



INSTALLATION GUIDE

DM-20

English

Version 1.00

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Safety Instructions

Please read the following instructions carefully before using the product. This information is important for ensuring the safety of the user and for preventing damage to the user's property.

Warning

Violation of the instructions may cause serious injury or death.

Installation Instructions

Do not install the product in direct sunlight or in a location that is damp or dusty.

- This can cause a fire or electric shock.

Do not install the product near any heat source such as electric heaters.

- This can cause a fire from overheat or electric shock.

Install the product in a dry place.

- Moisture can cause product damage or electric shock.

Install the product in a place where there is no electromagnetic interference.

- This can cause product damage or electric shock.

Have qualified service professionals install or repair the product.

- Otherwise, it can cause a fire, electric shock, or injury.
- If the product is damaged due to a user's unauthorized installation or dismantling of the product, a service fee will be charged for repair.

Caution

Ignoring these instructions may result in minor injuries or damage to the product.

Installation Instructions

Protect the power cord from being walked on or pinched.

- This can cause product damage or injury.

Keep the product away from strong magnetic objects such as magnets, TVs, monitors (especially CRT monitors), or speakers.

- This can cause a failure.

Operating Instructions

Do not drop the product or subject it to shock or impact during use.

- This can cause a failure.

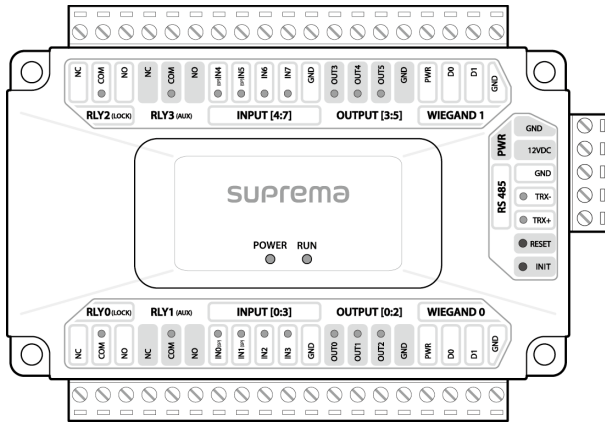
Do not press the buttons on the product with excessive force or with a sharp tool.

- This can cause a failure.

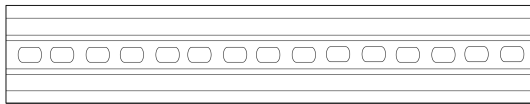
Clean the product with a soft, dry cloth. Do not use alcohol, benzene, or water.

- This can cause a product failure.

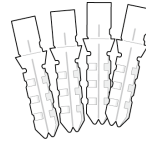
Components



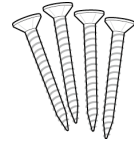
DM-20



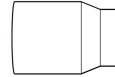
Bracket
(1)



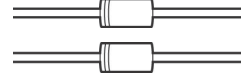
PVC Anchors
(4)



Mounting screws
(4)



Support Boss
(4)

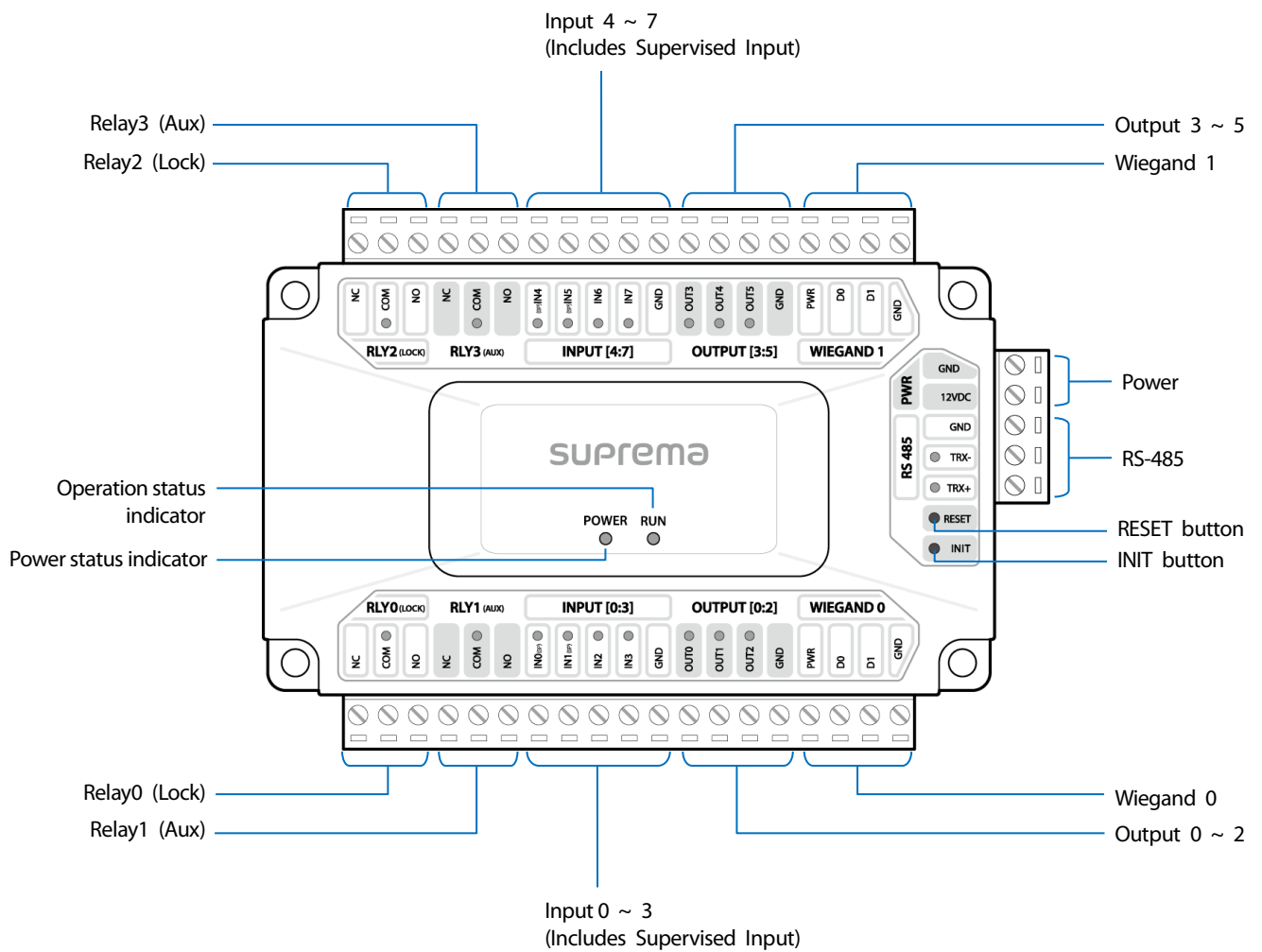


Diode
(2)



120Ω resistor
(1)

Front Side



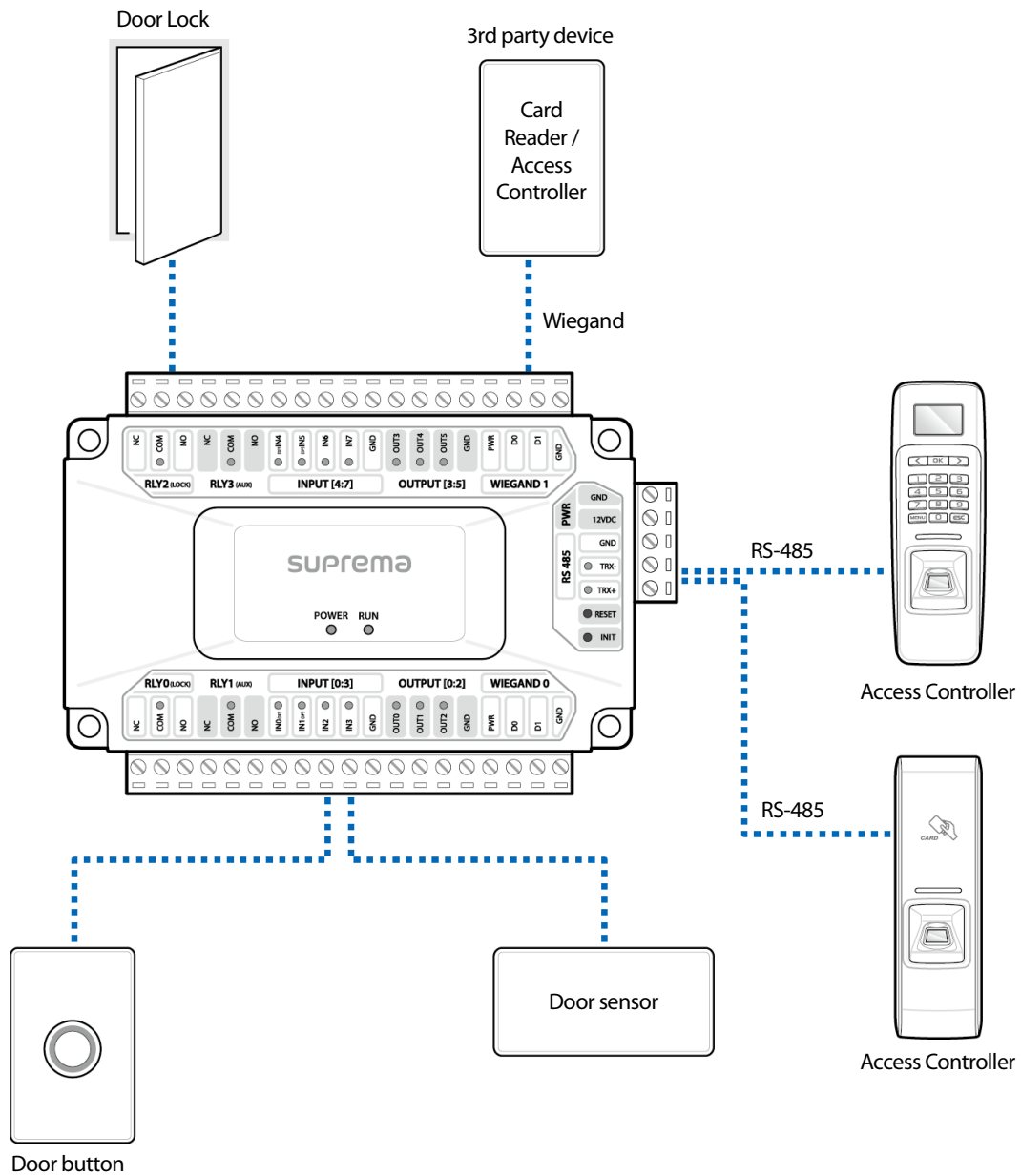
Note

- 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

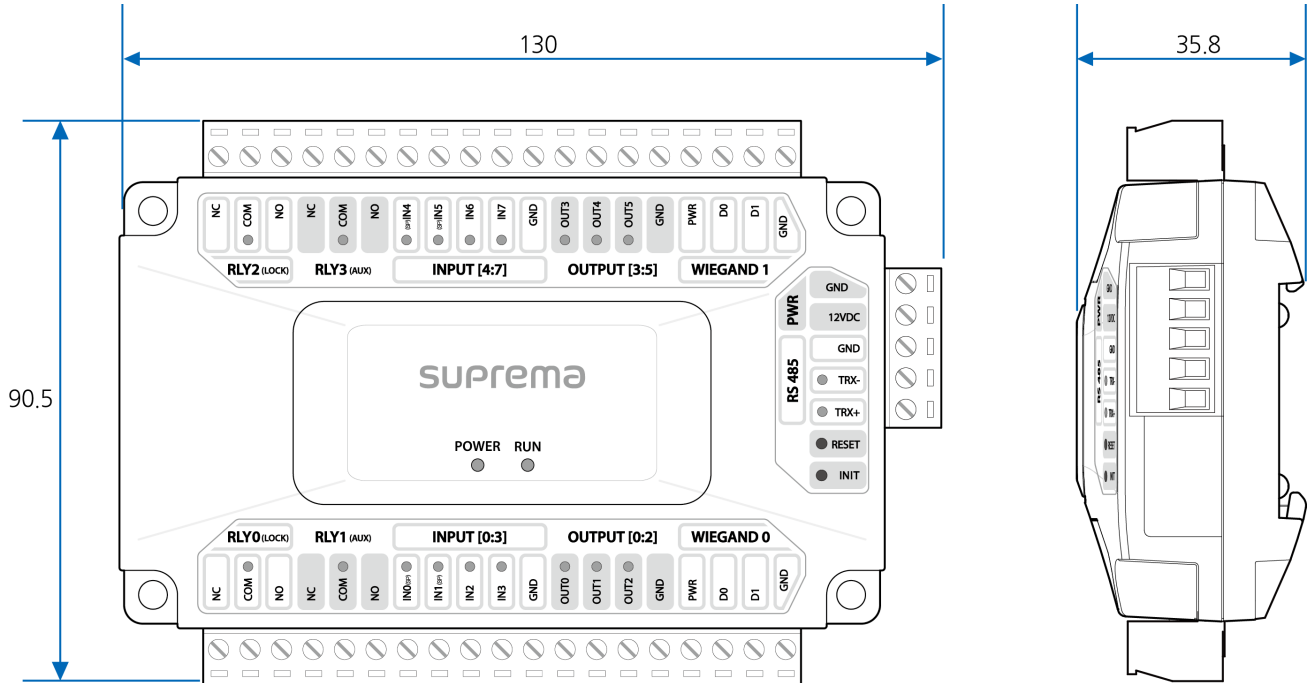
DM-20 is connected with various I/O and Wiegand and can be compatible with 3rd party device.

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



Dimensions

(Unit: mm)



Installation

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

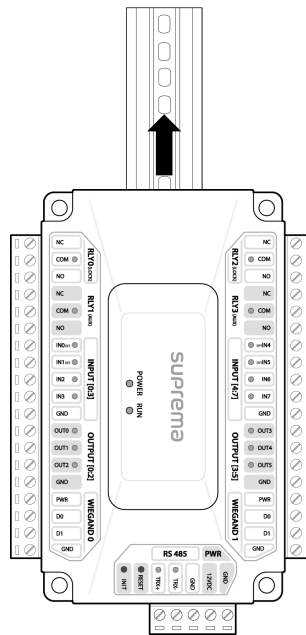
Mounting the Bracket

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

Note

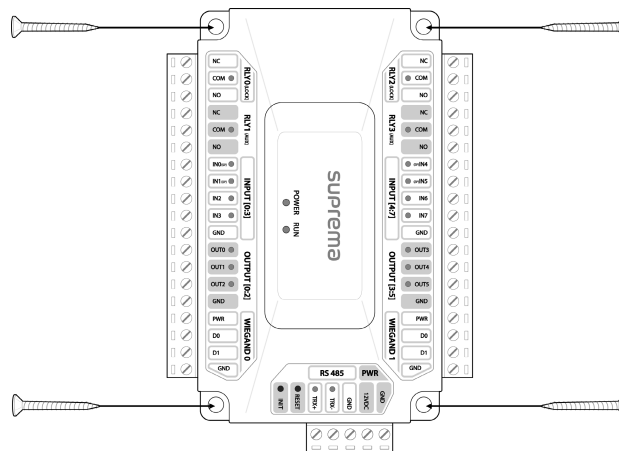
- If DM-20 should be installed onto a concrete wall, make a hole with a drill, and then insert a PVC anchor into the hole before screwing the mounting screw.

- 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.



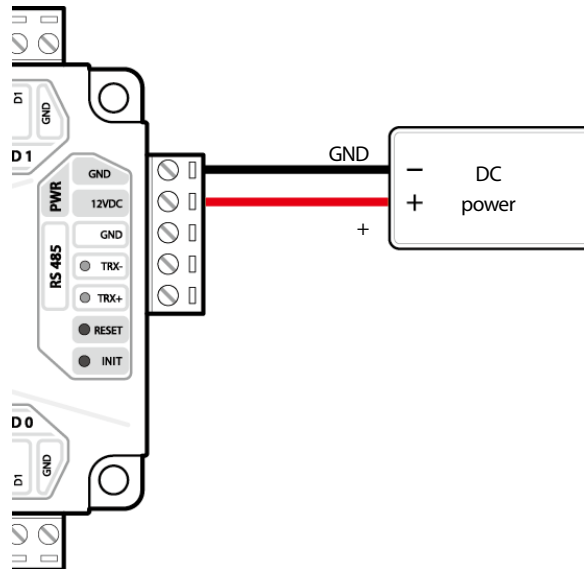
Note

- 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.

Connections

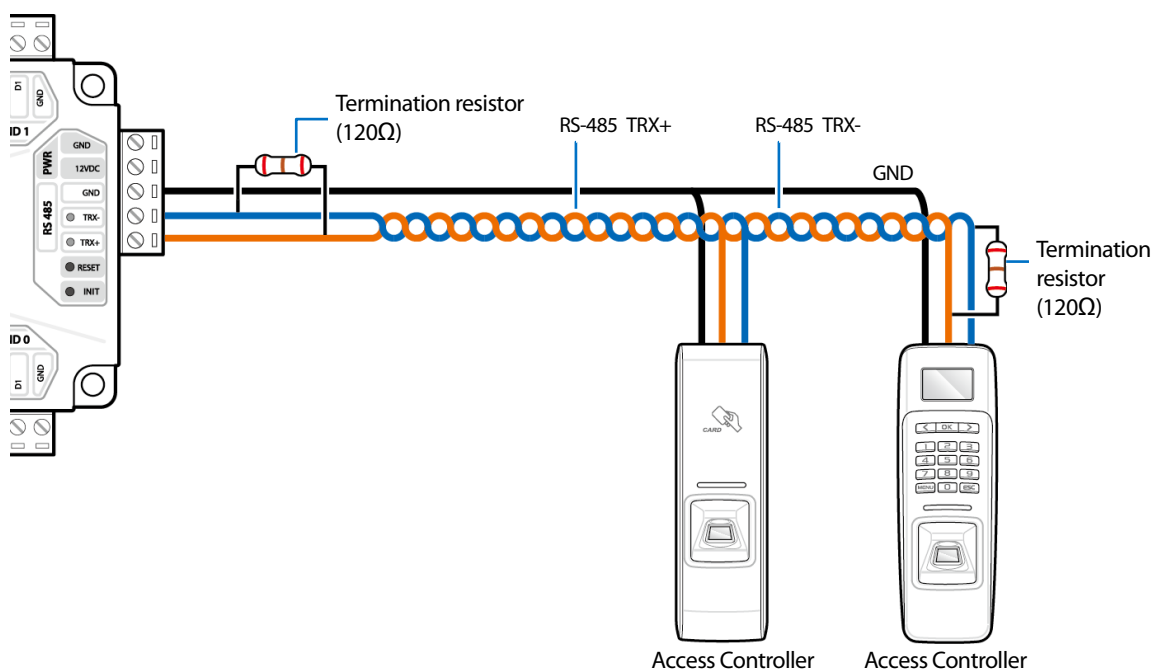
Power

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



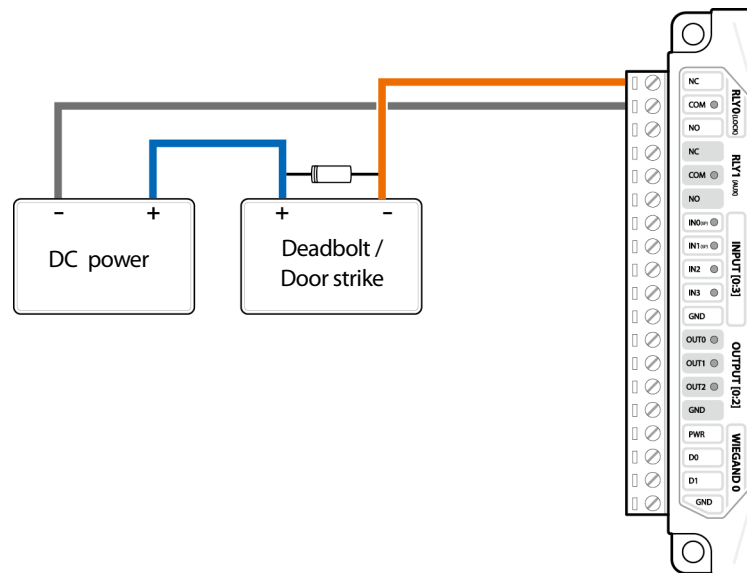
RS-485

- 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.)



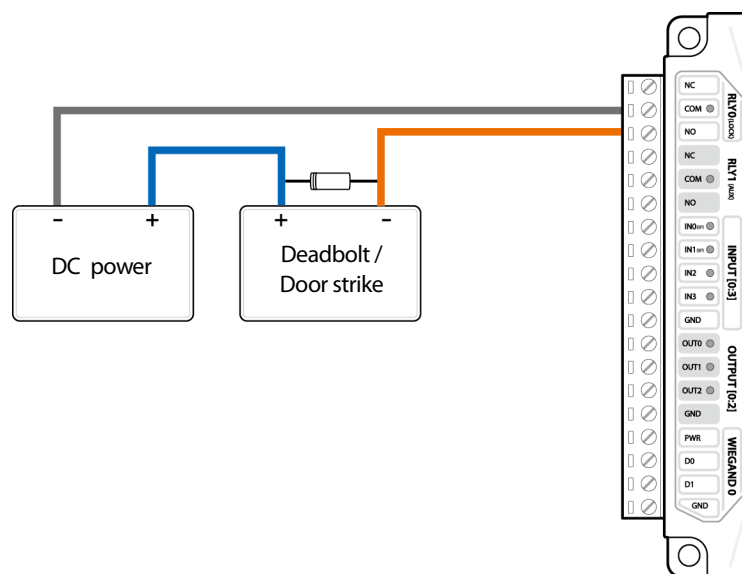
Fail Safe Lock

- To use fail safe lock, connect NC terminal as shown below. Normally, there is a current flowing through the relay and the door is opened when the relay is activated by blocking current flow. The door will also be opened when there is a blackout or power failure caused by external conditions.
- When deadbolt or door strike is installed, the diode included with the product should be connected at both ends of the power input as shown in the figure. Place the diode carefully in the correct direction. The cathode (stripe mark) should be connected to the (+) of the power.



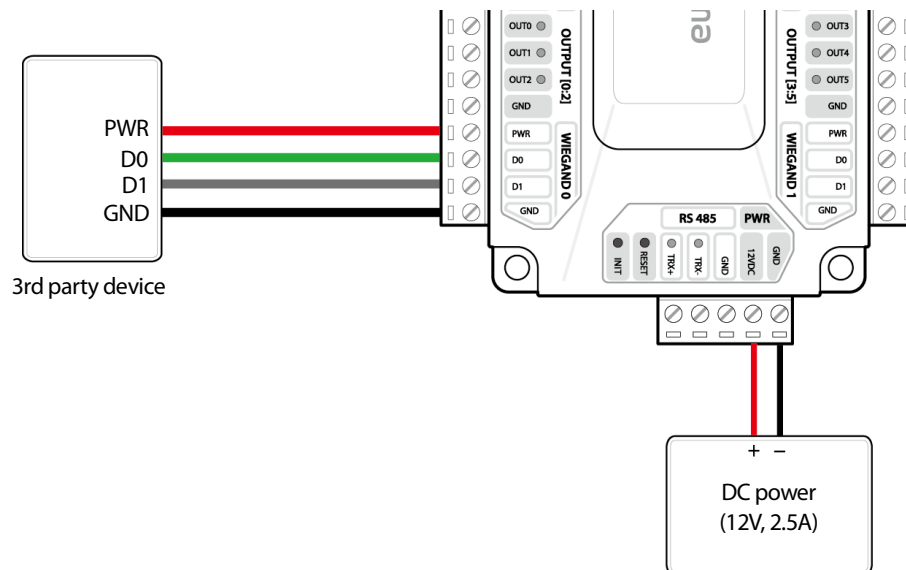
Fail Secure Lock

- To use fail secure lock, connect NO terminal as shown below. Normally, there is no current flowing through the relay and the door is opened when the relay is activated by a current flows. The door is locked when there is a blackout or power failure caused by external conditions.
- When deadbolt or door strike is installed, the diode included with the product should be connected at both ends of the power input as shown in the figure. Place the diode carefully in the correct direction. The cathode (stripe mark) should be connected to the (+) of the power.



Wiegand

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

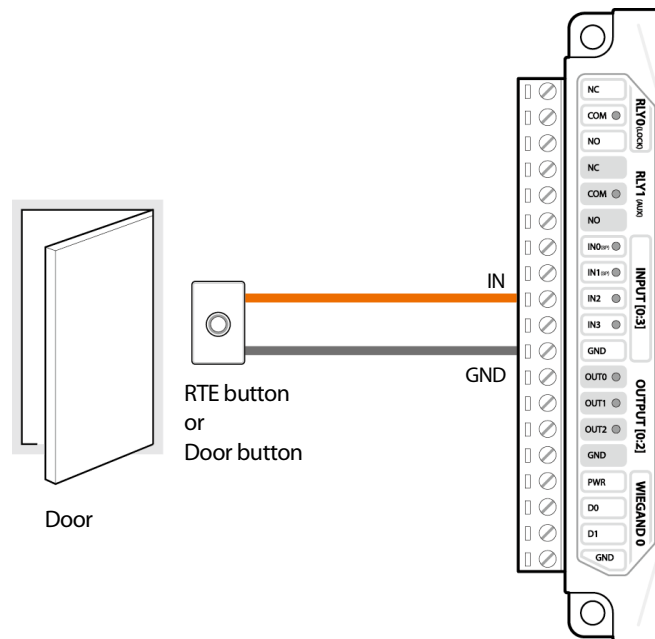


Note

- 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.

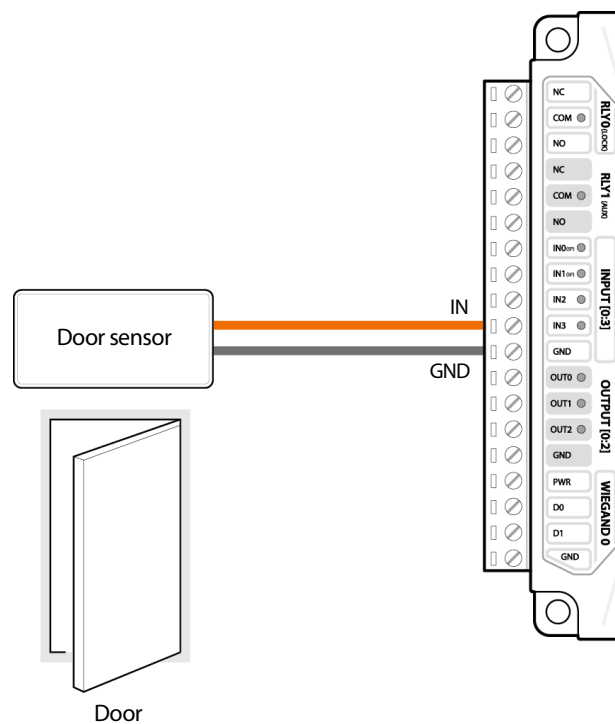
Door button

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

Item	Specification
CPU	STM32(Cortex M 32Mhz)
Memory	128KB Flash, 20KB SRAM
Host communication	1x RS-485
Input	4x TTL Input 4x Supervised Input
Output	6x TTL output
Relay	4x relay <ul style="list-style-type: none"> • Rated load: 0.4 A @ 125 VAC; 2 A @ 30 VDC • Maximum switching voltage: 250 VAC, 220 VDC • Maximum switching current: 3 A
Wiegand	2x Wiegand Input (12V, Max. 1.5A)
LED	<ul style="list-style-type: none"> • 1x Power • 4x Relay • 4x TTL Input • 4x Supervised Input • 6x TTL Output • 2x RS-485 • 1x Run
Operating Temperature	-20°C ~ 60°C
Power	9-18V, Max. 2.5A
Dimensions (W x L x D) (mm)	130 x 90.5 x 35.8
Certificates	CE, FCC, KC, RoHS, REACH, WEEE

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.

Note: 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.

Appendix

Disclaimers

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