# EV Buddy 3

## Pro / Pro LTE


## Smart Portable Wallbox

**User guide**

Version 1.1

EN

# Table of Contents

# 1 Welcome to

Thank you for purchasing the EV Buddy 3 Portable Wallbox or EV Buddy 3 Pro. This user guide contains important information about the product. Please read this user guide for the EV Buddy 3 Portable Wallbox.

Please read this user guide carefully. Failure to follow the instructions in this User's Guide may result in fire, shock, serious injury or death, and may void the product warranty.

## Product Features

EV Buddy 3 & EV Buddy 3 Pro is a portable wallbox with Wi-Fi and LTE connectivity. This enables a range of advanced features.

- Bluetooth, Wi-Fi & LTE connectivity
- OCPP 2.0 & ModBus communication
- Local and cloud APIs
- OTA updates
- Automatic network detection (TN, IT)
- RCD Type B
- Automatic phase detection
- Undervoltage and overvoltage monitoring
- Fleet mode
- Detailed charging history
- Schedule mode
- Boost mode
- Scalable charger system
- Charging from PV surplus
- Charger length on request
- Temperature monitoring of all phases
- Real-time charger communication and the adapter
- Durable wire designed for charging electric vehicles
- Clear charging history Timer mode
- TÜV certification

Note: Additional features may be introduced in future software releases.

# 2 Contents of package

Please check the contents of the package carefully before proceeding further.

The number of adapters in the package may vary depending on the version of the charging kit selected.


## Explanation of symbols

CE This symbol indicates that the product meets the requirements of the relevant European Economic Area product directives.

RoHS This symbol signifies that the product meets the requirements of the EU Directive restricting the use of certain hazardous substances.

## Important notice

This charger is designed only for charging electric vehicles supporting IEC 62196-1 and IEC 61851-1 standards with Type 2 and Type 1 vehicle sockets. Do not use this product for any purpose other than charging compatible electric vehicles.

- Do not use the charger if it shows signs of damage or if the LED indicates an error.
- Before use, familiarize yourself with the charger control panel and its functions.
- Use the charger only with adapters specifically designed for this product.
- Do not use a charger with a socket that does not comply with current regulations and standards.
- Always make sure that the charger is connected to a properly earthed electrical outlet with the appropriate rating.
- Never attempt to disassemble, modify, or repair the product or its parts. If the product malfunctions, do not use the product and contact your dealer.
- Never disconnect the charger from an electrical outlet or from the electric vehicle while charging. Doing so may cause injury or damage to your electric vehicle or equipment.
- Always ensure that the cables of the portable charger are not tangled or covered by any objects that could impede normal airflow and cooling during charging.
- Do not use any extension cables with the charger.
- Do not expose the charger or its parts to harsh external conditions such as excessive pollution, heavy rain, or snow.
- Keep the charger and all its parts clean and dry. If necessary, clean the surface of the charger with a dry or slightly damp cloth.
- Protect the charger cover from direct sunlight or heat sources while charging. These could cause overheating and malfunctions. During summer days, the control unit or the socket may overheat. In such cases, this is not a fault of the equipment but an external influence. Allow the charger to cool down.
- Never touch the connector terminals with your hands, sharp objects, or other tools.
- Do not allow children or unauthorized persons to tamper with the charger or its accessories. Improper handling of the charger can cause shock, fire, serious injury, or death.
- Neither the manufacturer nor the seller of the product accepts any liability for damage caused by improper use of the product.
- The basic version of the charger is equipped with indicative three-phase measurement. For billing purposes, a version equipped with MID-certified measurement must be purchased.
- Some charger functions may not work optimally with specific types of electric vehicles, and the charger manufacturer is not responsible for this.
- If the charger is damaged due to improper handling or failure to follow the instructions above, any claim may not be accepted.

# 3 Product description

# 4 Portable Wallbox functions

The EV Buddy 3 & EV Buddy 3 Pro charging cable automatically detects the type of power supply and the connected adapter, then adjusts the maximum charging current accordingly. Once the charger is plugged into a compatible outlet, it performs a series of self-tests to ensure optimal functionality. After successful testing, the charger is ready to start the charging process.

The temperature monitoring function in the adapters and the automatic setting of the maximum charging current make charging your electric car safer. During charging, the portable Wallbox acquires real-time data from the adapters and evaluates the charging process. This feature ensures safe charging and protects the car and charger from potential overheating problems, reducing the risk of fire.

In addition, if the charger is connected to a three-phase power supply, it is possible to switch between single-phase mode and three-phase charging (this function ensures more efficient charging of the PV surplus). This can be done via a button on the control panel or in the mobile app. The mobile app offers a myriad of additional features, including monitoring charging progress, scheduling charging or charging from PV surplus.

**Schedule settings**

To set the charging schedule (timer), press the „Charging scheduler“ tab in the mobile app and select the day for which you want to set the schedule. You can select up to ten events for each day. Alternatively, you can also choose whether to start or stop charging during a specific event.

Then click on „add event,“  then choose whether you only want to charge a certain number of kWh and the time you want to start charging. If you leave the kWh charge value at zero, charging will start at the selected time and continue until it ends either at the selected time limit or when stopped by the EV.



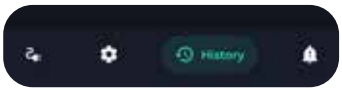
Click on the „add event“ button. Choose the time to start charging, the charging current, and the limit of kWh you want to charge. (If the value is 0 kWh, charging will stop only at the limit set in your electric car or at the selected charging end time.) Select whether you want to start or stop charging during this event.

Each event can be copied to other days of the week. The maximum number of events for one day is ten.

### Charging history

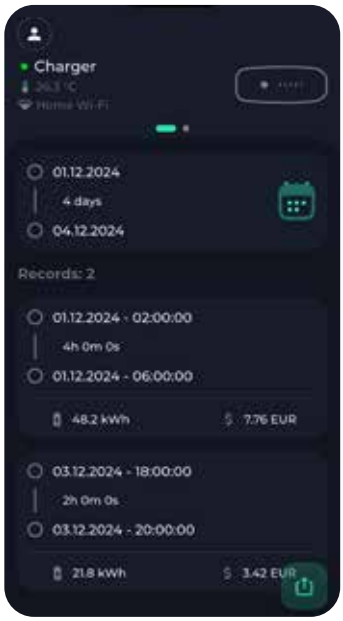
In the mobile app, you can see all the charging sessions that has already taken place for the period you have selected in the charging history tab. If you want to export this data, select the date range for the data to be exported and click on the export button in the mobile app. You can download the history in .csv format and then open the document (for billing purposes, we recommend that you have a MID-certified charger, otherwise the measured values are only indicative).

Note: If you are using Excel to open the charging history, we recommend the following procedure: Open a blank Excel workbook: click on the Data->From Text/CSV->select document (charging history)->Read. Then the charging history should be displayed correctly.




Click on the „History“ tab in the mobile app


Select the start and end date for which you want to generate the charging history.




Selected data from the charging history will be displayed in the schedule. The data can then be exported to an email or other device.

## Using a charger on an IT network

**If you do not intend to use the charger in Norway, you can disregard the rest of this chapter.**

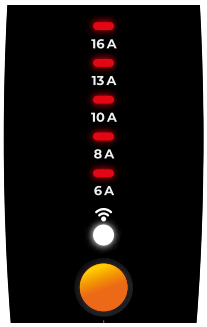
### Special Norwegian IT network system

This section explains the unique requirements of the Norwegian IT network system. In the isolated IT network system used in Norway, the protective earthing control does not work. The charger automatically switches the charging mode to the IT network to function properly. You can also identify this mode by the change in the LED colour when charging starts (it changes from blue to purple).

### Switching the charger between TN and IT network mode (Norway).

If you plug the charger into an IT network socket, it will automatically switch to IT network mode.
If you plug it back into a TN network, the charger will automatically switch back to TN mode. Under certain conditions, the charging cable may not recognize the IT network due to poor impedance. In this situation, hold the button on the charger panel for 10 seconds (this is a soft error). In case of a TN ground error display, the error cannot be bypassed. You should contact an electrician or the distributor of the charging device.

1. „Grounding error“ error appears in the IT network




2. Press the control button and hold it for 10 seconds. This switches the charger to IT network mode.

### Connecting to Wi-Fi

To connect the EV Buddy 3 & EV Buddy 3 Pro to the internet, follow the steps below:

1. Plug the charger into an electrical socket
2. Open the mobile app
3. Click on the settings icon and then „Wi-Fi Settings“ in the Communications section.
4. The available Wi-Fi that found the charging cable will appear in the menu
5. Select the Wi-Fi network you want to connect to
6. Enter the password for the selected Wi-Fi network
7. **Confirm your settings in the mobile app**
8. Now your EV Buddy 3 or EV Buddy 3 Pro II charger is successfully connected to the Wi-Fi network and can be accessed via the EVManager mobile app (see chapter 7: Using the EV-Manager mobile app).


You can configure up to ten different Wi-Fi networks. In the mobile app, you can view an overview of the Wi-Fi networks you have already added and remove any unwanted ones if necessary. In the Wi-Fi settings, you can also manually add a Wi-Fi network (e.g., a hidden network) by entering the router‘s SSID and password.


## EV Buddy 3 Pro firmware update

We are continuously developing the second generation of EV Buddy 3 & EV Buddy 3 Pro portable wallboxes.

For a successful firmware update, the user must be within Bluetooth range of the charger. The mobile phone must also be connected to the internet. In the mobile app, click on the charging device name (and temperature). A window will appear showing the current firmware version and whether a new version is available.

The connection status LED pulses purple during the update. The update can take up to a minute to complete.

When you click on the „firmware version“ tab, you can see if an update is available. If so, please follow the instructions provided earlier in this section to complete the process.

# 5 Charging the Electric Car

## Before charging

1. Park your vehicle within reach of a suitable electrical socket. Unfold the charging cable and place the black plastic box in a suitable location, away from direct sunlight and heat sources. Also, try to avoid placing the plastic box in excessively dirty areas or under direct and heavy rain.
2. If necessary, use an adapter compatible with the socket you plan to use for charging.

## Starting charging

1. Check the charger before each use. This will prevent the possibility of shock, injury, or damage to property.
2. If the charger does not show any signs of damage, plug it into a power outlet. Wait 5 seconds until all the protective tests that the charging cable performs each time it is plugged into the socket have been completed.
3. If necessary, select the desired charging current.
4. Switch between single-phase and three-phase charging as needed (available when using a three-phase power outlet). If charging does not continue when switching phases, it may be a car problem, not a product problem.
5. Connect the charging cable connector directly to the electric car.
6. Within a moment, the charger will start the charging process, and the colour of the LED indicating the charging current will change from green to blue. In the case of automatic IT network detection, the LED will change from green to purple.
7. You can change the charging current on the charging cable panel or in the mobile app. The change can also be made while charging.
8. Once your electric car is fully charged, the vehicle connector will remain locked in the vehicle until you unlock it in the car's mobile app (if applicable) or manually in your car.

Note: Never attempt to disconnect the vehicle connector while charging!

Note: Observe the maximum ratings of your electrical wiring in the building. Select a charging current lower than the maximum rating of the local electrical system to reduce the risk of accidentally tripping the main circuit breaker. If several electric vehicles are charging simultaneously, ensure that the total charging current of all vehicles does not exceed the maximum rating of the electrical system in the facility.

## Operating the charger from the control panel

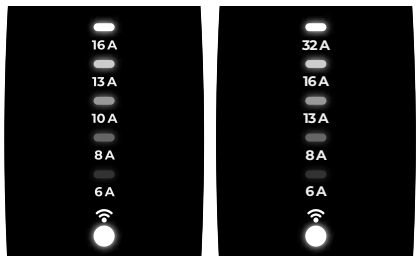
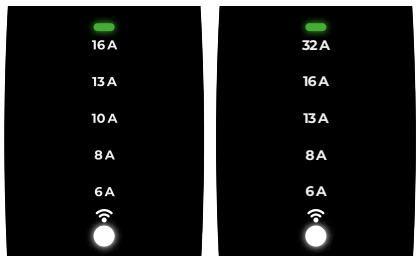
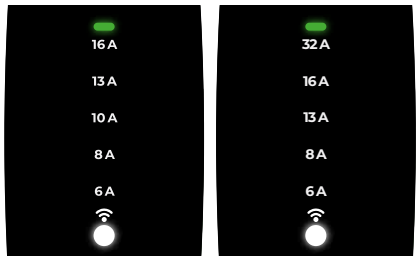
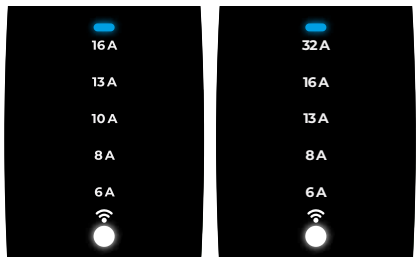
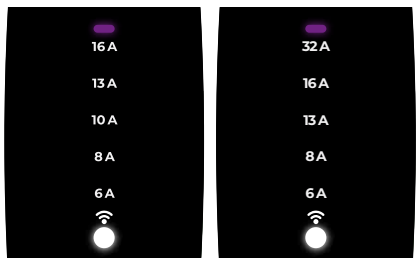
You can control charging before and during the charging process from the charger control panel. The following functions are available on the control panel:

| Functions | Description | Events |
|---|---|---|
| Changing the target charging current | Set the target charging current between 6A and 32A (or maximum current allowed by the power cable assembly). | Press the control button to increase the target charging current. The LED indicates the selected charging current setting. |
| Enabling charging | If charging is disabled or a charging schedule is set in the mobile app, the LED will glow. | Press the control button 3 times consecutively to activate Boost mode. (If no Boost limit is set, it will remain active for 12 hours at full power or until the electric car is fully charged.) Charging will start regardless of any timing or charging pause. |
| Switching off the current charging | Switch off the charging in progress from the charger panel. | To stop the charging process, press the control button 5 times in succession. |
| Error condition | The LED on the charger panel is red and the charging cable is in error. | If there is a soft error, the charging cable can be switched to emergency charging by holding the control button for 10 seconds. The current will be set to 6A for the time necessary to charge the electric car. |
| Switching between singlephase and three-phase charging | Switching between single-phase and three-phase charging mode (this option is only available in three-phase power network TN-C/TN-S). | Press and hold the control button on the panel for 3 seconds before connecting the connector to the vehicle or while charging. Charging will stop and the LED will flash once for single-phase and three times for three-phase Charging will restart immediately after signaling and will indicate the selected status once every 5. |
| Soft error confirmation | In case of a soft error (an error marked in the manual with an asterisk) on the charger, it is possible to temporarily resolve the issue. | Press the button on the panel for 10 seconds to activate emergency charging at 6A until the end of the charging cycle. |

If the charger is connected to a single-phase mains supply (e.g. using an adapter), the charging mode is automatically set to single-phase charging.

## LED indicators on the control panel

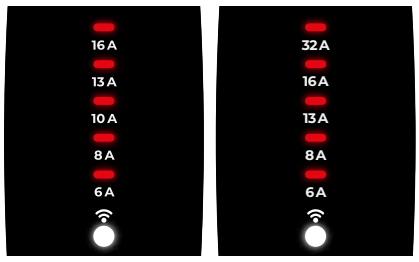
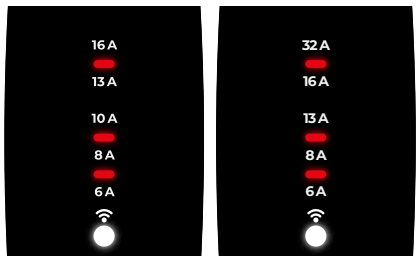
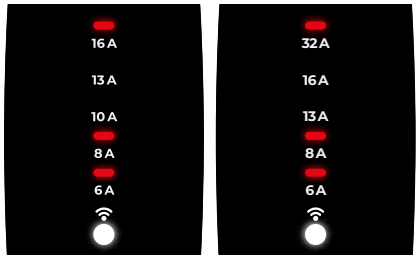
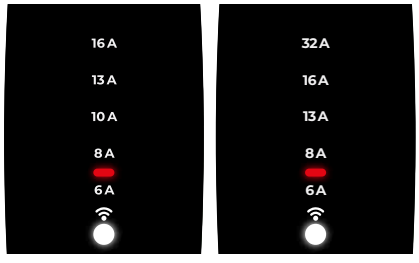
During charging, the LEDs on the control panel indicate the following states:

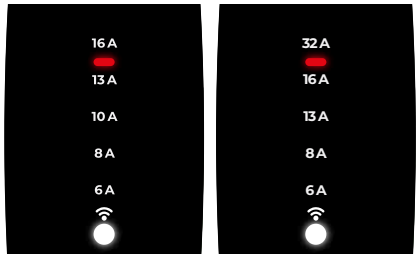
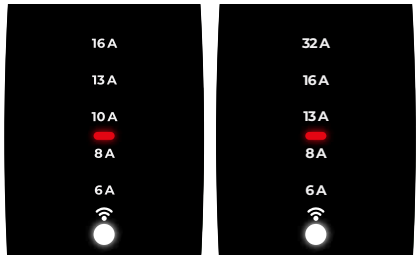
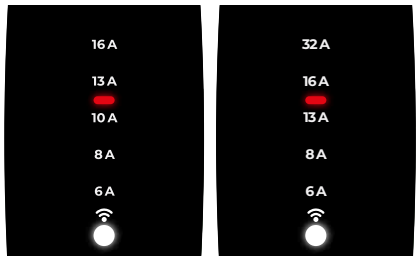
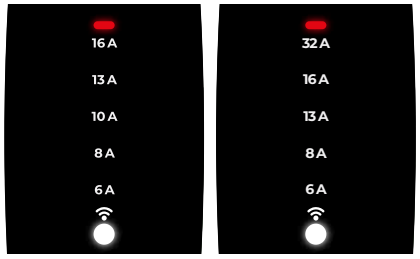
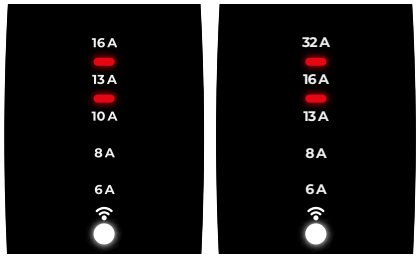
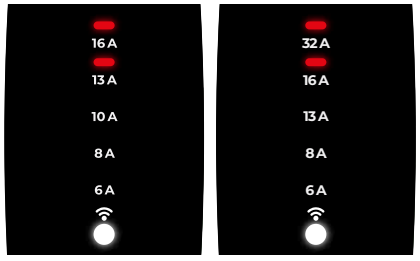
| LED indicators | Description | Note |
|---|---|---|
|  | Initial selftest | The progress of the self-test is indicated by the successive illumination of the LED lights from 6 A to 32 A.<br>During this time, the charger performs a series of tests to ensure safe charging. |
|  | Setting the target charging current | The LED charging indicator shows the set charging current.<br>You can set the current from 6 A to 32 A, corresponding to 4.1 kW - 22 kW for three-phase charging and 1.4 kW - 7.2 kW for single-phase charging. |
|  | Single-phase/ three-phase charging | Single-phase: The LED pulses every 5 seconds.<br>Three-phase: The LED pulses three times every 5 seconds.<br>Even in IT network mode, this state is signaled. |
|  | Wi-Fi or LTE connection status | Unconfigured Wi-Fi<br>- permanent white colour<br>Connected to Wi-Fi, LTE<br>- permanent blue colour<br>Module LTE error<br>- permanently orange colour |
|  | TN network - Light blue | The blue LED in the TN network lights up on the selected Ampere value indicator when charging is activated.<br>When Boost Mode is turned on, the LED will glow bright blue for the duration that Boost Mode is active. |
|  | IT network<br>- Purple colour | A purple LED in the IT network lights up on the selected Ampere value indicator when charging is activated. |

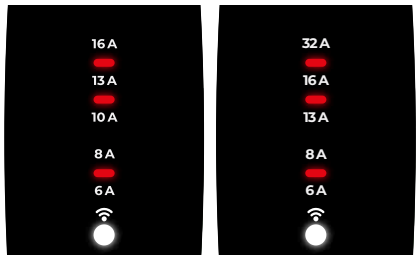
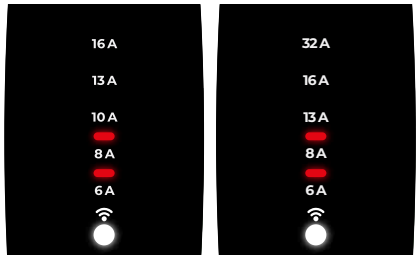
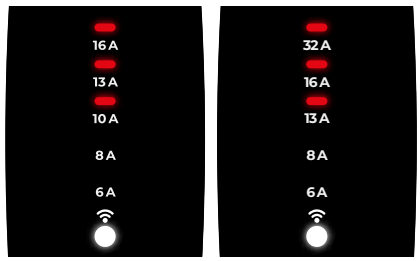
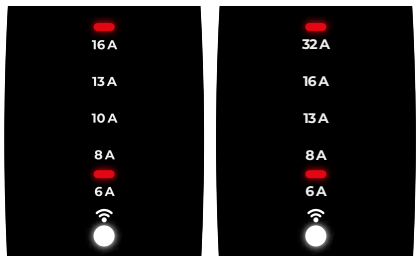
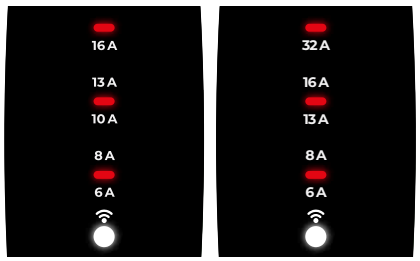
## Error message indication on the charging cable panel

If the charger detects an error, it will be indicated by an LED on the charging cable panel or in the mobile app under the „Notifications“ tab.

In this section of the mobile app, you will find more detailed information about the error.


| LED indicators | Error | Note |
|---|---|---|
|  | Grounding error | No or defective PE wire connection.<br>Disconnect the charger from the socket. If you are using the charger on an IT network, follow the instructions in Chapter 6: Using a Charger in an IT Network System. Otherwise, have the electrical outlet inspected by a qualified professional. |
|  | Network Type Detection Failure | If, after plugging the charger into an IT power socket, the following error message appears, the network probably does not have the correct isolation impedance, or there may be a poor connection of wires.<br>This is most likely a fault in your electrical system, and you should have it fixed as soon as possible. In this case, charging is not possible.<br>Unplug the charger from the power outlet. If the problem persists, have the electrical socket inspected by a qualified professional. |
|  | Failure of N wire test | No or faulty N wire connection. Disconnect the charger from the socket.<br>If the problem persists, have the electrical socket inspected by a qualified professional. |
|  | Failure of automatic current protector test | Initialization or RCD test failed. Disconnect the charger from the socket.<br>If the problem persists, contact your distributor. |
|  | The diode check was unsuccessful | Error in the on-board charging system or vehicle connection.<br>Disconnect the charger from the vehicle.<br>If the problem persists, have the vehicle inspected. |

| LED indicators | Error | Note |
|---|---|---|
|  | Control Pilot automatic test failure | Vehicle communication signal test failed. Disconnect the charger from the vehicle.<br>If the problem persists, check the vehicle connection. |
|  | Current leak detected | AC or DC leakage detected. Disconnect the charger from the vehicle.<br>If the problem persists, have the vehicle inspected. |
|  | Relay error (switching, or relay contact opening) | Detected output voltage when the coil is relay off.<br>No output voltage detected when the relay coil is on.<br>Disconnect the charger from the vehicle.<br>If the problem persists, contact your distributor. |
|  | Adapter detection error* | The charging device does not communicate with the adapter. This is probably due to an adapter issue. The error can be bypassed by pressing the button on the panel for 10 seconds. After performing emergency charging, contact your dealer immediately. |
|  | High temperature error | The temperature of the main control unit has exceeded the maximum limit. Allow the main control unit to cool down. Locate the main control unit away from sources of excessive heat. |
|  | Overvoltage error | The supply voltage has exceeded the maximum limit.<br>The error will automatically disappear once the correct supply voltage is restored and maintained for at least 30 seconds. |

| LED indicators | Error | Note |
|---|---|---|
|  | Undervoltage error | The supply voltage has dropped below the minimum limit.<br>The error will automatically disappear once the correct supply voltage is restored and maintained for at least 30 seconds. |
|  | Power plug overheating error | The socket temperature has exceeded the maximum limit. Allow the socket to cool down or reconnect the vehicle connector.<br>The error will automatically disappear once the temperature drops below the limit. Check the plug for possible corrosion. |
|  | Vehicle requires ventilation* | Your vehicle requires ventilation. Move the vehicle to an open area and press the button on the panel for 10 seconds to continue in emergency charging mode.<br>This is a problem with the electric car. If the issue occurs frequently, contact your electric car dealer. |
|  | Control unit error | A problem with the charger hardware. Try restarting the charger and then try again. If the error persists, contact your dealer. |
|  | Vehicle error* | The vehicle does not respond to a request to change the charging current or to a request to switch off charging at the required time. You can press the button on the panel for 10 seconds to continue in emergency charging mode. If you experience this error repeatedly, contact your electric vehicle dealer. |

In the event of a detected error marked with an * in the user manual (soft error), emergency charging can be enabled at 6A if necessary. You can bypass the error by pressing the button on the charger panel for 10 seconds or by confirming the error in the mobile app. **If any other error message occurs, contact your dealer.**

## Exit charging

To stop charging your electric car, follow these steps:

1. The charging process will automatically stop when your car is fully charged.
2. If you wish to interrupt the charging process before the car is fully charged, stop charging using the vehicle app (if applicable) or the charger mobile app. Alternatively, press the button on the charger control panel 5 times in succession.
3. Once the charging process has stopped, you can safely disconnect the vehicle connector from your electric vehicle.
4. As a final step, unplug the charging cable from the socket. Alternatively, you can leave the charging cable plugged into the socket. In „standby“ mode, the charging cable consumes minimal power.

Note: Terminating charging via the mobile app may not work properly with some EV models. Certain vehicles may report an error if charging is stopped by the charger.

This is not a charger malfunction. Some EVs may not fully support charging standards. If this issue persists, contact your car dealer or the vehicle manufacturer for assistance.

# 6 Troubleshooting

If the charging process stops unexpectedly, check the vehicle‘s on-board system. If the issue occurs repeatedly, inspect the electrical socket connection and the vehicle connection, or contact your dealer. If the control panel indicates a problem with the charging cable, disconnect it, take the necessary precautions, and contact your dealer.

# 7 Using the EV-Manager mobile app

If the EV Buddy 3 or EV Buddy 3 Pro is connected to Wi-Fi, LTE, or Bluetooth, it can be controlled via the EV-Manager mobile app. With Bluetooth control, even in the Offline version, the user can manage charging, download charging history, or schedule charging while within Bluetooth range.

## Installing and setting up the EV-Manager mobile app

**1.**

**Scan the following QR code with your phone or search for the EVMAnager app in Google Play or the Apple Store.**

**2.**

**Install the app EV-Manager.**


**3.**

**Create a user account**

You can use your email and password to log in or sign in with your Google, Apple, or Facebook account.

**4.**

**Assign your charger to the app**

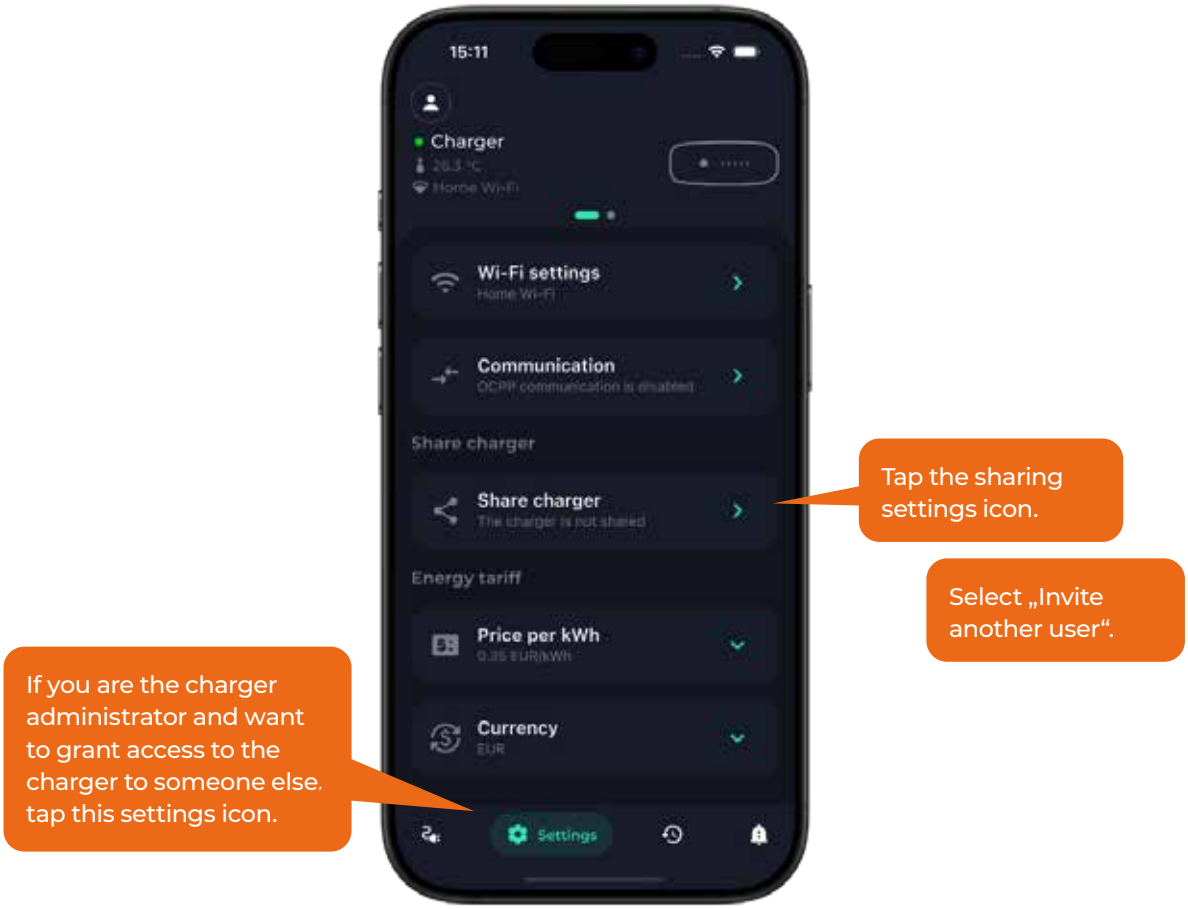
You can assign your charger in the app by scanning the QR code located on the back of the charging cable box. You will then be prompted to name your charger.

## Charger Manager

The user who first assigns the charger to the application becomes the charger administrator.
The administrator can grant access to the charger to other users.

## Inviting other users

As an administrator, you can grant someone else access to control the charger. However, these new users cannot grant access to others. Only the administrator has this capability.





**The user will receive an email invitation.**
You can remove a user's access at any later time.
You can also transfer the administrator role to another user by selecting „Transfer administrator role“.

## Charger controls

| | |
|---|---|
| Boost mode | Charging will temporarily increase to the set charging current for a specified period of time. Boost Mode can be recognized by the light blue color displayed on the charger panel while charging is in progress. |
| 1 phase mode | Press the button for 3 seconds to switch to single-phase mode. The mode can be changed either before or during charging. The current mode is indicated by the LED flashing every 5 seconds at the set current. |
| Remaining Boost Time | Indicates the remaining time until the Boost function ends, displayed in minutes. |
| Charging timer | The charging timer can be set either to the number of kWh to be charged or to the charging duration. In the mobile app, you can set the charging start time and copy your schedule as needed. |

## Setting up the charger

| | |
|---|---|
| Maximum charging current | Maximum current permitted in normal mode and „Boost“ mode. |
| Charging current during fast charging | Adjust the current used in „Boost“ mode. |
| Fast charging time | The total duration of „Boost“ mode, measured in minutes. |
| „Play“ button | Turning charging on and off. |

## Using the charger application program interface (API)

Here, you can find detailed API documentation by scanning the QR code. The Portable Wallbox supports both local and cloud API modes. Using the API, the charger can be integrated into external systems (e.g., Home Assistant, SundayGate, Solar-Station, Clever-PV, Solarmanager, and others). Through the API, the charger can be controlled, and current charging data can be retrieved.

The user can generate login credentials in the mobile app, which the external system uses to connect and control the charger. With the local API, this functionality is available within the user‘s local network, while the cloud API provides access via the cloud and the internet.

# 8 Product warranty

The warranty period is two years from the date of purchase. During this time, the product is guaranteed to be free from defects and malfunctions. Defective products will be repaired or replaced by the manufacturer.

Proof of purchase must be provided when making a claim.

The warranty does not cover defects resulting from improper use that violates the instructions in this user manual, tampering with the product, or visible external damage.

# 9 Technical specifications

| | |
|---|---|
| Charger model | Type 2 - 11kW / 22kW |
| Producer | EVCH420RE1001VC20 |
| Product type | Mode 2 Charging Device (IC-CPD) |
| Box material | Non-flammable polyacrylate, black |
| Dimensions of the box | 245 x 91 x 47 mm (control unit) |
| Net weight | 2800 g - 11kW I 4500g - 22kW |
| Dimensions including packaging | 420 x 395 x 120 mm |
| Gross weight including packaging | 3300g - 11kW and 5000g - 22kW |
| Rated voltage | 230 / 400 VAC |
| Rated current | 16 A / 32 A |
| Rated power | 11 kW / 22kW |
| Own energy consumption | 2.5 W |
| Protection against leakage current | RCD Type B DC 6 mA, AC 30 mA, with automatic test at each connection |
| Connector type | Type 2 (IEC 62196-2), cable length 6.5 m, 10 m depending on product version |
| Type of fork | CEE 5p/16A I CEE 5p/32A I PRO adapter |
| Operating temperature | -25 to +45 °C. At temperatures above +40 °C the charging current can be automatically reduced. |
| Storage temperature | -30 to +60 °C |
| Degree of coverage | IP 67 (box), IP44 (fork and Type 2 connector) |
| Norms and standards | IEC 62752:2016, IEC 62752:2016+AMD1:2018 CSV, SAE J1772, IEC 62752, IEC 62196, 61851-Mode2, 62196-1 and IEC 61851-1, EMC, RoHS, ETSI EN 300 328 V2.1.1 |
| Connecting | Bluetooth, Wi-Fi, LTE |
| Integrated power metering | 3-phase orientation, 3-phase MID certified. |

# 10 Product disposal

This product cannot be disposed of as regular municipal waste. When disposing of this product, follow the European environmental standard 2012/19/EU, which outlines the proper disposal of electronic waste.

Before disposal, separate the packaging and electrical components according to their material types. Dispose of the paper packaging in a paper recycling container.

Other parts of the product must be disposed of at an authorised waste and recycling facility. Ensure that all relevant regulations for proper disposal are followed.

# 11 OCPP settings

The charging cable supports control via OCPP 1.6 or OCPP 2.0. Please note that in OCPP mode, the charger cannot be controlled using the EV-Manager mobile app.

OCPP setup is performed through the mobile app.


## Configuration menu

| | |
|---|---|
| OCPP enabled | Enable this option if you want to use OCPP mode |
| OCCP server URL or IP address | Enter the URL or IP address of your OCPP server |
| SSL mode | If this option is enabled, select „not secure“ or use internal root certificate chain depending on your OCPP settings |
| Authentication | If your OCPP server requires authentication, enter the string listed in the OCPP server setup instructions |
| Vendor | This value is fixed. Your OCPP server may require this information |
| Model | This value is fixed. Your OCPP server may require this information. |
| Free charge mode | Enable this option if you want the charger to work when OCPP is not available |


www.ev-buddy.ch