

Door Module

INSTALLATION GUIDE

Version 1.2
English
EN 101.00.DM-20 V1.2A

CONTENTS

Safety information	2	Product Specifications	12
Instructional icons	2		
		FCC compliance information	14
Introduction	4		
Components	4	Appendices	15
Name of each part	5	Disclaimers	15
Installation Example	6	Copyright Notice	15
Installation	7		
Mounting the Bracket	7		
Mounting the Support Boss	7		
Power connection	8		
RS-485 connection	8		
Fail Safe Lock	9		
Fail Secure Lock	9		
Wiegand	10		
Door button	11		
Door sensor	11		

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 adaptors, 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.

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.

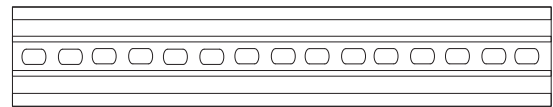
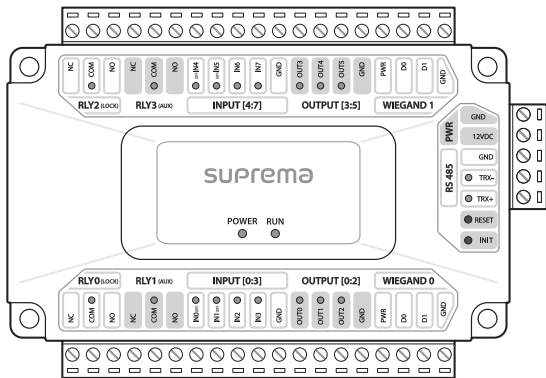
- Wipe the product with a clean and dry towel.
- If you need to sanitize the product, moisten the cloth or the wipe with a proper amount of rubbing alcohol and gently clean all exposed surfaces including the fingerprint sensor. Use rubbing alcohol (containing 70% Isopropyl alcohol) and a clean, non-abrasive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

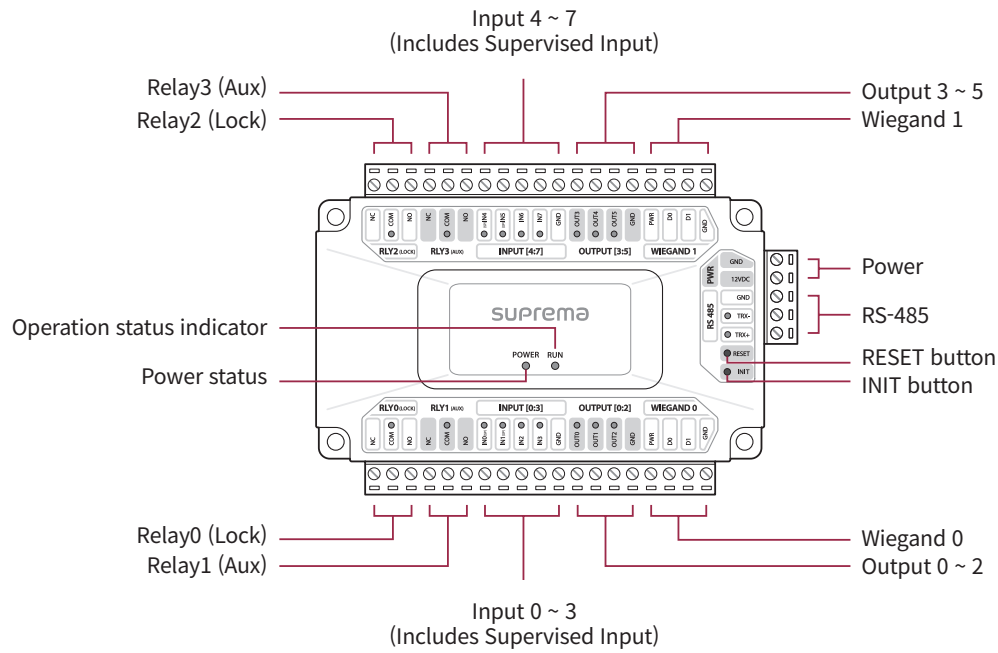


Door Module		Bracket		
				
PVC Anchors x4	Mounting screws x4	Support Boss x4	120Ω resistor	Diode x2



- Components may vary according to the installation environment.

Name of each part

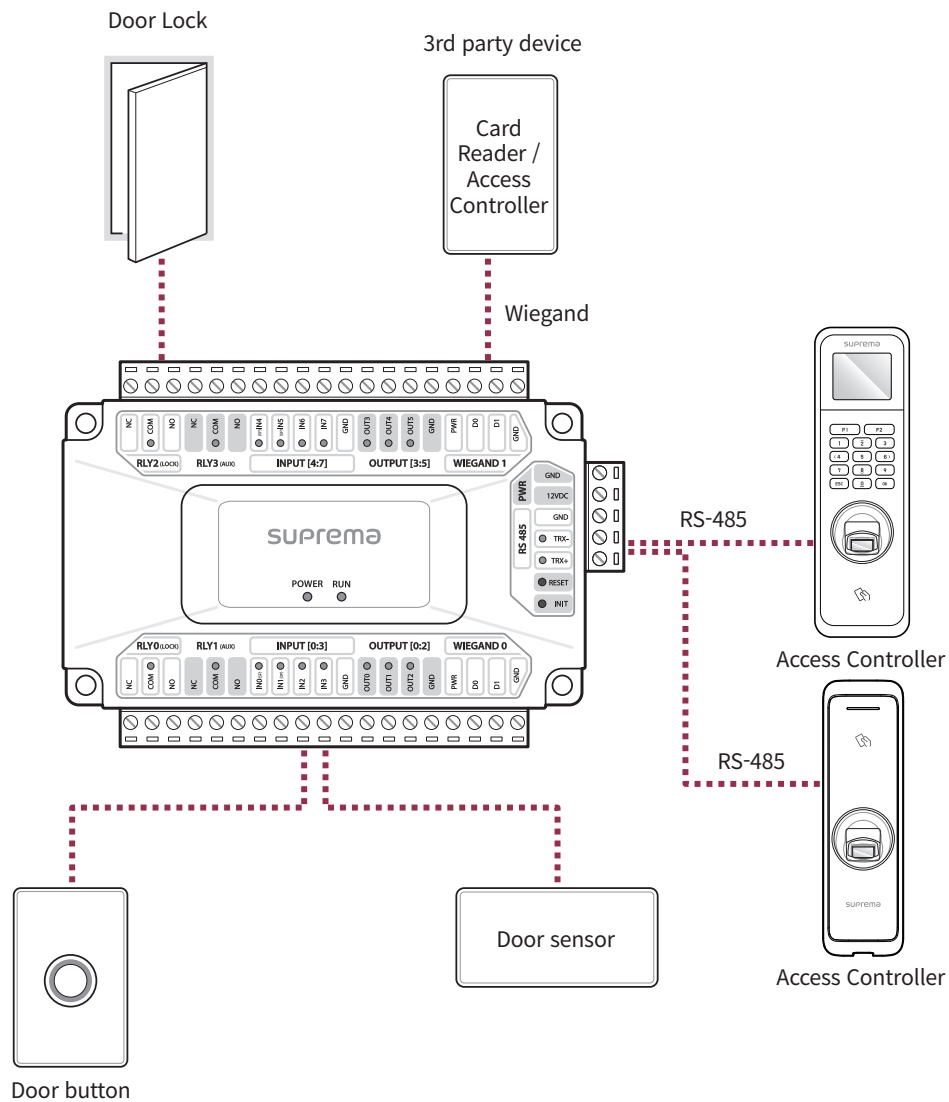


- Press INIT button to reset DM-20 interworking with a device and then connect to another device.
- If you use the supervised input, refer to below details for LED status.
 - Orange: Open
 - Red: Short
 - Green: On
 - Off: Off

Installation Example

DM-20 is connected with various I/O and Wiegand and can be compatible with 3rd party device.

It can be used supervised input, a supervised connection is a four-state connection to determine if the connection is Open, Short, On, Off.



Installation

DM-20 can be mounted with bracket or support boss.

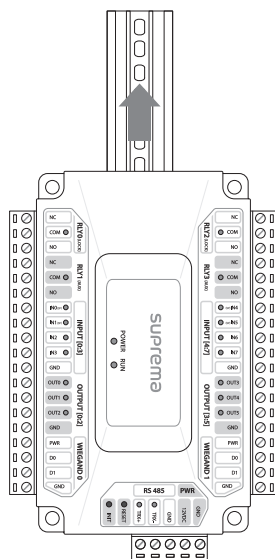
Mounting the Bracket

- 1 With the mounting screws for the bracket, mount the bracket firmly onto the surface where DM-20 is to be installed.



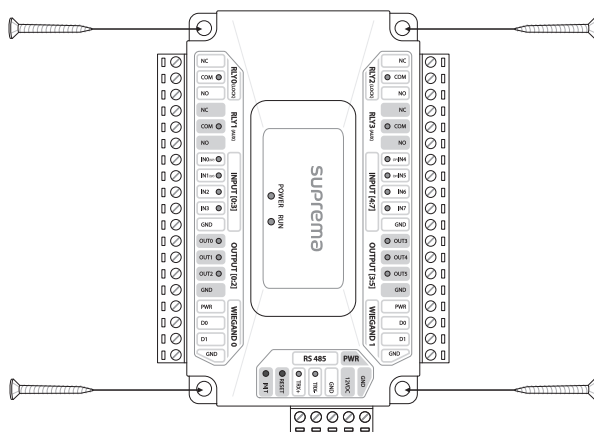
- If DM-20 should be installed onto a concrete wall, make a hole with a drill, and then insert a PVC anchor into the hole before screwing the mounting screw.

- 2 Attach DM-20 onto the mounted bracket.



Mounting the Support Boss

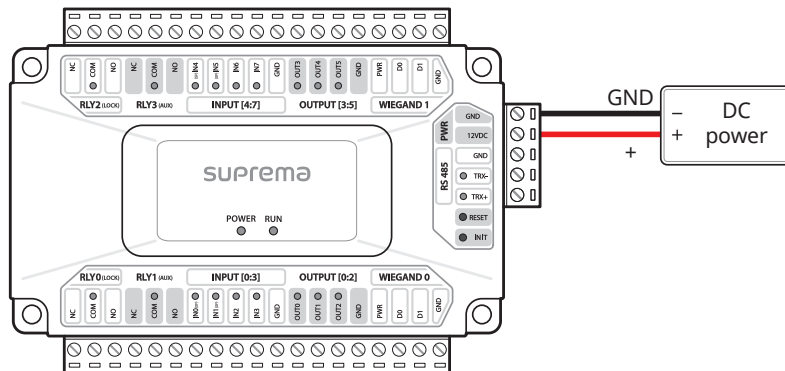
- 1 With the mounting screws and support bosses for DM-20, mount the bracket firmly onto the surface where DM-20 is to be installed.



- If DM-20 should be installed onto a concrete wall, make a hole with a drill, and then insert a PVC anchor into the hole before screwing the mounting screw.

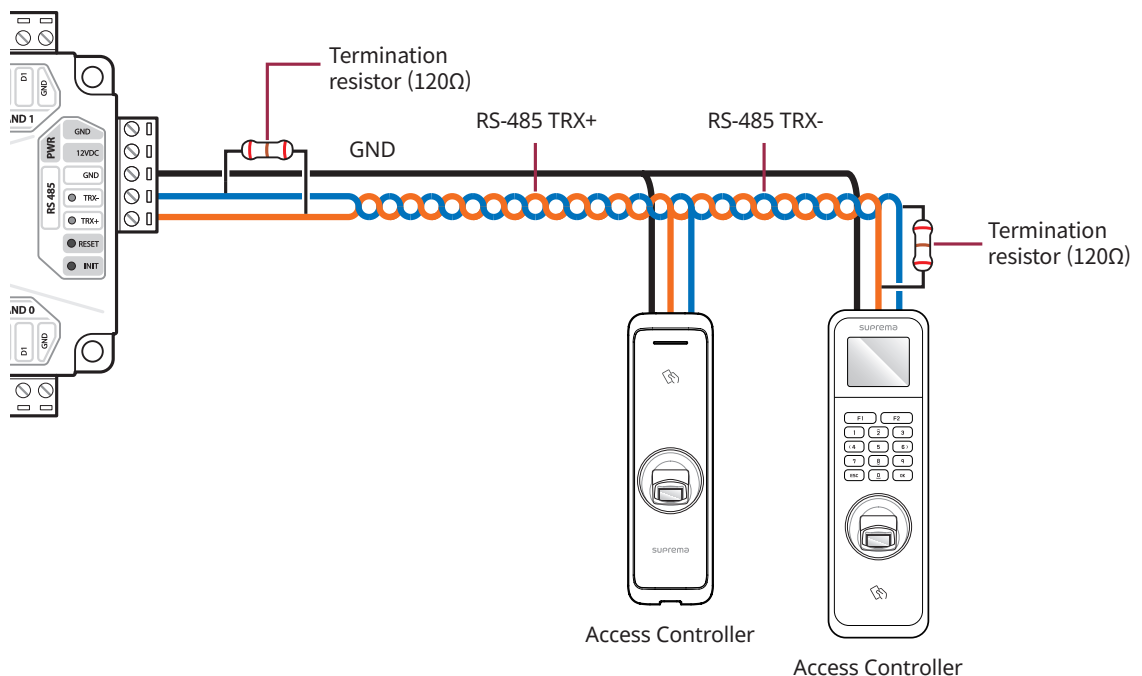
Power connection

- Do not share the power with the access controller.
- If the power is shared by other devices, it should provide 9-18 V and a minimum of 500 mA.
- If the power is shared by Wiegand devices, it is recommended to provide 12 V and 2.5 A.



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 card readers or up to 7 fingerprint devices with 24 card readers can be connected with DM-20. (If Xpass set to master device, fingerprint devices cannot be connected as slave device.)



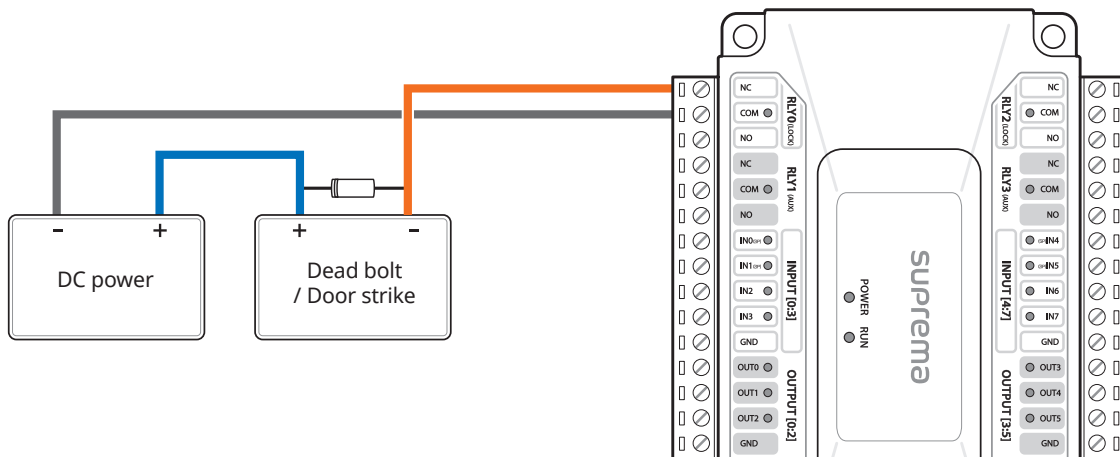
Relay

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.

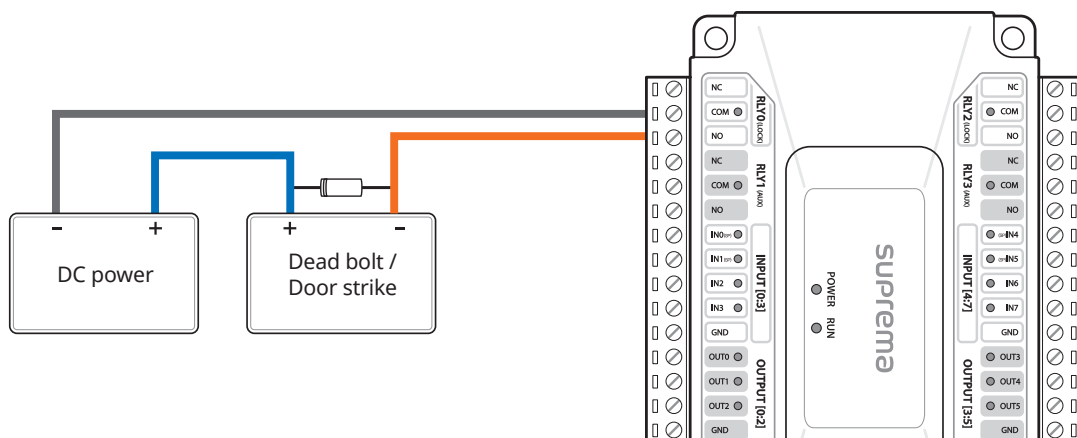


Fail Secure Lock

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.

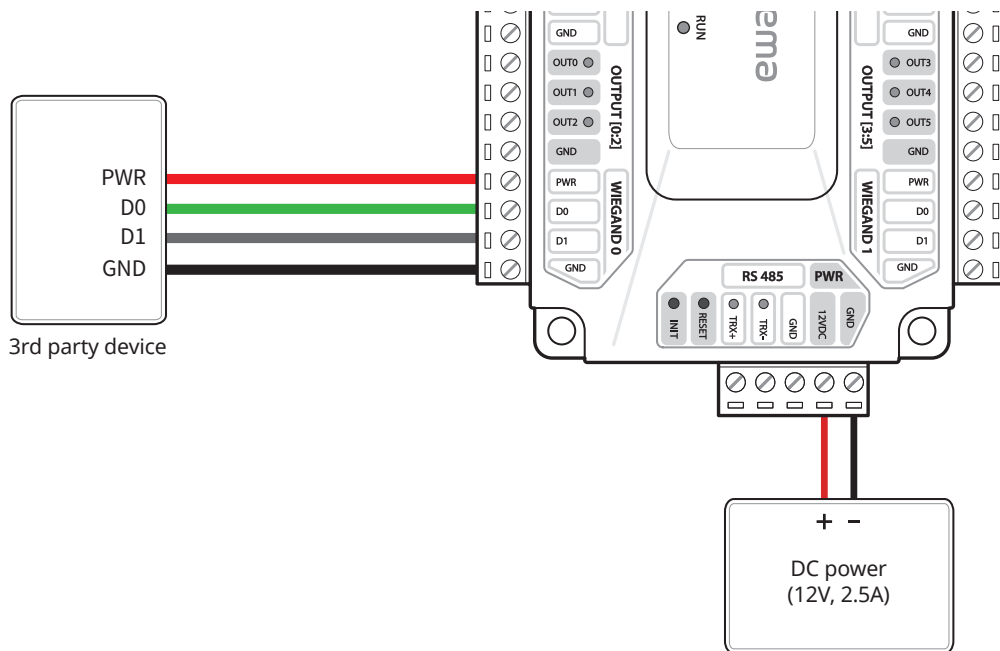


- Connect a diode to both ends of the power input as shown in the figure below when installing a deadbolt or a door strike. Make sure to connect the Cathode (direction to the stripe) to the + part of the power while paying attention to the direction of diode.



Wiegand

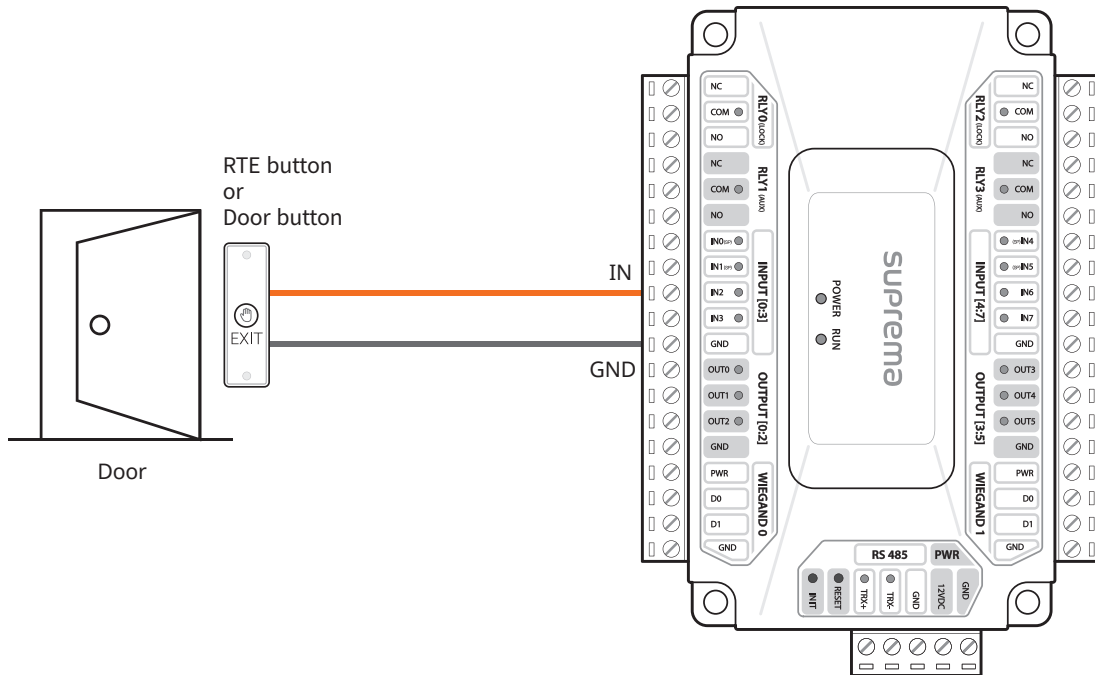
If the power is shared by Wiegand devices, it is recommended to connect 12V and 2.5 A to DM-20.



- You can use 12V, Max. 1.5A for Wiegand devices. If you connect a device that needs 1.0A to **WIEGAND 0**, **WIEGAND 1** deliver only 500mA.

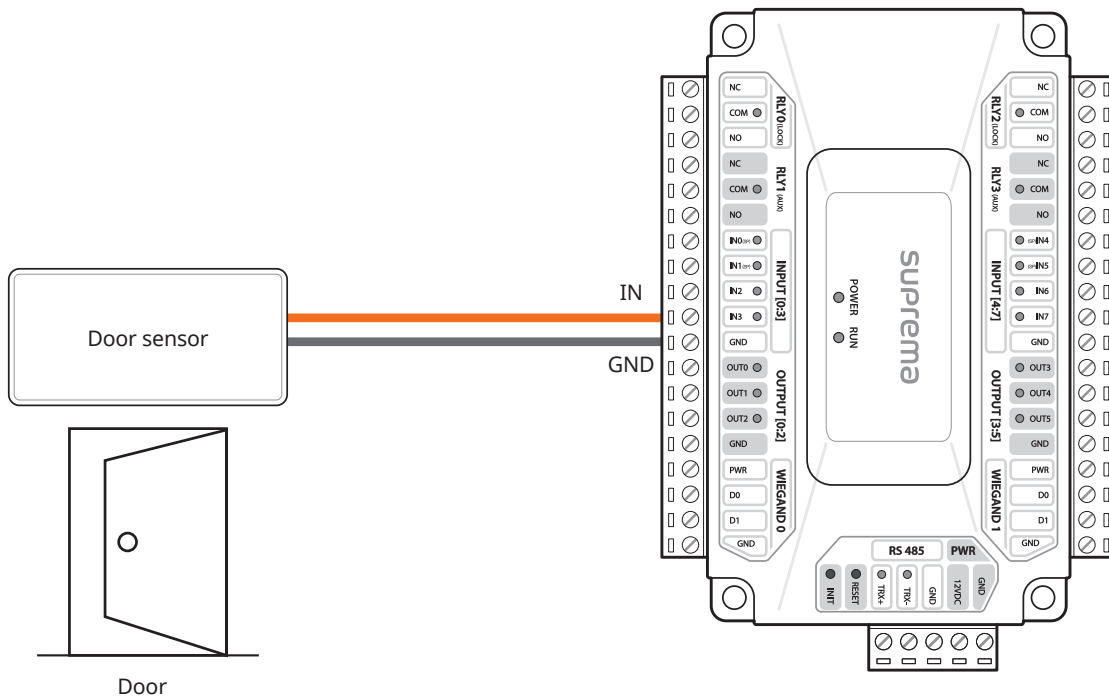
Door button

IN0(SP), IN1(SP), IN4(SP), IN5(SP) terminals support the supervised input, and it operates always as N/C(normally closed). If you want to connect with non-supervised input, use IN2, IN3, IN6, IN7 terminals.



Door sensor

IN0(SP), IN1(SP), IN4(SP), IN5(SP) terminals support the supervised input, and it operates always as N/C(normally closed). If you want to connect with non-supervised input, use IN2, IN3, IN6, IN7 terminals.



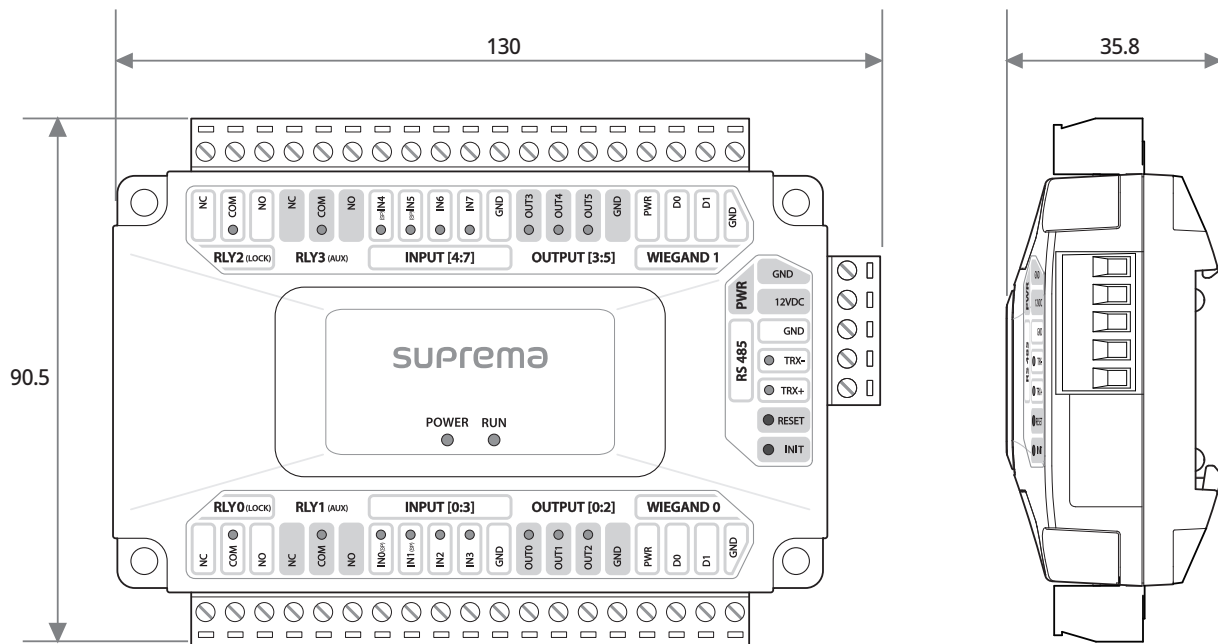
Product Specifications

Category	Feature	Specification
General	Model	DM-20
	CPU	Cortex M3 72 MHz
	Memory	128KB Flash, 20KB SRAM
	LED	Multi-color <ul style="list-style-type: none"> • Power x1 • Relay x4 • TTL Input x4 • Supervised Input x4 • TTL Output x6 • RS-485 x2 • Run x1
	Operating temperature	-20°C ~ 60°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)	130 mm x 90.5 mm x 35.8 mm
	Certificates	CE, FCC, KC, RoHS, REACH, WEEE
	Interface	RS-485
TTL Input		<ul style="list-style-type: none"> • TTL Input 4ch • Supervised Input 4ch
Output		TTL Output 6ch
Relay		4 relays
Wiegand		Wiegand Input 2ch (12 V, Max. 1.5 A)
Electrical	Power	9-18V, Max. 2.5A
	Relay	2 A@ 30 VDC Resistive load 1 A@ 30 VDC Inductive 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 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

Disclaimers

- Information in this document is provided in connection with Suprema products.
- The right to use is acknowledged only for Suprema products included in the terms and conditions of use or sale for such products guaranteed by Suprema. No license, express or implied, by estoppel or otherwise, to any intellectual property is granted by this document.
- Except as expressly stated in an agreement between you and Suprema, Suprema assumes no liability whatsoever, and Suprema disclaims all warranties, express or implied including, without limitation, relating to fitness for a particular purpose, merchantability, or noninfringement.
- All warranties are VOID if Suprema products have been: 1) improperly installed or where the serial numbers, warranty date or quality assurance decals on the hardware are altered or removed; 2) used in a manner other than as authorized by Suprema; 3) modified, altered, or repaired by a party other than Suprema or a party authorized by Suprema; or 4) operated or maintained in unsuitable environmental conditions.
- Suprema products are not intended for use in medical, lifesaving, life-sustaining applications, or other applications in which the failure of the Suprema product could create a situation where personal injury or death may occur. Should you purchase or use Suprema products for any such unintended or unauthorized application, you shall indemnify and hold Suprema and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Suprema was negligent regarding the design or manufacture of the part.
- Suprema reserves the right to make changes to specifications and product descriptions at any time without notice to improve reliability, function, or design.
- Personal information, in the form of authentication messages and other relative information, may be stored within Suprema products during usage. Suprema does not take responsibility for any information, including personal information, stored within Suprema's products that are not within Suprema's direct control or as stated by the relevant terms and conditions. When any stored information, including personal information, is used, it is the responsibility of the product users to comply with national legislation (such as GDPR) and to ensure proper handling and processing.
- 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.
- Except as expressly set forth herein, to the maximum extent permitted by law, the Suprema products are sold "as is".
- Contact your local Suprema sales office or your distributor to obtain the latest specifications and before placing your product order.

Copyright Notice

Suprema has the copyright of this document. The rights of other product names, brands, and trademarks belong to individuals or organizations who own them..



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



For more information about Suprema's global branch offices,
visit the webpage below by scanning the QR code.

<http://www.supremainc.com/en/about/contact-us.asp>