XPass D2

INSTALLATION GUIDE

Version 1.12

English
EN 101.00.XPD2

suprema
SECURITY & BIOMETRICS

CONTENTS

Safety Instructions 4

Compliance Information 4

Getting Started 8

Components 8

Name and function of each part 9

Installation 11

Fixing the bracket and the product 11

Power supply connection 15

RS-485 Connection 16

Wiegand and other cable connections 16

Factory default 17

Reset RS-485 transmission performance 18

Product Specifications 19

Credentials 19

General 19

Interface 20

Electrical 20

Dimensions and Weight 21

Regulatory Information 23

FCC Compliance Information 23

IC information 24

EU Declaration of Conformity (CE) 24

Appendices 25

Disclaimers 25

Copyright Notice 26

Open Source License 26

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.

When installing the product on a wall, do not seal around the product with silicone or similar materials.

- The device may malfunction.

When installing multiple devices, ensure the minimum spacing distance is observed.

- May affect the RF and BLE performance of other devices, causing them to 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.

It is recommended to use an enclosure when installed outdoors with full exposure.

- Decreased waterproof and dustproof performance may cause malfunction.

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.

Manage the password so others do not know it, and change it regularly.

- This may lead to unauthorized access.

Use the product within -35 °C ~ 65 °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.

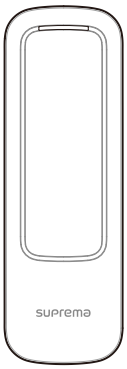
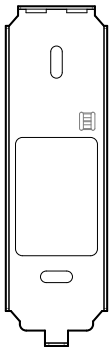
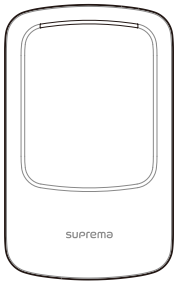
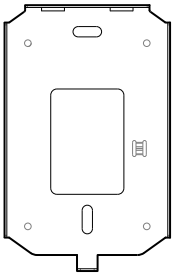
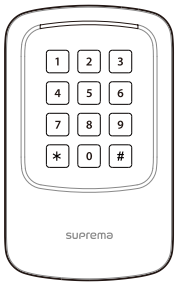
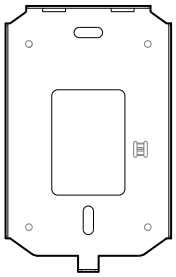
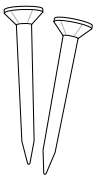
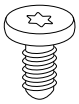
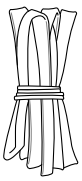
- The device may malfunction.

> **RTC Battery**
>
> Replacing with unauthorized or incorrect types of batteries may pose a risk of explosion. Dispose of batteries according to local or international waste regulations.

Getting Started

Provides initial procedures for getting started with the device.

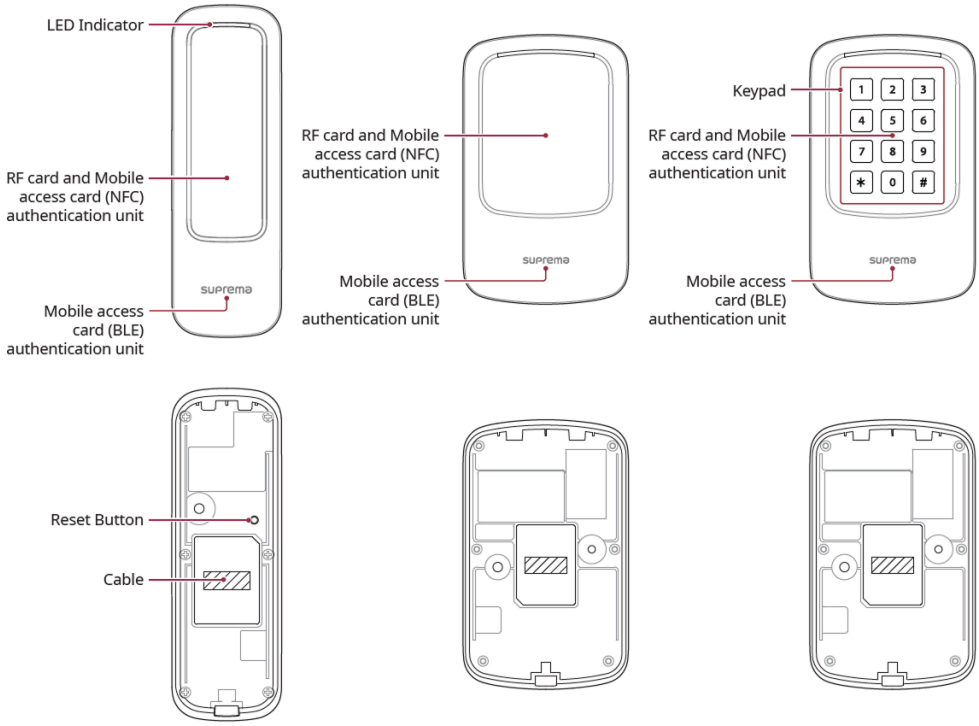
Components

			
XPass D2 Mullion Type (XPD2-MDB)	Wall Bracket (XPD2-MDB)	XPass D2 Gang Box Type (XPD2-GDB)	Wall Bracket (XPD2-GDB)
			
XPass D2 Keypad Type (XPD2-GKDB)	Wall Bracket (XPD2-GKDB)	Fixing Screws x2	Bracket Fixing Screw (Star Shaped)
			
120 Ω Resistor	Shrink Tube	Quick Guide	Open Source Software Guide

Info

- Components may vary according to the installation environment.
- When assembling the product with the bracket, you can use the included bracket fixing screw (Star Shaped) instead of the product fixing screw for enhanced security.

Name and function of each part



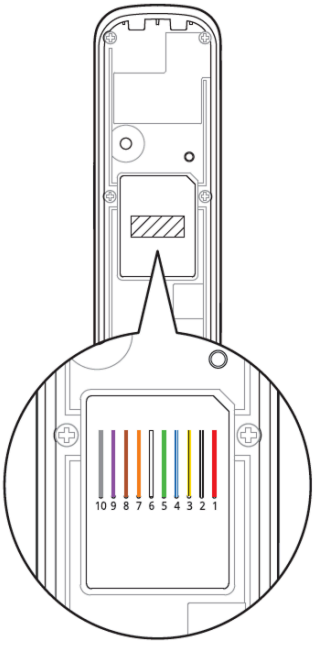
- **LED Indicator**: Indicates the operational status of the device with the color of the LED.
  - Green: Authentication success.
  - Red: Authentication failure.
  - Blue/Cyan blinking: Normal operation.
  - Blue/Green blinking: During network settings initialization
  - Green blinking: Waiting for input.
  - Green/White blinking: Connecting to the Suprema AirFob Pass (BLE) application
  - White blinking: Connecting to the Device Manager application
- **RF card and mobile access card authentication unit**: Part to scan a RFID card or mobile access card for entrance.
- **Mobile Access Card Recognition Area**: This is the part that recognizes mobile access cards for entry.
- **Reset Button**: Deletes all stored information and certificates and initializes the settings. For more information on factory initialization, refer to Factory default.

- **Cable**

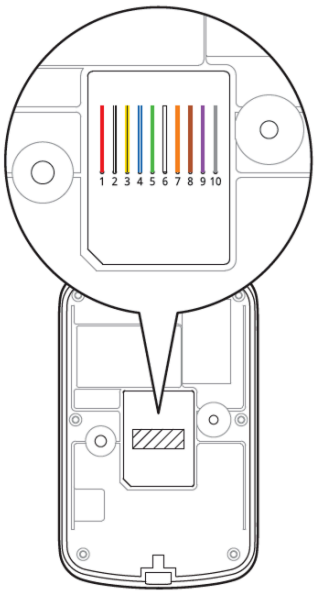
  Power / RS-485 / Wiegand Output / LED Input / Beep Input / Tamper

- **Keypad**: XPD2-GKDB Used to authenticate by directly entering the Card ID. To authenticate using direct input mode, change the authentication method settings in BioStar X.
  - **0-9**: Used when entering numbers.
  - ✳: Used to distinguish between FC code and ID when entering Wiegand Card ID.
  - #: Used to terminate input.

Cable



XPD2-MDB



XPD2-GDB, XPD2-GKDB

Pin	Name	Color
1	PWR +VDC	Red
2	GND	Black (White Stripe)
3	485 TRXN	Yellow (Black Stripe)
4	485 TRXP	Blue (White Stripe)
5	WG D0	Green
6	WG D1	White
7	LED RED	Orange
8	LED GRN	Brown
9	BEEP	Purple
10	TMPR	Gray

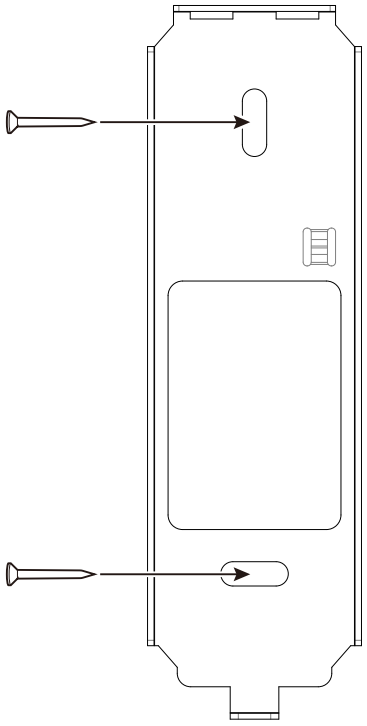
Installation

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

Fixing the bracket and the product

> **Info**
> This document explains the installation method based on the million type. Install the gang box type and keypad type in the same way.

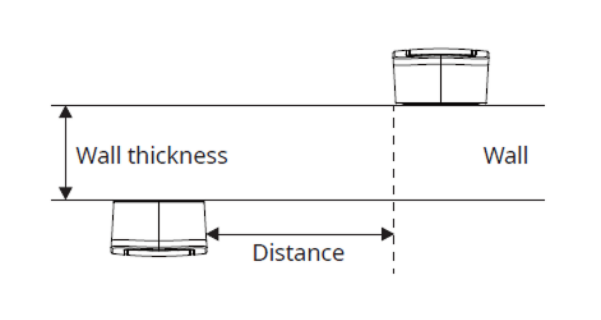
1. Secure the bracket tightly using the fixing screws at the location where the product will be mounted.

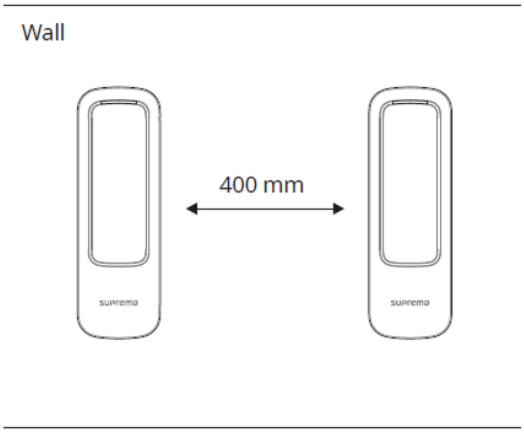


Info

- If installing the product on a concrete wall, drill a hole, insert a PVC anchor, and secure it with a fixing screw.
- To avoid RF interference, a minimum separation distance must be maintained.

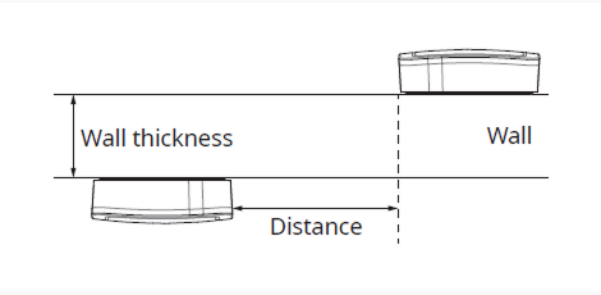
XPD2-MDB

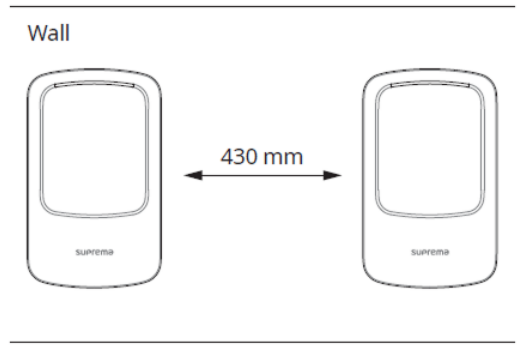




Wall thickness	Distance
100 mm	360 mm
120 mm	360 mm
150 mm	300 mm

XPD2-GDB, XPD2-GKDB

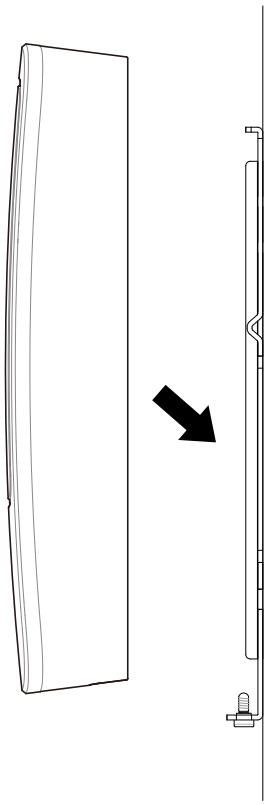




Wall thickness	Distance
100 mm	400 mm
120 mm	380 mm
150 mm	380 mm

- When using a mobile access card, install devices maintaining a minimum distance of 1 m between devices to avoid BLE interference.

2. Mount the product on the fixed bracket.



3. Rotate the fixing screws to assemble the product with the bracket.

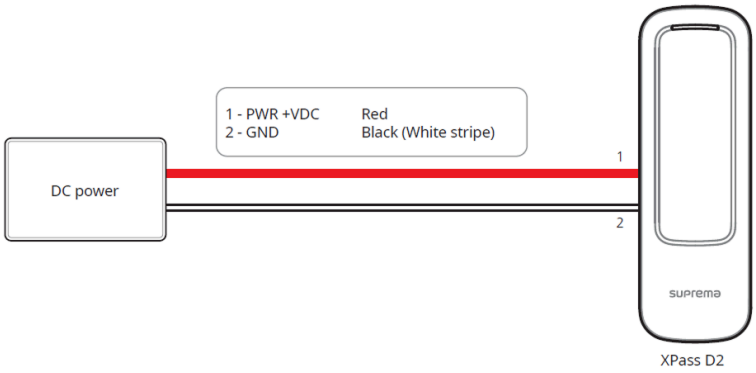


Info

When assembling the product with the bracket, you can use the included bracket fixing screw (Star Shaped) instead of the product fixing screw for enhanced security.

Power supply connection

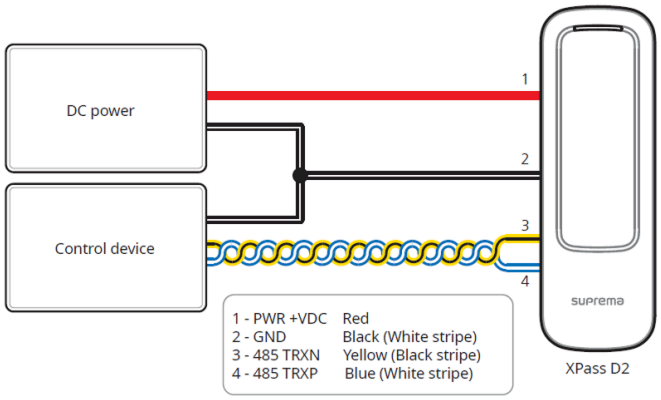
This product can be used as an RFID card or mobile card reader by connecting to a master device or CoreStation.



Caution

- 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.

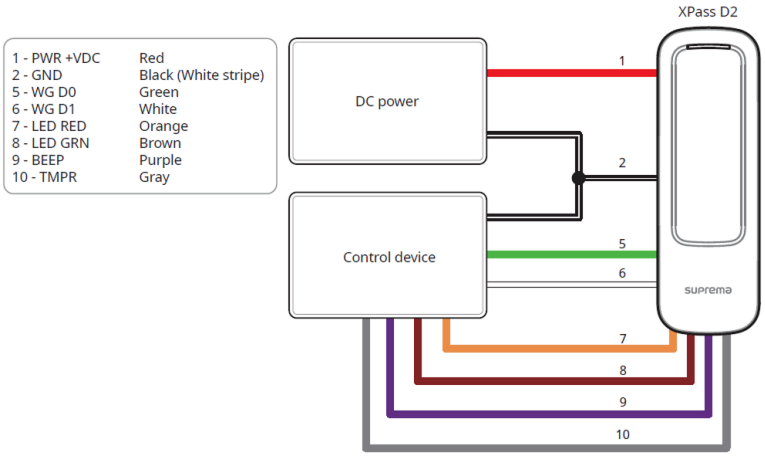
RS-485 Connection



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.

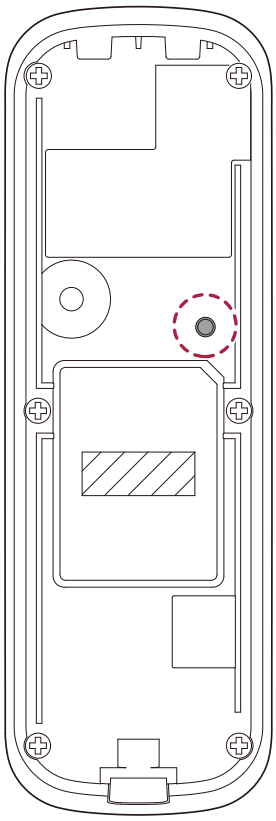
Wiegand and other cable connections



Factory default

Delete all information stored on the device and initialize the settings.

1. Power on.
2. Quickly press the reset button three times.



3. Press the reset button once more when the device's LED blinks green.

Info

You can only use Factory Default when the root certificate is stored on the device.

Reset RS-485 transmission performance

You can choose and set the desired communication performance.

1. Power on.
2. Press the reset button for more than 2 seconds. When you enter setting mode, the LED flashes green.
3. When the device's LED flashes green, press the reset button as many times as desired. The transmission performance is set according to the number of presses, and you can check the set performance by the LED color.

Number of presses	Transmission performance	LED color
1	9600	Sky blue
2	19200	Blue
3	38400	Purple
4	57600	White
5	115200	Red

4. The LED color of the set transmission performance flashes for 5 seconds. When you hear a beep, the transmission performance setting is complete.

Info

If you do not press the reset button after entering setting mode, the transmission performance will automatically be set to 115200.

Product Specifications

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

Credentials

RF Card	**125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3, FeliCa**
RF Read Range[1)]	**EM/MIFARE/DESFire: 50 mm, FeliCa: 30 mm**
Mobile	**NFC, BLE**

General

CPU	**80 MHz**
Memory	**512 KB Flash + 160 KB RAM**
Crypto Chip	**Supported**
LED	**Multi-color**
Sound	**Multi-tone Buzzer**
Operating Temperature	**-35 °C ~ 65 °C**
Storage Temperature	**-40 °C ~ 70 °C**
Operating Humidity	**0 % ~ 95 %, non-condensing**
Storage Humidity	**0 % ~ 95 %, non-condensing**
IP Rating	**IP65, IP67**
IK Rating	**IK08**

Authentication	**CE, UKCA, KC, FCC, IC, RCM, BIS, SIG, RoHS, REACH, WEEE**

Interface

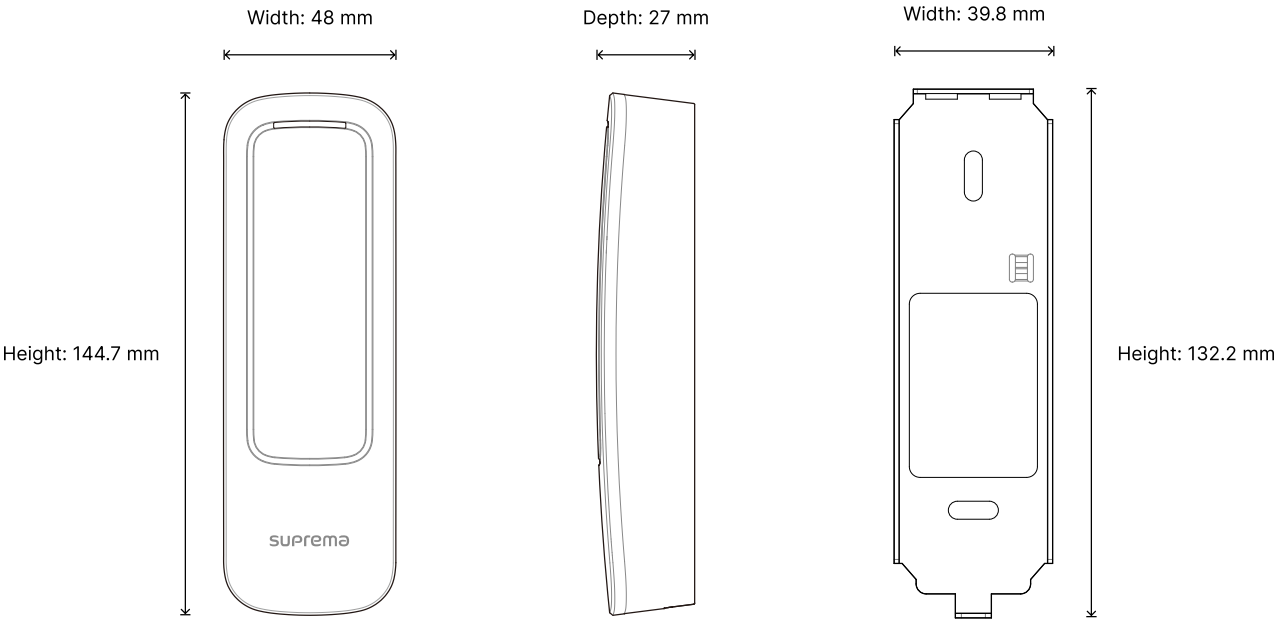
RS-485	**1 ch Slave**
RS-485 Communication Protocol	**OSDP V2 compliant**
Wiegand	**1 ch**
LED	**2 ch**
Beep	**1 ch**
Tamper	**Supported**

Electrical

Power	**12 Vdc**	**Current: Max. 0.3 A**
LED, Beep Input VIH	• **Min.: 3 V** • **Max.: 5 V**	
LED, Beep Input VIL	**Max.: 1 V**	
LED, Beep Pull-up Resistance	**4.7 kΩ (The input ports are pulled up with 4.7 kΩ.)**	
Wiegand Output VOH	**More than 4.8 V**	
Wiegand Output VOL	**Less than 0.2 V**	
Wiegand Output Pull-up Resistance	**Internally pulled up with 1 kΩ**	

Dimensions and Weight

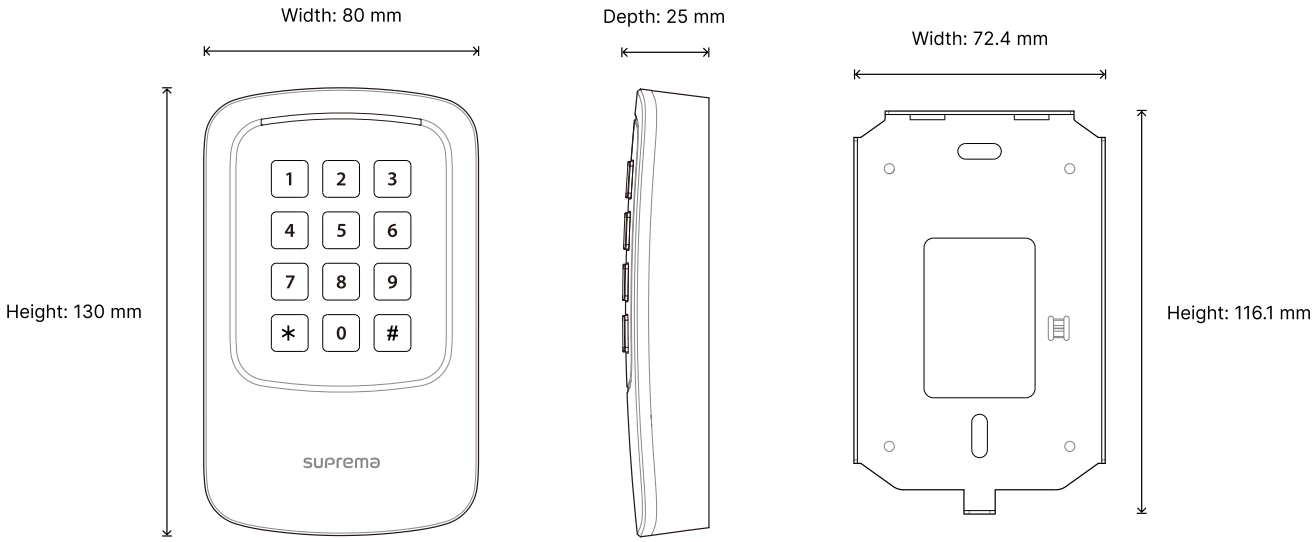
XPD2-MDB



Weight: 117 g

Weight: 30 g
(Including washer and bolt)

XPD2-GDB, XPD2-GKDB



Weight
- XPD2-GDB: 140 g
- XPD2-GKDB: 145 g

Weight: 52 g
(Including washer and bolt)

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1) The RF detection range may vary depending on the installation environment.

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.

IC information

This device complies with Industry Canada's licence-exempt RSSs.

Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

1. l'appareil ne doit pas produire de brouillage ;
2. l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

EU Declaration of Conformity (CE)

This product is CE marked according to the provisions of the Radio Equipment Directive (RED) 2014/53/EU.

Hereby, Suprema Inc. declares that this product is in compliance with the essential requirements and other relevant provisions of Radio Equipment Directive (RED) 2014/53/EU and is marked with the CE mark. This device is a Class 1 radio device according to the instructions.

- Bluetooth transmit power: -0.44 dBm
- Bluetooth frequency: 2402~2480 MHz
- NFC frequency: 13.56 MHz
- RFID frequency: 13.56 MHz + 125 kHz

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

Suprema Inc.

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Tel: +82-31-783-4502 / Fax: +82-31-783-4503

Appendices

Includes legal notices contained in the product.

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- The source modified based on FreeRTOS included in this product can be downloaded by contacting the Suprema Technical Support Team.

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