



# NORA+Air DLM Kit

INSTALLATION MANUAL – SMART HOME CHARGING



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## 1. Safety and usage guide

### 1.1 Disclaimer

This document is subject to updates and changes. Errors and omissions are exceptional.

RAEDIAN shall bear no liability in any way, for any kind of damage, and the warranty for the product and the accessories shall not apply in the following cases:

- Failure to comply with the instructions in this guide in general and with the operating conditions specifically.
- Improper use.
- External damage.
- Installation, commissioning or faulty repair or maintenance by unqualified persons.
- Failures from the grid or the cellular network provider.
- Modification or configuration of the product or accessories without the knowledge of RAEDIAN.
- Use of spare parts not approved or manufactured by RAEDIAN.
- The charger is used outside its operating conditions as stated in this guide.
- Situations have occurred that are beyond the control of RAEDIAN (force majeure).
- Damage to the electrical vehicle.

### 1.1.1 Improper use

It is safe when the charger is used as intended. Any other use or changes to the charger are considered improper use and therefore not permitted. The operator, owner or qualified technician is responsible for any personal injury or material damage arising from improper use.

### 1.2 Copyright

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### 1.3 Trademarks

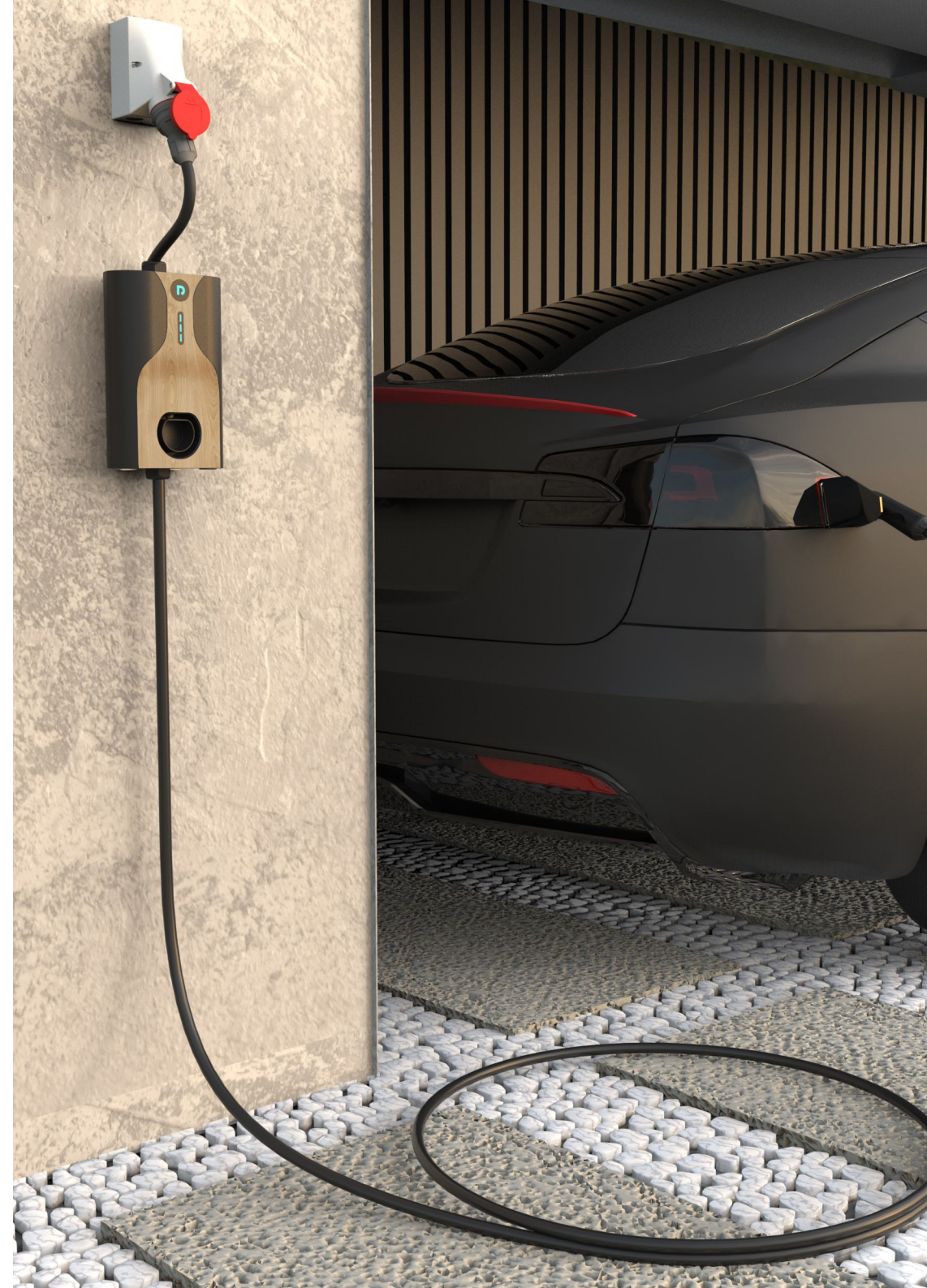
**D<sup>RAEDIAN</sup>**® is trademark registered by RAEDIAN. Any unauthorized use of this trademark is therefore illegal.

### 1.4 Languages

The English version of this document is the original source. Documents in other languages are translations of this source.

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1.5 Purpose and target audience



This guide applies to the NORA (in this document also indicated as "Charger") produced by RAEDIAN. NORA is intended exclusively for charging electric vehicles. Follow this guide to install and debug the charger correctly.

Installation, commissioning and maintenance of this charger may only be performed by a qualified electrician. It is essential that this person has:

- Proficient in general and specific rules related to safety and accident prevention.
- Comprehensive knowledge of applicable electrical regulations.
- The ability to identify and foresee risks and avoid potential hazards.
- Received and read these installation and operating instructions.

1.6 Safety symbols

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

	<b>Dangerous voltage</b>
	<b>Protective earth</b>

1.7 Complementary documentation

By means of the following links, you can obtain detailed information regarding NORA.



Installation video



Install APP

1.8 Operating conditions

Operating temperature	-30°C ~ 55°C with derating mechanism
Relative atmospheric humidity	5% ~ 95%
Electrical safety class	Class I
Degree of protection (housing)	IP55
IK protection (mechanical impact)	IK10

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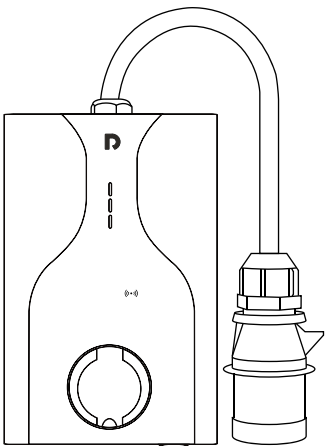




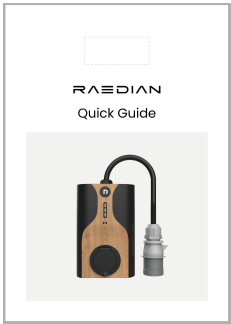
2. Product overview

2.1 Scope of delivery

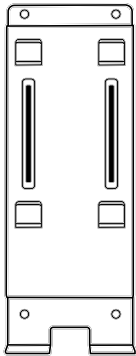
No.	Item	Quantity
1	NORA	1
2	Quick Guide	1
3	Wall bracket	1
4	Plastic anchor	4
5	Wall-mounting screw	4
6	Security screw	2
7	RFID card	2
8	Air DLM Kit	1



1



2



3



4



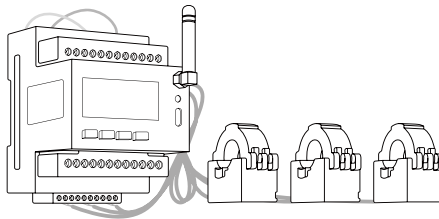
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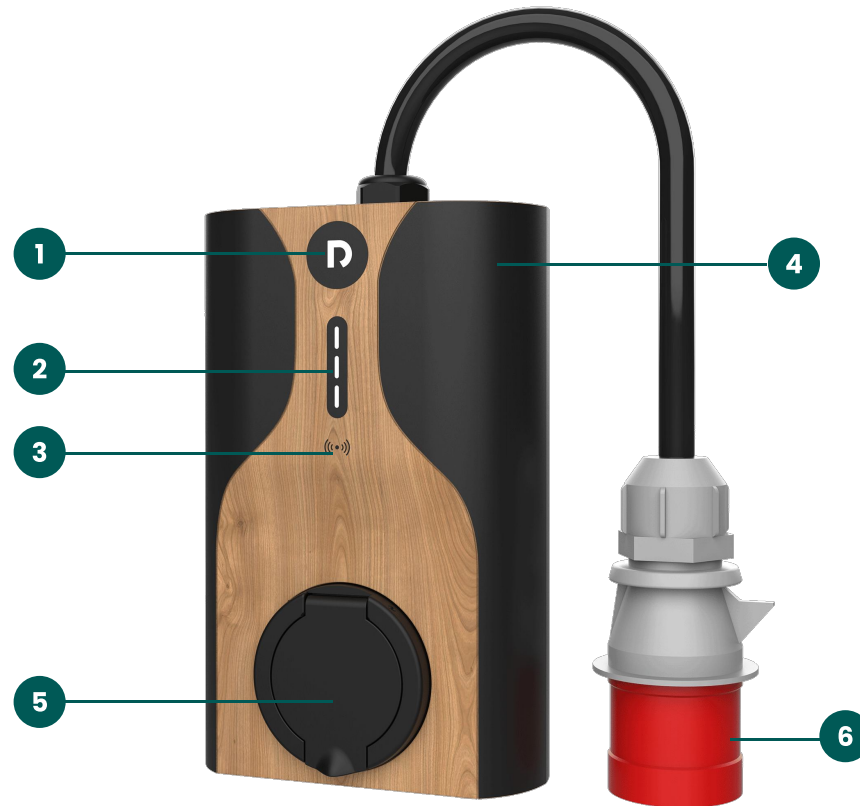
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## 2.2 Exterior view

1. Logo LED
2. Status LED
3. RFID card reader
4. Charger
5. Type 2 socket
6. CEE plug
7. Button





## 3. Installation and connection

### 3.1 Safety announcements



#### **DANGER**

Risk of injury and electrocution. Installation, (de)commissioning and maintenance of the charger must only be performed by a qualified electrician.



#### **DANGER**

Risk of injury and electrocution. Installing the charger incorrectly may result in fatal injury! When working with electricity, failure to comply with relevant regulations can lead to dangerous and life-threatening situations.



#### **DANGER**

Risk of electrocution. The electrical system must be disconnected from every power source before performing any installation or maintenance work!



#### **DANGER**

Risk of injury and electrocution. The charger contains electrical components that still contain a charge after being disconnected from the system. Always test with proper equipment to ensure there's no residual current before commencing to work.



#### **WARNING**

Risk of injuries, explosion or fire. Never install in a potentially explosive atmosphere.



#### **WARNING**

Risk of electrocution. Never install in areas prone to flooding without implementing compensatory measures.



#### **WARNING**

Risk of injury and electrocution. Installation work must not be carried out during rain or if the air humidity exceeds 95%.



#### **WARNING**

Risk of injury and electrocution. The installation must be performed by a qualified electrician who has read this guide and will execute the installation in accordance with the IEC 60364 (Electrical Installations for Buildings) standard.



#### **WARNING**

Risk of damage or electrocution. A charger must always be installed on separate power circuit.



#### **WARNING**

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**

Risk of injury and damage. The installer is always responsible for choosing the correct cable diameter and ensuring compliance with relevant standards and regulations.



#### **CAUTION**

Risk of injury and damage. The installation and cables must be rated to match the maximum charging current of the charger input, assuming continuous load.

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### 3.2 Assembly and installation requirements

#### 3.2.1 Power supply cable

Minimum advised cable cross-section (based on assumed max. 50 m cable length):

- 3-phase 11 kW charging, 16 A selected per phase: 5 x 4 mm<sup>2</sup>
- 1-phase 7.4 kW charging, 32 A per phase: 3 x 6 mm<sup>2</sup>
- 3-phase 22 kW charging, 32 A per phase: 5 x 6 mm<sup>2</sup>

#### 3.2.2 RCD requirement

- A residual current monitor device is integrated inside the charger. The charger will stop charging in case residual current exceeding 6mA DC is detected, according to IEC 62955.
- The RCD is automatically tested between each charging session.
- The integrated RCD has no influence on the function of external protective devices.

An external RCBO is required shown as below:

Input	Specification	Remark
1-phase	2P, 40A RCBO, at least Type A, Characteristic B/C	50 Amp is recommended if the ambient temperature is higher than 40°C
3-phase	4P, 40A RCBO, at least Type A, Characteristic B/C	

#### 3.2.3 Grounding

- TN system: separate PE cable
- TT system: separately installed grounding electrode < 100 Ohm spreading resistance
- IT system: connected to a shared reference (common earth) with other metal parts

### 3.3 Preparation prior to installation

- Check the scope of delivery and all required parts.
- Read this installation guide beforehand.
- Verify and determine the installation location.

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### 3.4 Installation tools

1. Pencil or marker
2. Measuring tape
3. Drilling machine
4. Hammer
5. Phillips screwdriver
6. Hex wrench: M4(3/32)
7. Voltmeter or digital multimeter

### 3.5 Installation procedure prerequisites



#### NOTE

The following text only describes the wall-mounting installation procedure. The NORA can also be mounted on a pedestal. The pedestal is an accessory and the installation instruction is provided within its scope of delivery.



#### NOTE

Install the charger upright against the wall and/or on the mounting pedestal. Installations other than this may lead to damage to the charger.



#### NOTE

Chargers which are exposed to the elements will gradually age and/or discolor. RAEDIAN recommends to place the chargers in a sheltered environment to optimize the lifetime of the product.

- The installation position must be against a solid, vertical wall.
- In the surroundings of at least 5 m of the installation position there must be no fire hazard.
- The power supply cable must be routed before proceeding with the installation.
- The power cabinet must be equipped with at least a Type A RCD according to IEC 61008 or IEC 61009.
- The electrical system must be disconnected from every power source before performing any installation work.

### 3.6 Mechanical installation procedure

- Take the charger out of the box.
- Place the charger on a non-scratching surface to prevent damage.
- Check if all parts listed are provided.





### 3.6.1 Secure the wall bracket to mount NORA



#### NOTE

Place the wall bracket on a clear and solid wall with a bearing capacity of at least 100 kg. Recommended height: 800-1200 mm.

- 1 Ensure it is level, and use a pencil to mark the positions for 4 drilling holes.

Drill four holes at the marked locations. Recommended depth and diameter: 50 mm;  $\phi 8$  mm.

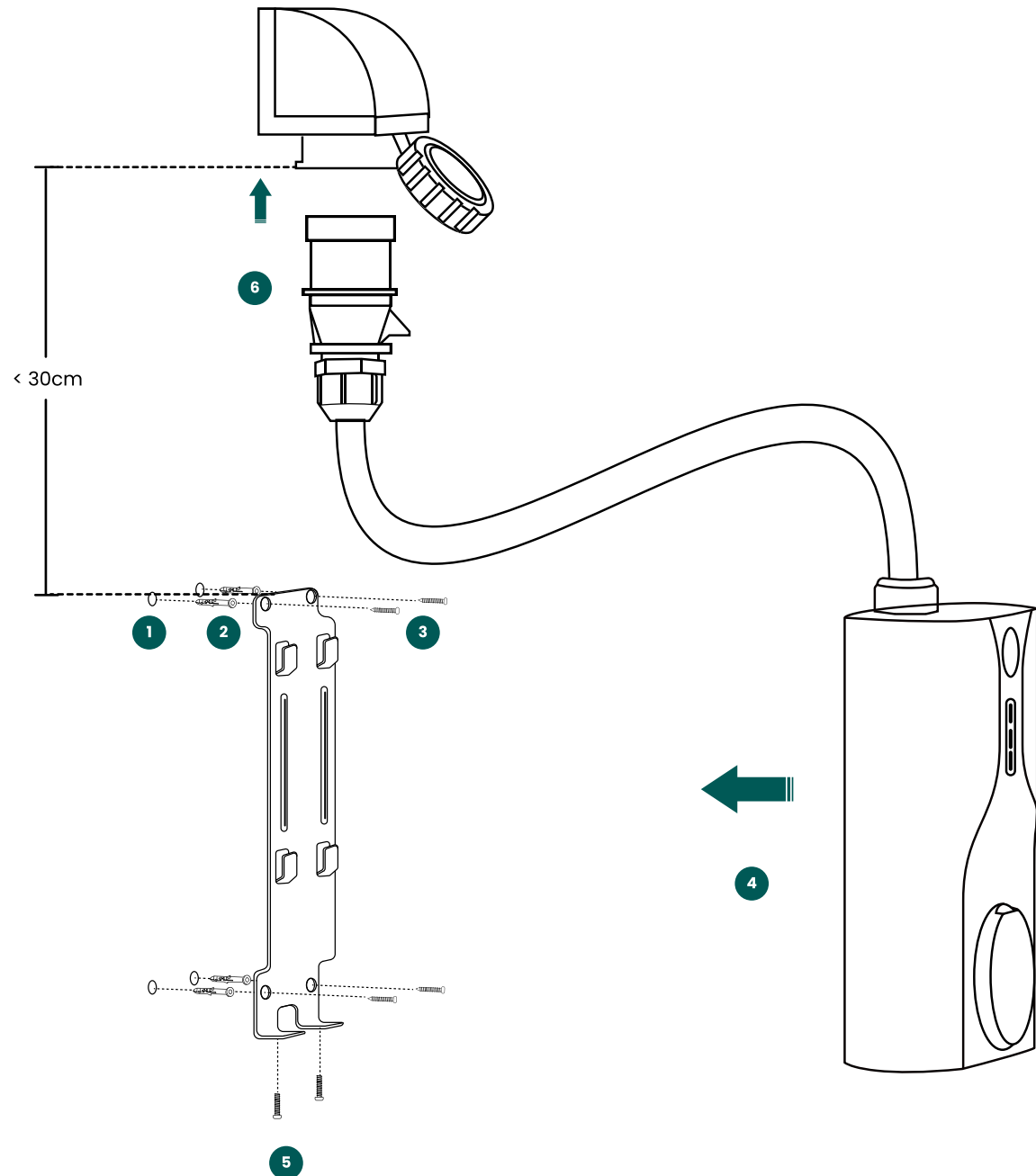
- 2 Insert four plastic anchors into the drilled holes.

- 3 Mount the backplate and fasten it using four wall-mounting screws.

- 4 Hang the charger on the wall bracket.

- 5 Tighten the two security screws at the bottom of the charger.

- 6 Plug into CEE socket.



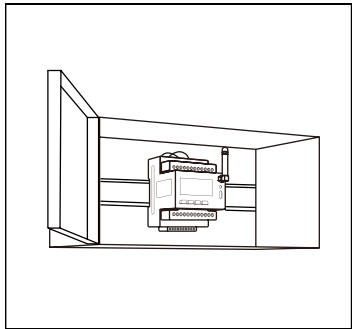
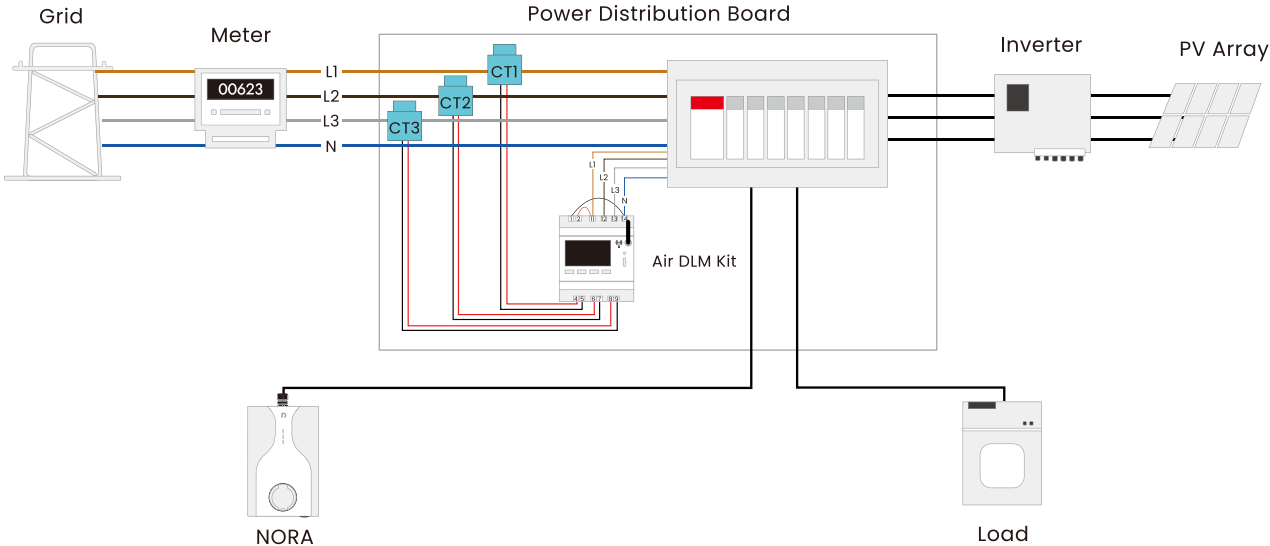
### 3.6.2 Installation instructions for Home Balance and Solar Charging



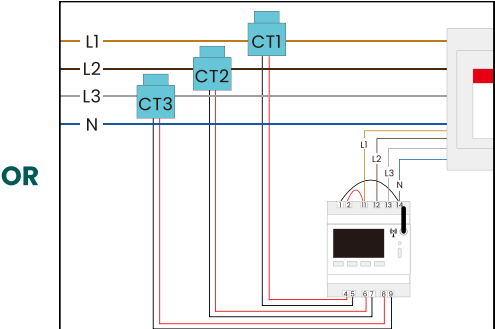
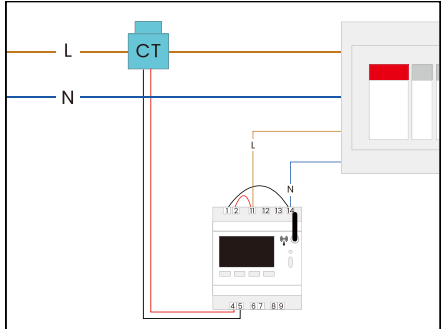
#### NOTE

For installations in open, non-metallic environments where signal reception conditions are optimal, use the default stub antenna. For installations in environments with poor signal conditions or in metallic distribution boards, replace the default antenna with the extended antenna before installation.

- 1 Place the meter securely on the DIN rail next to the main circuit breaker. Connect the incoming terminals of the meter to the main circuit breaker.
- 2 Securely attach CT1 to L1, either upstream or downstream of the main circuit breaker. Ensure that the arrow on the CT clamp is pointing toward the load, and firmly clamp it until you hear a 'click'.
- 3 Repeat the same steps for CT2 and CT3 (if present), attaching them to L2 and L3 respectively.
- 4 Attach the extended antenna (if necessary) securely in a location with good signal reception.

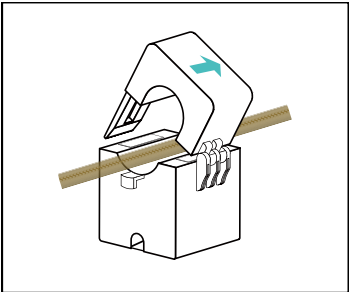


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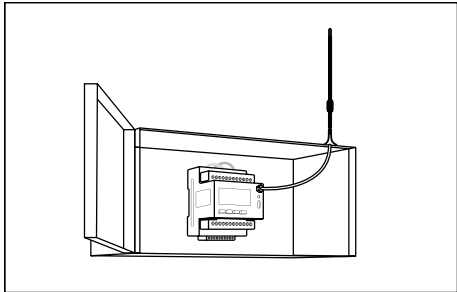


OR

2



3



4



## 4. Commissioning

### 4.1 Safety instructions before use

Carry out the following safety instructions before commissioning your charger:

- Check if the charger is properly connected to the power supply as described in this guide.
- Check if the distribution of the power supply is separately protected by an appropriate breaker (automatic or fuse cartridges).
- Check if the charger is installed in accordance with this guide.
- Check if the casing is closed.
- Verify the charging cable is not twisted and that the cable, plug and casing are not damaged.

### 4.2 Initial start-up

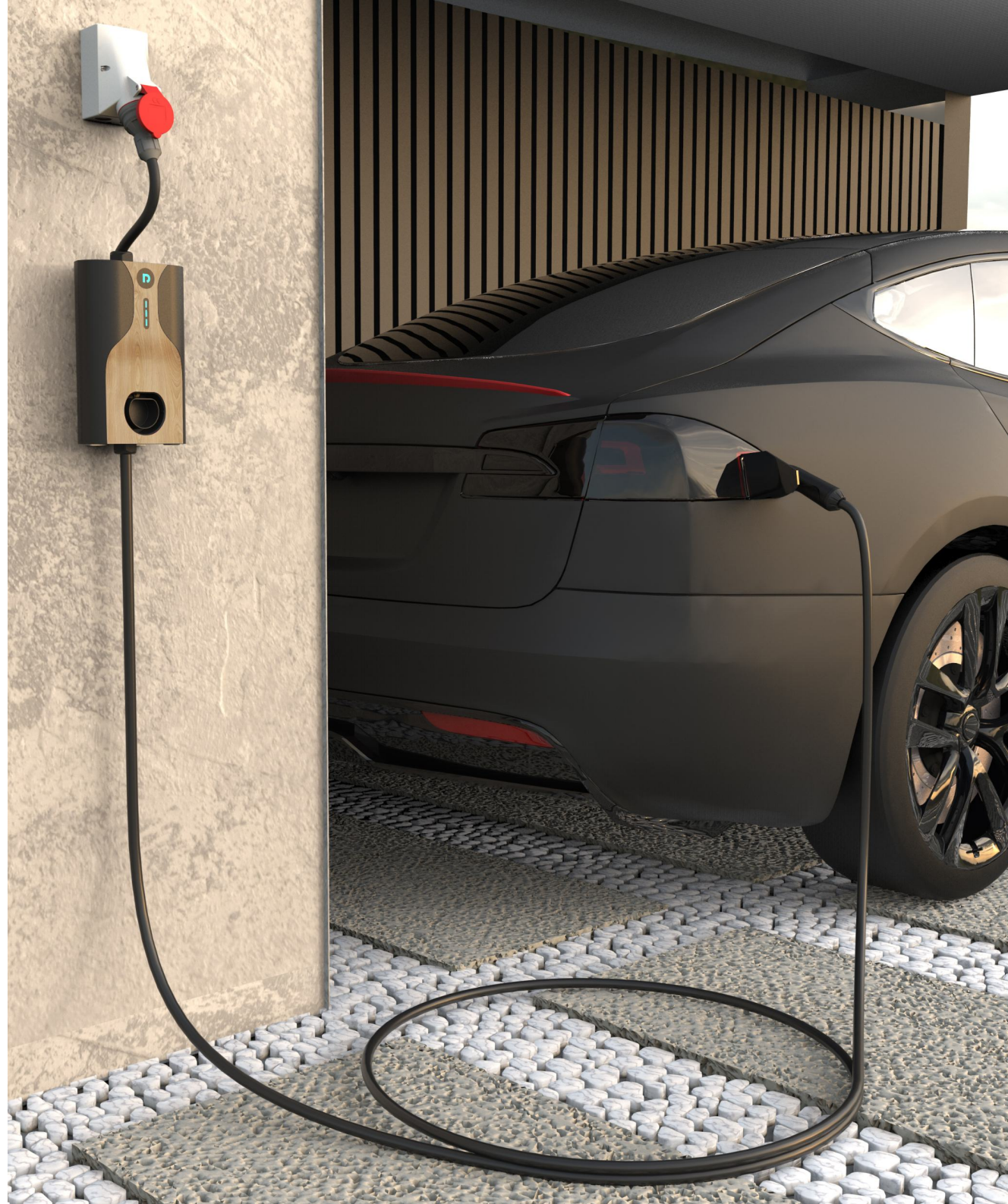
- Turn on the local power supply
- The charger will boot up and run self diagnostics within a few seconds.
- The charger's Logo LED will remain solid white.
- The charger is now ready for testing.

### 4.3 Test the charging process

- Plug the charging cable into the socket (for socket variant), and press it it firmly.
- Plug cable into EV to start charging.
- The charger is ready for charging and is waiting for the vehicle to connect. The charger's Logo LED will display a blue steady light effect, while the status LED will display a blue running light effect.
- After the vehicle has enabled charging, the charger's Logo LED and status LED will display a cyan breathing light effect. The charging session will begin with a safe initial current of 10 amps. Charging current can be adjusted to fit the installation with RAEDIAN APP.

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## 5. Maintenance

Maintaining the casing of the charger:

- Annual cleaning, using water and mild soap.



### NOTE

The casing of the charger can be damaged. Do not use any aggressive cleaning agents, high-pressure cleaners, scouring pads or similar.

## 6. Waste Electrical And Electronic Equipment (WEEE)



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

Equipment marked with the symbol above indicates that it's electrical and electronic equipment. It means that this waste must be collected separately and should not be discarded together with household waste.

Please check with your local authority for collection schedules. Residents can dispose of waste electrical and electronic equipment at recycling centres or other designated collection points.

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