MANUAL

Power Wallbox

EN

Contact Info

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Document Number: 01/2021

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Important Information

Safety Instructions

You must read and follow the safety instructions on the installation and commissioning of the RCT Power Wallbox.

Pay attention to the precautions and warnings listed below in particular.

Danger!
This symbol indicates danger to life or serious injury due to electric shock from high voltages! Actions marked with this symbol must NOT be performed IN ANY CASE.

Caution!
This symbol indicates additional hazards that may result in damage to the device itself or other consumers. Actions marked with this symbol must be performed by skilled personnel with SPECIAL DILIGENCE.

Notice!
This symbol indicates further important information and special features necessary for successful operation of the device.

Safety notice on the device

Additional safety and operating instructions are attached to and inside the Wallbox. These symbols have the following meaning:

ATTENTION!
Please read, in any case, through the manual first, before opening the enclosure of your Wallbox.

ATTENTION!
After opening the enclosure, dangerous electrical voltages may be present inside.

General safety instructions

Before you start operating the Wallbox, read carefully through this manual and observe all warnings and instructions.

The installation, commissioning, maintenance and repair of the Wallbox may only be carried out by qualified personnel.

RCT-Power GmbH accepts no liability for damage to property or personal injury resulting from failure to observe the installation and operating instructions, from modifications to the Wallbox, from the use of non-approved spare parts or accessories or the use of unqualified specialist personnel.

This Wallbox corresponds to the current state of the art and complies with all existing safety requirements, directives and standards. The safety instructions in this manual intend to ensure proper installation at the place of use and safe operation. Violation or non-compliance with the safety information and instructions in this manual may result in electric shock, fire and/or serious injury.

The Wallbox may only be operated after technically sound installation followed by a technical acceptance by a qualified electrical contractor. Only authorised or qualified personnel may conduct troubleshooting of malfunctions that affect the safety of persons, connected consumers or the device itself.

In the event of incorrect installation or malfunctions that are caused by incorrect installation, always contact the company that carried out the installation first. If the malfunction can still not be rectified, please contact RCT Power technical service department.

Mail service@rct-power.com
Phone +49 (0) 7531 99667 333

The service case occurs when

- The enclosure has been mechanically damaged.
- The enclosure cover has been removed or can no longer be closed or locked.
- Adequate protection against splashing water and/or solid particles no longer seems to be provided.
- The charging sockets and/or the external charging cables have been functionally or visibly damaged.
- The Wallbox does not function properly or has otherwise been damaged.

Please note the following points:

- The Wallbox is adequately protected against the spaying and splashing of water per ingress protection class IP44. However, do not install the device in the immediate proximity of running water or water jets.
- The Wallbox must not be installed in an explosive environment (Ex area).
- The Wallbox must not be installed in locations subject to flooding.
- Additional overvoltage protection may be required by the connected vehicle and/or as per individual national regulations.
- Some countries and/or vehicle manufacturers may require a different tripping condition of the residual current operated circuit breaker (RCD Type B). In this case, contact your distribution partner.

Instructions for use/Maintenance

Observe these instructions for the use and maintenance of your Wallbox:

- The device must ALWAYS be connected to the protective earth conductor of the power supply.
- Ensure that the rated voltage and current of the device comply with the specifications for your local power grid and that the rated power is not exceeded during charging.
- The applicable safety regulations of the country where you operate the Wallbox have to be followed at all times.
- To disconnect the Wallbox completely from the power grid, the supply line must always be interrupted via the upstream circuit breaker(s).
- Never install and operate the Wallbox in confined spaces. You must ensure that the vehicle can be parked at the required distance from the Wallbox for charging and the charging cable is connected without tension.
- Ensure that the Wallbox enclosure front cover is always closed to prevent unauthorised opening.
- DO NOT modify the enclosure or the internal wiring of the device. If you do, you are in fundamental breach of the warranty conditions and the warranty will be voided with immediate effect.
- There are no user-serviceable parts inside the device.
- The device must be repaired and/or installed by qualified personnel only.

ATTENTION!
This Wallbox is designed for connection and operation on 230 / 400V 50 Hz mains voltage. The supply line must be fed from below the enclosure via a suitable cable duct or pipe.

- Use a dry or slightly damp, well-wrung cloth to clean the Wallbox. Do not use any aggressive cleaning agents, waxes or solvents (such as benzine or paint thinner) on the Wallbox. They may blur the displays or damage the varnish.

- The wallbox must NEVER be cleaned with a high-pressure cleaner or similar device avoiding that liquids are hitting the surface of the enclosure at high pressure.

- Check the charging socket and charging cable of your Wallbox for damage at regular intervals.

DANGER!
If, after installation, you notice any damage to the enclosure, the charging socket or the associated charging cable, you must immediately disable the Wallbox.

Contact the RCT Power technical service department under service@rct-power.com.

Local regulations for the operation of electrical devices apply at all times.

Product description

Your Wallbox allows safe and convenient charging of electric vehicles via the integrated charging cable under standard IEC 61851-1, Mode 3.

The wallbox is available at 11 kW or 22 kW charging power. A Type 2 plug is used for AC charging of the electric vehicle.

Depending on the electric vehicle specifications, 1-, 2- or 3-phase charging is possible. The operating status is displayed via a LED display and can also be monitored with a web browser interface.

If required, an RCT Power Storage unit can be included in the charging process. The communication between the Wallbox and the DC- or AC-coupled RCT Power storage system is easily established via the house network and only requires a patch cable connected to the router/home network for setting up.

Wall mounting is easy and safe. The additional installation of an energy meter is not required. A simple and inexpensive RCD TYPE A residual current circuit breaker is sufficient, due to the DC residual current monitoring.

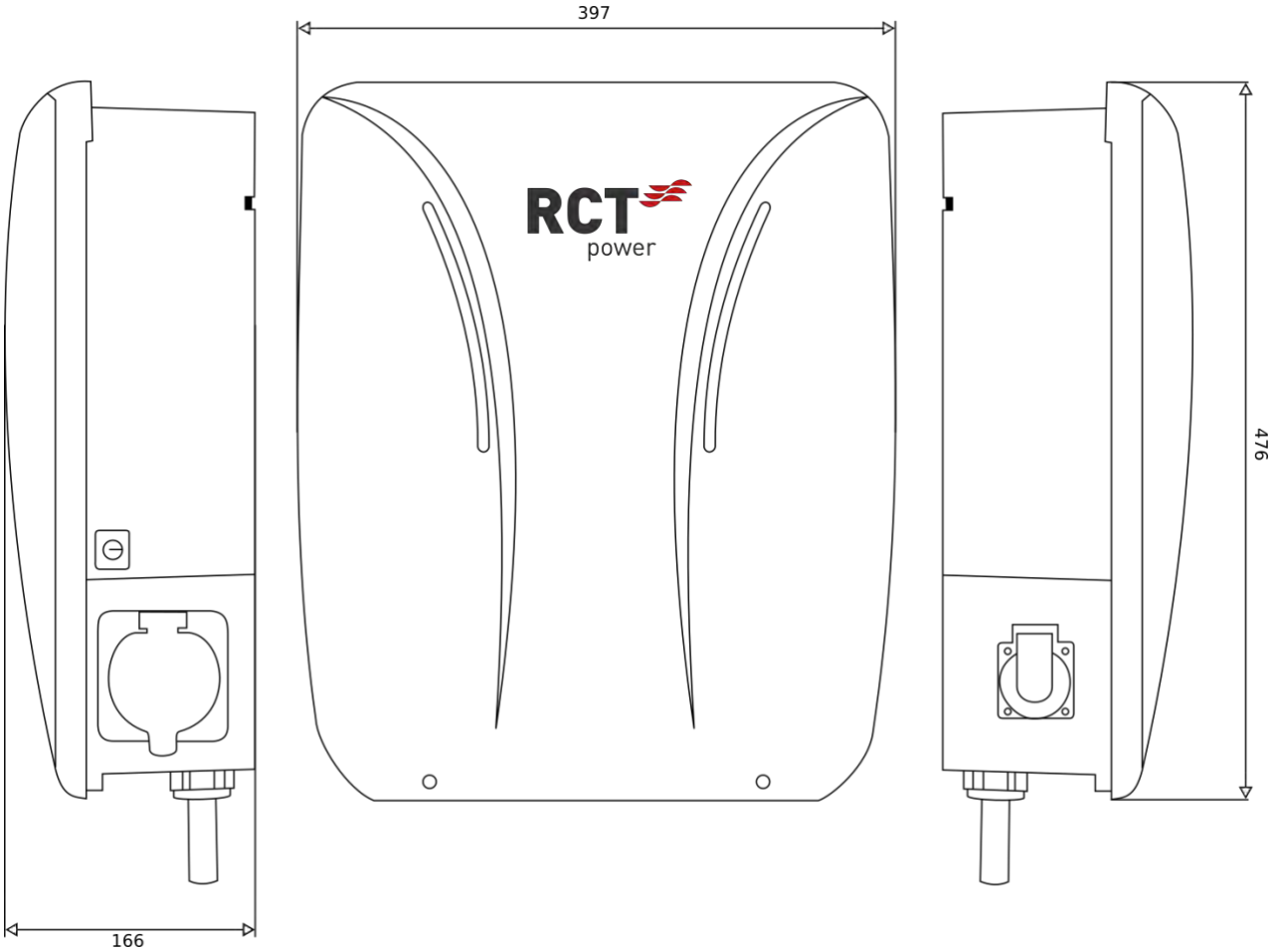
Two status LED lights on the front side of the Wallbox enclosure inform about the current status of the wallbox or the charging status of the connected vehicle at any time.

The Wallbox internal RFID module provides access control and allows for efficient and secure management of the charging process. The integrated energy meters ensure accurate consumption measurement. The Wallbox consumption data can be downloaded in various file formats for further processing in external applications on smartphones, tablets or PCs.

Dimensions and dimensional drawings

The Wallbox is delivered fully assembled and tested. The dimensions are shown in the drawing below.

Plan and side view:
(all dimensions in mm)



Identifying the product variant

The RCT Power Wallbox is shipped with a Type 2 connector and in different variants which have different charging power and cable design. The Wallbox variants can be identified by the type plate on the of the enclosure. Open the enclosure prior to installation and commissioning to check the variant.

To identify your product variant check the model name (xTyy)

and the values for the mains connection (voltage, mains frequency, current).

Detailed information about the Wallbox variants are listed in **“Appendix“** - **“Technical data“** on page 46.

Scope of delivery

Your Wallbox ships with various components that are necessary for installation and proper operation of the device. Check immediately after unpacking whether these basic components are included:

Components	Quantity	Description
Wallbox	1	Wallbox, consisting of a plastic enclosure with a lockable panel, charging cable and Type 2 plug
Manual	1	

The manual is also available for download from the download section of the RCT Power website.

Available wallbox variants

RCT Power offers these Wallbox variants:

Image	Description	Order number
	Wallbox with a charging power of 11 kW with 4 m spiral cable and RFID functionality	350-0001
	Wallbox with a charging power of 11 kW with 8 m plain cable and RFID functionality	350-0002
	Wallbox with a charging power of 22 kW with 5 m plain cable and RFID functionality	350-0003

Installation

As a principle, the installation should be carried out by qualified personnel. **A qualified electrical contractor must always sign off on the initial commissioning.**
Your Wallbox is an electrotechnical device and therefore subject to regulations for the installation in indoor and outdoor environments. The device enclosure meets protection class IP44 requirements. However, you must consider the various environmental conditions, especially with the exterior installation.

Assembly site requirements

The Wallbox was designed for interior and exterior use. You, as the operator of the device, must meet the following requirements on location and installation to ensure proper charging conditions.

- Comply with all local regulations concerning electrical installations and fire and accident prevention.
- All regulations related to low-voltage electrical installations according to IEC 60364-1 and IEC 60364-5-52 apply.
- The mounting surface must have sufficient strength to withstand the mechanical stresses on the attached device.
- An adequately dimensioned supply line for the power supply must be provided at the mounting position. Depending on the equipment variant, this can also be two separate supply lines.
- Select the mounting position of the Wallbox so that charging cable can easily reach the charging socket of the vehicle. The charging cable must NEVER be under tension when connected to the vehicle.
- The Wallbox should not be installed close to footpaths or passageways with a high number of pedestrians. Ensure especially that charging cables are visible and are NOT obstructing the walkways and passers-by.
- The design of the Wallbox allows for operation at high ambient temperatures. Nevertheless, It is recommended though to mount the wallbox, if possible, in a position where it is shielded from direct sunlight to prevent excessive heating of the enclosure. For more information on ambient conditions, refer to the section **"Technical data"** on page 46.
- The socket and bracket for the connector should be between 0.4 m and 1.5 m above the ground.

Wallbox installation - mounting

You will need the following components:

- Drill or cordless drill (not included in the scope of delivery)
- Drill bit Ø 10 mm suited to the mounting surface (not included in the scope of delivery)
- Torx screwdriver or Torx bit TX25 and TX40 (not included in delivery)
- Four ASSY-D dowel screws 8.0-70/60, partial thread, with matching nylon dowels 10 x 56 mm (included in delivery)
- Two socket head screws M5x16 (included in delivery)
- If necessary, spirit level (not included in the scope of delivery)

Proceed as follows:

- Nehmen Sie die Gehäuseblende der Wallbox ab. Drehen Sie die beiden Schrauben an der unteren Seite des Deckels heraus. Heben Sie die Gehäuseblende vorsichtig ab
- Mark the four drill holes for mounting
- Drill the mounting holes (Ø 10 mm).
- Insert the supplied dowels
- Attach the Wallbox to the wall using the supplied screws

Wallbox installation - electrical

DANGER!
Danger to life due to electric shock!

Before you start work on the Wallbox, disconnect the power supply and ensure that it remains disconnected throughout your work.

After the Wallbox has been mounted it is connected to the power grid.

Follow the steps listed below:

1. Confirm, once again, that all line circuit breakers and any other RCDs present in the supply line are deactivated.

2. Remove the enclosure cover of the Wallbox.

2.1 Remove the two screws at the bottom of the cover.

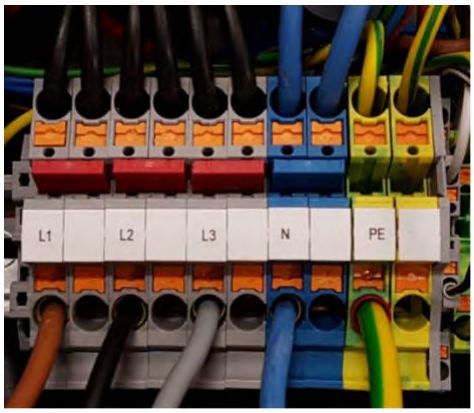
2.2 Take off the enclosure cover carefully.

2.3 Lift the touch protection cover carefully and pull out the plug for the LED INDICATORS. Then remove the touch protection cover.

3. Switch off all internal circuit breakers and residual current circuit breakers in the Wallbox (switch position 0 – OFF).

4. Insert the supply line from below into the corresponding cable gland. Then connect the stripped wires of the supply line to the supply line terminals as per the labelling on the terminal (6 mm²).

4.1 Supply line to terminal block:



Description	Wire colour supply line	Terminal block labelling
Live wire phase L1	BROWN	EUROFUSE NH00/000 63A
Live wire phase L2	BLACK	EUROFUSE NH00/000 63A
Live wire phase L3	GREY	EUROFUSE NH00/000 63A
Neutral N	BLUE	BLUE drain wire
Protective earth/ground PE	GREEN/YELLOW	GREEN-YELLOW drain wire

DANGER!
The colour coding mentioned above is NOT internationally binding. Contact a qualified electrical contractor if individual wires in the supply cable are coloured differently. If necessary, have the supply line checked and replaced.

5. Switch on the circuit breakers and RCDs in the Wallbox (switch position I-ON). The LED INDICATORS will light up green.

6. Connect the enclosure cover back to the Wallbox.

6.1 Reconnect the plug for the LED DISPLAY and reinsert the touch protection cover.

6.2 Place the enclosure cover carefully back on the Wallbox

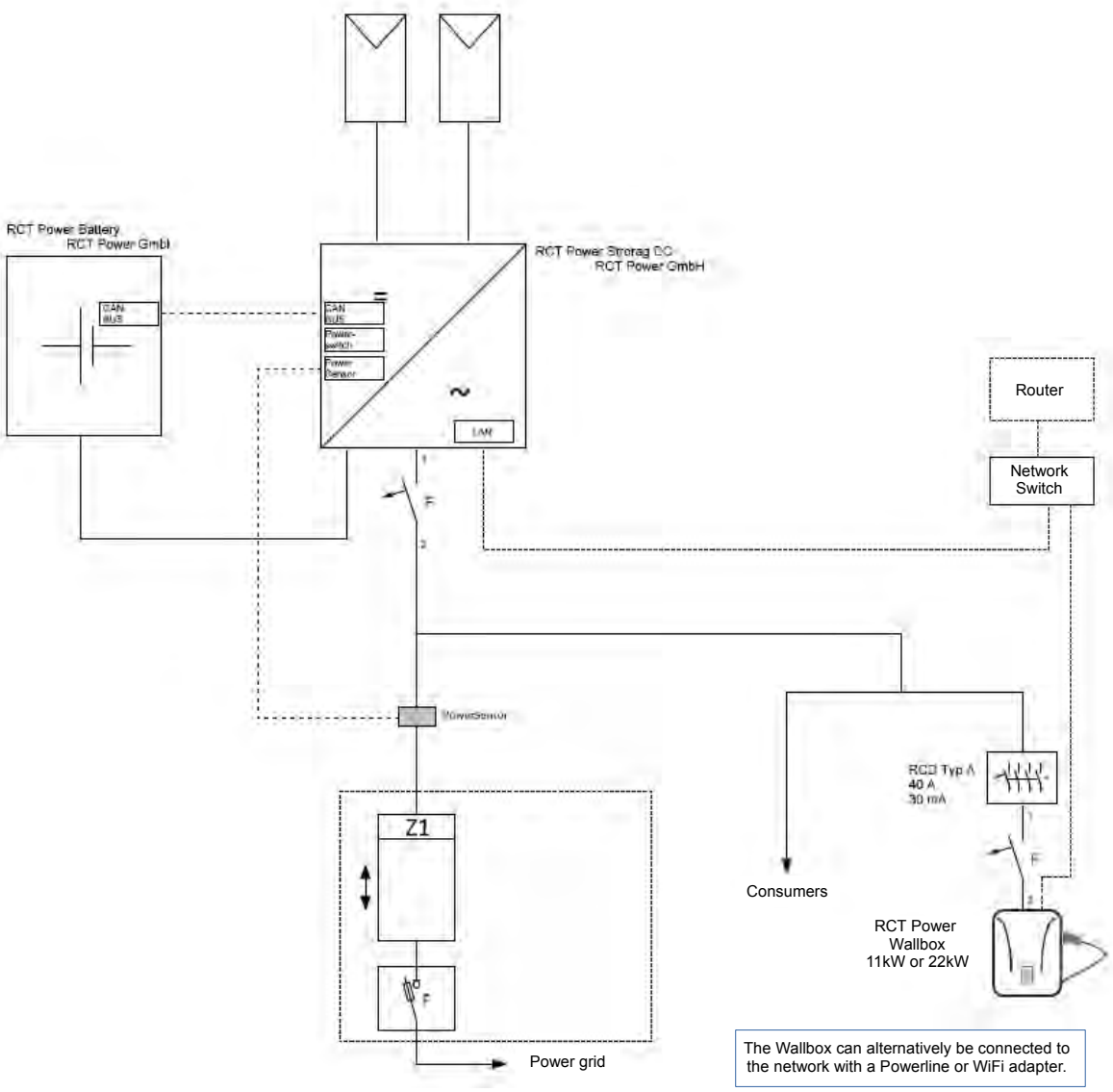
6.3 Reinsert and tighten the two screws at the bottom of the cover.

7. Connect the RCT-eCB1 controller to the home network via a patch cable. See overview wiring diagram.

This completes the electrical installation of your wallbox.

NOTE!
The initial commissioning of the Wallbox should always be carried out together with or by a qualified installer. This person can determine the correct function of the Wallbox or correct potential malfunctions and installation errors.

8. Overview wiring diagram



Commissioning

After the Wallbox is mounted and the electrical installation is completed, you must configure the RCT-eCB1 controller via a web browser interface (see page 20).

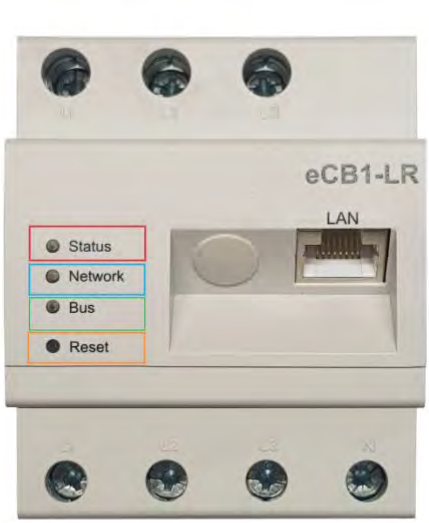
The charging socket of the Wallbox offers an electromotive interlock. Together with the internal RFID module, the charging process is fully controlled. It allows user-specific monitoring and release of the Wallbox.
The Type 2 charging connector has an internal DC fault current module.

This protection is especially required if your electric vehicle does not offer integrated protection against DC fault currents. More information can be found in the manual of your electric vehicle and obtained from the manufacturer or sales partner.

Commissioning the RCT-eCB1 controller

LED states

Status-LED



Green – permanent light	The device is in operation.
Green – flashing slowly	The device is starting.
Green – flashing fast	A firmware update is running.
Red or Orange - permanent light or flashing	An error has occured.

Network-LED

Off	no connection
Green – permanent light	connection is active
Green – flashing	network activity

Bus-LED

Off	The device is not configured.
Green – permanent light	The connection is ok.
Orange - permanent light	No device is detected.
Red - permanent light	There is a Bus error.

The reset function

You can reset the eCB1 network settings to factory settings or simply restart the device by pressing the reset button.

Reset to factory settings
Use a pointed object to press the Reset button for about 4 to 10 seconds.

Restart the eCB1
Use a pointed object to press the Reset button for about 1 to 3 seconds.

Establishing a direct LAN connection

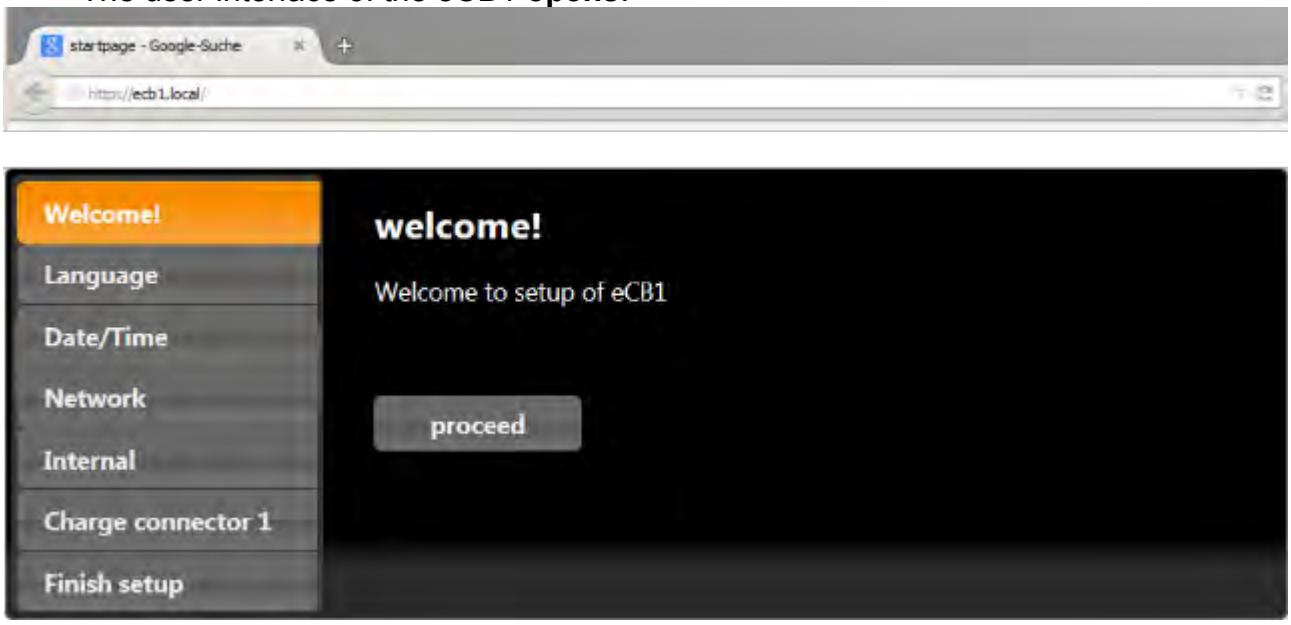
Step 1: Connect the eCB1 with a patch cable to your home network and a PC/Laptop (see graph).

Connect the eCB1 via patch cable to your Router/Network switch

Notice: Make sure only one not yet configured eCB1 controller is connected to your network to avoid configuration conflicts.

1. Start your web browser

2. Call up the URL „**http://ecb1.local**“ (see graph below).
   → The user interface of the eCB1 **opens**.

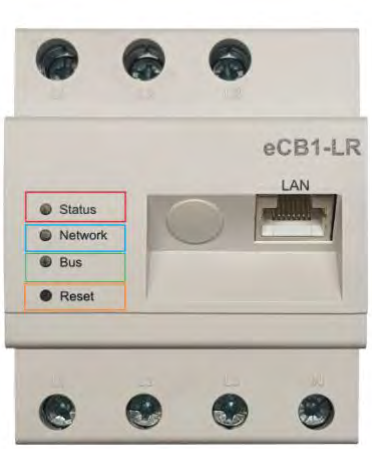


If you cannot open the user interface, please follow this checklist:

1. The name resolution does not work
Access the user interface by using the current IP address of the eCB1.
“(http://<IP>/)“

You can obtain the IP address via the settings menu of your router. (For detailed instructions to access your router‘s settings and user interface refer to the router manual.)

2. The status LED is not illuminated
If the **Status-LED** of the eCB1 is not illuminated, it indicates that it is not provided with power.



Please ensure that at least the L1 phase conductor and the neutral conductor N are connected to the eCB1.

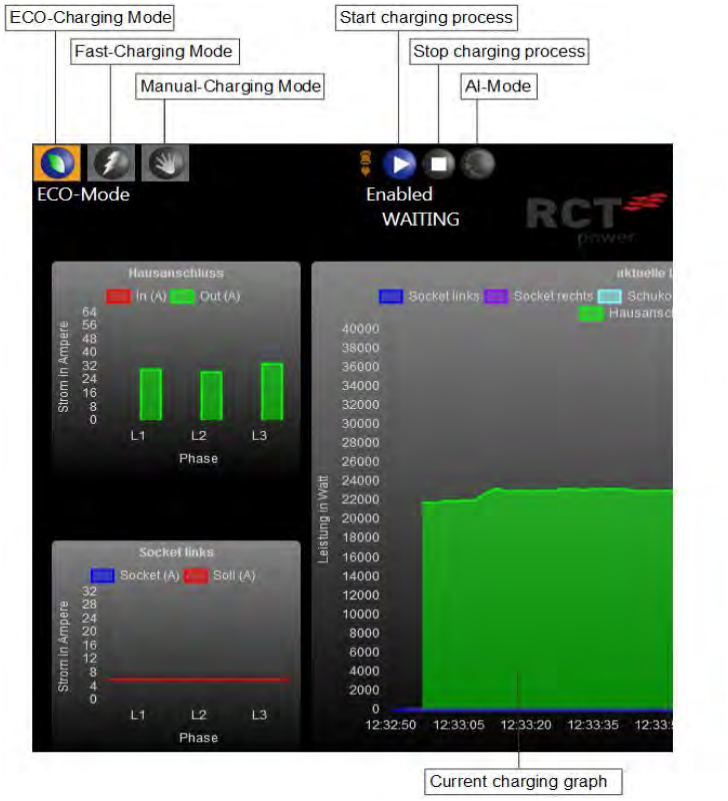
3. The status LED is illuminated or flashes red
If the **Status-LED** is illuminated or flashes red, it indicates that an error has occured.
Please restart the eCB1 by pressing the **Reset button** with a pointy object **for about 1 to 3 seconds.**

4. The Network-LED is not illuminated
If the **Network-LED** is not illuminated, it indicates that the network patch cable is improperly connected to one or both network ports. Please ensure that both ends of the patch cable are inserted correctly into the network ports.

5. The eCB1 cannot not be located in the network
This indicates that the eCB1 is not located in the same local network. Please ensure that the eCB1 is connected to the same router/network switch as your PC/Laptop.

If that does not solve your problem, please reset the eCB1 to its factory settings by pressing the **Reset button** with a pointed object **for about 4 to 10 seconds.**

Web interface explained



ECO-Charging Mode	Ensures minimum charging from a PV-System and, if required, from the power grid. AI- Mode must be deactivated when power is drawn from the public grid.
AI-Mode	Only available if ECO-Charging mode is activated (the interface icon is highlighted in orange). In AI-Mode, charging will automatically start when a predefined level of excess PV power is present and turn off when the PV power is below a minimum level. The thresholds are defined in the “Eco Min-Max Ampere“ settings later in the configuration process.

An explanation of the differences between ECO und AI-Modus can be found on page 23

Fast-Charging Mode	Charging with maximum capacity of the Wallbox is initiated.
Manual-Charging Mode	Set the charging power manually.
Start charging process	Start the charging process.
Stop charging processes	Stop the charging process.
Current charging graph	Displays the current power output at the house connection as well as single power curves of the charger connections.

Explaning the "AI and ECO Mode"

With the key switch located on the side of the wallbox,

you can select three different charging modes.

1 ECO
2 FAST (-Charging)
3 OFF

ECO charging mode
IIn ECO charging mode, your electric vehicle is charged with a configured minimum charging power (see the setting **"ECO Min-Max Ampere 6-32 Ampere"**).

The minimum charging power or rather the minimum charging current depends on your electric vehicle. If this value is unknown refer to the vehicle manual or contact the manufacturer/dealer.

Excess PV power, battery discharging power and grid power are combined as needed to provide the minimum charging power for the electric vehicle. In a situation where the excess PV power is not sufficient to charge the vehicle and an RCT Power storage battery is installed, the difference required to reach the minimum charging power is drawn from the battery storage or the grid! In most cases, the ECO charging mode will discharge the RCT Power storage completely!

Activating the **AI mode** provides additional options. You can charge the electric vehicle exclusively with excess solar power or limit the discharge power of RCT battery storage.

The **AI mode** only works together with the ECO charging mode and can only be activated via the web interface. (See also: **"Web interface explained"**)

Fine tune the **AI mode** to your requirements by adjusting the parameter "**Ref.-Value ECO-mode 0 Watt"**. (See also: **“Important operation settings”**)

You want to charge your vehicle exclusively with excess solar power!
Netzbezug und oder Batterieentladung sollen ausgeschlossen werden:

- Activate the AI mode (see page 23)
- Activate the ECO mode with the key switch or web interface
- Select for the parameter "Ref.-Value ECO mode 0 Watt" = + 200 Watt

Principle function:
If the excess power of the PV system is higher than the electric vehicle's minimum charging power, the Wallbox starts charging. The charging process stops when the additional 200 W cannot be provided. There is a risk that the wallbox will constantly switch on and off, if you choose a value smaller than 200W.

You want to charge your vehicle, if necessary, with a limited and defined support from the RCT battery storage or power grid!

- Activate the AI mode
- Activate the ECO mode with the key switch or web interface
- Select a value for the parameter "Reference ECO Mode": less than - 200 watts (Note: this value corresponds to a desired maximum RCT battery storage discharge power or grid power supply)

Principle function:
If the excess power of the PV system less the set value for "Ref.-Value ECO mode 0 Watt" is higher than the electric vehicle's minimum charging power, the wallbox starts charging. To achieve the required minimum charging power, the battery is discharged in support with the value set in "Ref.-Value ECO mode 0 Watt". If the battery is fully discharged, the maximum permissible power is instead supplied by the grid.
If the sum of excess PV power and the maximum available power in support falls below the electric vehicle's minimum charging power, the charging process stops.

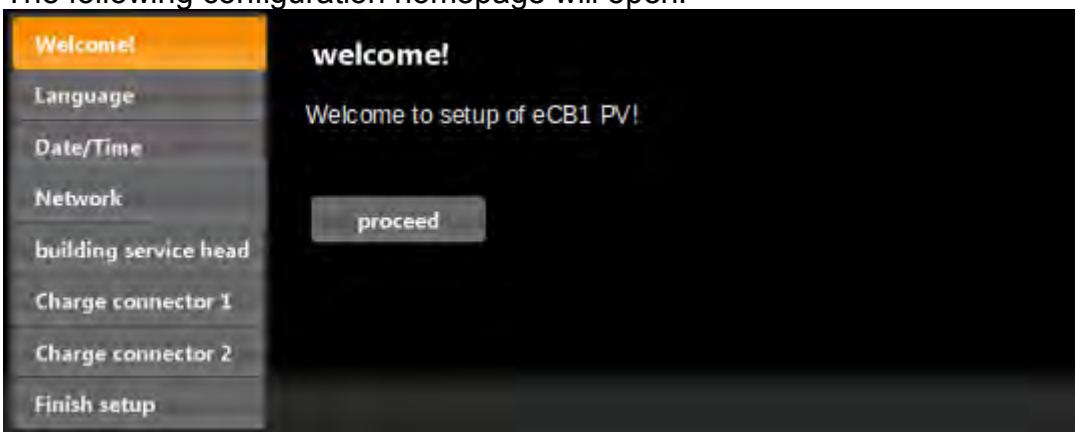
Configuring the eCB1 controller

Open the web interface of the eCB1 by entering its IP address in the address bar of your web browser.

You can use http://ecb1.local for the initial configuration if there are no other already configured eCB1s in your network.

If the DNS name resolution for this web address does not work obtain the IP address by accessing the router settings through the router web interface.

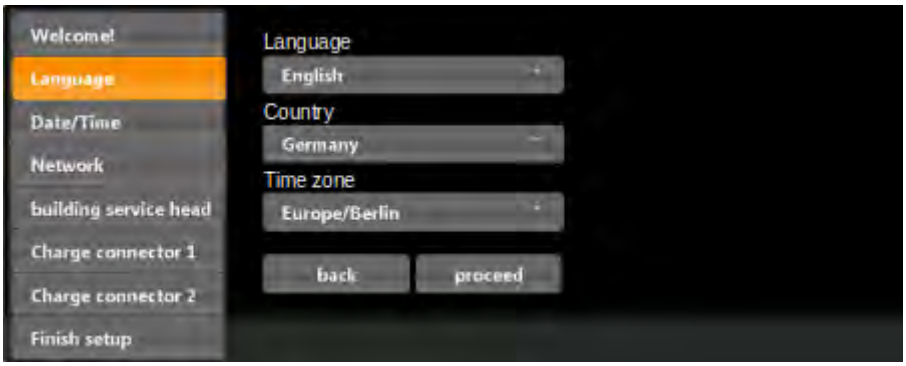
The following configuration homepage will open:



Click **“proceed”** to move to the **“Language”** tab.

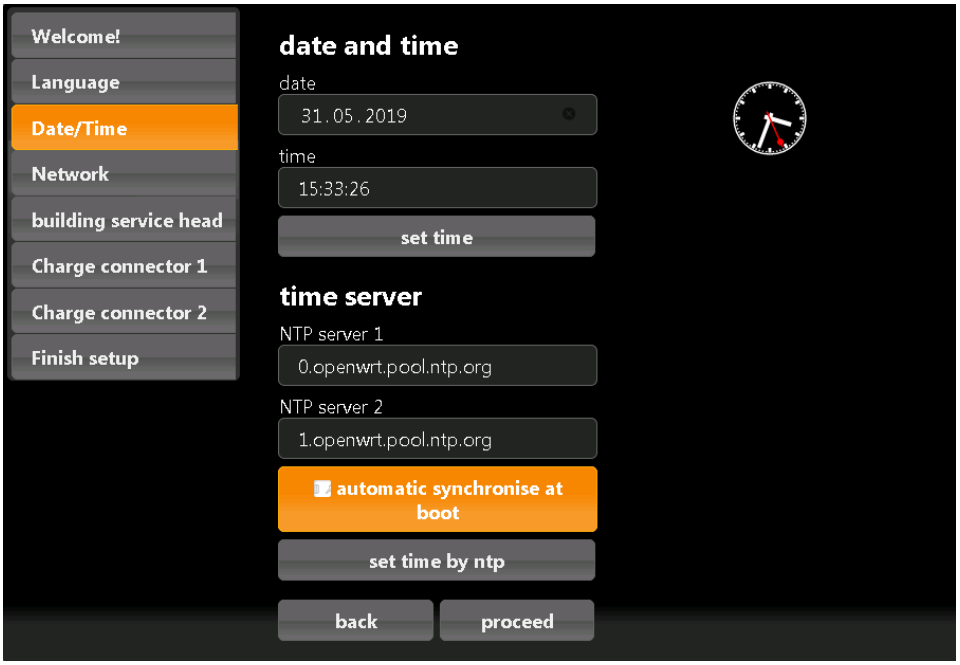
Language and region

In this section, you can set:
- the preferred language
- the country in which you are installing the Wallbox charging station and
- the applicable time zone



Click on “**proceed**” to move to the **“Date/Time”** tab.

Date and time



Here you can either set the date and time manually or have it set automatically.

Manual setting - date and time

Click on the **"date**" field and enter the current date. Continue by clicking on the **"time"** field to enter the current time in the format **"hh:mm:ss"**.

Confirm and save settings by pressing the **"set time"** button.

Automatic setting – time server

The fields **"NTP server 1"** and **"NTP server 2"** are pre-populated with addresses of internet-based time servers.
If you press the **"set time by ntp"** button the date and time will automatically update with information from these time servers. If you want to connect to a different, or your time server, please enter the internet address manually.

Setting a tick mark in the "**automatic synchronise at boot**" field will synchronise date and time automatically at the restart after an interruption (power, network etc.).

After completing the time and date settings, click on "**proceed**" to move to the **"Network"** tab.

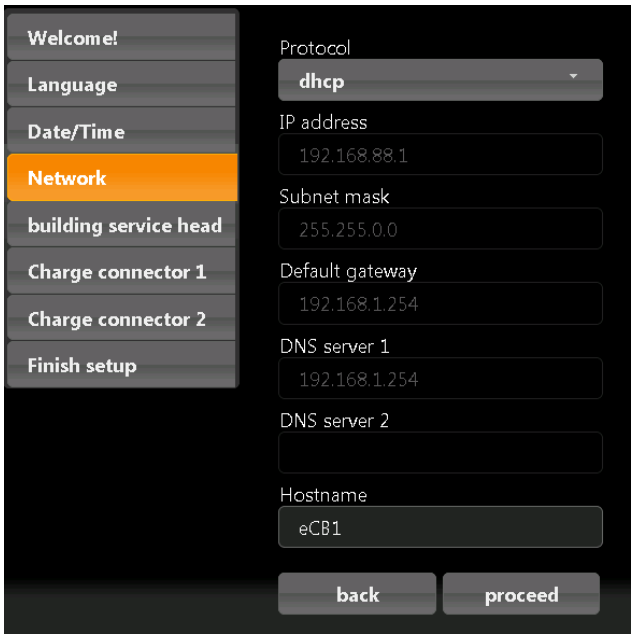
Network settings

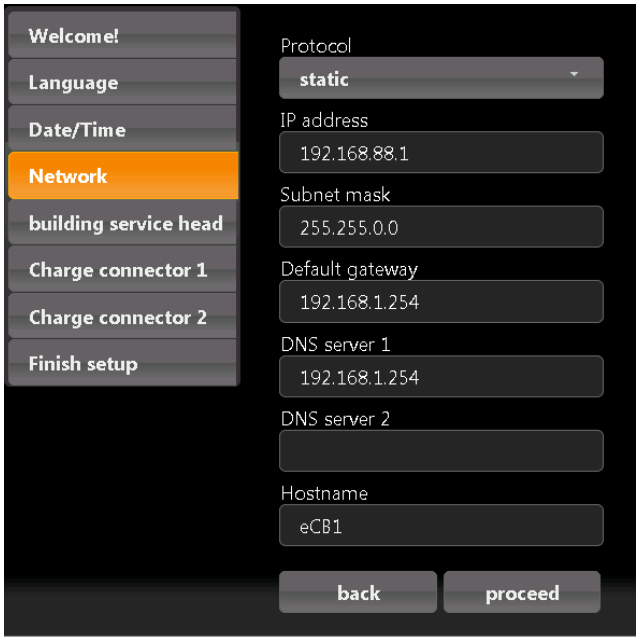
If you select **“dhcp”** from the **“Protocol”** drop-down menu:

The DHCP-Server of your router will automatically populate the missing network settings.

Add an unambiguous name in the Hostname field. The factory default hostname is **“ecb1**.local**“**.

The device should now be accessible on the network using the given hostname **(name**.local**)**.





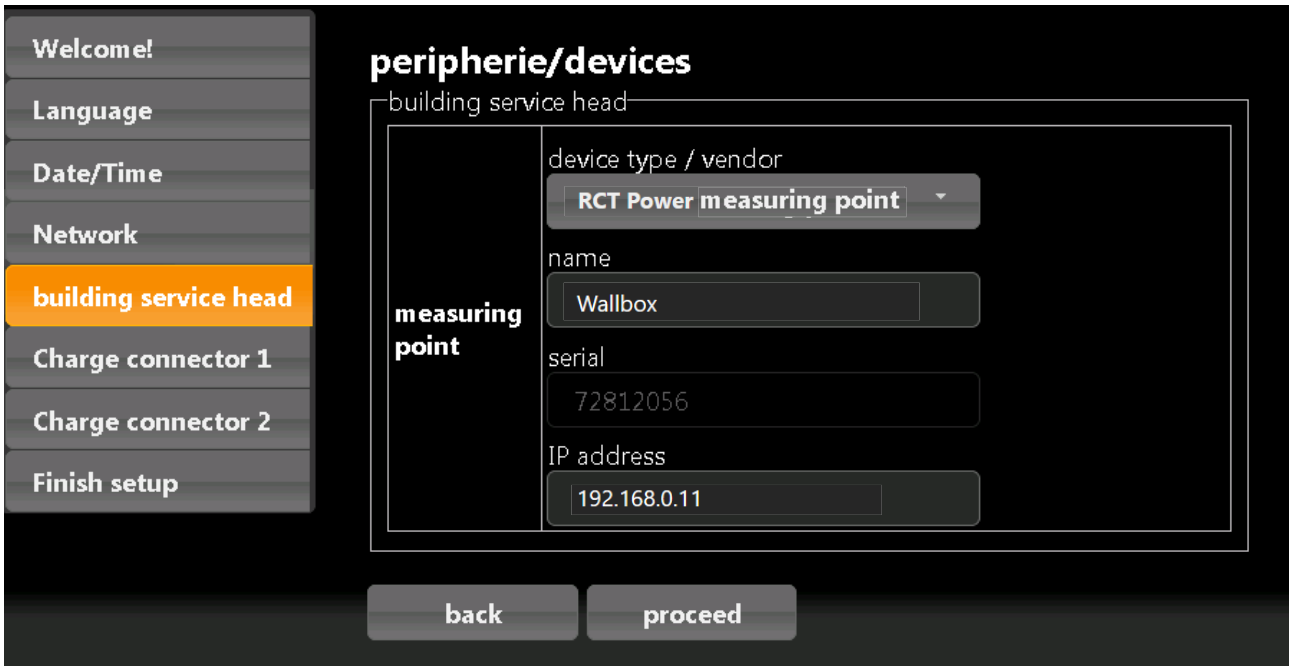
If you select **“static”** from the **“Protocol”** drop-down menu:

You have decided to establish a fixed static network connection to your device and will therefore need to update the network settings manually.

Refer to your router user manual for the required information.

After completing the network settings,
click on **“proceed”** to move to the **“building service head”** tab.

House connection



Select: device type / vendor → **"RCT Power measuring point"**. Please enter the RCT Power inverter's home network IP address (is also shown in the inverter display) in the corresponding section **"IP address"**.

Selection variants for "device type / vendor"
(The RCT Power Wallbox can also be operated in combination with devices from SMA, Fronius and Kostal)

RCT measuring point	An RCT Power Sensor is installed at the house connect
SMA Energy Meter	An SMA Energy Meter or a Home Manager 2.0 is installed at the house connection
Fronius measuring point	A Fronius smart meter is installed which can be read by the Fronius inverter.
Kostal measuring point	A Kostal smart meter is installed at the house connectio (only in combination with Plenticore+, Piko IQ)
no measuring point	No measuring point is installed at the house connection*

*If no device is installed at the house connection the option **"no measuring point"** ca be selected. The house connection stays deactivated. No input is saved in the house connection section.
Note: This selection makes it impossible to enable a PV powered charging or set a house connection limit.

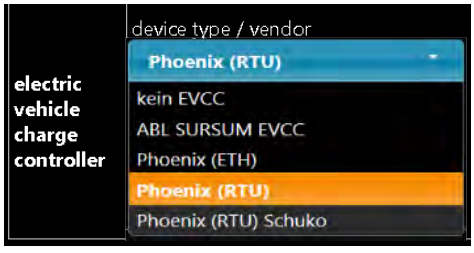
Click on **"proceed"** to move to the **"Charge connector 1"** tab.

Charge connector

Selection options "measuring point" → "device type/vendor"
Select the device type for current measurement that is installed in the supply line to the wallbox.

eCB1 (internal)	= eCB1 PV → for PV load control

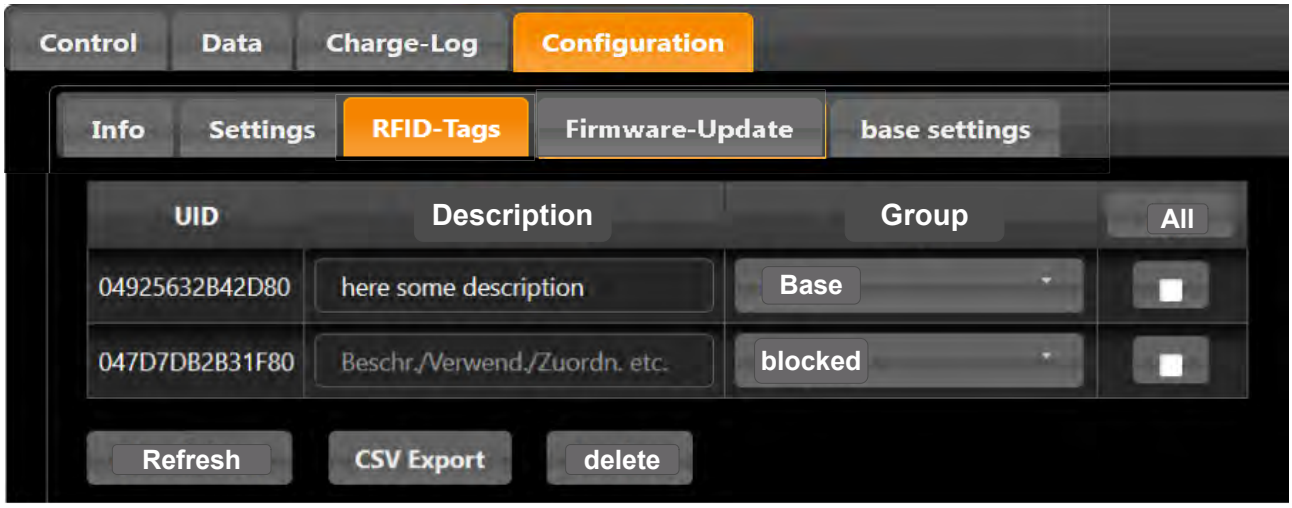
Selection options "electric vehicle charge controller"→ "device type/vendor"
If the charge controler is not preconfigured select **"Phoenix (RTU)"** from the list.



Enter **"1"** in box **"busid"** for charge connector 1.

RFID tag management

Open the **"Configuration"** tab. The submenu tab "RFID-Tags" shows a list of all the RFID cards that have come into contact with the card reader of the Wallbox RFID module.
You can view the status and the UID number of each registered RFID card. You can also perform access control by enabling, activating or deactivating selected cards.



Enabling/deactivating of RFID tags
Hold a new card in front of the RFID module to read the card's RFID tag. The tag will now appear in the list of registered tags. A newly added tag will have the status **"blocked"** as shown in the column titled **"Group"**. Change the status here to enable the card.

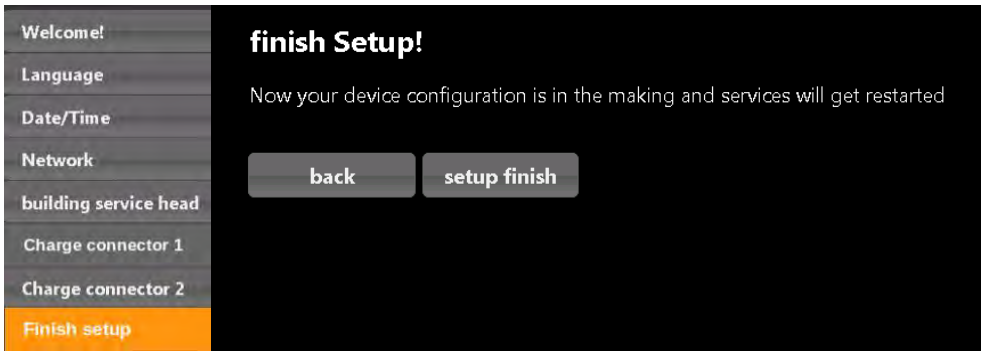
Already activated cards are listed with status **"Base"** in the **"Group"** column.

Mark RFID tags that have been read by mistake or are no longer required with a tick in the column titled **"All"** and remove them from the list by pressing the **"delete"** button.

Press the **"Refresh"** button to reload the list and display the latest information.

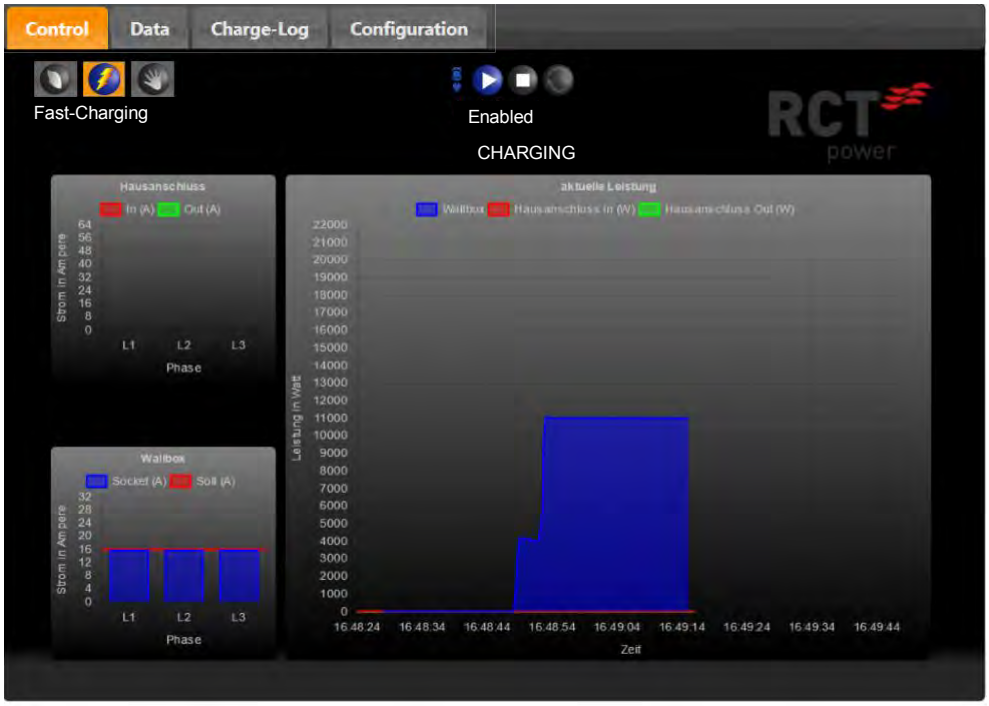
Completing the setup process

Click on the button **“setup finish“** to complete the setup process.



The device will now reboot and save your settings.
If the web interface does not open after five minutes, please refresh your browser.

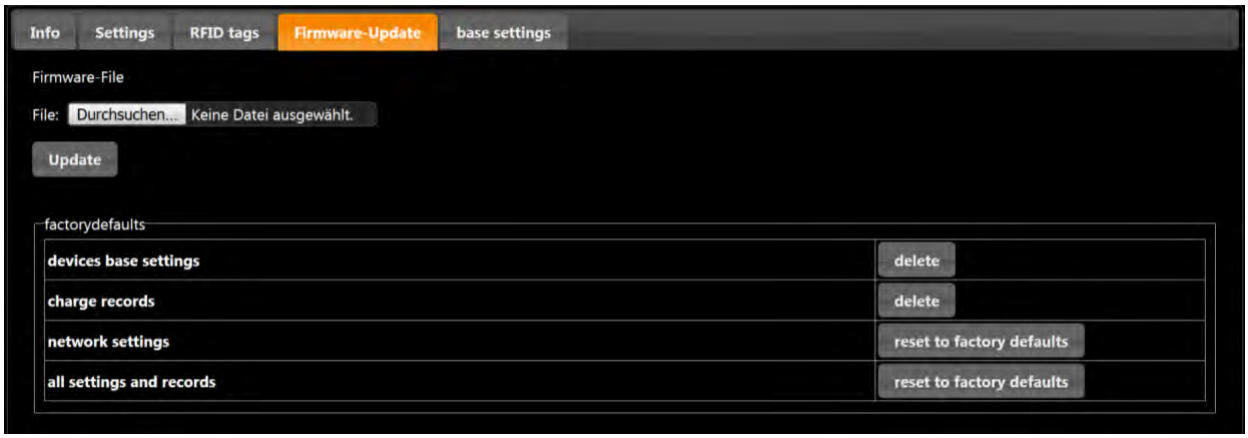
After reboot, the web interface will automatically open in the **“Control“** tab.



Use “**Configuration**“ → “**base settings**“ if you need to adjust the initially entered basic settings.

Firmware updates

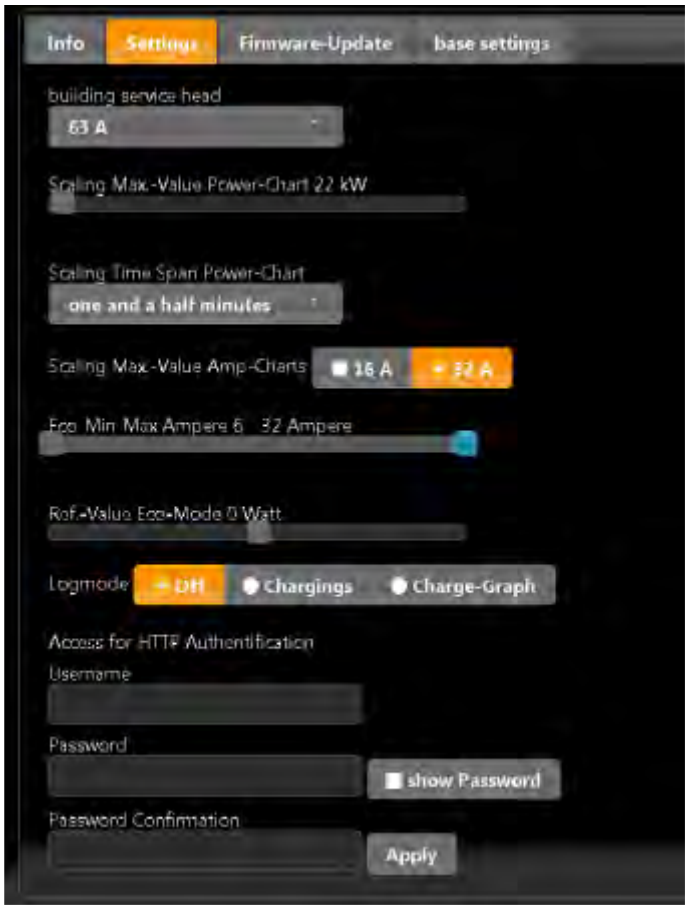
Select tab **“Firmware-Update“** to initiate a firmware update.



A firmware update can potentially solve hardware and software malfunction issues. Please contact the support department of RCT to confirm the appropriate action.

Mail: service@rct-power.com

Important operation settings



1) Building service head

Select the maximum value of your house connection.
It is mandatory to install a transducer if your house connection exceeds 63 A. Please contact a qualified electrical contractor for further information regarding the transducer.

2) Scaling Max.- Value Power PV-Chart 22 kW

Set the maximum scale value for the power diagram displayed under the tab “Control”. Select the desired value by dragging the slide bar to the left or the right. Your selection will only change the scale of the power chart and not change any charging process settings.

3) Scaling Time Span Power-Chart

Set the time intervals for the display of the power chart. (e.g. one and a half minutes). Check the effects of the changed settings to the chart display by returning to the “Control” tab.

4) Scaling Max.-Value Amp-Charts. 16A / 32 A

Set the maximum ampere values to be displayed in the chart. Check the effects of the changed settings on the chart display by returning to the “Control” tab.

5) Eco-Min-Max Ampere 6-32 Ampere

This setting is dependent on your electrical vehicle. Some vehicles require a minimum charging power of 8 or 10 A (or higher).
f the **ECO-Charging Mode** is selected and the excess power
(= power from PV system – house connection power consumption) is less than the required minimum charging power, the vehicle will continue to be charged. The shortfall in power (up to the minimum kW threshold) will be drawn from the grid. A more detailed description for this setting can be found in the chapter - Explaning the "AI and ECO Mode" on page 23.

6) Ref. -Value ECO-Mode 0 Watt

Use this setting to determine the amount of grid power that is permitted for charging the electric vehicles. If the value is set to “0 Watt” no power supply from the grid is allowed. A more detailed description for this setting can be found in the chapter - Explaning the "AI and ECO Mode" on page 23.

7) Logmode

Off	No visualisation of the charging process
Chargings	Tabular display of the charging process
Charge-Graph	Tabular display of the charging process and a graph of the charge curve

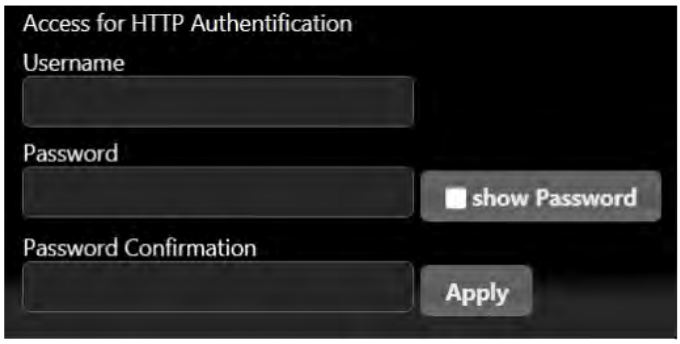
8) Access for HTPP Authentication

Set up a password protected user to protect your system from unauthorised access.

User data and authentication

User data requirements:

Username:	3 – 30	characters
Password:	8 – 255	characters



Deleting the user data

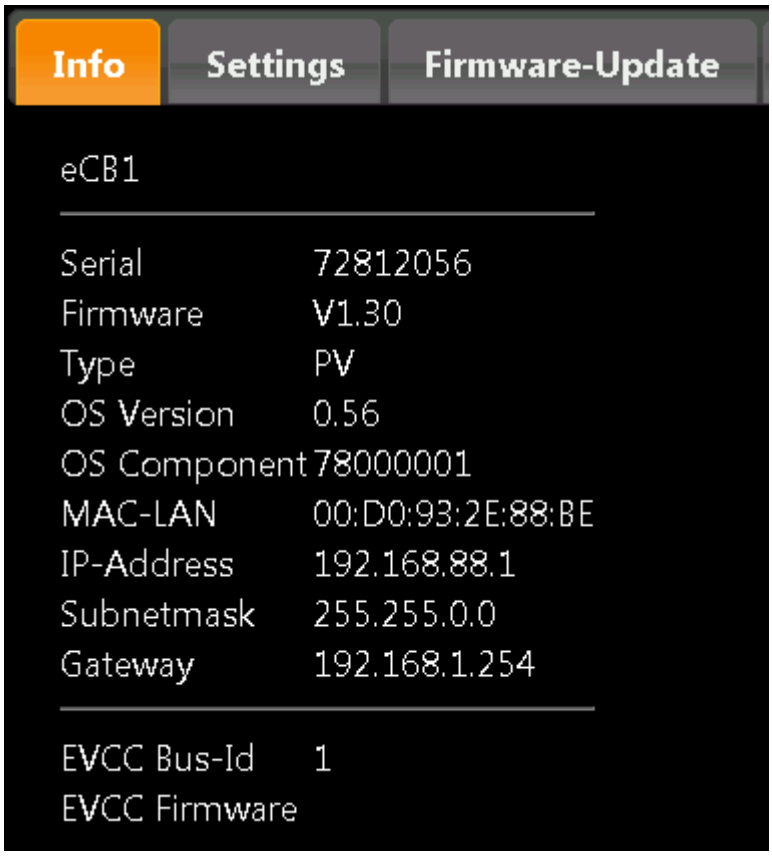
1. Open the web interface and log in
2. Go to **"Configuration"** → **"Settings"**
3. Delete the "Username" and the "Password"
4. Click **"Apply"** to confirm the changes

Changing the user data

1. Open the web interface and log in
2. Go to **"Configuration"** → **"Settings"**
3. Delete the current "Username" and/or "Password"
4. Enter a new "Username" and/or a new "Password"
5. Click **"Apply"** to confirm the changes

Info

Under Tab **“Info“** a useful list with internal and network settings data of the eCb1 is available.



Charge-Log

Check the current status of your charging connections under tab **"Charge-Log"**.

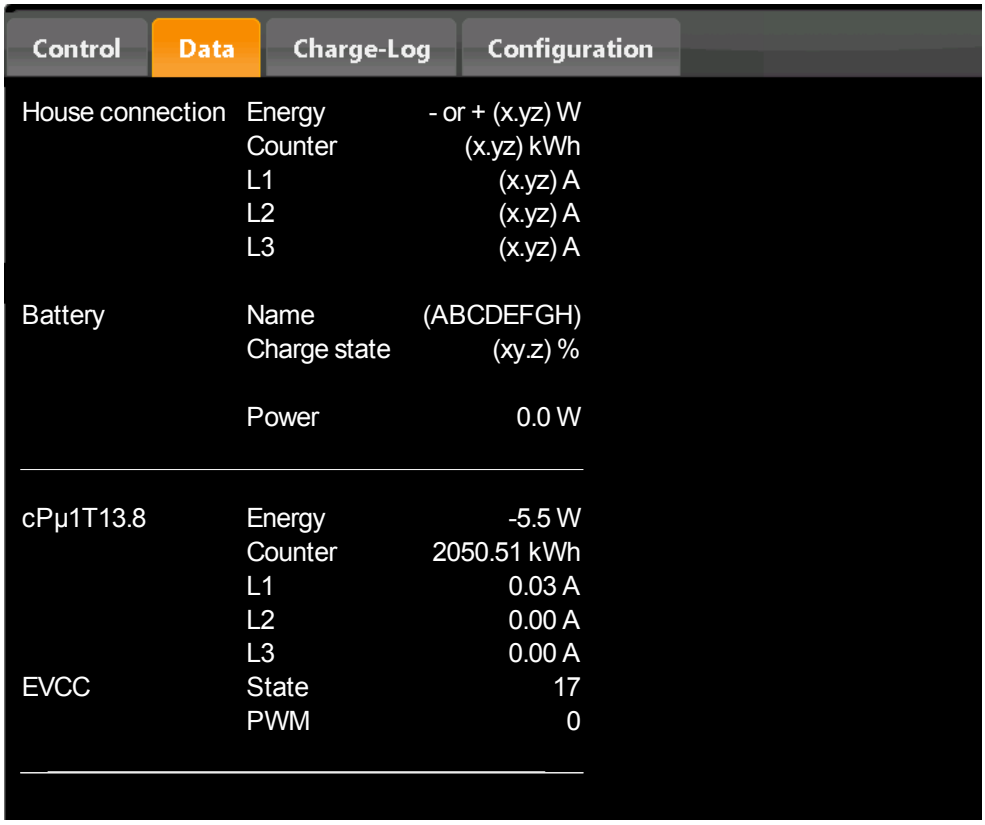
The state of the charging connection switches from **"No current charging"** to e.g. "**Charging for 1 minute, 0.8kWh**" during the charging process.

The following options allow you to display, print and export your charging data depending on your preferences and needs

Copy	Copy charging data
Excel	Export the charging data as an Excel file
CSV	Export the charging data as a CSV file
PDF	Export the charging data as a PDF file
Print	Print directly
Column visibility	Hide columns
Restore visibility	Restore hidden columns

Table of important system performance data

Under the tab **“Control”**, performance data of the system is displayed in graphs. The tab **“Data”** shows this data in tabular format.
(Below is an example with a photovoltaic system, a solar battery and the cPµ1T13.8)



House connection	Energy	in W → (-) sign = mains supply ; (+) sign = grid feed-in
	Counter	in kWh → total power supplied from mains
	L1, L2, L3	Current flow in the individual phases
Battery		Battery state of charge, output and power consumption.
cPµ1 T13.8	Energy	Strombezug von -5,5 W
	Counter	Power consumption of the cPµ1 = 2050,51 kWh
	L1, L2, L3	Current flow in the individual phases
EVCC		Internal data

Wallbox operating status

If there is a malfunction during operation, it will be indicated by the LED display at the front of the Wallbox and also by the LED of the RFID module.

Wallbox Status LED

The LED status indicators on the front of the wallbox reflect the current operating status. The LEDs can:

- light up (permanently on).
- not light up (permanently off).

During normal operation, the following colours and states are displayed:

LED color code	**Description**
Green	The wallbox is ready for operation. The vehicle can be connected for charging at any time
Blue	The vehicle is currently being charged
Red	A charging error has occurred (contact service technician)
Green/Yellow flashing	An RCM error has occurred (contact service technician)
Off	No power supply (check external fuses) / Error at charging point (contact service technician)

Charging

The real charging time depends on the vehicle battery. Another factor is the residual energy still stored in the vehicle battery. It is therefore not possible to make a definite statement on the required charging time.
Over time, you are likely to determine the usual charging time for your vehicle in an empirical way. You can then adjust your charging cycles to suit your needs.

Follow the steps below to charge your vehicle.

1. Check the LED status indicators on the front of the Wallbox.
The LEDs light up green when the Wallbox is ready for operation.

2. Open the charging socket on the vehicle.

3. Plug the charging cable into the charging socket on the vehicle. The vehicle must be parked so that the charging socket on the vehicle can easily be reached from the Wallbox. There must be NO tension on the charging cable during the charging process.

NOTE!
If no RFID authentication is required for the charging socket, the charging process starts immediately. Skip Step 4 in this case.

4. Use your RFID card to register on the RFID module of the Wallbox. To do so, hold the card in front of the correspondingly marked spot on the Wallbox.

For more information, see the section "RFID module" on page 44.

5. Select the desired charging mode with the key switch.

The ECO mode can be enhanced with an additional AI function in the RCT-eCB1 controller.

This can be set via the web interface (see page 20 and 23).

6. Starting the charging process

6.1 Normal operation

As soon as the charging process starts, the color of the status LED changes to blue.

6.2 Operation with activated time control

If time control is activated in the Wallbox, the charging process is not started until the time window reserved for charging has been reached. Outside this window, the Wallbox is marked as reserved as long as the charging cable is plugged into the socket. The status LED continues to light up green, but changes to blue when charging starts.

NOTE!

If the charging cable is unplugged in the reserved state, the reservation for the charging socket is deleted. The registration process has to be restarted.

The time control is activated via the wallbox and must cover a fixed period (start time - end time). Besides, individual weekdays can also be activated or de-activated.

Time control can be bypassed temporarily when individual RFID tags are marked as "master" tags. Charging jobs enabled with these tags ignore the time control settings and allow vehicles to be charged immediately.

NOTE!

The time control can only function flawlessly and long-term if the Wallbox has access to a time server (NTP)!

7. In the basic configuration, only the vehicle terminates the charging process. The Wallbox output message is that charging cable can be removed from the socket. The LED status indicator lights up green. When charging is complete, disconnect the cable from the socket on the vehicle. If the vehicle is not sufficiently charged after the Wallbox has reported the completed charging process, contact the vehicle service partner for advice.

NOTE!

If a fault occurs during or after the charging process, it will be indicated by the wallbox's LED status display. The chapter "Wallbox Status LED " (page 40) describes how to recognize operating and error states and the required actions.

NOTE!
If a time control is activated in the wallbox, an ongoing charging process is terminated as soon as the pre defined charging time window has closed.

RFID module

The integrated RFID card reader of the Wallbox can be used to set up user identification and manage the charging process for the authorised user group.

Registration at the Wallbox is established via RFID-compliant transponders and/or RFID access cards.

The RFID module sits in the middle of the Wallbox. A red LED light indicates the status of the RFID module during registration and operation.

In normal operation, the LED flashes for a short time every 6 seconds. This indicates that the RFID module is ready.

Before you can perform a charge with the Wallbox, the RFID cards must be registered via the web interface.

If you have connected a charging cable and want to initiate the charging process, you must present a valid RFID card to the RFID module.

If the card is already stored in the module database and is recognized by the RFID module, the LED lights up for 1.5 seconds and the charging process is initiated.

If the LED flashes briefly for three times, the RFID card is not activated and the charging process is not initiated.

In case your RFID card is not accepted, wait a few moments and then try again. If the Wallbox is still not activated, your RFID card might either be defective or the card details are not stored in the module database.

Interruption of operations and proposed solutions

The Wallbox performs various internal test routines to ensure proper and safe operation. In the event of a fault, you must, at first and beyond doubt, establish what kind of fault exists. You can then take appropriate actions to restore operation.

DANGER!
Dangerous **life-threatening** voltages may be present inside the Wallbox!
The opening and subsequent work on the Wallbox should only be carried out by qualified personnel.

Possible malfunctions

Malfunction	Possible cause	Proposed solution
The LEDs have no function	The Wallbox is not supplied with voltage	The external power supply to the wallbox is interrupted. Check the upstream circuit breakers in the supply line.
		An internal RCCB of the wallbox was triggered. Check the status of the RCCB and use the toggle lever to switch it on again if necessary.
	The LED indicators of the wallbox are defective	Defective Wallbox LED indicators must be replaced. In this case, contact your local sales partner.
The electric vehicle is not recognized	The charging cable is plugged incorrectly into the vehicle	Remove the charging cable from the vehicle and plug it in again. Make sure that the plug sits correctly in the vehicle socket.
	The vehicle is incorrectly configured	Check the vehicle settings and reset them, if required, to the default settings.
The LEDs display an error sequence	The Wallbox detects a malfunction	All errors indicated by the RFID module's LED relate to the RFID registration. If the error persists, re-register the RFID cards or contact your local sales partner.

Appendix

Technical data

Mains connection	supply line of 5 x 6 mm^2
Rated voltage	230 / 400 V
Rated current	16 A/ 32 A, 3-phase
Rated frequency	50 Hz
Max. charging power	11 KW/ 22 kW
Circuit breaker devices	DC residual current detection 6 mA (installed) and circuit breaker C16 A/ C32 A (installed, dependent on Wallbox variants) required on site: Residual current circuit breaker type A, 40 A, 0.03 A
Charging socket / charging cable	1 x Type 2, 16 A/ 32 A
Charge controller	1 x EVCC
Wallbox access	RFID Mifare smart card
Load management	dynamic
Umgebungstemperatur	-30 to 50° C
Lagertemperatur	-30 bis 85° C
Relative humidity	5 to 95% (non-condensing)
Protection class	I
Overvoltage category	III
Pollution degree	3
Enclosure class	IP44
Wallbox dimensions	476 mm x 397 mm x 166 mm (HxWxD)
approx. 10,5 kg	approx. 9 kg

Standards & Guidelines

The Wallbox complies with the following standards and protection classes:

General standards

Laws and directives	Explanation
2014/30/EU	Electromagnetic Compatibility (EMC) Directive
2011/65/EU	Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS 2) Directive
2012/19/EU	Waste Electrical & Electronic Equipment (WEEE) Directive
ElektroG	Electrical and Electronic Equipment Act

Equipment safety standards

Norm	Explanation
IEC 61851-1 Ed 2.0:2010	Conductive charging systems for electric vehicles- Part 1: General requirements
IEC 61851-22 (69/201/CD)	Conductive charging systems for electric vehicles Part 22: AC wall box for electric vehicles
DIN EN 61851-1:2012-01	Conductive charging systems for electric vehicles- Part 1: General requirements
E DIN EN 61851-22:2011-04	Conductive charging systems for electric vehicles Part 22: Alternating current wallbox for electric vehicles
HD 60364-7-722:2012	Low voltage electrical installations - Part 7-722: Requirements for special installations or locations - Supply of electric vehicle

For Germany only

Standard	Explanation
DIN VDE 0100-722:2012-10	Low-voltage electrical installations - Requirements for special installations or locations – Supplies for electric vehicles

Protection class & Ingress Protection

Protection class/ Ingress Protection	Explanation
Protection class I	All electrically conductive parts of the equipment are connected with low resistance to the protective conductor system of the fixed installation.
IP 44	Degrees of protection provided by enclosures: Protection against solid particles > 1 mm and protection against splashing water from any direction

Warranty / Guarantee

Warranty and guarantee conditions

The RCT Power GmbH grants the legally prescribed warranty period of 24 months on the present product. A guarantee with the same duration is also granted for the country in which the product was purchased. If the product is operated in another country, the legal regulations for the country in which the product was purchased still apply. The warranty, like the guarantee, cannot be transferred under any circumstances.

If modifications of any kind have been made to the product that have not explicitly been approved by RCT Power GmbH or described in a manual for authorized service partners, the warranty obligations on the part of the manufacturer expire with immediate effect.

Exclusion of claims for damages and liability

This includes claims which can be attributed to the following causes:

1. Deterioration due to normal wear and tear, corrosion, damage, accident, incorrect storage or operation, lack of reasonable and necessary maintenance.

2. Wallbox installation services performed by unauthorised persons (by an unauthorised electrician) or the customer itself.

3. Repairs or interventions carried out by unauthorised persons, companies or by the customer itself to remedy defects in the Wallbox.

4. Use of non-original spare parts.

5. Incorrect maintenance and/or use due to non-observance or non-compliance with the operating instructions.

6. Acceptance of further damage to the device and its surroundings e.g. continued use of the device after the fault or malfunction has been detected.

7. Damage due to mechanical overuse.

The repair or replacement of faulty parts does not extend or restart the warranty period according to the warranty conditions.

CAUTION!
If problems occur during the operation of your product, please immediately contact your local distributor partner or an authorised representative and clarify to what extent this malfunction is covered by the warranty and/or guarantee. Do not make any changes or repairs to your product yourself under any circumstances!

RCT Power GmbH assures the proper operation of this product after delivery within the scope of the legally valid warranty.

The warranty is limited to such damages which are due to normal use and to obvious material or manufacturing defects.
In such cases, the manufacturer, in cooperation with the local distributor partner, will attempt to restore the proper function of the product.
Any costs incurred for transport of the product shall be borne by the customer.

If the serial number of the Wallbox has, through the fault of the customer, been removed, altered or made illegible, all rights granted under the terms of the warranty shall expire and only the statutory warranty period shall apply.

Our customer service for your questions and complaints:
On working days from 9:00 - 12:00 and 14:00 - 16:00 under the telephone number:
+49 (0) 7531 99667 333, and by e-mail at: service@rct-power.com

Please have the serial number and product name of the Wallbox ready!

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