

Charge Amps Dawn



# Installation Manual

English

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Respect the environment! Must not be discarded with household waste! This product contains electrical or electronic components. Leave the product for separate collection and proper treatment at a designated location e.g. the local authority's recycling station.



Approved in accordance with the relevant EU directives and UK legislation.

Neglecting to follow and carry out the directions, instructions and safety precautions in this Installation Manual implies that any warranty provisions will be cancelled and that Charge Amps AB can reject any and all claims for compensation in connection with any injuries/damage or incidents – direct or indirect – that are a result of such negligence.

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# 1 Safety

**WARNING: Read all instructions before installation!**

- The product must only be installed by a qualified electrician in accordance with the Installation Manual.
- Make sure to switch the power off at the main switch before installation or service.
- For this product, automatic reclosing of protective devices are not allowed.
- Improper use and negligence to follow the instructions of this Installation Manual may create a risk of personal injury.
- National installation requirements and restrictions apply.
- Only use this product for charging compatible electric vehicles.
- Inspect the product for visible damage before use.
- Never attempt to repair or use the product if it is damaged.
- Make sure that the product is in good condition and that all cables are properly seated before use.
- Do not immerse the product in water, subject it to physical abuse or insert foreign objects in any part of the product.
- Never attempt to disassemble the product in any way other than what is described in the Installation Manual.
- Make sure no flammable, explosive, corrosive or combustible materials, chemicals, or fumes are nearby the mounting position.
- Make sure that all terminal screws are securely fastened before reattaching the charger unit.
- To avoid muscle strain or back injury, use lifting aids and proper lifting techniques.

## 2 Technical data

Charging mode	Mode 3
EV power supply identifier	
Metering	MID certified active electrical energy meter
Socket	Type 2, 22 kW
Rated voltage ( $U_n$ )	230/400 V
Rated insulation voltage ( $U_i$ )	250/400 V
Rated impulse withstand voltage ( $U_{imp}$ )	4 kV
Rated frequency ( $f_n$ )	50 Hz
Rated current ( $I_n$ )	32 A
Rated diversity factor (RDF)	1 (can be lowered if used together with a load balancing functionality)
Rated peak withstand current ( $I_{pk}$ )	3 kA, 20 kA <sup>2</sup> s
Rated short-time withstand current ( $I_{cw}$ )	192 A for 2 s
Residual current safety	Built in RCD Type-B complying with IEC 60947-2. AC: 30mA, DC: 6mA
Short circuit safety	External MCB is required
Protection against electric shock	Class I
Types of earthing system	TN, TT, IT
Overvoltage category	III
Pollution degree	3
Electromagnetic compatibility	Environment B

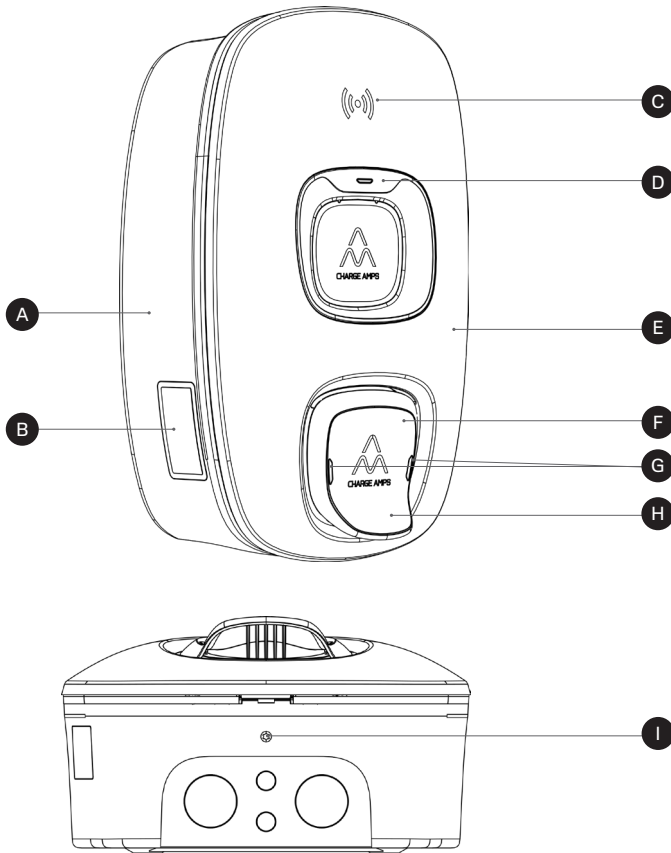
Operating temperature	-35°C to +45°C
Altitude	0 m to 2000 m
IP code	IP44
IK code	IK10
Mechanical resistance	High
Dimensions (W x D x H)	250 x 145 x 380 mm
Weight	3.5 kg
Characteristics of power supply and output	AC EV supply equipment connected to AC supply network, permanently connected
External design and method of mounting	Enclosed wall-mounted surface type: - Surface mounted on walls - Stationary ground and floor mounted installation with accessory Charge Amps Pole Mount
Type of construction	Fixed parts
Intended use and location type	By ordinary persons, indoor and outdoor installation with non-restricted access
Incoming cable dimensions	13 – 25 mm
Terminal block cable dimensions	Installing from top or bottom: 16 mm <sup>2</sup> Installing from back: 10 mm <sup>2</sup>
RFID	Type: ISO/IEC 14443 Typ A 13.56 MHz Mifare Range: 13.553 – 13.567 MHz Max output: 24 dBm
Bluetooth	Type: Class 2 Version: v4.2 Range: 2400 – 2500 MHz Max output: 4 dBm

Wi-Fi	Type: 802.11 b/g/n Range: 2400 – 2500 MHz Max output: 17.5/14/12.5 dBm@802.11 b/g/n
Cellular networks communication	Type: LTE-M, eMTC* Supported LTE-M bands: B2, B3, B4, B8, B12, and B20. Range: 699 – 960 / 1710 – 2155 MHz Max output: 35 dBm@GSM, 28 dBm@LTE SIM card: built-in

\*Support for additional cellular standards will be available through OTA updates in later releases.

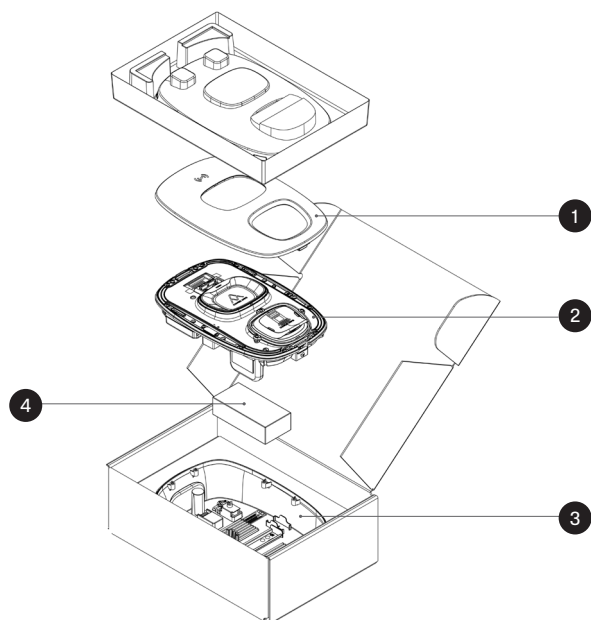


### 3 Product Overview

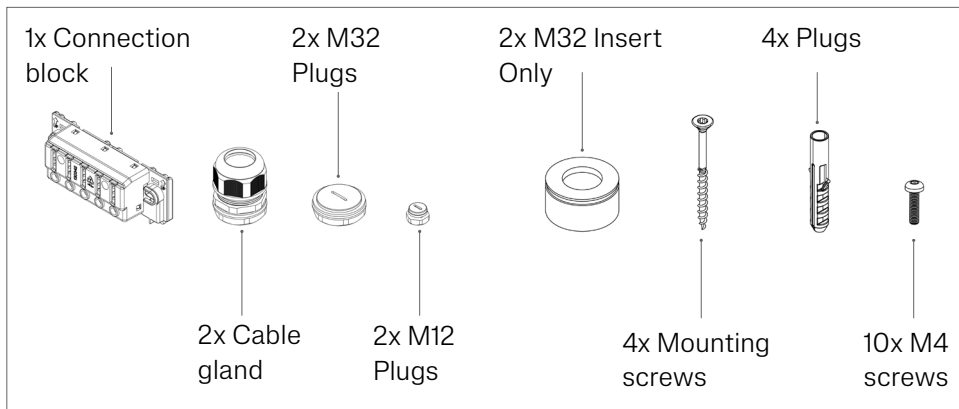


- |                      |                                 |
|----------------------|---------------------------------|
| <b>A</b> Back plate  | <b>F</b> EV socket              |
| <b>B</b> MID display | <b>G</b> Socket lights          |
| <b>C</b> RFID reader | <b>H</b> EV socket lid          |
| <b>D</b> RFID light  | <b>I</b> Front cover lock screw |
| <b>E</b> Front cover |                                 |

## 3.1 Package contents



- 1 Front cover
- 2 Charging unit
- 3 Back plate

**4** Accessories:**Additional contents:**

- 1 x RFID tag
- Quick Guide User
- Welcome letter

## 3.2 Charge Amps Installation Kit

In installations where the MCB is placed inside of Charge Amps Dawn, a specific terminal block and MCB must be used.

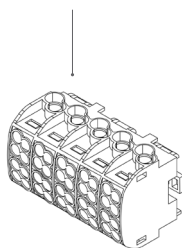
The terminal block and MCB can be purchased as a set in the Charge Amps Installation Kit, or bought separately. The specifications for the terminal block and MCB are stated below and any deviation from these specifications is strongly advised against.

**N.B:** The Charge Amps Installation Kit is sold separately and is not included in the Package contents for Charge Amps Dawn.

### 1 x Terminal block

Weidmüller:  
WPD 2X25/2X16  
1XGN/3XGY/1XBL

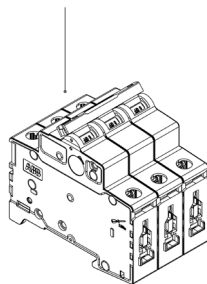
Article nr:  
1562140000



### 1 x MCB

ABB:  
S203-C32

Article nr:  
2CDS253001R0324



## 4 Before installation

### 4.1 Recommended tools

- Screwdriver Torx T20 + T25
- Screwdriver PH (or flat)
- Step drill (ø12 mm for LAN cable and ø32 mm for power cable)  
(N.B. Top cable entry holes only)
- Drill
- Multimeter
- Laser/spirit level
- Wire stripper for cabling
- Mobile phone, tablet or computer
- Wi-Fi analyzer app to ensure sufficient Wi-Fi strength at the installation location
- LTE Network analyzer app

### 4.2 Materials provided by installer

- 4 x M5 x 30 mm or longer flat head stainless screws type A2 or A4 with associated washers type A2 or A4 with a maximum outer diameter of 20 mm and plugs (if required) suitable for mounting of Charge Amps Dawn
- Installation cable, according to the charging capability of the product.

## 4.3 Mounting requirements

- If possible, do not mount the Charge Amps Dawn in direct sunlight.
- Make sure the wall can support a weight of 3.5 kg and the tractive force from the inserted cabling.
- Do not install Charge Amps Dawn in confined spaces.
- Use screws and plugs (if required) suitable for the wall material.
- Charge Amps Dawn must be mounted upright.
- Recommended mounting height 900 – 1450 mm, measured from the ground to the bottom of Charge Amps Dawn.

## 4.4 Electric requirements

N.B. Local regulations might add additional requirements for the electrical installation.

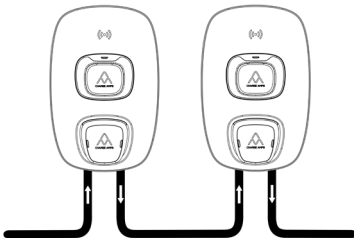
- Charge Amps Dawn must be earthed through permanent electrical installation.
- Only insert the electrical cable through the specified cable entry.
- If installing one Charge Amps Dawn, follow instructions for Single installation.

### Single installation



- If daisy chaining several Charge Amps Dawn, follow instructions for Daisy chain installation.

### Daisy chain installation



#### **4.4.1 Short circuit safety - internal MCB installation**

When an MCB is installed internally, inside of Charge Amps Dawn, an MCB with following specifications is required:

- ABB: S203-C32

Article nr: 2CDS253001R0324

This MCB can be purchased as a part included in the Charge Amps Installation Kit (described in chapter 3.2), or bought separately.

Instructions for how to reset the MCB when it is placed inside of Charge Amps Dawn can be found in Charge Amps Dawn User Manual.

#### **4.4.2 Short circuit safety - external MCB installation**

When an MCB is installed externally, outside of Charge Amps Dawn, an MCB with following specifications is required:

- Up to 32 A MCB, curve B or C, with Energy Class 3.

#### **4.4.3 Residual current safety**

Charge Amps Dawn has a built-in RCD functionality:

- Built-in RCD Type-B complying with IEC 60947-2.  
AC: 30mA, DC: 6mA.

Instructions for how to test and reset the built-in RCD can be found in Charge Amps Dawn User Manual.



## 4.5 Internet access

N.B. If Wi-Fi is configured, it will be prioritized over LTE.

Both Wi-Fi connection and LTE connection is available for Charge Amps Dawn. Charge Amps Dawn IEEE 802.1b/g/n Wi-Fi has a maximal speed of ~65 Mbps during ideal conditions and Charge Amps LTE-M CAT-M1 eMTC support up to ~500 kbps.

### 4.5.1 Wi-Fi connection

Wi-Fi connection is available and the placement of Charge Amps Dawn is key to solid Wi-Fi connectivity. Before installing Charge Amps Dawn:

- Give the network a pre-test with a Wi-Fi analyzer app to measure the network strength. Sufficient network strength should be -65 dBm
- Small adjustments of the location may have significant effect on the signal.
- If you can't find a good location for Charge Amps Dawn, you might need to use a Wi-Fi extender to extend the range.

## 4.5.2 LTE connection

LTE-M, i.e. enhanced machine-type communication (eMTC) low power wide area (LPWA), connection is available and requires public land mobile network (PLMN) coverage with reliable signal strength. The first time the Charge Amps Dawn attach to the PLMN it will require some additional time (up to ten minutes) due to the LTE network attachment procedure. After this, the Charge Amps Dawn will attach and connect to the network based on cached PLMN information. Before installing Charge Amps Dawn:

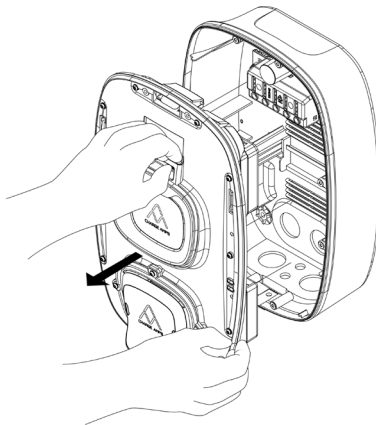
- Give the network a pre-test with a LTE Network analyzer app, to measure the LTE signal strength. Sufficient network strength should be better than -108 dBm.
- If you can't find a good location for Charge Amps Dawn, you might need to use Wi-Fi with a fixed Internet access line.

# 5 Installation

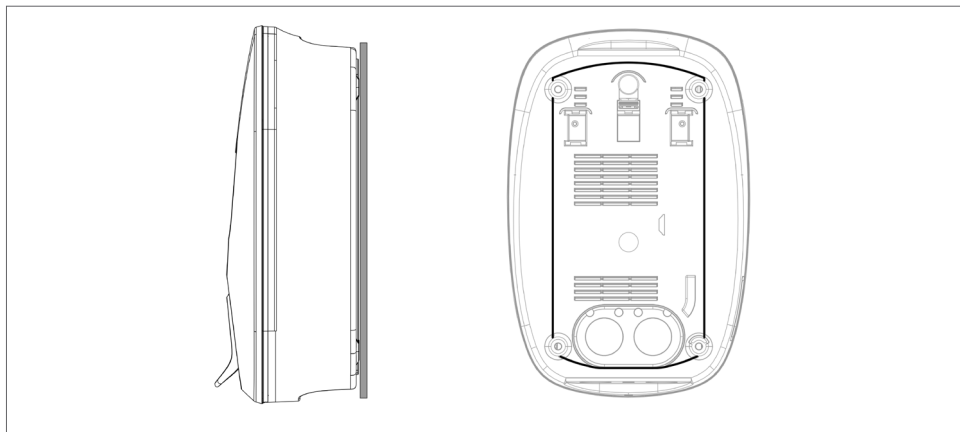
## 5.1 Mounting

N.B. Make sure to place front cover and charging unit in a place where they will not be damaged.

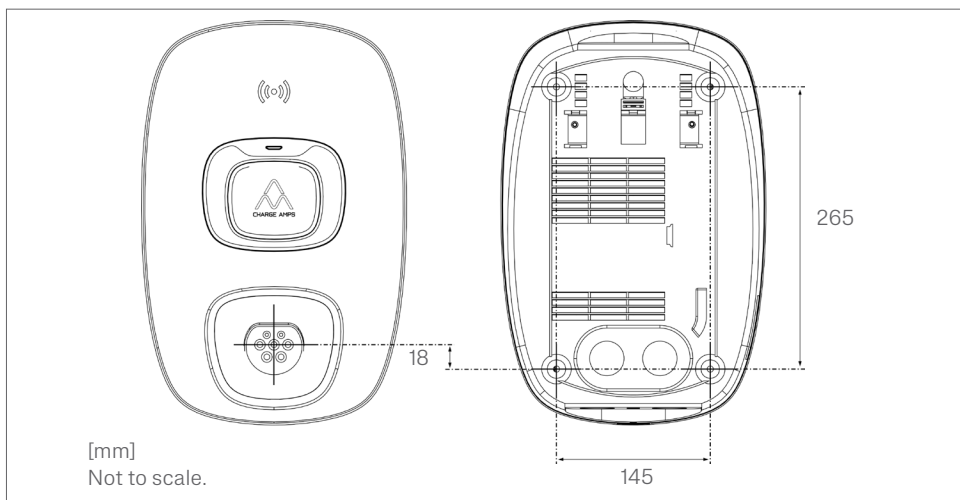
1. Unpack Charge Amps Dawn. Make sure that Charge Amps Dawn is in good condition and that all cables are properly seated.
2. Remove the charging unit. Secure from dropping the charger unit by holding a hand under the charger while pulling the tab.



3. Make sure the mounting surface is flat. Max. deviation for the four mounting holes is 3 mm. No other part of the surface should be in contact with the charger. The surface must also cover the area within the rim on the back side of the Charge Amps Down.



4. Mark the mounting holes on the wall.



5. Mount the Back plate to the wall.

## 5.2 Connection

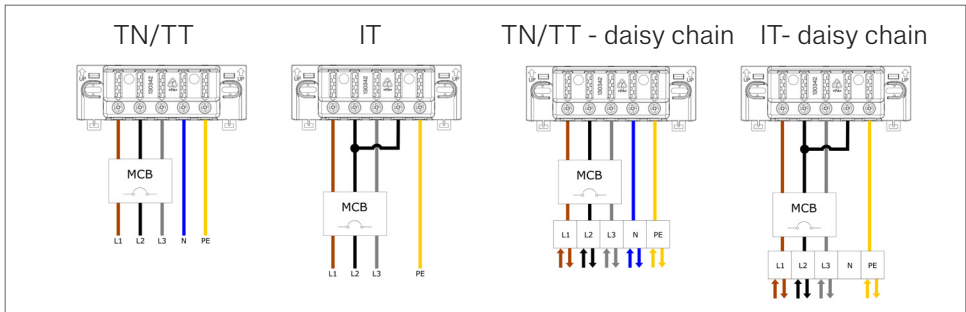
**WARNING!** Make sure that the power is turned off at the main switch and that the feed cable is isolated!

### 5.2.1 Cable connection

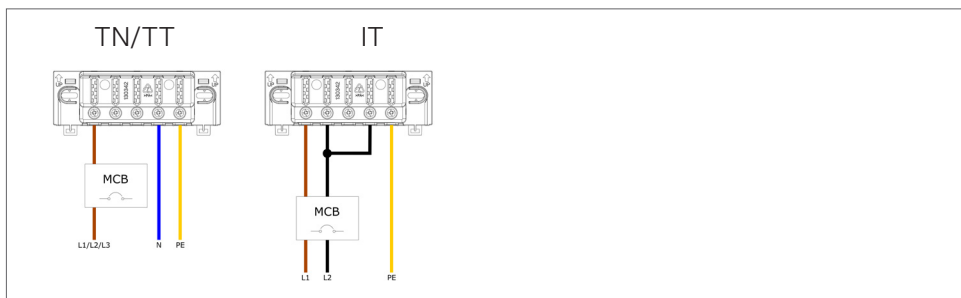
N.B. There are three options for cable entry, via the bottom, top or back side. Only insert the electrical cable through the specified cable entries.

1. Pull the power cable through the cable entry.
2. Strip approximately 20 mm off the end of the conductors.
3. Connect the conductors:

Three phase connection:



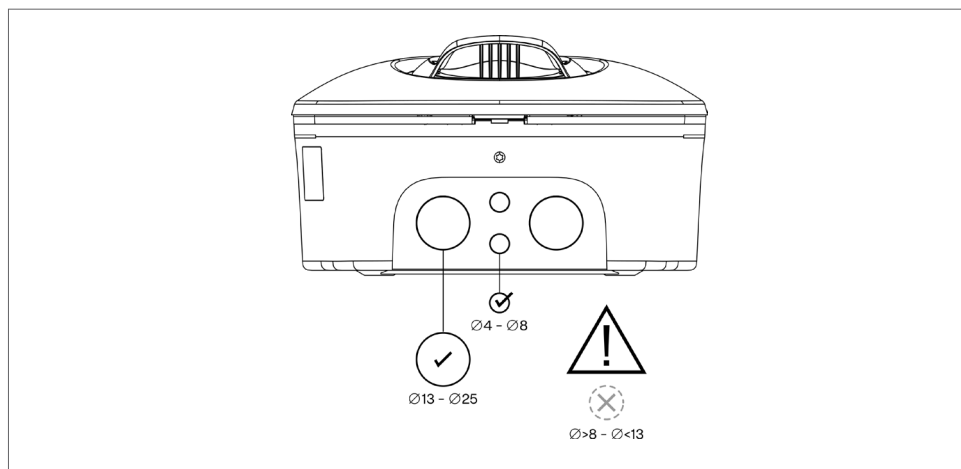
### Single phase connection\*:



\*It is also possible to daisy chain single-phase installations.

### 5.2.2 Bottom cable entry

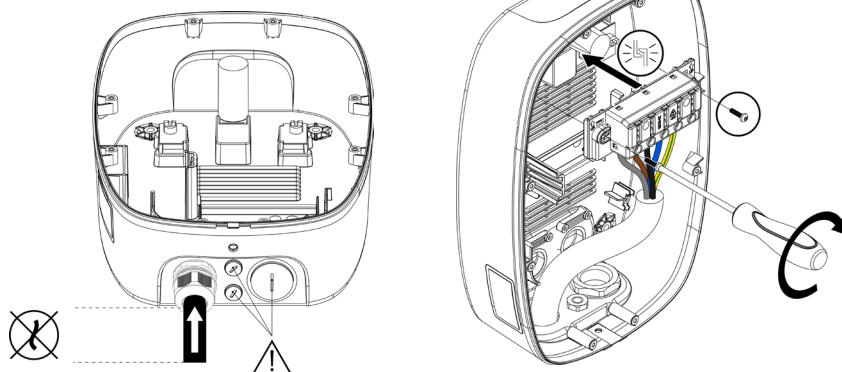
**Important!** Make sure to cover non used cable entries with suitable plugs found in the Accessories kit.



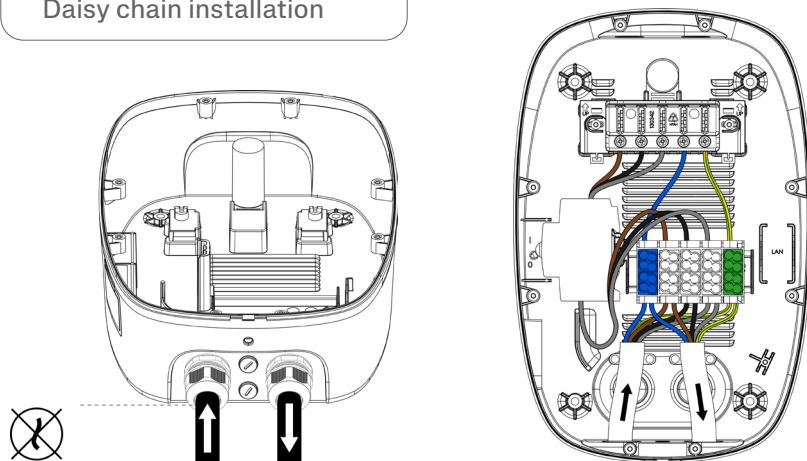
1. Insert and connect the cables.

N.B: Make sure the cables are straight after the cable gland to avoid strain on the cable glands and plastic parts.

### Single installation

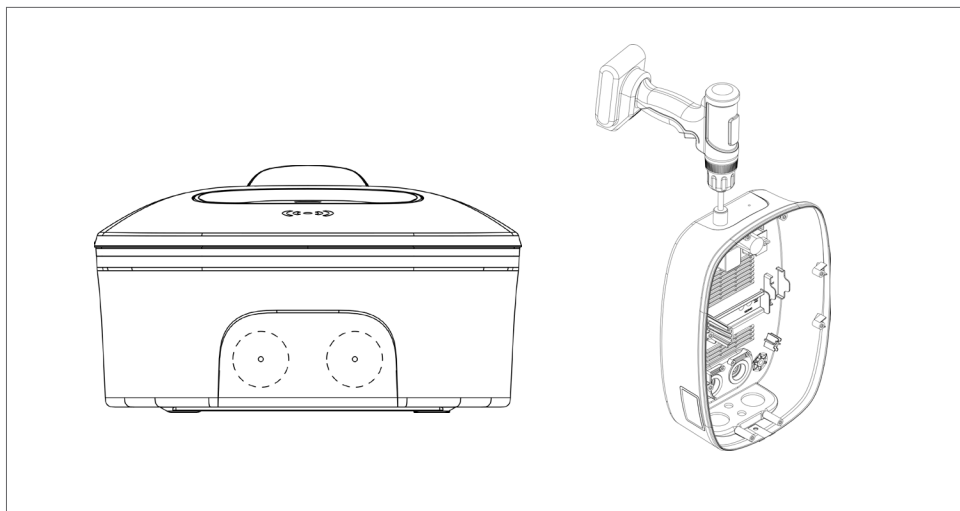


### Daisy chain installation



### 5.2.3 Top cable entry

1. Drill hole(s) according to the markings on the top using a step drill (LAN cable\*:  $\varnothing 12$  mm. Power cable:  $\varnothing 32$  mm).



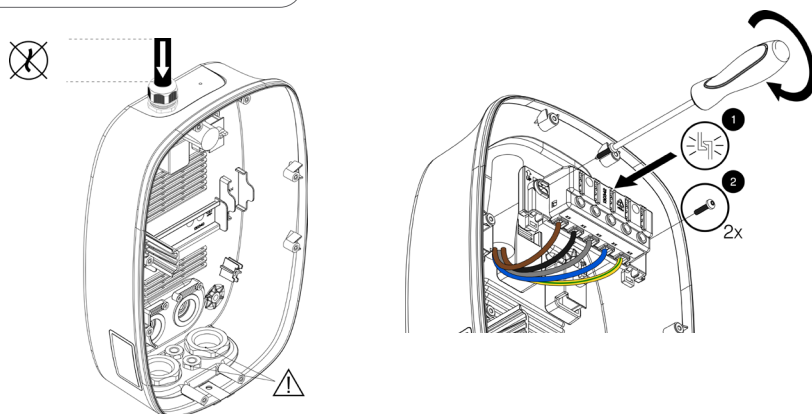
\* Some models only



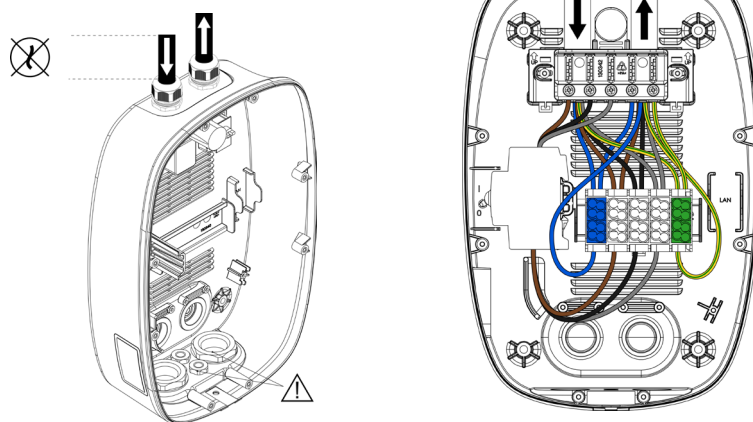
## 2. Insert and connect the cables.

N.B: Make sure the cables are straight after the cable gland to avoid strain on the cable glands and plastic parts.

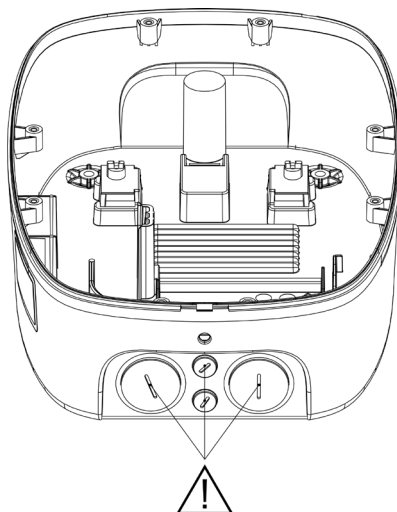
### Single installation



### Daisy chain installation

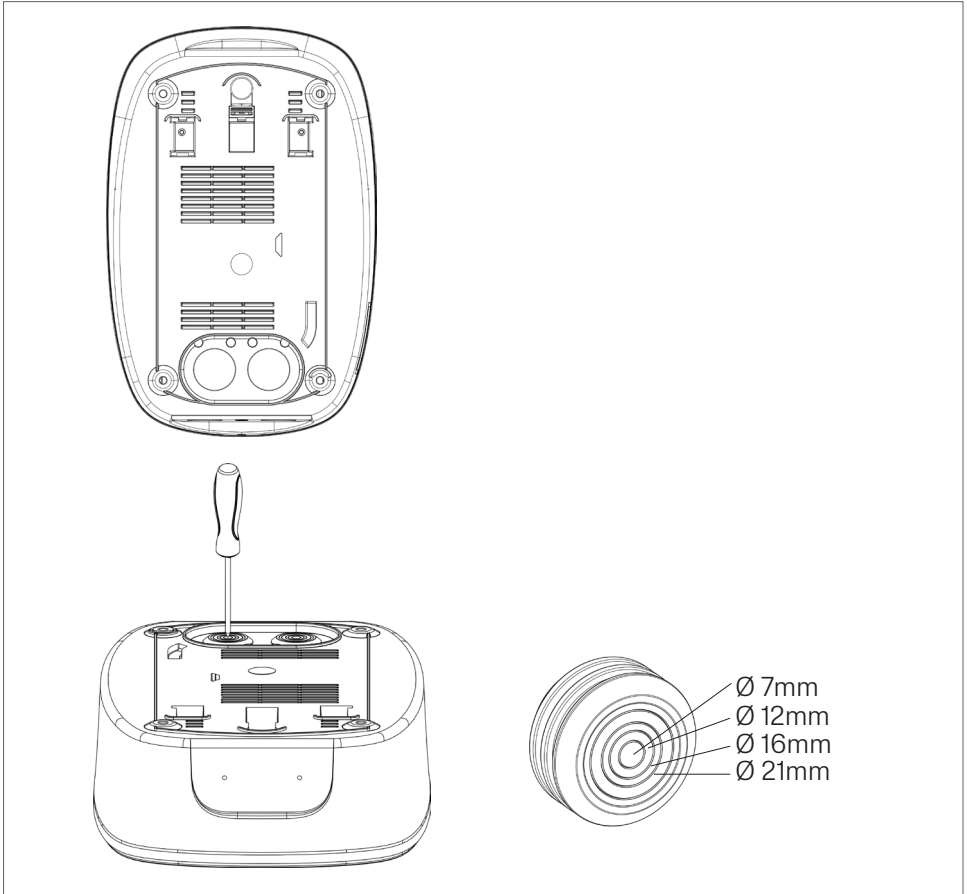


**Important!** Make sure to cover non used cable entries with suitable plugs found in the Accessories kit.



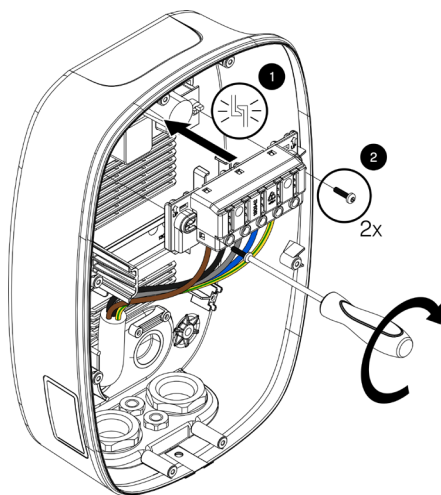
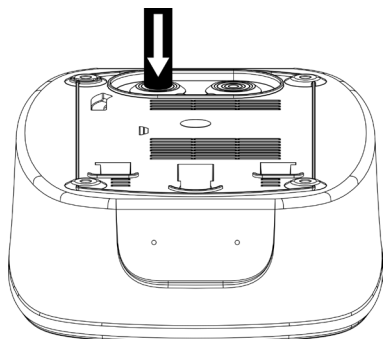
## 5.2.4 Back side cable entry

1. Make appropriate sized holes in the membrane using a suitable tool.

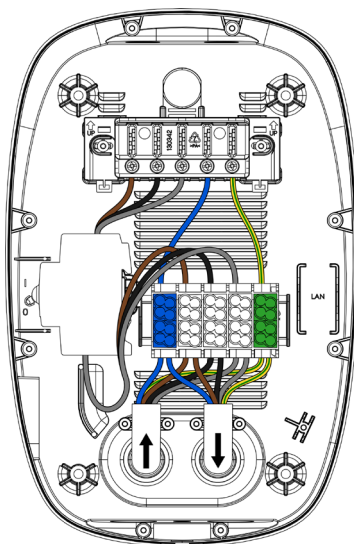
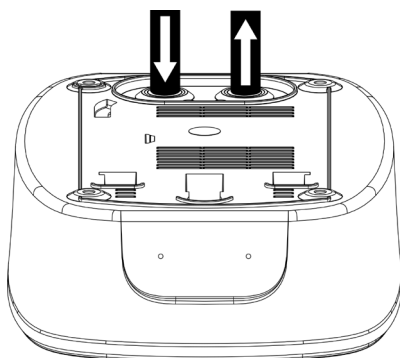


## 2. Insert and connect the cables.

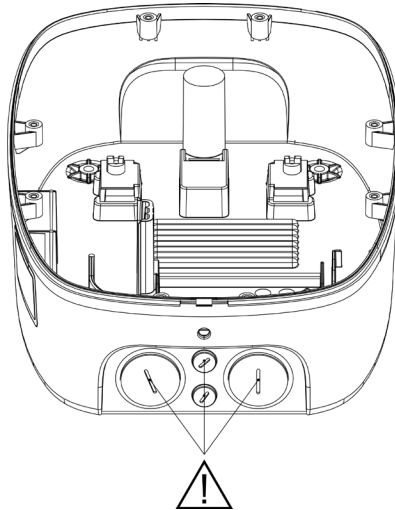
## Single installation



## Daisy chain installation

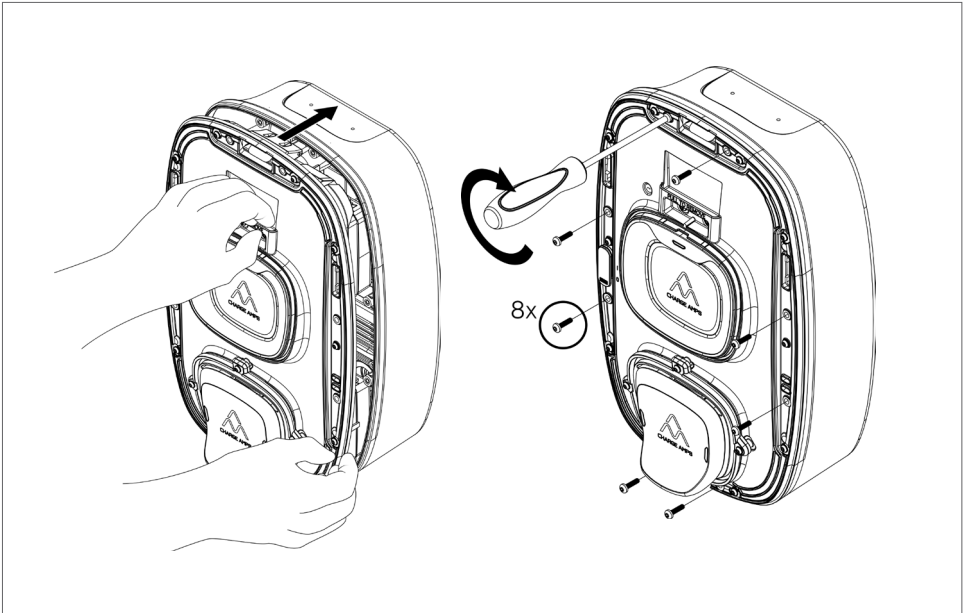


**Important!** Make sure to cover non used cable entries with suitable plugs found in the Accessories kit.

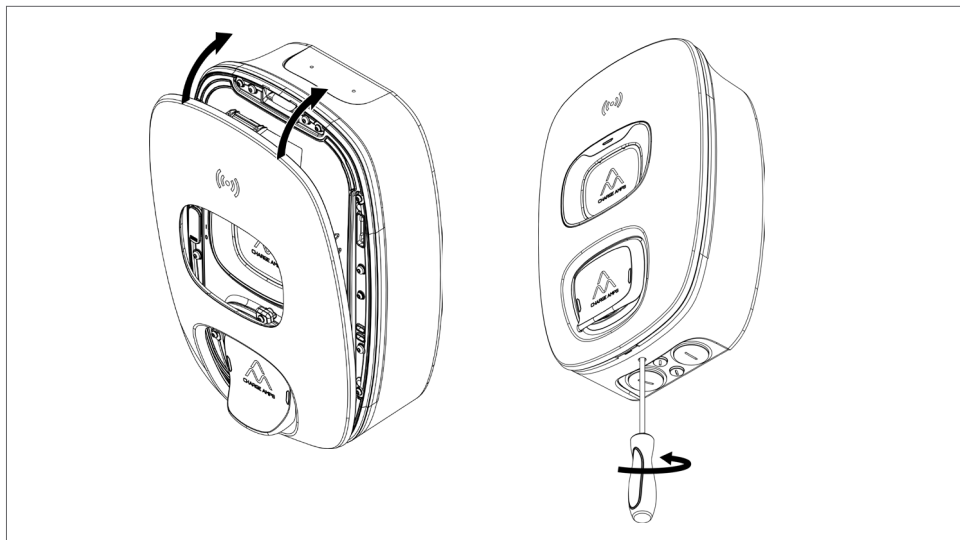


## 5.3 Reassemble

1. Insert the charger unit back on to the back plate and secure in place by tightening the 8 screws.
2. **IMPORTANT:** Remove the peel off label located on the front cover and save for configuration.



3. Insert the front cover bottom flange and rotate the cover in place. Secure in place by tightening the front cover lock screw using Torx 25.



**N.B.** The front cover lock screw should not be removed. Use a max. torque of 2 Nm when tightening the screw

4. Turn the power on at the main switch.
5. Make sure the RFID light and socket lights are on.

## 6 Configuration

**N.B:** Always register in Charge Amps Partner Portal to configure Charge Amps Dawn.

There's two ways to configure Charge Amps Dawn, via the Charge Amps Installer App or via the Installation Wizard in Charge Amps Cloud. Before starting the configuration, make sure to create a Partner Account in Charge Amps Partner Portal.

### 6.1 Create a Charge Amps Partner Account

Use your login credentials or create a new account.

1. Create a User Account at Charge Amps Cloud  
<https://my.charge.space/>
2. Send an email to Charge Amps (support@charge-amps.com) stating the following:
  - a. User account login name
  - b. Company name
  - c. Company postal address
  - d. Company email
  - e. Company phone number
  - f. Company organization number
  - g. Company representative
3. Charge Amps will notify you by email when your Partner Account has been created.



## 6.2 Configure via Charge Amps Installer App

The bluetooth interface is available 20 minutes after boot-up. If no connection is established within 20 minutes, a restart of Charge Amps Dawn is required to re-activate the bluetooth interface.

1. Open the app and press the button for configuration on the front page
2. Select the Charge Amps Dawn you wish to configure and enter the PIN code. (The PIN code can be found on the peel off label on the front of Charge Amps Dawn).
3. Follow the instructions given in the Installer App to enter details about the installation and to configure the connectivity for Charge Amps Dawn.

**N.B: To configure Load balancing and other functionality, go to Charge Amps Partner Portal**

## 6.3 Configure via Installation Wizard

To use the Installation Wizard in Charge Amps Cloud, Charge Amps Dawn must be connected to the internet and Charge Amps Cloud. By default, Charge Amps Dawn will use LTE to connect to the mobile network and automatically connect to Charge Amps Cloud. If mobile connection is unavailable, a temporary local Wi-Fi hotspot can be used:

1. Create a Wi-Fi hotspot on a smart phone or computer with following configuration details:
  - Wi-Fi SSID: dawnconfig  
Password: dawnconfig
2. Login to Charge Amps Partner Portal, start the Installation Wizard and follow the steps in the Installation Wizard:  
<https://my.charge.space/partner>

**NOTE: Always use the backplate serial number when adding a Charge Amps Dawn!**

If any question is not answered in this Installation manual, please contact the supplier, see <https://chargeamps.com/support>.

## 6.4 Cloud connectivity

Charge Amps Installer App and Charge Amps Cloud are available for Charge Amps Dawn connected to Charge Amps as the cloud provider.

### Charge Amps Installer App

Please download Charge Amps Installer App, available in App store and in Google Play.



### Charge Amps Cloud

Please create an account in the Charge Amps Cloud to configure, control and manage your charger via our web interface.



My charge space →

<https://my.charge.space/partner>

### Full product information

Visit [www.chargeamps.com](http://www.chargeamps.com) for Charge Amps Dawn Installation Manual, Charge Amps Dawn User Manual and other product documentation.



Product information →

<https://www.chargeamps.com/product/charge-amps-dawn/>

## 7 Dismounting

N.B. Dismounting shall only be performed by an authorized electrician.

The power supply to the charger must be isolated before dismounting starts.

1. Turn the power off at the main switch.
2. Use this installation manual and follow the steps in reverse to dismount Charge Amps Dawn in the correct order.

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