RAEDIAN

GEMINI

INSTALLATION MANUAL – PUBLIC OPERATIONAL CHARGING STATION

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Contents

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Rev 1.0.1 - 2024

1. Safety and usage instructions

1.1 Disclaimer

The information in this document is for information purpose only, is provided as is, and may be subject to change without notice. Although RAEDIAN has made its best efforts to keep the document as precise and up-to-date as possible, RAEDIAN including its subsidiaries doesn't assume any liability for the correctness or completeness of the document and is not liable or responsible for the defects and damages resulting from the use of the information contained herein.

> 🔔 **NOTE**
> This document is subject to updates and changes. Errors and omissions are exceptional.

Any deviation to RAEDIAN's assembled products, including but not limited to, specific modifications to the product, such as stickers and its place, or application of different colors (collectively referred to as "Customization"), may affect the product, its experience, appearance, quality, and/or lifespan (Customized Product). RAEDIAN is not liable for any damage to, or caused by, the Customized Product if this damage is due to applied Customization.

RAEDIAN waives all liability and claims for compensation such as any type of damage, warranty of the product and the accessories in the following cases:

- Failure to comply with the general instructions and specific operating conditions in this manual.
- Improper use.
- External damage.
- Failures from the grid or the 4G service provider.
- Installation, commission, activation, or faulty repair or maintenance performed by unqualified person.
- Modification or configuration of the product or accessories without the knowledge of RAEDIAN.

- Use of the charging station outside the operational conditions specified in this manual.
- Use of spare parts not approved or produced by RAEDIAN.
- Events beyond RAEDIAN's control (force majeure).
- Malfunction of an open charge point back office.
- Damage to the electrical vehicle.

1.2 Improper use

The charging station is safe when used as intended. Any other use or modifications to the charging station are considered improper use and therefore not allowed.

Operators, owners, or qualified technicians are responsible for any personal injury or material damage caused by improper use.

1.3 Copyright

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1.4 Trademarks

Ɒ ʀᴀᴇᴅɪᴀɴ® is trademark registered by RAEDIAN. Any unauthorized use of this trademark is therefore illegal.

1.5 Languages

The English version of this document is the original source. Documentation in other languages are translations of this source. If any ambiguity or deviation among different languages, it shall be subject to English version.

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1.6 Purpose and intended audience

This manual is applicable to GEMINI produced by Raedian. GEMINI is intended exclusively for charging electric vehicles and, when installed correctly, may be used by untrained individuals. Follow this manual to install and commission the charging station correctly.

Installation, commissioning and maintenance of this charging station must only be carried out by a qualified electrician. It is essential that the qualified technician has:

- Expertise on all relevant general and specific rules regarding safety and incident prevention.
- Comprehensive knowledge of applicable electrical regulations.
- The ability to identify risks and avoid potential hazards.
- Received and read these installation and operation instructions.

1.7 Explanation of text instructions used

Safety warnings and precautions in this document are as follows:

⚠️	**DANGER** Signal word used to indicate an imminent or serious injury.
⚠️	**WARNING** Signal word used to indicate a potentially hazardous situation which, if not avoided, could cause death or serious injury.
⚠️	**CAUTION** Signal word used to indicate a potentially hazardous situation which, if not avoided, could cause minor or moderate injury.
🔔	**NOTE** Signal word used to provide additional information or information on possible product damage.

1.7.1 Safety symbols

The following warning pictograms are attached to (parts of) the charging station:

⚡	**Dangerous voltage**
⏚	**Protective earth**

1.8 General safety

When installing or using the charging station, please follow below safety regulations:

⚠️ **DANGER**
There is a risk of injury, explosion, or fire. Do not install or use the charging station near explosive or highly flammable materials.

⚠️ **DANGER**
There is a risk of electrocution. Do not use the charging station if it is partially submerged in water.

⚠️ **DANGER**
There is a risk of injury and electrocution. Do not install or use the charging station if it is damaged or plugs and cables are defective. Contact the charge point operator to repair the defects immediately.

⚠️ **DANGER**
There is a risk of injury and electrocution. Keep away children and individuals who are not able to assess the risks associated with using this product.

More extensive safety information can be found in the relevant sections of this document.

1.9 Operating conditions

Operating temperature	**-30℃ ~ 50℃**
Relative atmospheric humidity	**5% ~ 95%**
Operating altitude	**2000m**
Environment rating	**Indoor and outdoor, IP55**

1.10 More information

Installation video

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2. Product overview

2.1 Scope of delivery

| No.	Item	Quantity
1	GEMINI charging station	1
2	Wall bracket	1
3	Quick guide	1
4	RFID card (Online)	2
5	RFID card (Offline)	2
6	Pre-paid SIM card (500M data, already installed)	1
7	M8-10*80 stainless steel expansion bolt	4
8	M8*18 stainless steel screw	2
9	M8*25 machine screw	3
10	Plug for M40 cable gland (Already installed)	2
11	T-Rubber for M25 dual-port cable gland (Already installed)	2

NOTE

The offline RFID card can only be used for authentication on the GEMINI charging station that it comes with.

The authentication is regardless of whether the charging station is online or offline, whether the charging station is connected to NEBULA (RAEDIAN's CSMS) or any third-party CSMS.

The online RFID card can only be used for authentication after it has been being added to NEBULA and when the charging station is connected to NEBULA and online.

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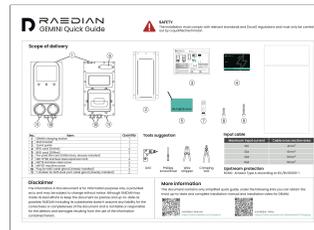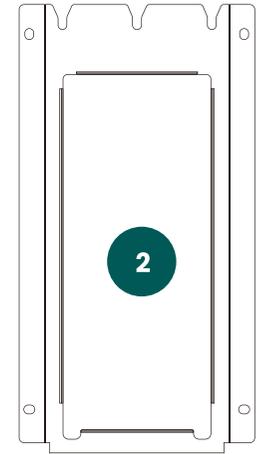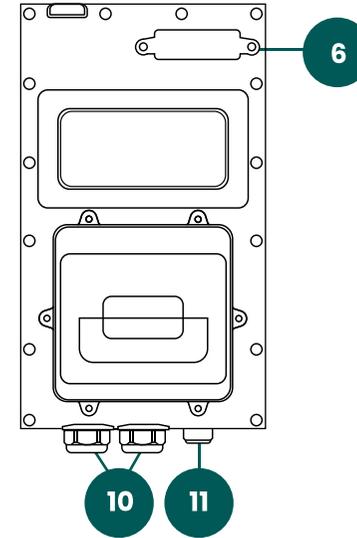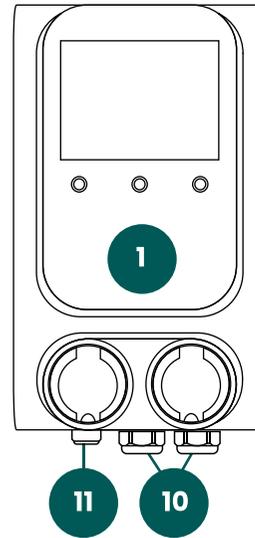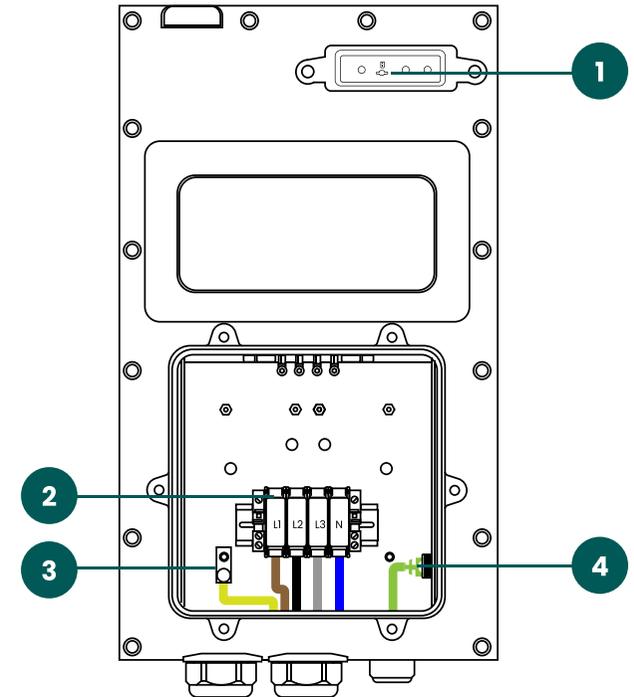
2.2 Exterior view

1. Display
2. Touch button
3. Card reader
4. Socket-outlet
5. M40 cable gland for power cable(s)
6. M25 dual-port cable gland for communication cable
7. MID or Eichrecht compliant energy meter
8. Identification label
9. Rear router cover plate
10. Rear wiring cover plate
11. PIN code label
12. Modem login info label
13. Holes for wall mounting the charging station
14. Holes for securing the charging station

2.3 Interior view

1. Pre-paid SIM card and SIM card holder
2. Distribution block
3. PE ground terminal
4. RJ45 port

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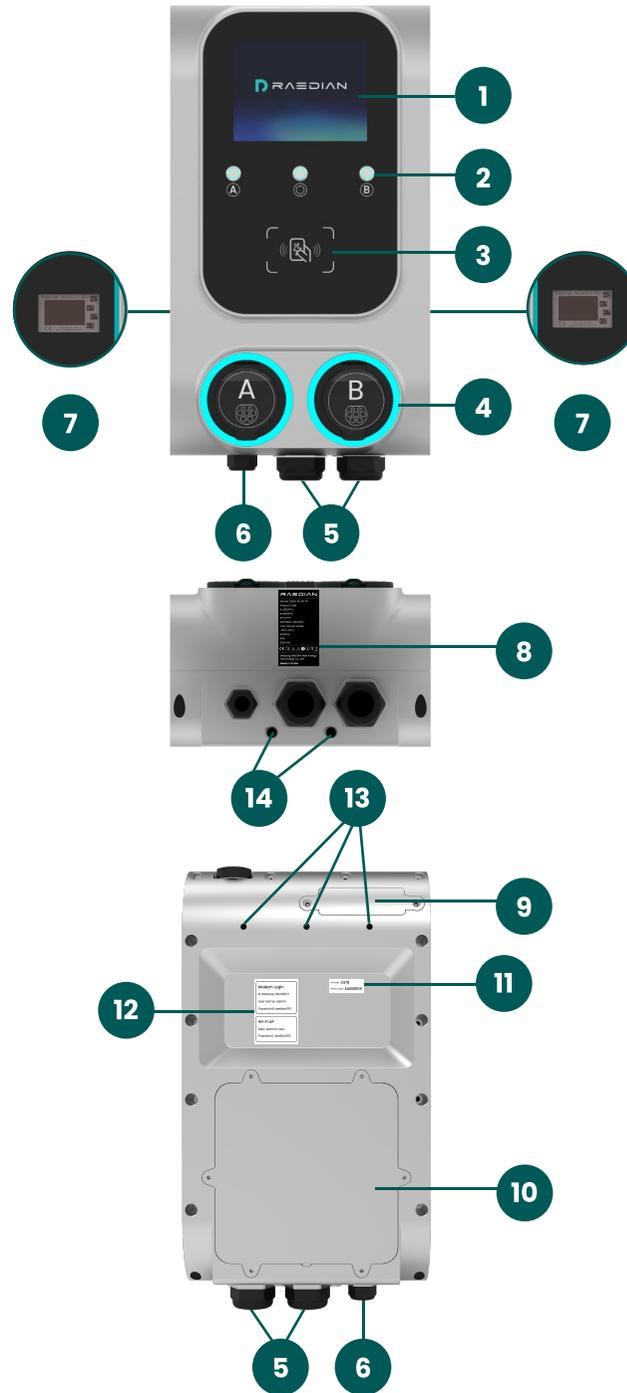
Exterior view

Interior view

2.4 Label information

2.4.1 Identification label

1. Product model
2. Product code for socket A
3. Product code for socket B
4. Wiring type
5. Voltage range
6. Maximum current
7. Operating temperature
8. Grid frequency
9. Ingress protection rating
10. Manufacture date (YYYY-WW)

NOTE
When contacting your charge point supplier/ operator, always have your product model/ product code available to facilitate quick support.

2.4.2 Pin code label
Find the Pin code label on the Quick Guide or the back of the charging station. The pin code is a 4-digit number, the product code is an 8-character string ending with the letter "R".

NOTE
Please reset your password after successful login.

2.4.3 Modem login info label
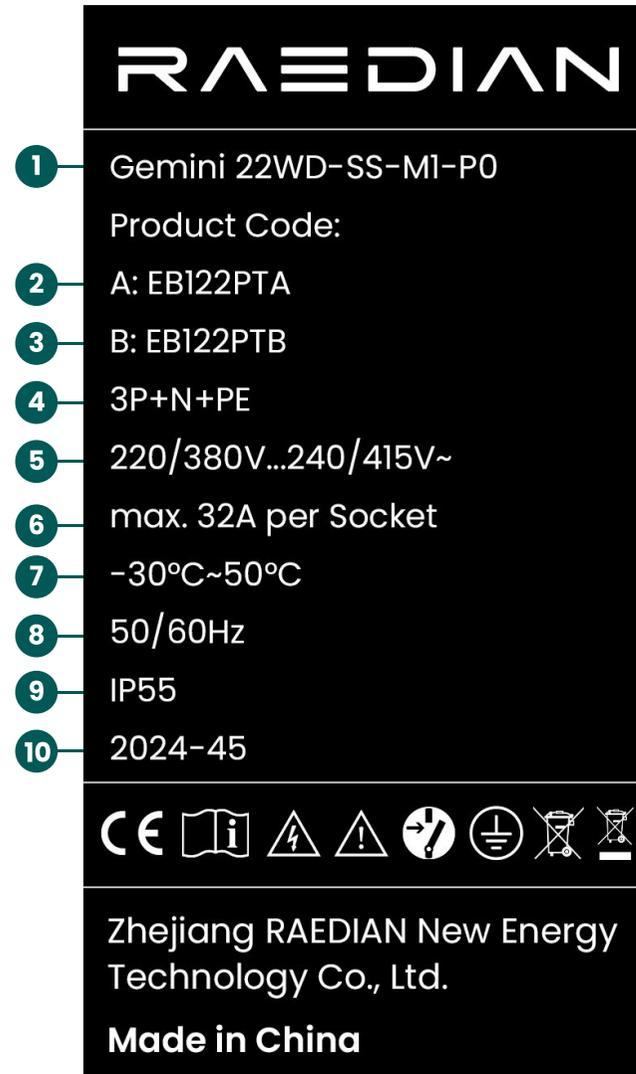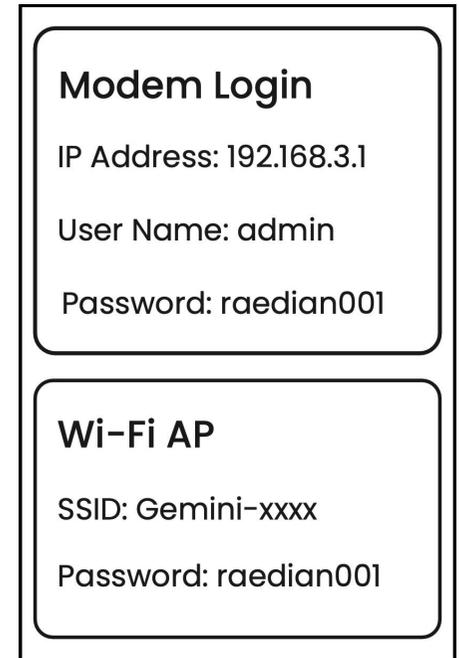Find the modem login info label on the Quick Guide or the back of the charging station.

NOTE
Please reset your password after successful login.

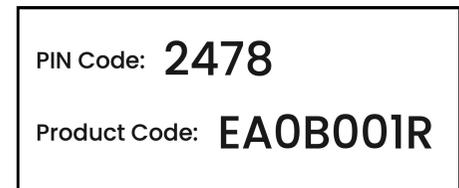**GEMINI**
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1. Gemini 22WD-SS-M1-P0
Product Code:
2. A: EB122PTA
3. B: EB122PTB
4. 3P+N+PE
5. 220/380V...240/415V~
6. max. 32A per Socket
7. -30°C~50°C
8. 50/60Hz
9. IP55
10. 2024-45

Zhejiang RAEDIAN New Energy Technology Co., Ltd.

Made in China

Identification label

Modem Login

IP Address: 192.168.3.1

User Name: admin

Password: raedian001

Wi-Fi AP

SSID: Gemini-xxxx

Password: raedian001

Modem login info label

PIN Code: **2478**

Product Code: **EA0B001R**

Pin code label

3. Installation instructions

3.1 Safety announcements

⚠️ **DANGER**
There is a risk of injury and electrocution. The installation, (de)commissioning, and maintenance of the charging station can only be performed by a qualified electrician.

⚠️ **DANGER**
There is a risk of injury and electrocution. Improper installation of the charging station could result in fatal injury! When working with electricity, failure to comply with relevant regulations can lead to dangerous and life-threatening situations.

⚠️ **DANGER**
There is a risk of electrocution. The electrical system must be disconnected from every power source before performing any installation or maintenance work!

⚠️ **DANGER**
There is a risk of injury and electrocution. The charging station contains electrical components that still contain a charge after being disconnected from the system. Always test with proper equipment there's no residual current before commencing to work.

⚠️ **WARNING**
There is a risk of injury, explosion, or fire. Never install in an environment that is potentially explosive.

⚠️ **WARNING**
There is a risk of injury and electrocution. Installation work must not be carried out during flood, rain or if the air humidity exceeds 95%.

⚠️ **WARNING**
There is a risk of injury and electrocution. The installation must be performed by a qualified electrician who has read this manual and will execute the installation in accordance with the IEC 60364 (Electrical Installations for Buildings) standard.

⚠️ **WARNING**
There is a risk of damage or electrocution. Local conditions may affect the installation requirements. Your installation must comply with the standards and regulations of the location (country) where it is installed.

⚠️ **CAUTION**
There is a risk of injury and damage. The installer is always responsible for choosing the correct cable diameter and complying with the relevant standards and legislation.

⚠️ **CAUTION**
There is a risk of injury and damage. The installation and cables should be installed to match the maximum charging current to the input of the charging station. This should assume continuous load.

⚠️ **CAUTION**
There is a risk of injury and damage. Mechanical impact and/or collisions might cause damage to the equipment. Protect Raedian Products installed in public areas and car park sites.

⚠️ **CAUTION**
Risk of damage. Adapters or conversion adapters are not allowed to be used.

3.2 Assembly and installation requirements

When selecting a location to install the charging station, the following criteria must be taken into account:

- Always fully comply with local technical requirements and safety regulations.
- The charging port on the vehicle must be easy to reach with the charging cable.
- The charging station must be installed at a location where the charging cable (approx. 5 - 7.5 m) can be used without placing any tension on the cable.
- The cable trajectory must be installed in accordance with the usual local professional standards.

3.3 Tools suggestion

1. Drill
2. Phillips screwdriver
3. Wire stripper
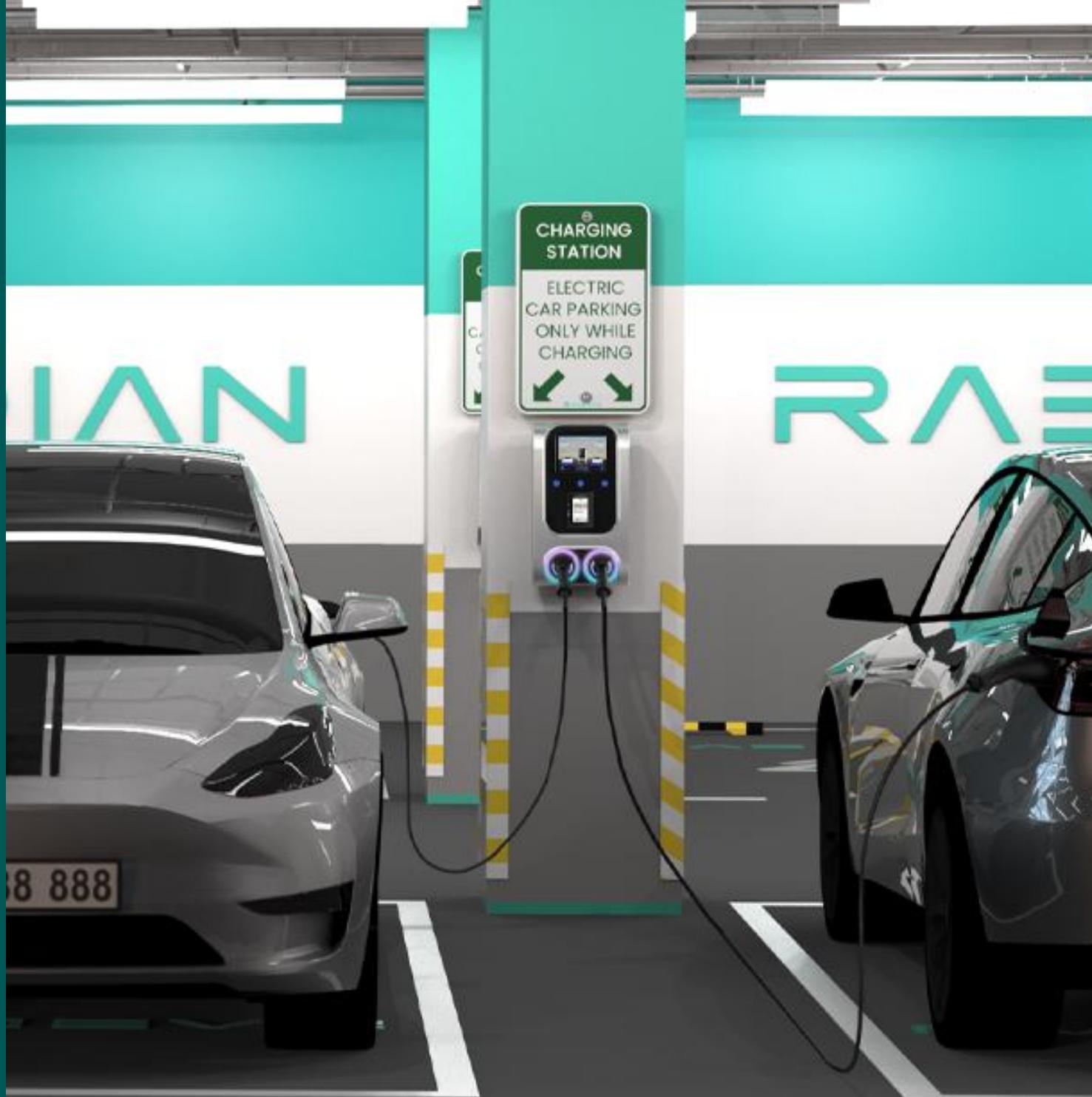4. Crimping tool
5. Multimeter
6. Spirit level
7. Tape measure

3.4 Preparation

3.4.1 Input cable

Maximum input current	Cable cross section area
16A	$4mm^2$
32A	$6mm^2$
40A	$10mm^2$
64A	$16mm^2$

3.4.2 Upstream protection

RCBO: At least Type A according to IEC/EN 61009-1

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3.5 Wall-mounting the charging station

1 Mount the wall bracket
- The installation position should be a solid, right-angled wall.
- The recommended installation height is 900 - 1200 mm from the ground to the bottom of the wall-bracket.
- Drill the holes for the wall bracket. Use the wall bracket for marking the holes. Level the mounting block with a spirit level.
- Fix the wall bracket to the wall by pushing the M8-10*80 stainless steel expansion bolts into the four holes.
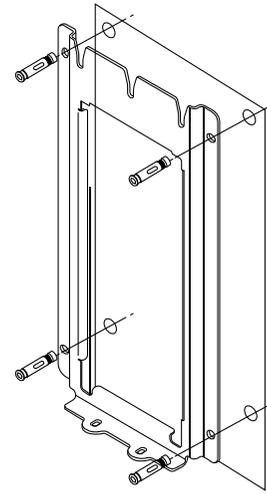
2 Electrical installation
- Loosen the screws on the charging station's rear wiring cover plate, remove it, and set it aside carefully.
- Remove the plug from either one of the M40 cable glands, thread the power supply cables via the gland, connect L1, L2, L3, N to the distribution block and connect PE to the PE ground terminal. Then tighten the M40 cable gland.

3 Ethernet cable installation
- Remove either one of the T-Rubbers, connect the Ethernet cable via the M25 cable gland on the bottom to the RJ45 port of the charging station. Then tighten the M25 cable gland.
- Check and confirm that the installation is correct, then reinstall the rear wiring cover plate.
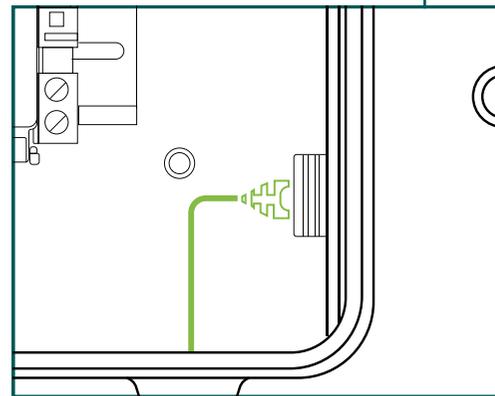
4 Mount and secure the charging station
- Tighten the three M8*25 machine screws into the threaded holes at the top rear of the charging station. Hang the charging station to the wall bracket via the three machine screws and tighten the two M8*18 stainless steel screws at the bottom to complete the installation.
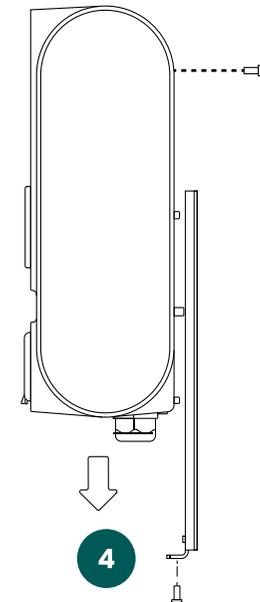
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1

2

L1 L2 L3 N
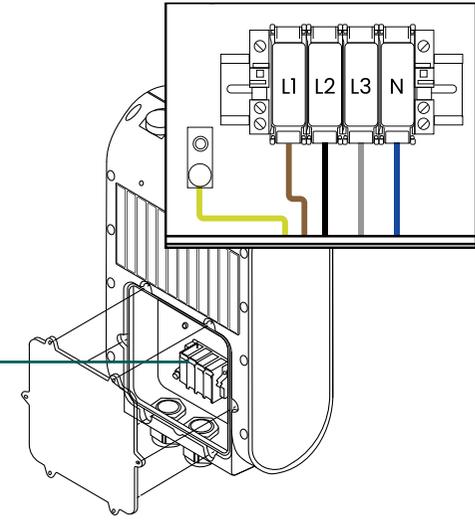
3

4

3.6 Pedestal-mounting the charging station

**1** **Electrical installation**
- Loosen the screws on the charging station's rear wiring cover plate, remove it, and set it aside carefully.
- Prepare power supply cables about 1 meter long, remove the plug from either one of the M40 cable glands, thread the power supply cables via the gland, connect L1, L2, L3, N to the distribution block and connect PE to the PE ground terminal, leave the other end of the power supply cables outside the charging station for later wiring. Then tighten the M40 cable gland.

2 **Ethernet cable installation**
- Prepare ethernet cable about 1 meter long, remove either one of the T-Rubbers, connect one end of the ethernet cable via the M25 cable gland on the bottom to the RJ45 port of the charging station, leave the other end of the ethernet cable outside the charging station for later wiring. Then tighten the M25 cable gland.
- Check and confirm that the installation is correct, then reinstall the rear wiring cover plate.

3 **Mount the pedestal and secure the charging station**
- Please refer to the GEMINI Pedestal Quick Guide for this purpose.

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1m

L1 L2 L3 N

1

2
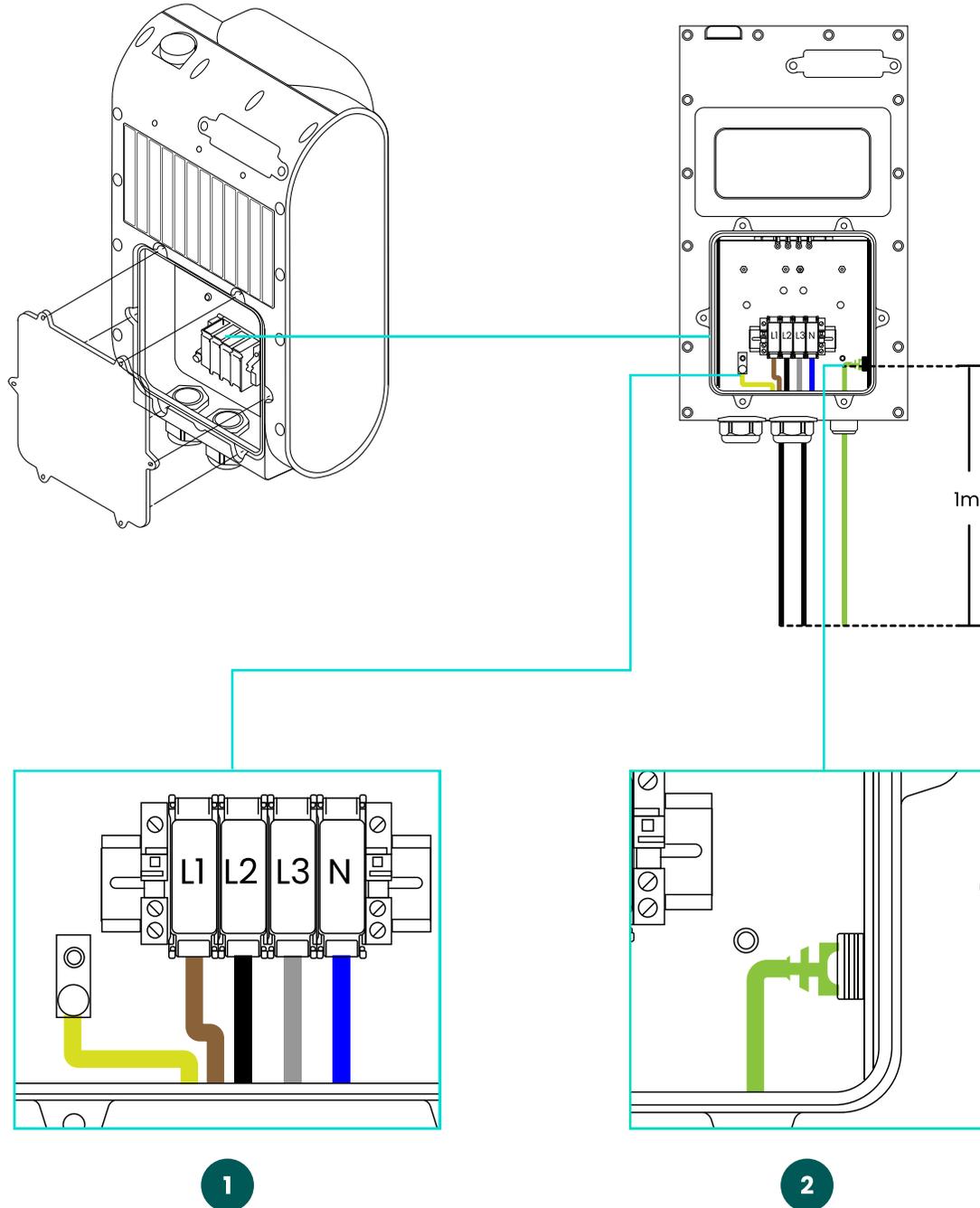
4. Commissioning

4.1 Safety instructions before use

Before commissioning your charging station, please follow these safety instructions:

- Ensure that the charging station is properly connected to the power supply as described in this manual.
- Verify that the distribution of the power supply is individually protected by a suitable circuit breaker (or fuse).
- Confirm that the charging station is installed in accordance with the instructions provided in this manual.
- Make sure that the enclosure is securely closed.
- Measure the insulation resistance to ensure that the charging cable is not entangled, and that the cable, plug, and casing are free from damage.

4.2 Power on

- Turn on the local power supply. Wait until you see the hello page.
- Scan the QR code to download the Install APP.
- Press any button ('A', 'B' or 'O') to skip the hello page and you will see the standby page (Without pressing, it will automatically go to the standby page after 600s countdown).

4.3 Testing the sockets

- Insert the charging cable into the socket-outlet of the charging station and the vehicle inlet.
- Press the corresponding button ('A' or 'B') for the inserted socket-outlet.
- Hold the offline RFID card in front of the card reader to initiate charging.
- Hold the offline RFID card in front of the card reader to stop the charging process.

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- Remove the charging cable.
- Repeat the same procedure for the other socket.
- Optional: Add the charging station and the online RFID card to NEBULA and repeat the tests with the online card.

4.4 Install SIM card

- The charging station comes with a pre-paid SIM card (500M data).
- Loosen the screws on the charging station's rear router cover plate to install your own SIM card and reinstall the rear router cover plate.
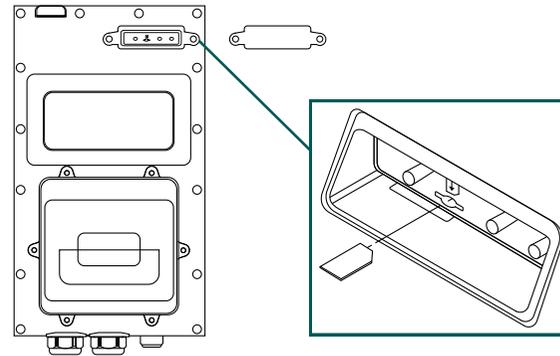
NOTE

The pre-paid SIM card is for initial commissioning and testing purpose only. Please replace it with your own SIM card before operation if the ethernet cable is not connected.

5. Status indication

⬤	Mobius strip cycle	Boot initialization
⬤	Cyan breathing	Standby-connected
⬤	Green steady	Plugged in-unauthorized
⬤	Green breathing	Plugged in-authorized
⬤	Gradient breathing	Charging
⬤	Gradient steady	Charging completed
⬤	Red steady (4 LEDs)	Error

6. Operation and maintenance

6.1 Preparation before operation

Proper labels should be prepared before operation.

> **NOTE**
> As CPO or the owner of the charging station, you need to stick the socket label (comply with EN 17186:2019, shown as left pic) near the sockets of the charging station and provide information including but not limited to, product code, maximum current of each socket, contact information and how to start and stop a charging session for the user, etc.

6.2 Cleaning

Maintaining the casing of the charging station:

Clean it annually using water and mild soap. Polish the charging station with wax that is also suitable for cars.

> **NOTE**
> The casing of the charging station can be damaged. Avoid using any aggressive cleaning agents, high-pressure cleaners, scouring pads, or similar items.

6.3 Waste Electrical and Electronic Equipment (WEEE)

Electrical and electronic equipment contains materials, components, and substances that may be hazardous and pose a risk to human health and the environment if not handled properly.

Equipment marked with the illustrated crossed-out wheeled bin is considered electrical and electronic equipment. The crossed-out wheeled bin indicates that this waste must be collected separately and should not be discarded with household waste.

Consult your local authority for collection schemes, allowing residents to dispose of waste electrical and electronic equipment at recycling centers or other collection points.

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