Door Module

INSTALLATION GUIDE

Version 1.41

English
EN 101.00.DM20

suprema
SECURITY & BIOMETRICS

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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.

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.

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.

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.

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.

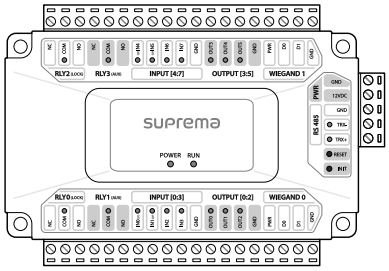
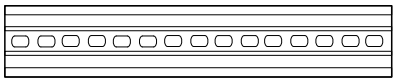
Do not use the product for purposes other than its intended use.

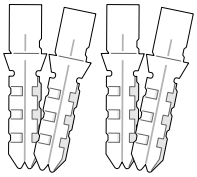
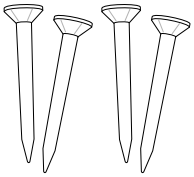
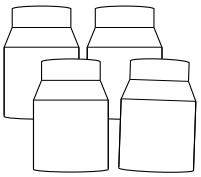
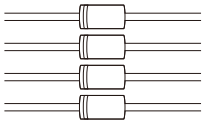
- The device may malfunction.

Getting Started

Provides initial procedures for getting started with the device.

Components

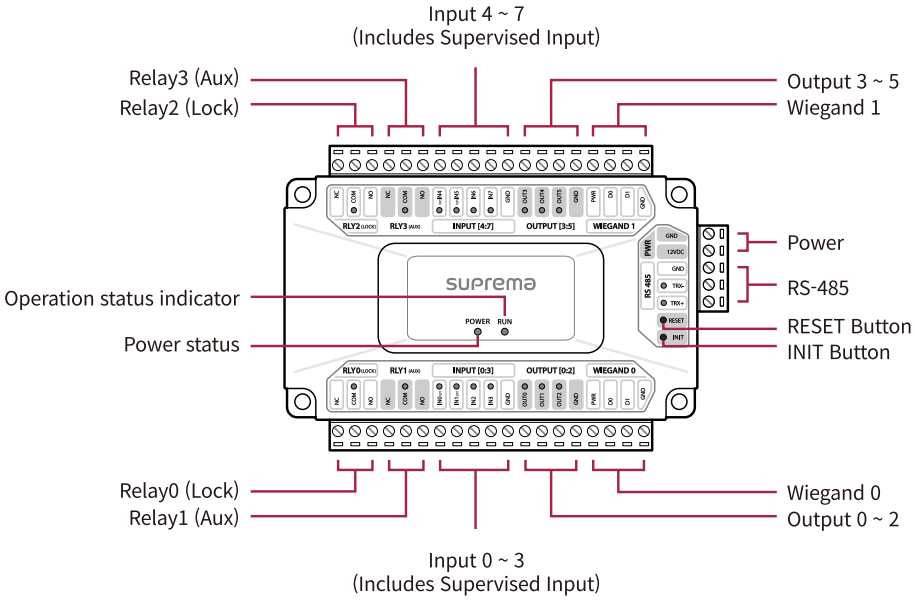
	
Door Module	Wall Bracket
	
	120 Ω Resistor

			
PVC Anchor x4	Fixing Screw x4	Spacer x4	Diode x4

Info

- Components may vary according to the installation environment.

Name and function of each part



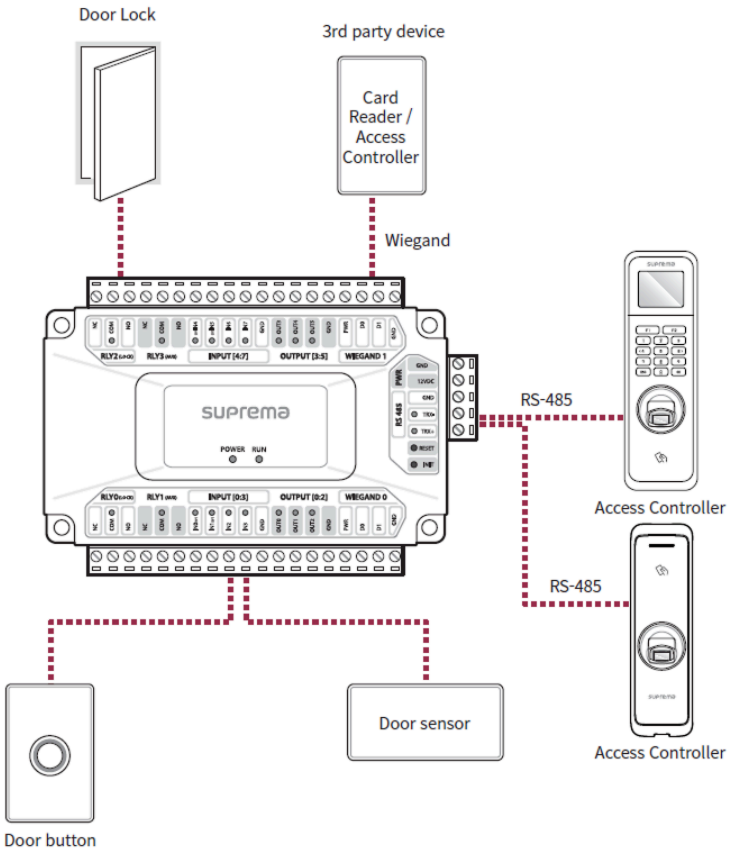
Info

- Press the **INIT** button for more than 2 seconds after initializing the product linked to the device to connect it to another device.
- Press the **RESET** button to reboot the product.
- Refer to the LED status below when using Supervised Input.
  - Orange: Short Circuit
  - Red: Short
  - Green: On
  - Off: Off

Installation example

This product supports various inputs and outputs as well as Wiegand connections, enhancing scalability with Suprema devices and third-party devices.

Supervised Input is also available, which can check for short circuit, short, On, and Off status.



Installation

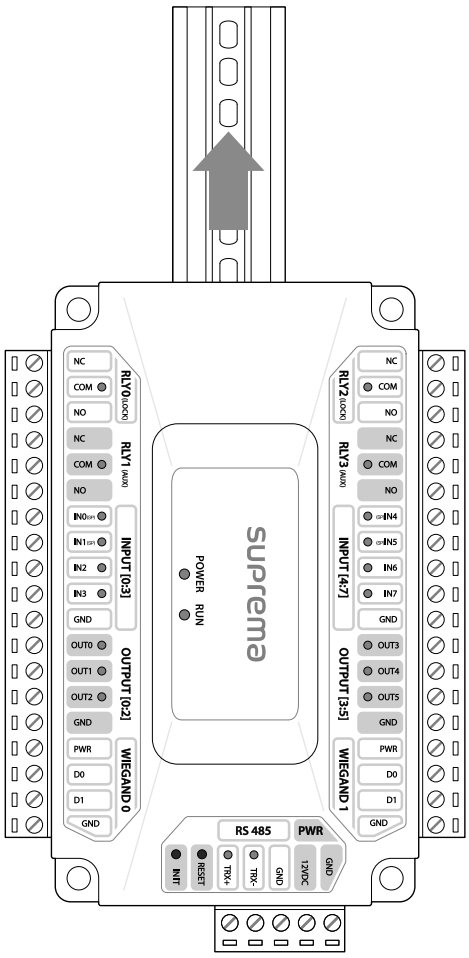
Provides the complete installation procedures and connection examples required for the device.

Use bracket

1. Secure the bracket tightly using the fixing screws at the location where the product will be mounted.

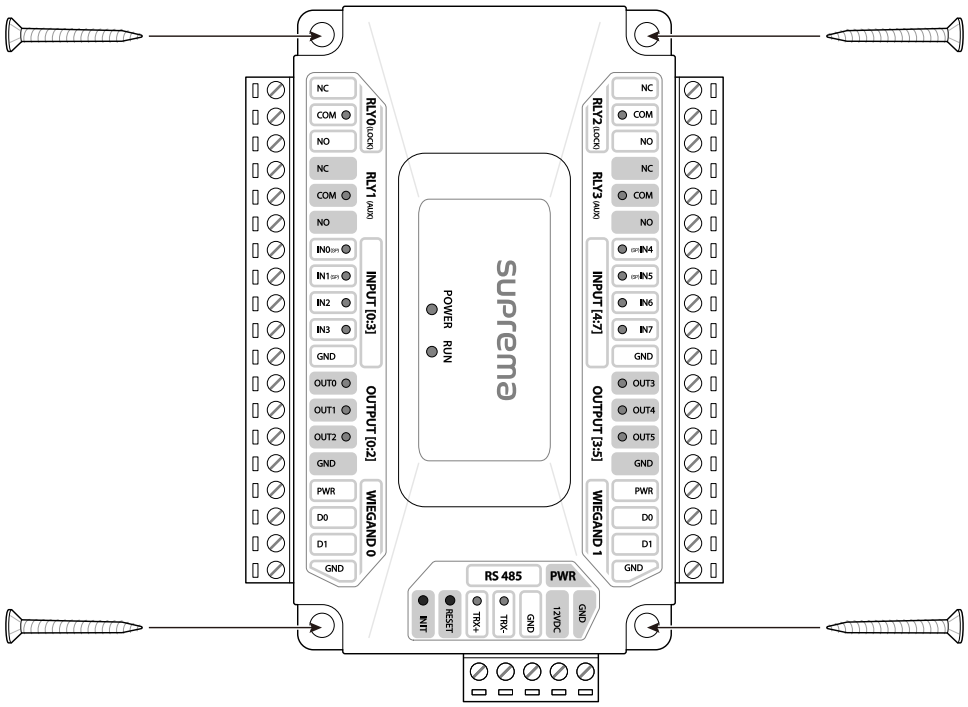
> **Info**
> If installing the product on a concrete wall, drill a hole, insert a PVC anchor, and secure it with a fixing screw.

2. Mount the product on the fixed bracket.



Use spacer

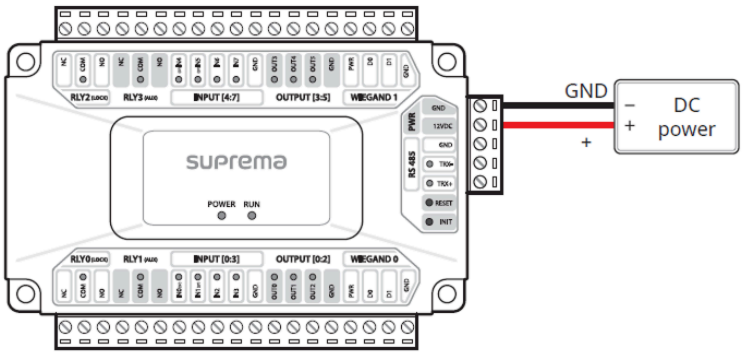
Secure the product tightly using spacers and fixing screws at the position where the product will be mounted.



Info

If installing the product on a concrete wall, drill a hole, insert a PVC anchor, and secure it with a fixing screw.

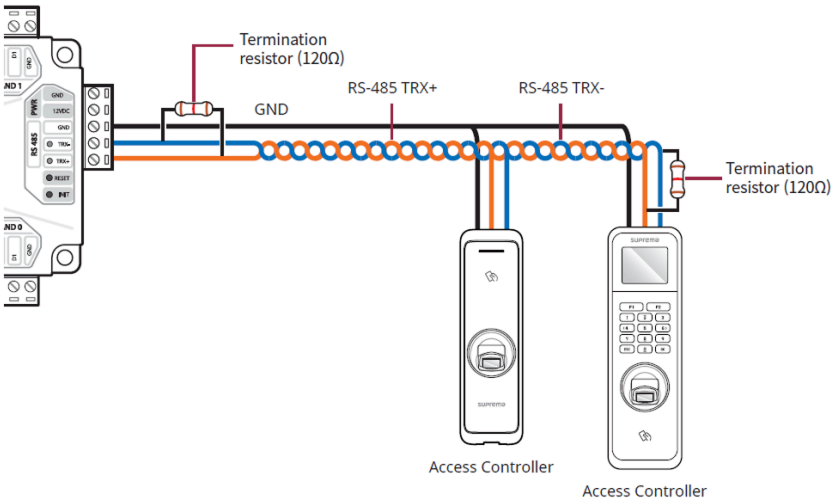
Power supply connection



Caution

- Make sure to use separate power for the access control device and products.
- 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.

RS-485 Connection



Info

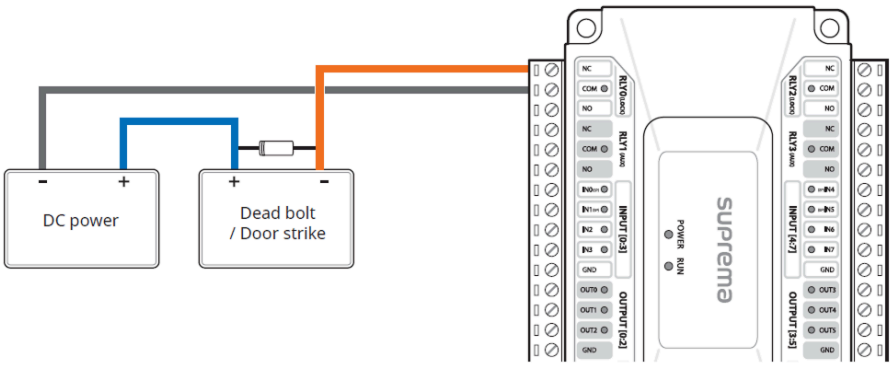
- Use an AWG24 twisted pair with a maximum length of 1.2 km for the RS-485 cable.
- It is recommended to use RS-485 cables with a characteristic impedance of 120 Ω.
- If connecting with a RS-485 daisy chain, connect the termination resistor (120 Ω) to both ends of the daisy chain connection. If connected 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.
- You can connect up to 31 card readers with the product, and up to 7 biometric devices can be connected in combination with 24 card readers.
- If XPass or XPass 2 is connected to the master device, only card authentication can be used.

Relay Connection

Fail Safe Lock

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

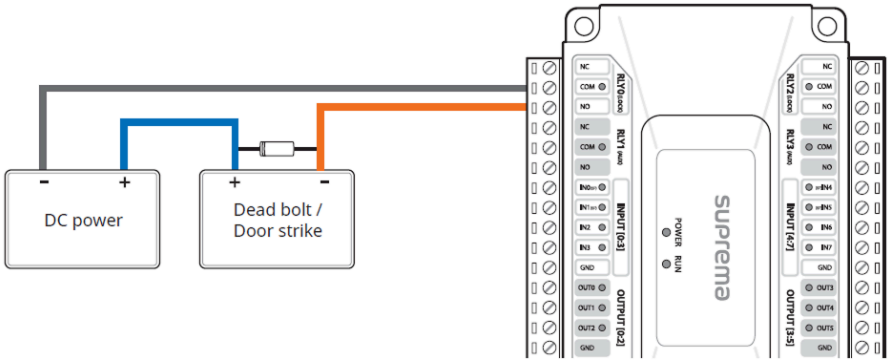
> **Info**
>
> Connect a diode to both ends of the power input as shown in the figure below when installing a deadbolt or a door strike. Make sure to connect the Cathode (direction to the stripe) to the + part of the power while paying attention to the direction of the diode.



Fail Secure Lock

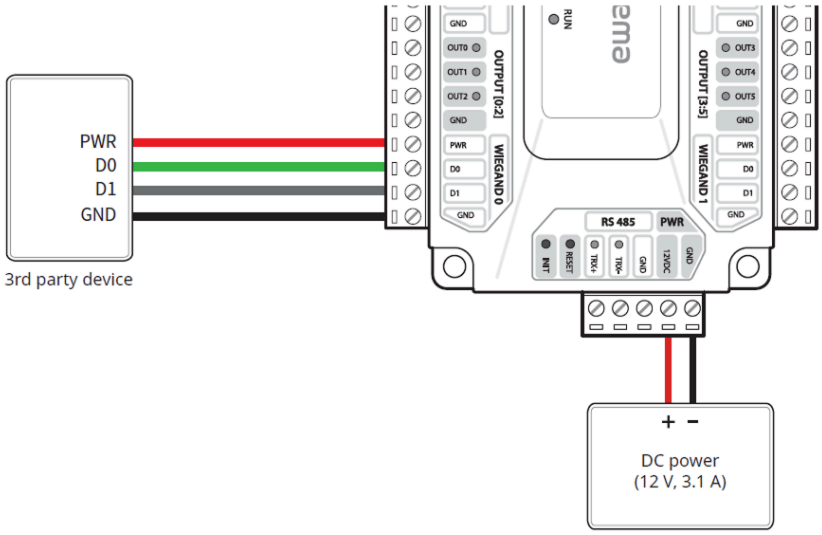
In order to use the Fail Secure Lock, connect **NO** relay as shown in the figure below. There is normally no current flowing through the relay for the Fail Secure Lock. When the current flow is activated by the relay, the door will open. If the power supply to the product is cut off due to a power failure or an external factor, the door will lock.

> **Info**
> 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.



Wiegand Connection

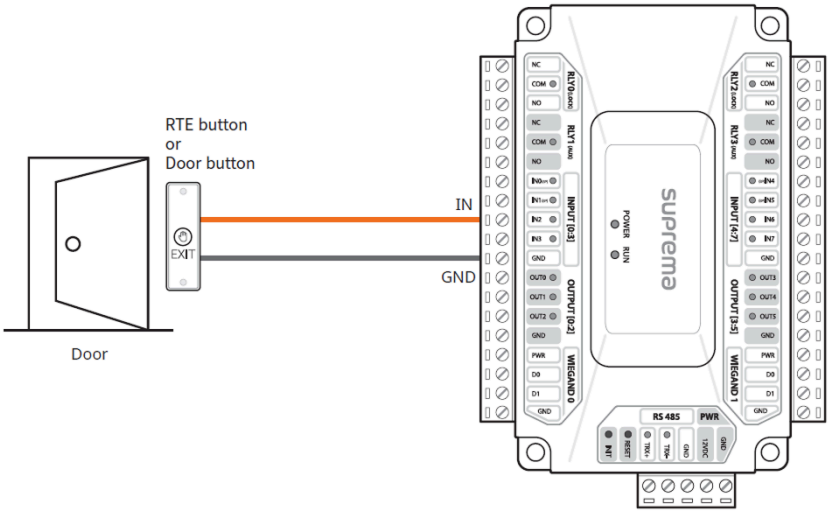
Connect the product to a 12 V, 3.1 A power supply when connecting a Wiegand device.



> **Info**
>
> You can use a 12 V, up to 1.5 A power supply when connecting a Wiegand device to the product. When connecting a device requiring 1.0 A to **WIEGAND 0**, only 500 mA can be used on **WIEGAND 1**.

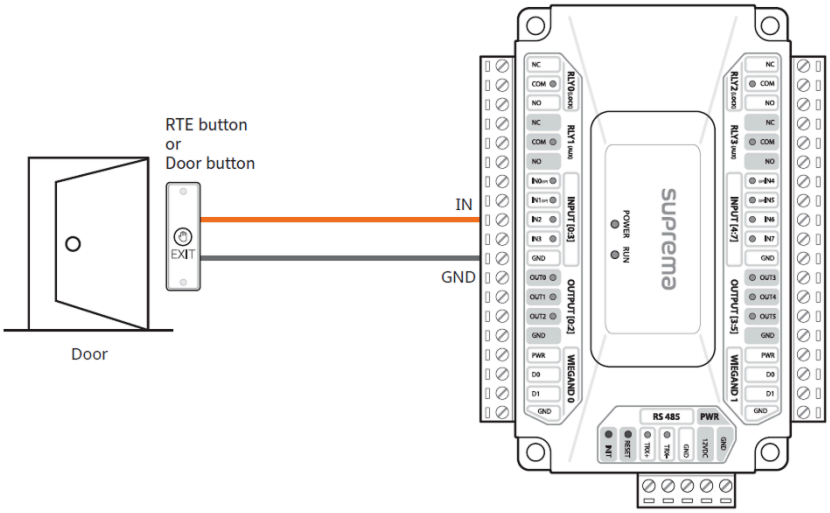
Exit button

The IN0(SP), IN1(SP), IN4(SP), IN5(SP) ports support the Supervised Input feature and operate only as N/C. To avoid using Supervised Input, connect to the IN2, IN3, IN6, IN7 ports.



Door sensor

The IN0(SP), IN1(SP), IN4(SP), IN5(SP) ports support the Supervised Input feature and operate only as N/C. To avoid using Supervised Input, connect to the IN2, IN3, IN6, IN7 ports.



Product Specifications

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

General

Model Name	**DM-20**	
CPU	**Cortex M3 72 MHz**	
Memory	**128 KB Flash + 20 KB SRAM**	
LED	**Multi-color**	• **POWER: 1ea** • **RELAY: 4ea** • **INPUT: 4ea** • **SUPERVISED INPUT: 4ea** • **OUTPUT: 6ea** • **RS-485: 2ea** • **RUN: 1ea**
Operating Temperature	**-20 °C ~ 60 °C**	
Storage Temperature	**-40 °C ~ 70 °C**	
Operating Humidity	**0 % ~ 80 %, non-condensing**	
Storage Humidity	**0 % ~ 90 %, non-condensing**	
Authentication	**CE, UKCA, KC, FCC, RoHS, REACH, WEEE**	

Interface

RS-485	**1 ch**
RS-485 Communication Protocol	**OSDP V2 compliant**
Input	**4 ch**

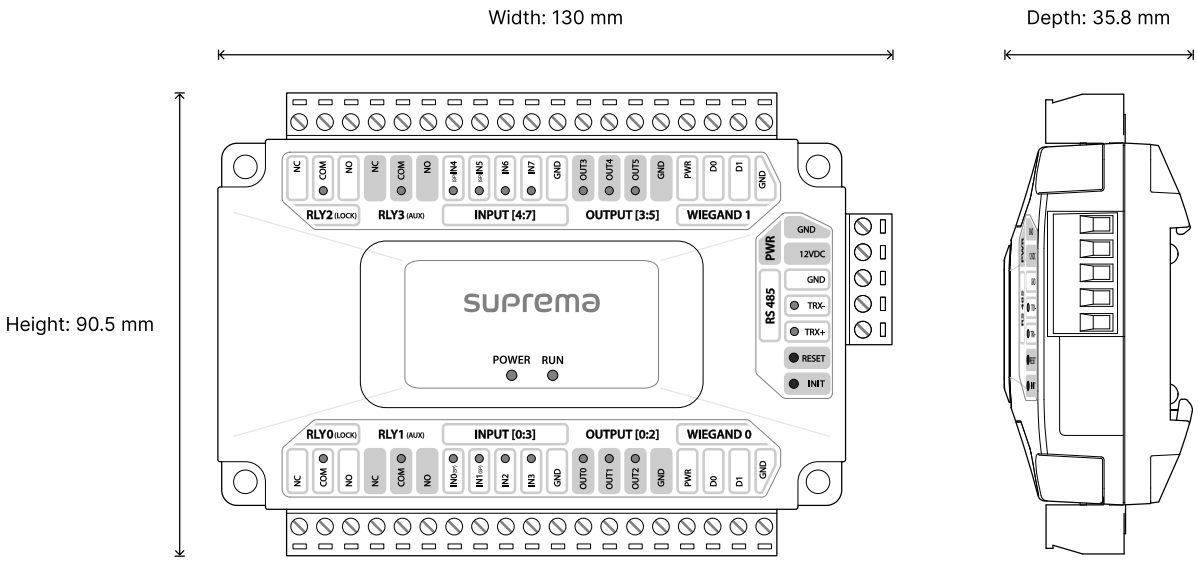
Output	**6 ch**
Supervised Input	**4 ch**
Relay	**4 relays**
Wiegand	**2 ch Inputs**

Electrical

Power	**12 Vdc**	**Current: Max. 3.1 A**
Relay	• **2 A @ 30 VDC Resistive load** • **1 A @ 30 VDC Inductive load**	

Dimensions and Weight

The dimensional tolerance is ±0.3 mm.



Weight: 220 g

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 B 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.

For more information, please contact us via the contact details below.

Suprema Inc.

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Appendices

Includes legal notices contained in the product.

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