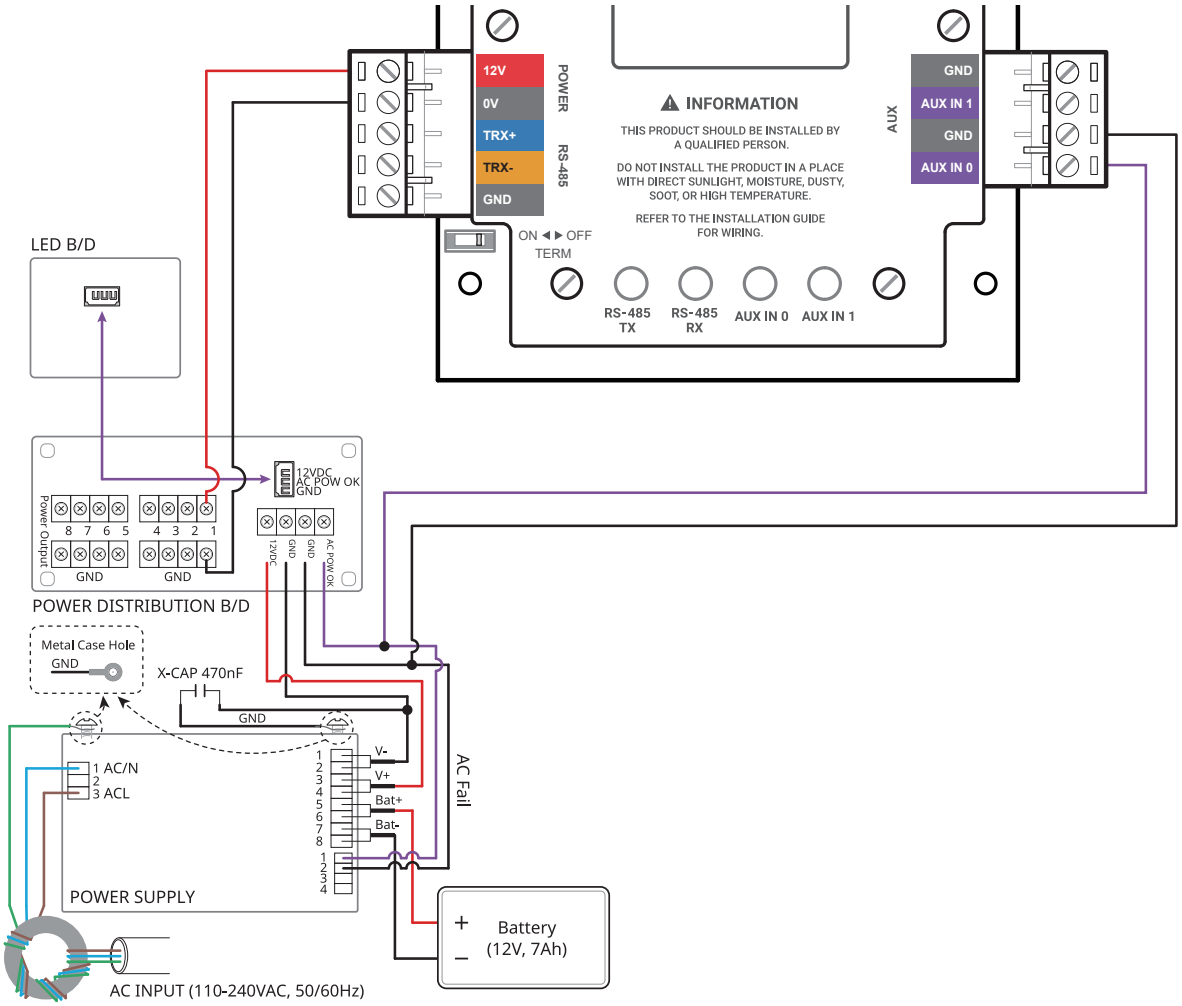


2 After positioning the Output Module in the enclosure, fix it with the fixing screws.



Power and AUX Input Connection

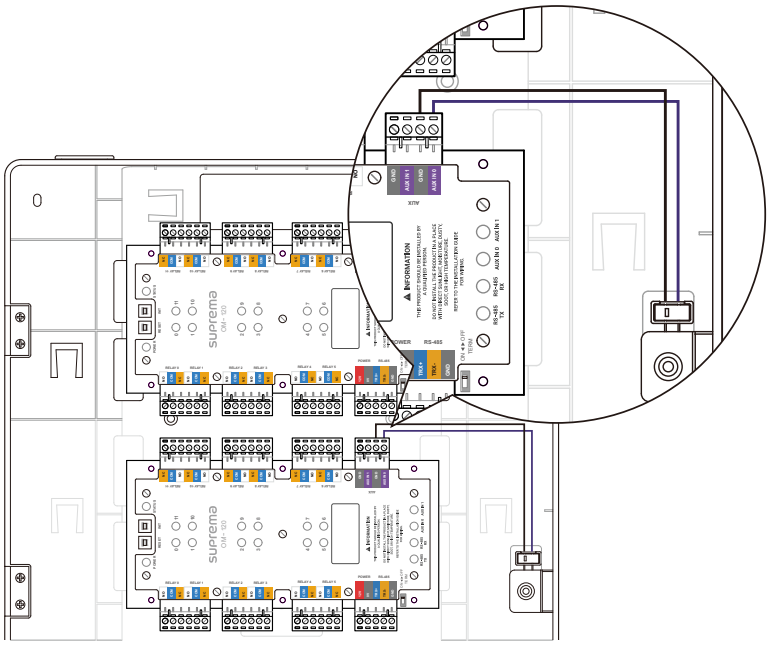
You can connect an Uninterruptible Power Supply (UPS) to prevent power failure. And a power failure detector or a dry contact output can be connected to the AUX IN terminal.



- Make sure to use separate power for the access control device and Output Module.
- 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 backup battery with 12 VDC and 7 Ah or higher. This product was tested with 'ES7-12' battery of 'ROCKET'. It is recommended to use a battery corresponding to 'ES7-12'.

Tamper Connection

If Output Module is detached from the installed location due to an external factor, it can trigger an alarm or save an event log.



- For more information, contact the Suprema technical support team (https://support.supremainc.com).

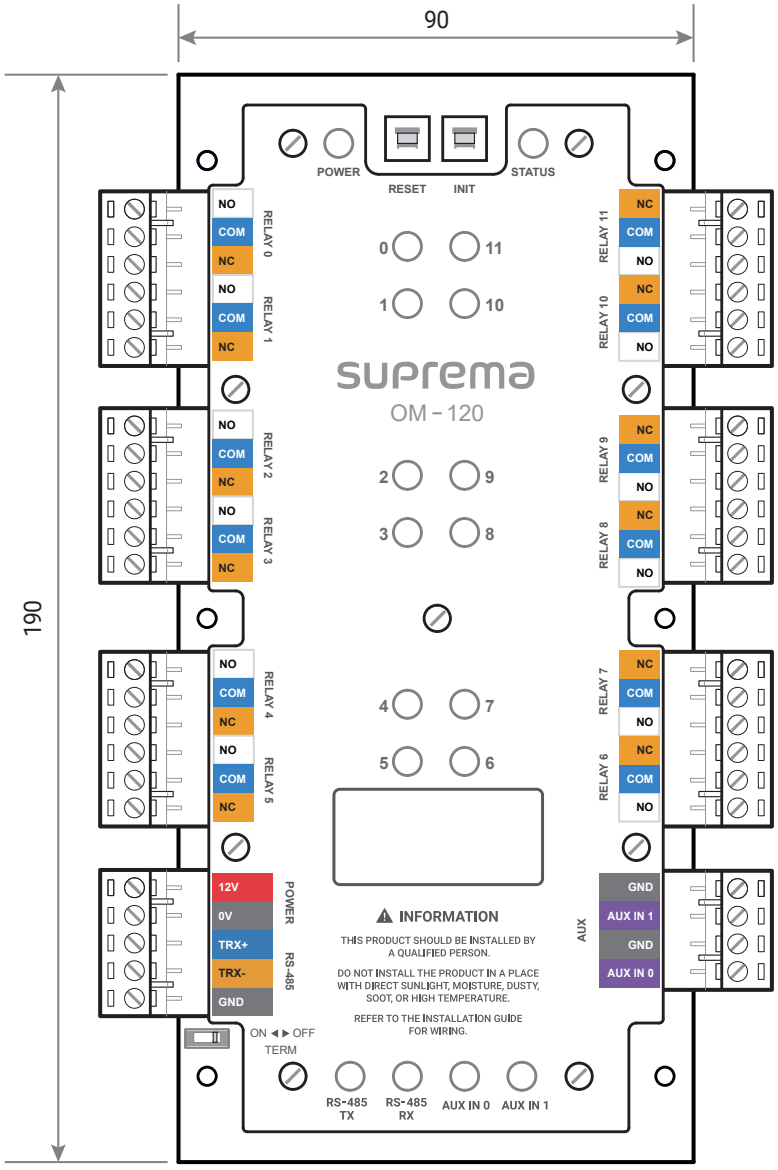
Product Specifications

Category	Feature	Specification
General	Model	OM-120
	CPU	Cortex M3 72 MHz
	Memory	128 KB Flash, 20 KB SRAM
	LED	Multi-color • POWER - 1 • RELAY - 12 • RS-485 TX - 1 • RS-485 RX - 1 • AUX IN - 2 • STATUS - 1
	Operating Temperature	-20 °C ~ 60 °C
	Storage Temperature	-40 °C ~ 70 °C
	Operating Humidity	0 % ~ 95 %, non-condensing
	Storage Humidity	0 % ~ 95 %, non-condensing
	Dimension (W x H x D)	90 x 190 x 21 (mm)
	Weight	300 g
	Certificates	CE, UKCA, KC, FCC, RoHS, REACH, WEEE
Interface	RS-485	1 ch
	AUX Input	2 ch Dry Contact Input
	Relay	12 relays
Capacity	Text Log	10 ea per port
Electrical	Power	• Voltage: 12 Vdc • Current: Max. 0.6 A
	Switch Input VIH	Max. 5 V (Dry Contact)
	Relay	5 A @ 30 VDC Resistive load

Dimensions

(Unit: mm)

* The tolerance is ±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 A 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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- You must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Suprema reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them.
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