Smappee Infinity and EVBox

Install guide

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smappee

English – Version 1.2 – January 2021

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1. Compatibility

Smappee hardware

EVBox car charging stations are only compatible with Smappee Smart EV charging if one of the available preconfigured Smart Charging kits is used or when a Smappee Infinity setup with Genius as gateway is used. In the latter case, Smart Charging Connectors must be purchased separately.

IMPORTANT: Smappee Smart EV charging won't work with a Smappee Connect unless this gateway is part of a Smart Charging kit.

Compatible Smart Charging kits:

Article number	Commercial name
SMARTC-1P50A-2	Smart Charging 1-Phase (50A)
SMARTCPLUS-1P50A-2	Smart Charging Plus 1-Phase (50A)
SMARTC-1P100A-2	Smart Charging 1-Phase (100A)
SMARTCPLUS-1P100A-2	Smart Charging Plus 1-Phase (100A)
SMARTC-3P50A-2	Smart Charging 3-Phase (50A)
SMARTCPLUS-3P50A-2	Smart Charging Plus 3-Phase (50A)
SMARTC-3P100A-2	Smart Charging 3-Phase (100A)
SMARTCPLUS-3P100A-2	Smart Charging Plus 3-Phase (100A)

Smappee Smart Charging kits use a Smappee Connect as gateway, whereas Smappee Smart Charging Plus kits use a Smappee Genius. All kits are available in a 50A version and a 100A version for the UK market.

IMPORTANT: The components in the kit (Power Box, CT hub(s) and Connect or Genius unit) are pre-configured and are specific to one kit. These components cannot be used with a different kit.

If the Smappee Genius gateway is purchased separately and not as part of a Smart Charging (Plus) kit, a set of Smart Charging Connectors is required:

Article number	Commercial name
SMARTC-CONX	Smart Charging Connectors (1x RJ10 connector, 1x RJ10 splitter, 1x EVBox Charge Point connector)

EVBox hardware

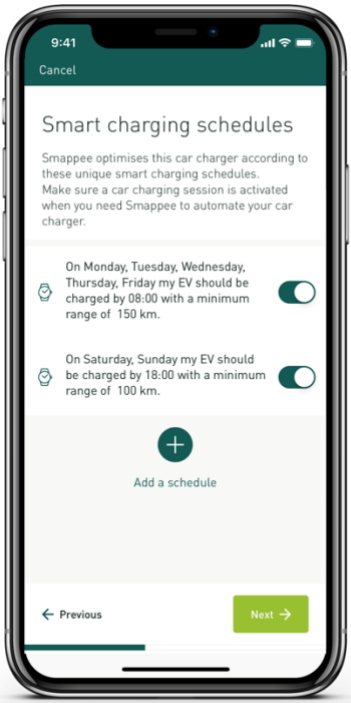
The following EVBox car charging stations support Smappee Smart EV charging:

Product	Smart Charging compatibility
BusinessLine	Supported from G3 onwards
HomeLine	Supported
Elvi	Supported from Q4 2019 onwards

2. Smappee Smart EV charging

Smappee Infinity ensures autonomous overload protection and optimal charging of the electric vehicle while it cleverly manages the energy flows so users can live, work, and relax without compromising on comfort.

Smappee optimises the energy available from solar and other renewable energy sources to ensure it is maximised throughout the day. It does this while making sure your EV always has as much charge as you want by the time you need it according to unique Smart Charging schedules.



3. Installation Procedure

The installation procedure consists of the following steps:

1. Physical installation: the physical installation of the car charging station and all Smappee Infinity components.
2. Configuration: the connection between car charging station and Smappee system.
3. Validation of the installation: checking the connection.
4. Smart EV charging: the configuration of Smart EV Charging schedules.

This procedure is done with the Smappee Energy Monitor mobile app.

4. Physical installation

WARNING: For safety purposes, it is necessary to power off the installation before proceeding with the physical installation.

Smappee physical installation

Install the Smappee Infinity according to the installation manual. Download the installation manual at smappee.com/smappee-manuals. Do not start the configuration via the app yet!

In order to connect with a car charging station, make sure that:

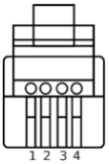
- At least the following loads are measured with a CT (Check how to configure CTs in section 5 and 8 of the Smappee Infinity manual).
    - Grid
    - Car charging station – Appliance
    - Solar (if present)
- The Smappee Power Box is installed on the same electrical group as the charging station.
- The phase mapping of the Smappee Infinity is the same as the phase mapping of the EVBox car charger.
- If you have a preconfigured Smart Charging kit, take notice of the stickers on the CTs which indicate to which load they should be attached.

IMPORTANT: The following steps assume that the Smappee Infinity physical installation has been completed. If this is not the case, please follow the installation manual at smappee.com/smappee-manuals.

In order to enable communication with the EVBox car charging station, a communication cable must be connected between the Smappee Connect or Genius gateway and the charging station. The required connectors are supplied in the preconfigured Smart Charging kit, or they can be purchased separately. The cable itself is not supplied by Smappee. It is recommended to use a RS-485 or CAT 5/6 cable.

1. Install the communication cable along the route from the Connect or Genius unit to the charging station. Leave enough cable at each end to make the connections.

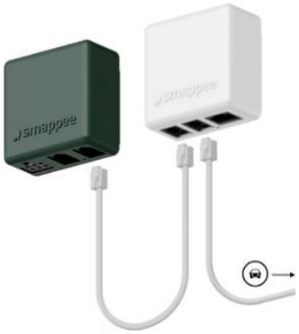
2. Install the RJ10 connector (supplied) on the Connect or Genius unit end of the network cable:



	1 – Do not connect
	2 – RS485 – A
	3 – RS485 – B
	4 – Do not connect

Note: The unused wires of the network cable remain unconnected. When a Genius unit is used, connect the RJ10 Splitter (supplied) to the unit.

3. Connect the RJ10 connector to the RJ10 Splitter or to the Smappee Connect.



4. Continue with connecting the network cable to the charging station in the next section.

EVBox physical installation

Install the EVBox car charging station according to the EVBox installation manual. Download the installation manual at evbox.com/en/manuals.

IMPORTANT: The following steps assume that the EVBox car charging station installation has been completed. If this is not the case, please follow the installation manual at evbox.com/en/manuals .

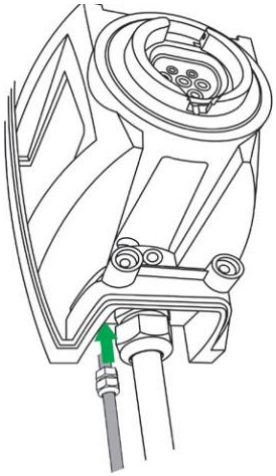
The following sections describe the connection of the RS485 cable to the following types of charging station:

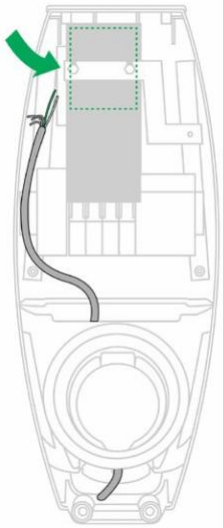
- BusinessLine G3
- BusinessLine G4
- HomeLine
- Elvi

For each type of charging station, refer to the related Installation Manual for instructions about removing the cover to access the Smart Charging connection points.

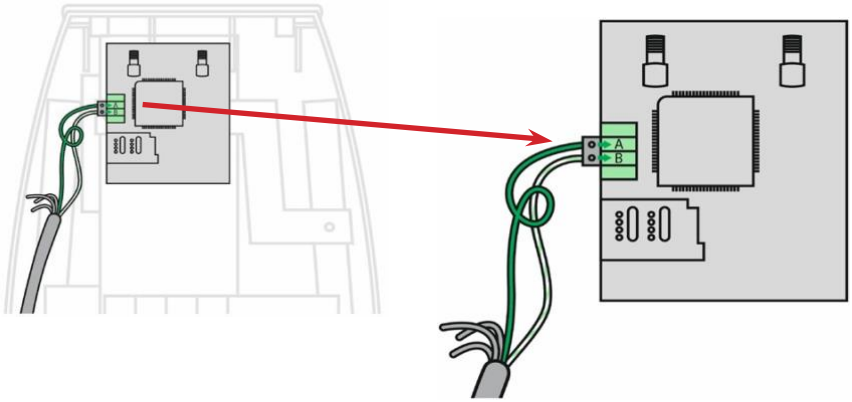
BusinessLine G3

1. In the charging station, find the RS485 connection on the modem board PCB. The figures below will help you find the connection.
2. Route the network cable into the charging station along the same route as the power cable. When the cable enters the base of the station, drill a hole and use a cable gland.



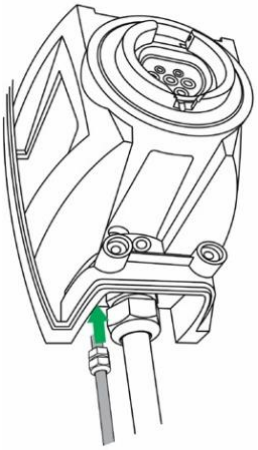


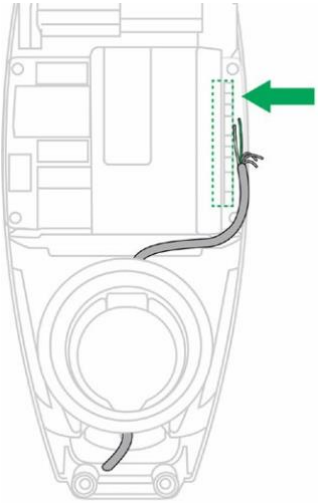
3. Connect the network cable to the modem board PCB using the gray 2-pole Phoenix plug (supplied):
    - Green > RS485 pin A
    - Green/White > RS485 pin B



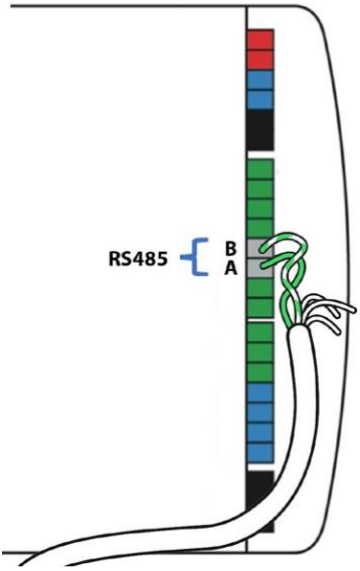
BusinessLine G4

1. In the charging station, find the RS485 connection on the modem board PCB. The figures below will help you find the connection.
2. Route the network cable into the charging station along the same route as the power cable. When the cable enters the base of the station, drill a hole and use a cable gland.





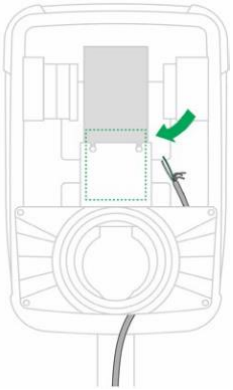
3. Connect the network cable to the controller's gray RS485 connector using the gray 2-pole Phoenix plug (supplied):
    - Green > RS485 pin A
    - Green/White > RS485 pin B



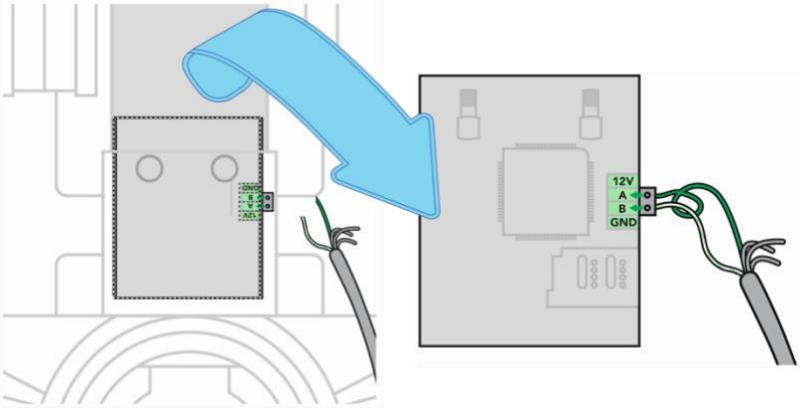
HomeLine

1. In the charging station, remove two hex-bolts then move the controller and modem PCB up out of the support.
2. Find the RS485 connection on the modem board PCB. The figures below will help you find the connection.
3. Route the network cable into the charging station along the same route as the power cable.

   Connect the network cable to the modem board PCB using the gray 2-pole Phoenix



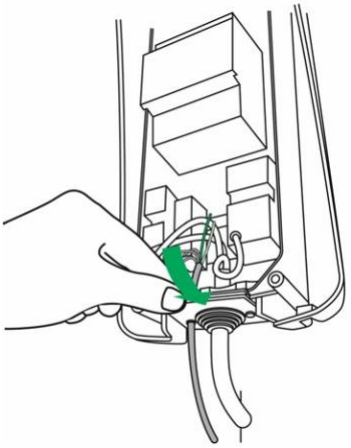
4. plug (supplied):
   - Green > RS485 pin A
   - Green/White > RS485 pin B



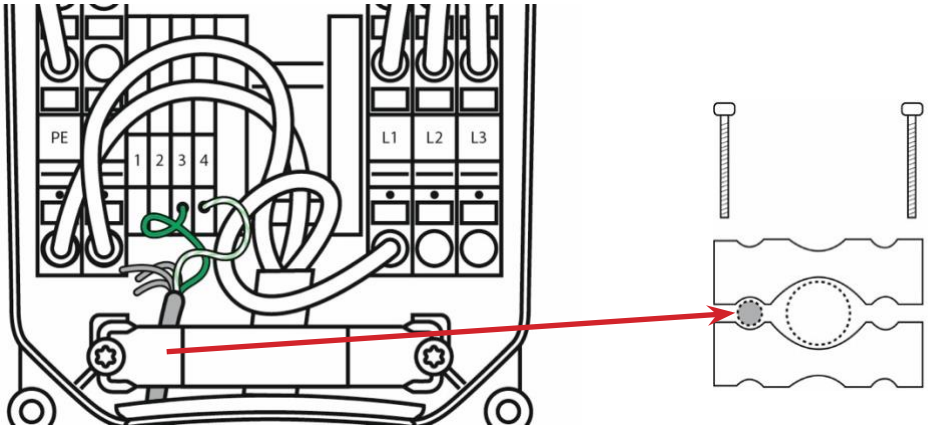
Elvi

Note: This is only applicable for Elvi model from Q4 2019 onwards.

1. In the charging station, find the RS485 connector blocks on the DIN rail. The figures below will help you find the connection.
2. Route the network cable into the charging station along the same route and using the same cable gland as the power cable. Cut an additional hole in the cable gland for the network cable.



3. Connect the network cable to the RS485 connector blocks on the DIN rail:
    - Green > Connector block 3
    - Green/White > Connector block 4



Check Physical installation

WARNING: Make sure that it is safe to supply power. All wiring connections must be completed and the cover must be on the charging station and secured.

1. Supply power to both the Smappee Infinity installation and the EVBox car charging station.

2. Use a digital multimeter to ensure that the phase mapping of the Smappee Infinity is the same as the phase mapping of the EVBox car charging station. Please note that the colour code inside the fuse box and/or the phase numbering may be incorrect.

   Note: 0 volts is measured when both loads are on the same phase.

3. Ensure that the stickers on the CTs or CT Hubs match the load they are measuring. The sticker with a car icon should measure the EVBox charging station, the house icon should measure the grid, and the sun icon should measure solar production (if applicable).

5. Configuration

EVBox Smart Charging is configured using the Smappee Energy Monitor app. This app can be used from the installer's or user's smartphone or tablet.

When the Smart Charging has been configured, the user uses the Smappee Energy Monitor app to monitor their energy usage.

> ⚠ IMPORTANT: The configuration procedure is different for preconfigured Smart Charging kits than for Smappee Infinity products which were purchased separately. If you do not have a preconfigured kit, please skip to 'Non-preconfigured Smappee Genius'.

Preconfigured Smart Charging Kits

1. Download the Smappee Energy Monitor app onto your smartphone or tablet.

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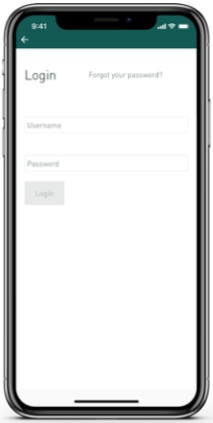
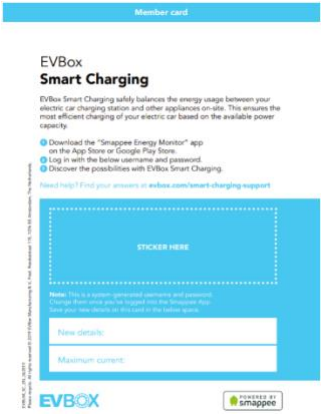
2. Log in to the app with your username and password on the member card provided with the kit.

   Note: The username and password are unique to the kit and cannot be used on a different installation.



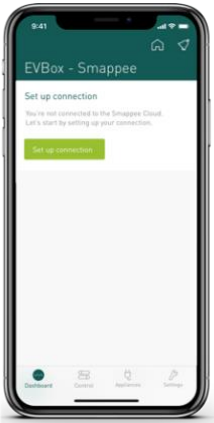


Note: It is recommended to change the name of the installation to the customer's preference (for example, 'My EV station')

3 In the app, select **Set up connection**.

Follow the instructions shown in the app. You will set-up the following features:

- Internet connectivity - set the Wi-Fi network to which EVBox Smart Charging must connect to.
- Overload protection - Enter the maximum current that the main circuit breaker can supply.



If a preconfigured Smart Charging kit with Smappee Connect as gateway is used, the LED will be red breathing if there is no valid connection with the EVBox charging station.

Non-preconfigured Smappee Genius

IMPORTANT: The configuration procedure is different for preconfigured Smart Charging kits than for Smappee Infinity products which were purchased separately. If you have a preconfigured kit, you may skip this section.

1. Download the Smappee Energy Monitor app onto your smartphone or tablet.

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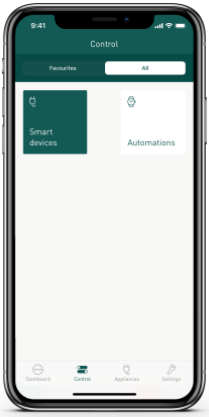
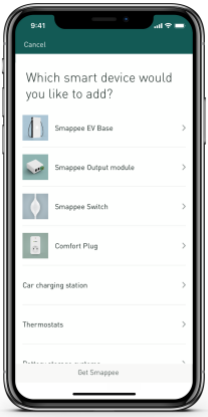
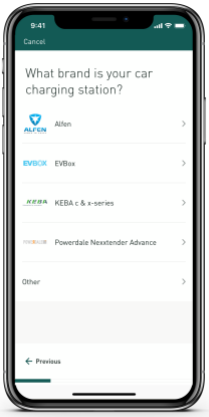
2. Follow the instructions in the Smappee Infinity installation manual to configure the loads using the app.

3. Navigate to the 'Control' tab, then to 'All', 'Smart devices', 'Add', 'Car charging station', 'EVBox'. Then follow the instructions shown in the app.







The maximum current that the car charging station can support is dependent on the type of EVBox car charging station and your electrical installation. See the EVBox installation manual for more information.

The default minimum current that an electric vehicle needs to start charging is 6 A. Find the exact value in the manual of the electric vehicle.

6. Validation of the installation

Once the installation is complete, it is good practice to validate the correct operation of the connection between the EVBox car charging station and the Smappee Infinity.

To validate the physical Smappee Infinity installation, please refer to the Smappee Infinity manual. Pay extra attention to the following:

- Check if the stickers on the CTs or CT Hubs correspond to the correct load
- In the app, go to Settings – Your Smappee monitors – Load configuration and check the values to see if they are logical

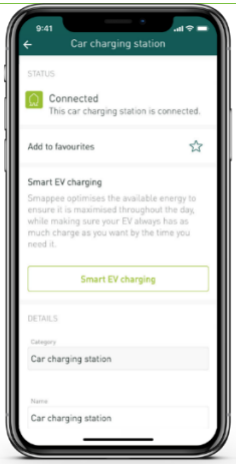
The procedure to verify the connection between the Smappee gateway and the EVBox charging station depends on whether a Smappee Connect or Genius is used, as can be seen below.

Smappee Connect

To check correct operation, verify that the LED is green breathing. If it is red breathing if there is no valid connection with the EVBox charging station.

Smappee Genius

To check the correct operation, go to Control – All – Smart devices – the car charging station you connected – Status should state Connected.



7. Set up Smart EV charging

Smappee automatically protects against overloads. The user can set up Smart EV charging schedules in the Smappee App to make sure solar energy is maximised throughout the day and the electric vehicle always has as much charge as you want by the time you need it.

	To optimise the connected car charging station according to unique Smart Charging schedules, go to Control – All – Smart EV charging

Proceed in the Smappee Energy Monitor mobile app and follow the steps as shown.