HARDY BARTH
emobilität

Smartmeter

eCB1-LR

Configuration manual

English

Contact data

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Contents

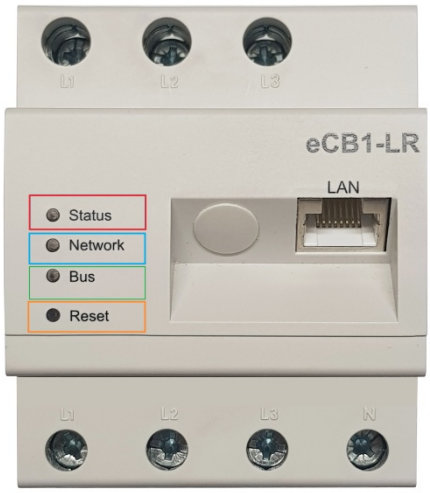
Note

To prevent confusion between the different models of the eCB1, be sure to check the model specification on the package.

General information about eCB1
Meaning of LED status

Status-LED

- **Permanent green** — The eCB1 is ready.
- **Slowly flashing in green** — The device is starting.
- **Quickly flashing in green** — A firmware update is running.
- **Glowing or flashing in red or orange** — An error occurred.



Network-LED

- **Off** — no connection
- **Permanent green** — connection active
- **Green flashing** — Network activity

Bus-LED

- **Off** — Device is not configured.
- **Green** — connection is okay.
- **Orange** — No device detected.
- **Red** — BUS error

Reset function

You can reset the ecB1 to network settings or simply restart the device by pressing the reset button. The time period of pressure applied is important.

Reset to factory settings
With a pointy object, press the Reset button for 4 to 10 seconds.

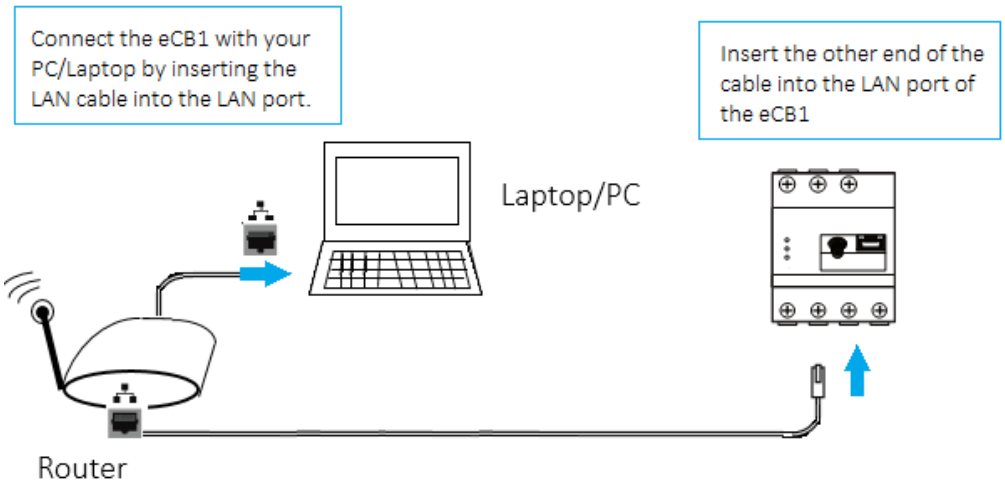
Restart the eCB1
To restart, use a pointy object to press the Reset-button for 1 second to 3 seconds.

The installation and configuration of the described devices should be executed in the stated order.

Setup of direct LAN connection to the eCB1

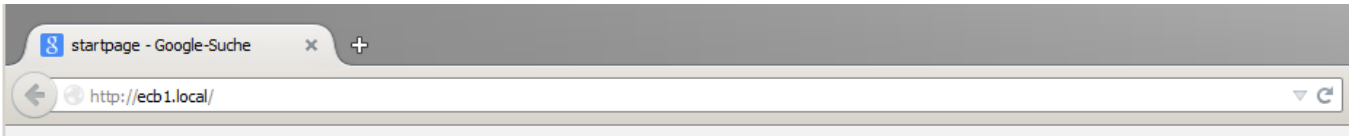
Step 1: Install eCB1 (if included externally) and/or connect it to the power supply.

Step 2: Integrate the eCB1 in your network, a PC or a laptop with help of a LAN cable (see image).

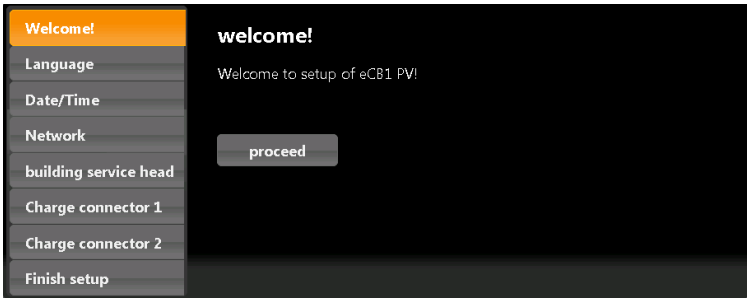


Please Note: Please make sure that only one unfigured eCB1 is connected to your network in order to avoid name collisions.

1. Start your browser.
2. Type in the following URL „**http://ecb1.local**“ (see image below).



1. The user interface of the eCB1 **opens**.



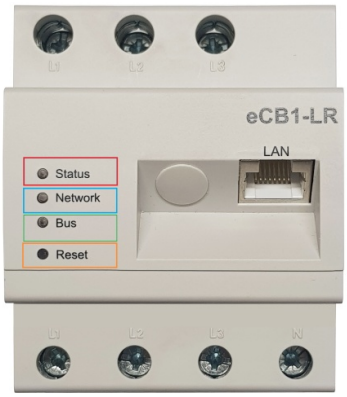
Should the interface not open, please verify the following things:

1. The name resolution does not work.
Please open the interface via the actual IP-adress of the eCB1.
„(http://<IP>/)“

Open the desktop of your router and read the IP address of the eCB1 (see manual of your router).

If you have Windows XP/7/8: Install Apple Bonjour®. You can find the download link on www.apple.com. Then try to enter the URL again.

Please note: Apple Bonjour® is also included in Apple iTunes®.
Alternatively, contact the network administrator.



2. The Status LED is not glowing.
If the Status LED of the eCB1 does not glow, it means that the Smartmeter is not provided with any power.

Please make sure that at least one of the phase conductors L1 and the neutral conductor N are connected to the eCB1.

3. The Status-LED glows or blinks in red.
If the Status LED glows or blinks in red, an error has occurred. Please **restart** the eCB1 by pressing the Reset-button with a pointy object **for about 1-3 seconds**.

4. The Network-LED is not glowing
The network cable is not properly/correctly connected to the network port if the network-LED does not glow. Please make sure that you have inserted both ends of the cable properly and correctly.

5. eCB1 could not be found in the network
This means that eCB1 is not located in the same local network. Please connect the eCB1 with the same Router/Switch as the one of your PC’s/laptop’s.

If that doesn’t solve your problem, please reset the eCB1 to its factory settings by pressing the Reset-button with a pointy object for about 4 seconds to 10 seconds.

Connecting the eCB1 and the cPµ1 via BUS

Image 1: shows the BUS-clamps of the cPµ1.
Image 2: shows the BUS-clamps of the eCB1.

(Please note the green marks in Image 1)

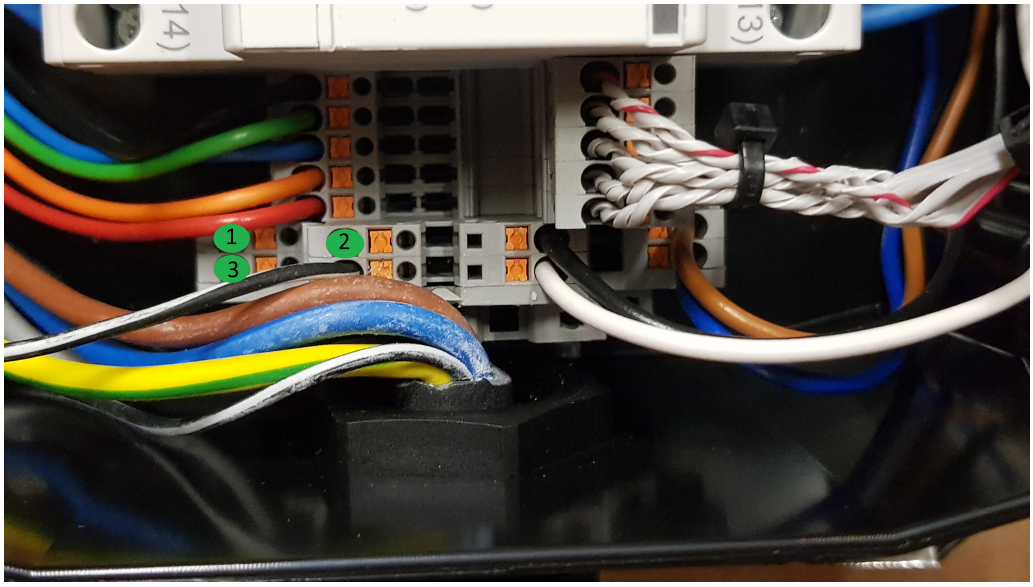


Image 1
cPµ1 charging station

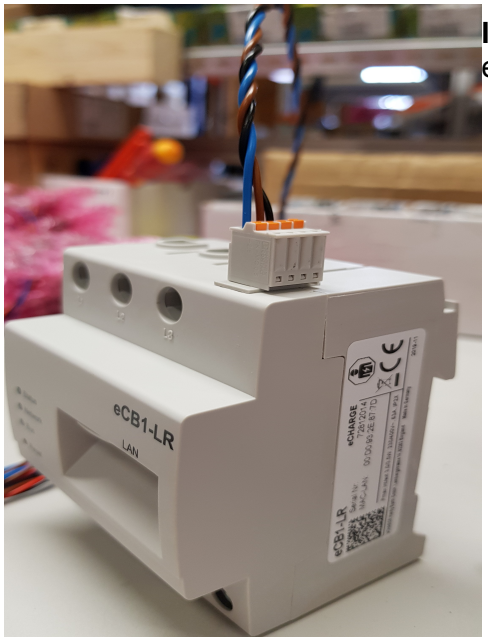


Image 2
ecB1 and Bus terminal

These have to be connected as follows:

plug the **brown wire** (second slot on the eCB1) in **clamp 1** (shown in Image 1).
plug the **black wire** (third slot on the eCB1) in **clamp 2.**
Last step you plug the **blue wire** (first slot on the eCB1) in **clamp 3.**

Configuration of eCB1 LR MP+ (metering point)

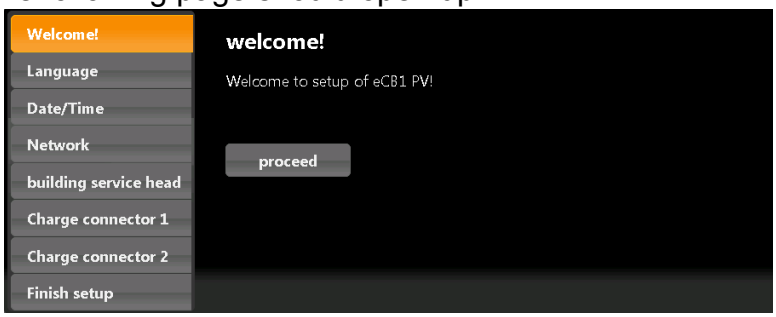
Opening the Webinterface

Access the Webinterface of the eCB1 MP+ (metering point at the house connection) by entering its IP address in your webbrowser.
Prior to that, it has to be integrated into the network of the house. Then through the interface of the router, you can find the IP address of all eCB1, including this one.

If therer is no other configured eCB1 in your Network you can contact the eCB1 MP+ with http://ecb1.local for first configuration.

If the Domane Name System should not work you can find the IP adress through the Webinterface of your router.

The following page should open up:

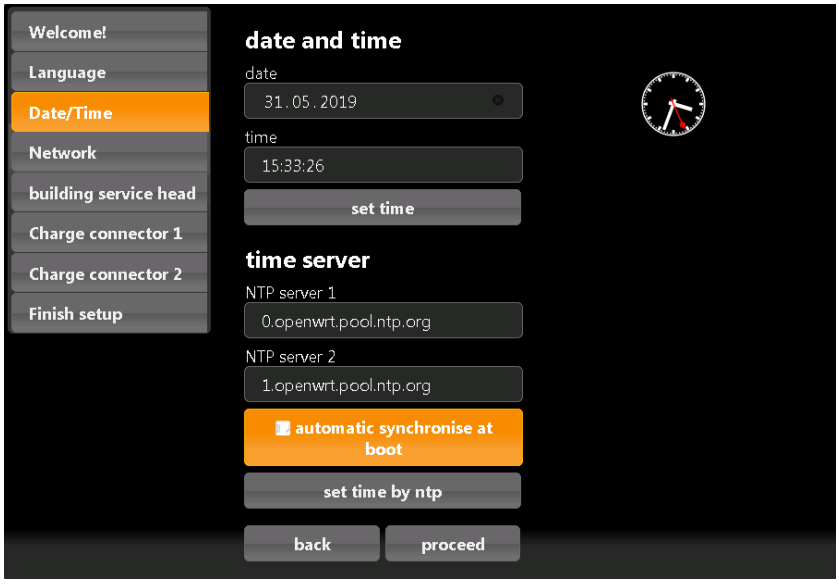


Please click “proceed” to get to the following section:

Language

Here you can set:
- language
- the country in which you are installing the charging station
- the time zone

Date and time



Click “proceed” to get to the following screen:

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

Manual setting

Click on the **Date button** and choose the current date. Then continue with the **Time button** to enter the current time.
Please separate the hours, minutes and seconds with colons.
To complete the settings, press “set time” and the settings will be saved.

Automatic setting

In this case “Date” and “Time” do not need any entries.

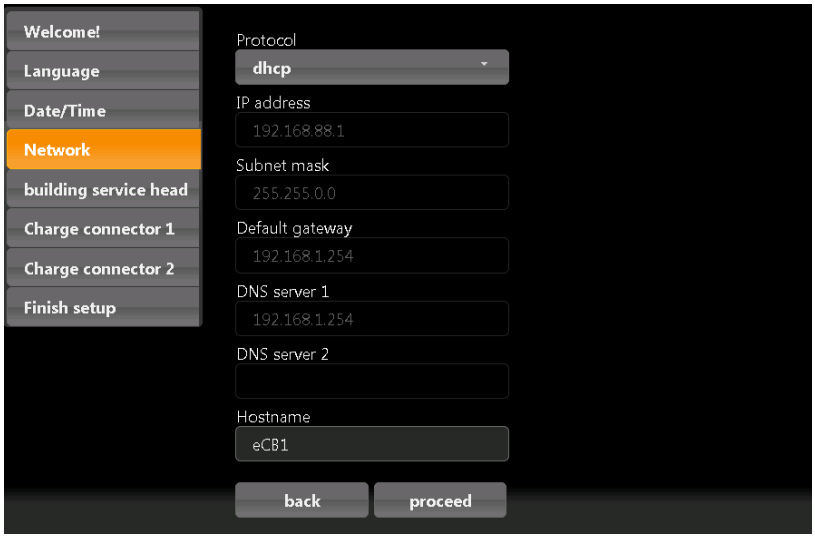
There are pre-set internet pages in section “NTP Server 1” and “NTP Server 2”. These will connect you automatically with a time server.

Click on “**Set time by ntp**” to save your settings. If you want to connect with a different, or your own time server, please enter the internet address manually.

By clicking “**automatic synchronise at boot**”, the time will be synchronised automatically after every outage (power, network, etc.).

Network settings

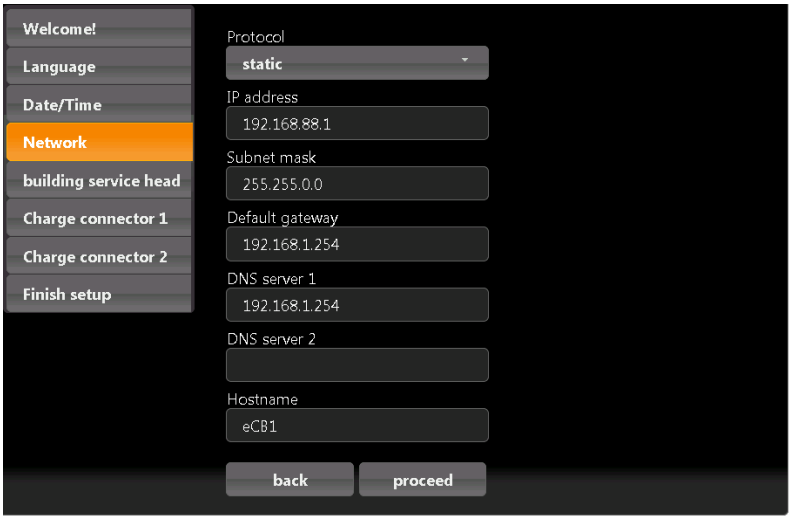
After completion of the time and date settings, click on “Continue” to get to the next section.



Choose “**DHCP**” as protocol.

Your DHCP Server (e.g Router) will do further settings automatically and fill the remaining blank spaces.
There are no other settings to be made in the section except giving a **hostname**.

If you choose “static” as protocol, please contact your network administrator in order to fill the remaining forms according to your network.



Select a distinct **hostname**. Usually the device responds to the given hostname, meaning the URL will change to >givenname<.local instead. Upon delivery the hostname given is “**ecb1.local**”.

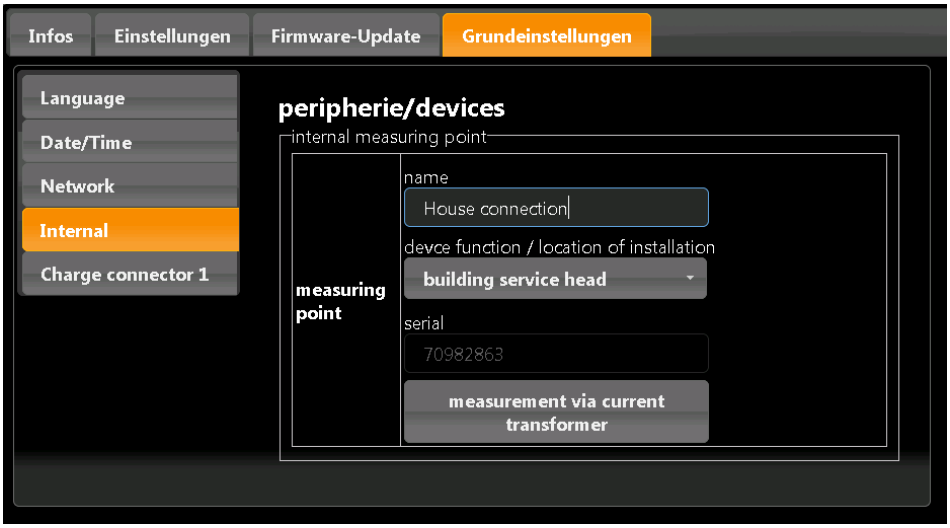
Internal

In this section you will determine the function of the eCB1, which in this case, is to be the metering point at the **house connection**.

Therefore choose “building service head” as device funktion as well.

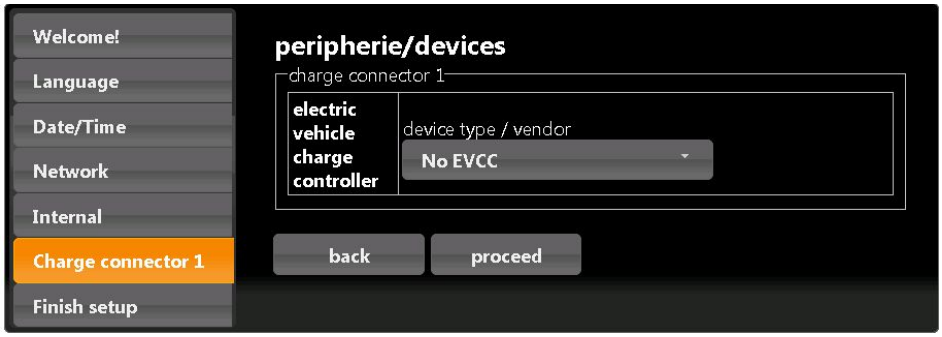
The button “measurement via current transformer” must only be activated when there is a measuring transformer needed/installed. Press on the button to activate (orange) and deactivate (grey). Usually (by German law) a measuring transformer is required when the house connection exceeds 63A.

To prevent confusion between both, the **eCP1 MP+** and **eCP1 PV** you can choose a name for the device.



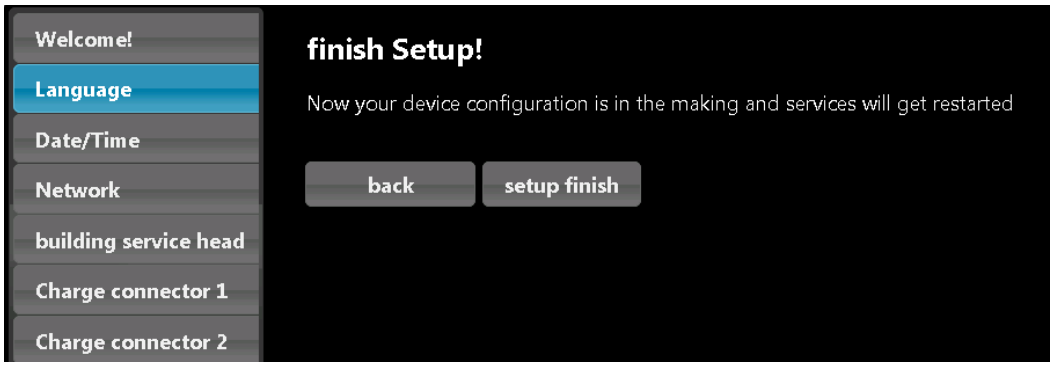
Charge connector

Since the eCB1 MP+ is solely for metering, there is no charging point to define. Choose “no EVCC”.



Setup finish

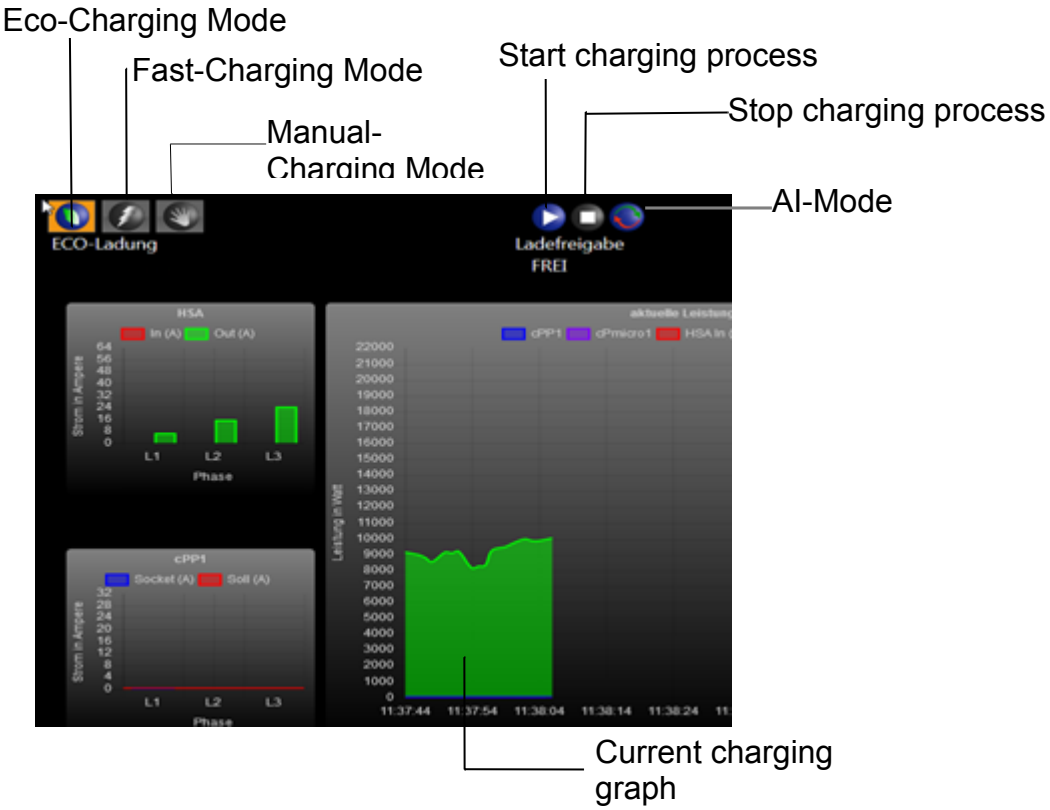
After completion of the initial setup, the device restarts to implement/save all the settings. Restarting process can take up to five minutes.



Should no interface appear after five minutes, please refresh the page or enter the IP-address again.

The setup finish ends the configuration process of the eCB1 LR MP+ and you can now go on with the configuration of a second eCB1.

Explanation of Webinterface



ECO-Charging Mode = ensures minimum charge (see page 16) through a PV-System and/or with power from the power supply net if needed. Purchase of energy from power supply net is only the case if AI-Mode is deactivated.

AI-Mode = Only available if ECO-Charge Mode is activated (Button will be marked in orange). In AI-Mode the charging process will automatically start in case of surplus PV-power or turn off when there is too little PV-power. For this, section „Eco Min-Max Ampere“ in the later configuration is the most important setting.

Fast-Charging Mode = A charging process with maximum capacity of the charging station is started.

Manual-Charging Mode = In this charging mode, you can set the charging power manually.

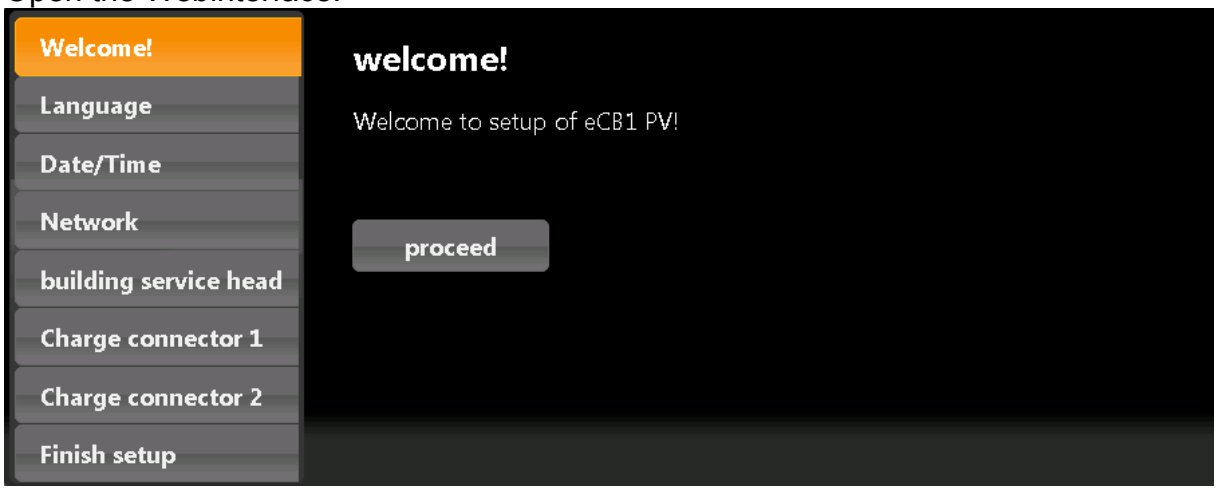
Start Charging process = Press this button to start the charging process.

Stop Charging process= Press this button to stop the charging process.

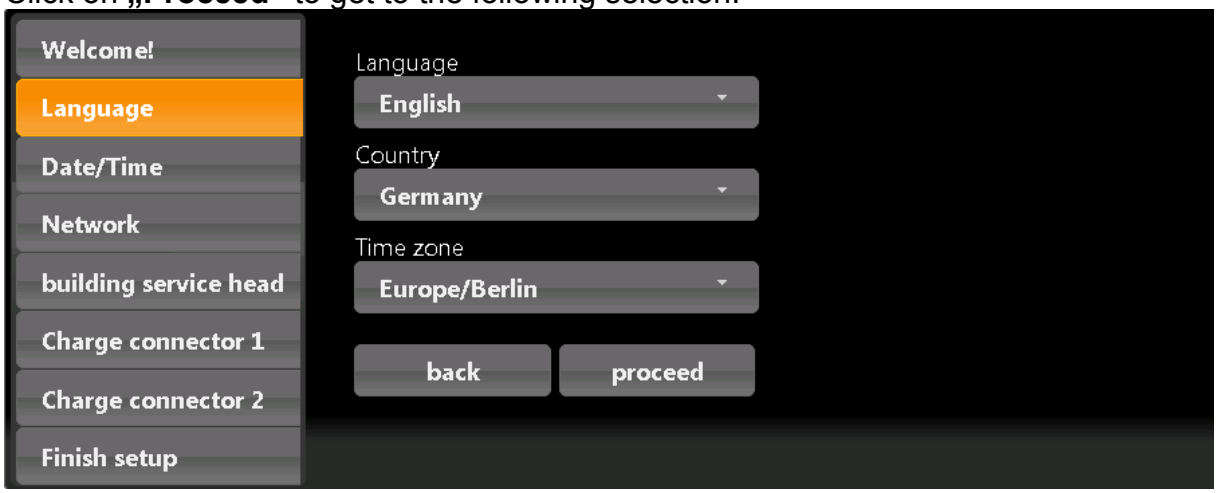
Current charging graph= Shows the current power output at the house connection as well as single power graphs of the charger connection.

Configuration of eCB1 LR PV (PV load control)

Open the Webinterface:

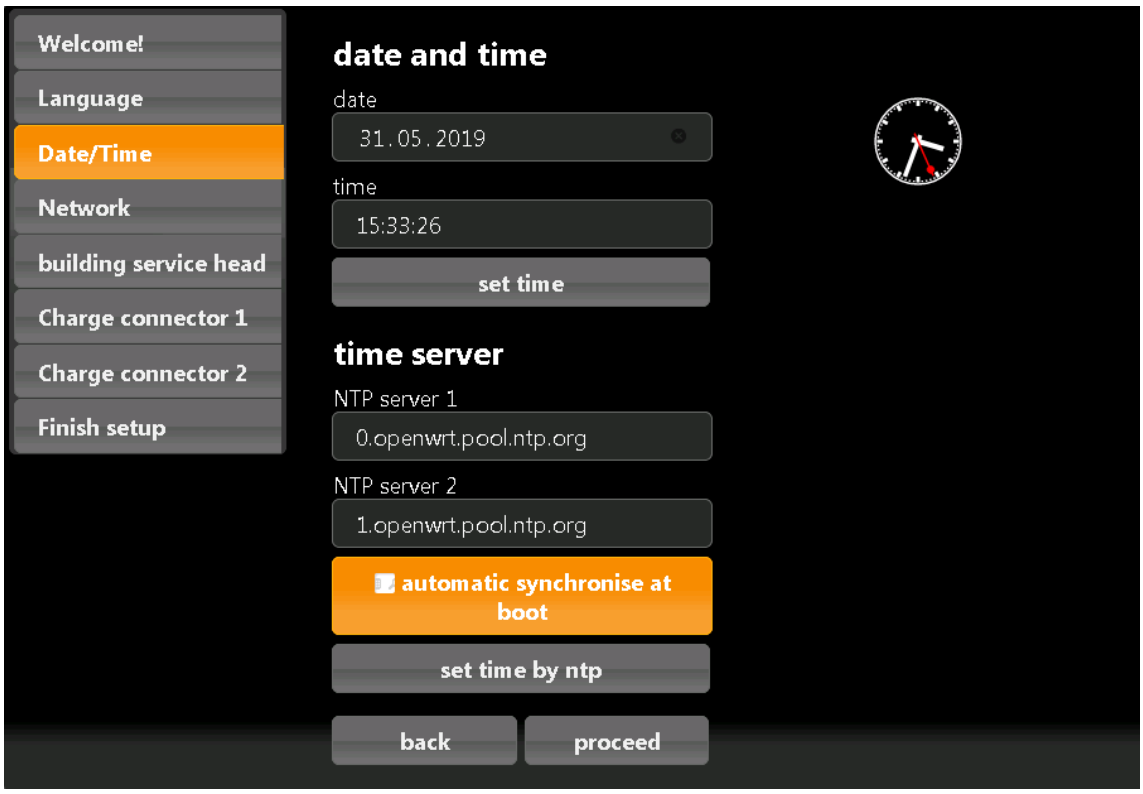


Click on **„Proceed“** to get to the following selection:



Here you can set
- the language,
- the country in which you are installing the charging station and
- the time zone.

Date and time



Click on “**Proceed**” to get the following screen:

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

Manual setting
Click on the **Date button** and choose the current date. Then continue with the **Time button** to enter the current time.

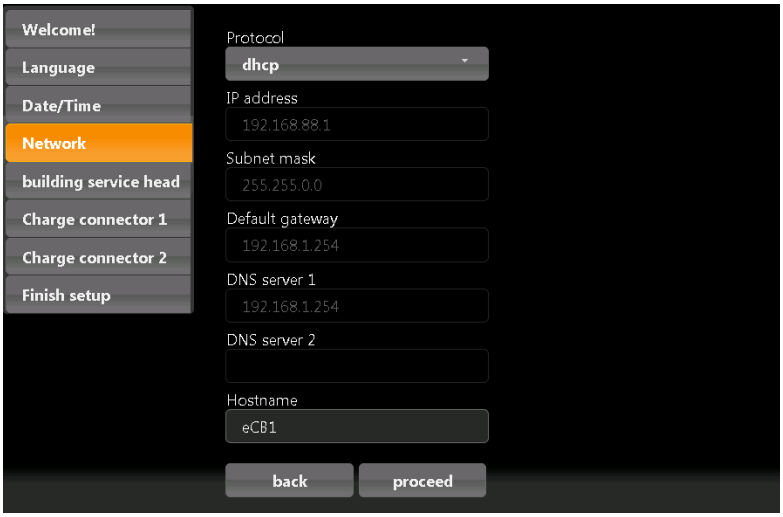
Please separate the hours, minutes and seconds with colons.
To complete the settings, press “Set time” and the settings will be saved.

Automatic setting
In this case “**Date**” and “**Time**” do not need any entries.
There are pre-set internet pages in section “NTP Server 1” and “NTP Server 2”. These will connect you automatically with a time server.

Click on “**Set time by ntp”** to save your settings. If you want to connect with a different, or your own time server, please enter the internet address manually.
By clicking “**automatic synchronise at boot**”, the time will be synchronised automatically after every interruption (power, network etc.).

Network settings

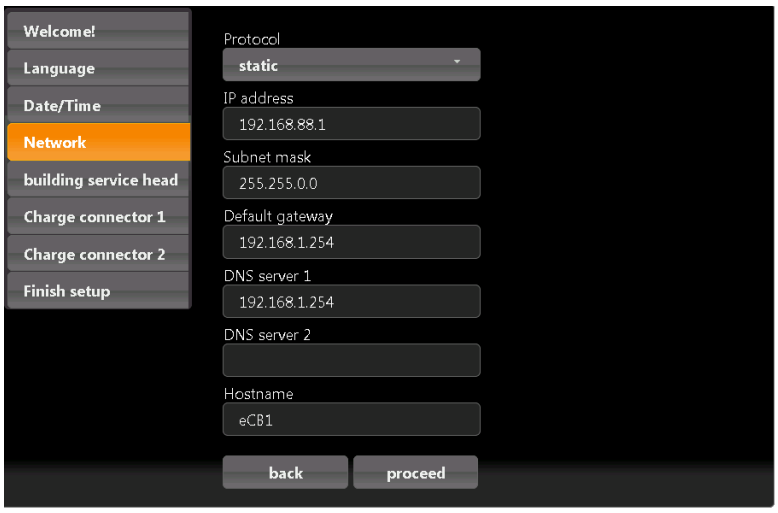
After you have completed the time and date settings, click on “Continue” to get to the next section.



Choose “**DHCP**” as protocol.

Your DHCP Server (e.g Router) will do further settings automatically and fill the remaining blank spaces.
There are no other settings to be made in the section except giving a **hostname**.

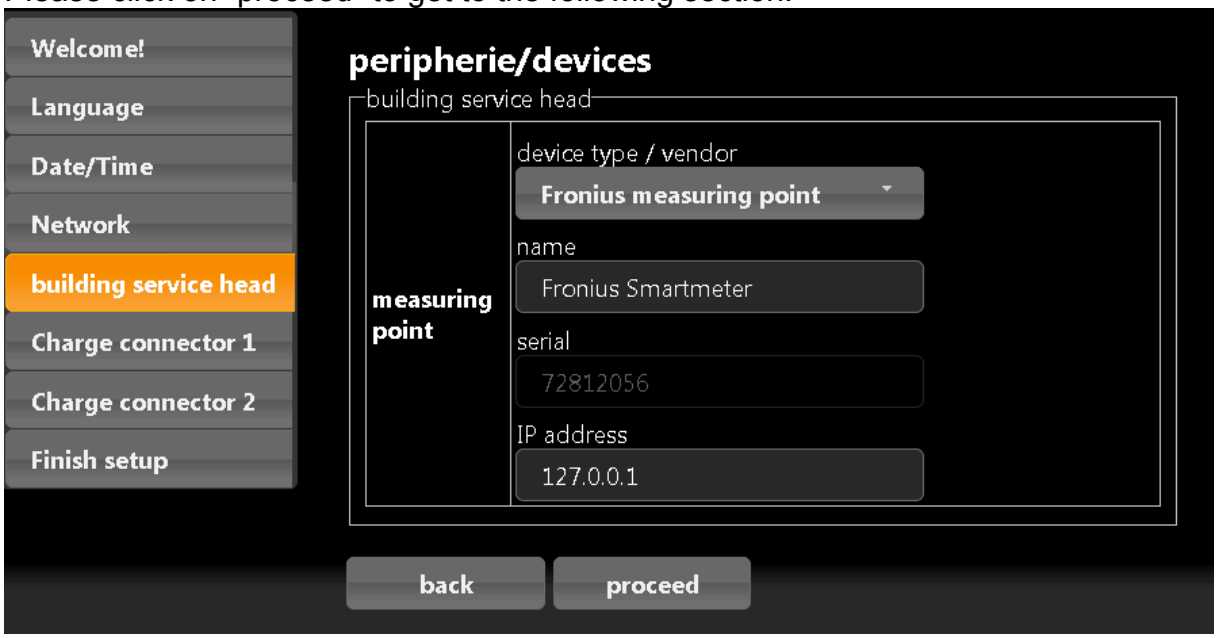
If you choose “static” as protocol, please contact your network administrator in order to fill the remaining forms according to your network.



Select a distinct **hostname**. Usually the device responds to the given hostname, meaning the URL will change to >givenname<.local instead. Upon delivery the hostname given is “ecb1.local”.

House connection

Please click on “proceed” to get to the following section:



Options device type/manufacturer
Choose the energy meter that is installed at the house connection as metering point.

Please note: In this screenshot a Fronius Smartmeter has been installed in combination with the solar system prior to the configuration and thus the Fronius Smartmeter was selected.

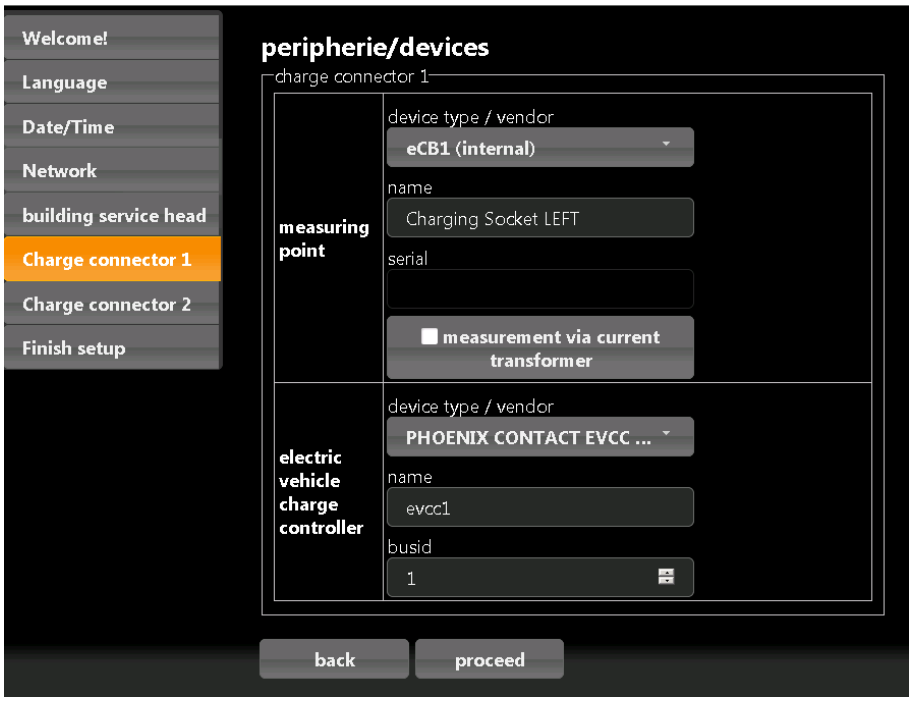
eCB1 internal	an eCB1-LR PV is installed at the house connection
another eCB1	an eCB1-LR MP+ is installed at the house connection
B-control Energy Manager	a B-Control Energy Manager (EM 100, EM 210, EM 300) is installed at the house connection
SMA Energy Meter	a SMA Energy Meter or a Home Manager 2.0 is installed at the house connection
Fronius Measuring point	a Fronius Smartmeter is installed which can be read via the Fronius Inverter.
Kostal Measuring point	a Kostal Smartmeter is installed at the house connection
Janitza UMG Netzanalyser	a Janitza UMG network analyser is installed at the house connection

KLEFR 6934 Meter	a KLEFR Energy Meter is installed at the house connection
PHOENIX CONTACT Measuring pointt	a Phoenix Contact measuring point is installed at the house
Passive push updated Measuring point	via http Post (via API gateway) updated measuring point
No measuring point	There is no measuring point installed

Please note: If you choose “No measuring point” because no smartmeter is installed, in that case no charging with surplus solar energy can be performed and limiting the house connection is also not possible.

Click “**Proceed**“ to get into the next section.

Charging point



Choose a device that is integrated/built-in your charging station
Options device type/manufacturer

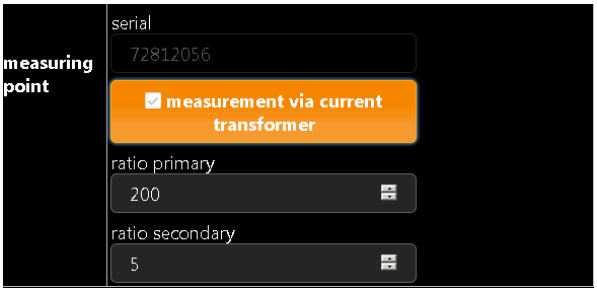
eCB1 (internal)	an eCB1 PV is built in the charging station → for PV-load control
KLEFR Energy Meter	KLEFR Energy Meter is installed as measuring point in the charging station
Phoenix Contact Measuring point	Phoenix Contact measuring point is built in the charging station

Serial
The system fills the serial number of the measuring point automatically after completion of the set up.

EVCC
In this section you can choose between various Charge Controllers. The system usually per-determines the correct EVCC. Should that not be the case, please choose
"PHOENIX CONTACT EVCC Modbus RTU".

For “Bus ID” give number 1 for charging connector 1 and “Bus ID 2” for charging connector 2, if available in your variant. If not, leave blank and continue by pressing “proceed”.

measurement via current transformer:
Only activate “measurement via current transformer” when a current transformer is installed. This usually is only the case when the house connection exceeds 63 A



If an **eCB1 LR MP+** has already been installed and this setting has already been chosen for the first device during the earlier described configuration process (see page 8), it is not necessary to activate it again.

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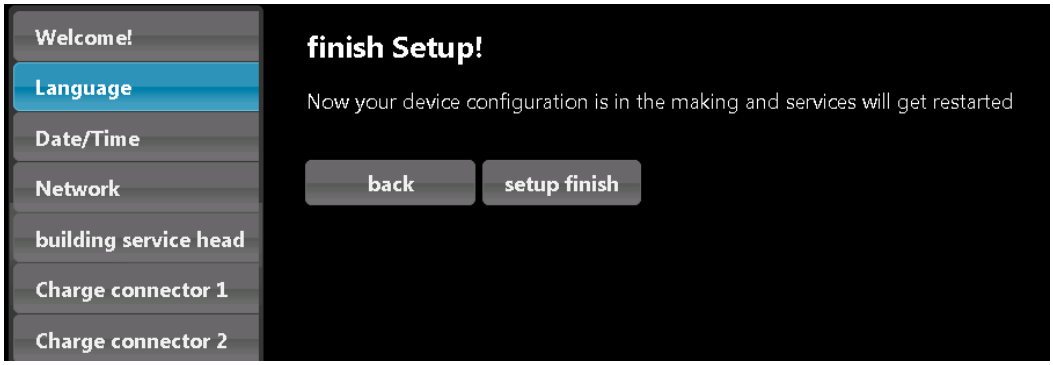
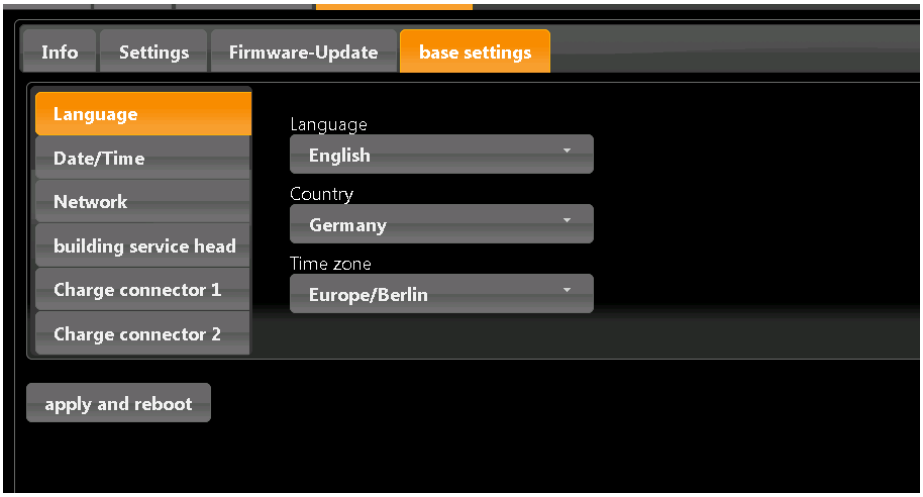
Setup finish

After completion of the initial setup, the device restarts to implement/save all the settings. Restarting process can take up to five minutes. Should no interface appear after five minutes, please refresh the page.

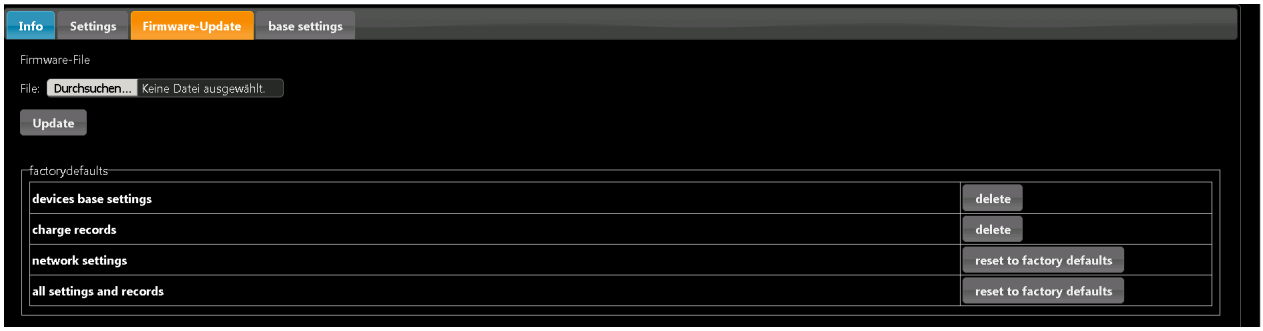


After restarting, the following page should appear automatically:



Here you can adjust settings in section “base settings”. These settings are those from the intial set up.

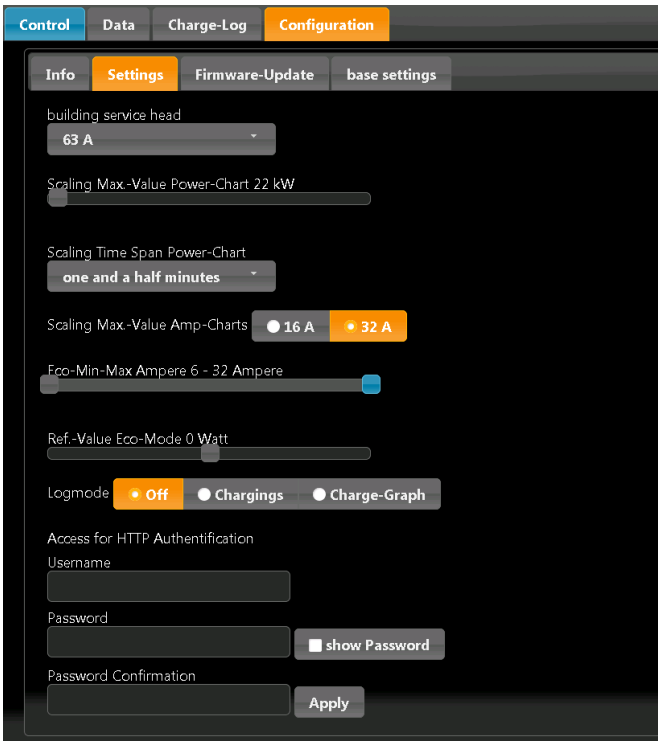
Firmware-Update



In section „**Firmware-Update**“, you can update the firmware. We recommend an update only case of malfunction with either the hardware of the software. Please contact the support department of eCharge Hardy Barth GmbH in order to issue a firmware update if needed.
Via e-mail: support@echarge.de

Important settings for operation

In order to guarantee the best operation possible according to your own infrastructure, several important settings are required in this section.
Those are saved automatically and are active immediately.



1) House connection
Choose the maximum value of your house connection.
If your house connection exceeds 63 A, the installation of a transducer is obligatory. Please contact professional staff for further information regarding the transducer.

2) Scaling Max.-Value Power-Chart 22 kW
Settings here only impact the diagram on the first page.
Choose the value according to the maximum charging capacity of your Electric Vehicle. Set the value by dragging the controller to the left or to the right.

3) Eco-Min-Max-Ampere 6-32 Amperes
These settings depend on your EV. There are vehicles that require minimum charging power of 8 or 10 A (or higher).
Should the **ECO-Charging Mode** be activated and the surplus power (= solar produced energy – energy consumption at house connection) be lower than the required minimum charging power, the car will continue charging. It will get the remaining power needed (to fill up the balance until the required minimum charging power) from the grid.

4) Ref. Value ECO-Modus 0 Watt
Settings in this section determine how much energy is allowed to be drawn from the grid to charge your Electric Vehicle. If value “0 Watt” is set, no additional purchasing from the grid is allowed.
Should there be a solar battery, there could be interference in charging your car, e.g. power supply from grid and/or power supply from solar battery. In order to avoid that, setting the value of “500 W” is the most suitable.

5) Logmode

Off	No visualization of each charging process.
Chargings:	Tabular visualization of each charging process.
Charge-Graph:	Tabular visualization, including graphic charts of each charging process.

6) HTPP Authentication

You can set an username and a password to protect your system from unauthorized access and changes. Please make sure to note down the username or password in order to be able to access the system later on.

Requirements for the setup:
Username: 3 – 30 letters
Password: 8 – 255 letters

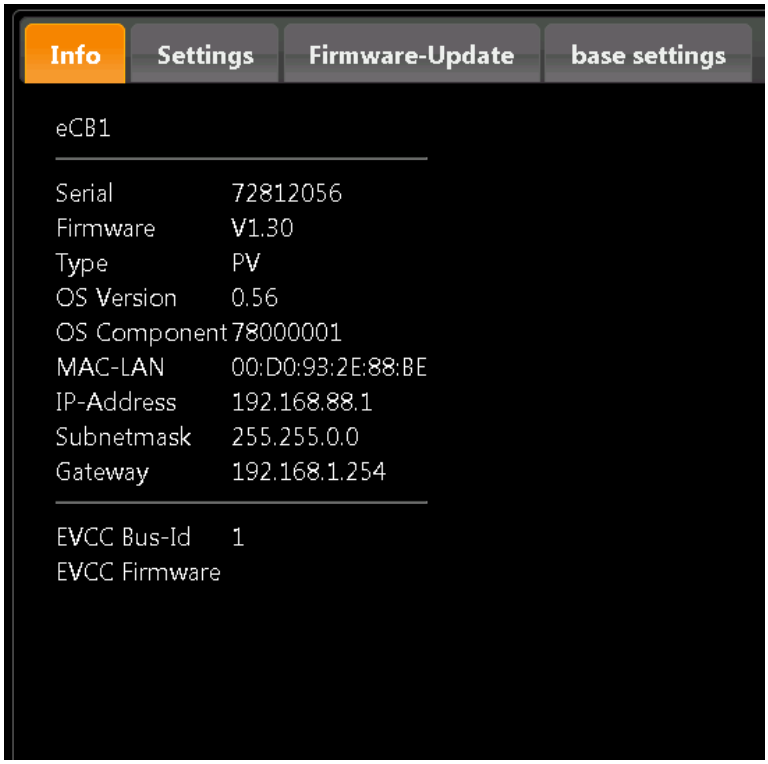
Deleting username and password

1. Open the webinterface and log in
2. Go to Configuration > Settings
3. Delete the username and the password
4. Press Apply.

Changing username and password

1. Open the webinterface and log in
2. Delete current username and password
3. Set a new username and a new password
4. Press Apply.

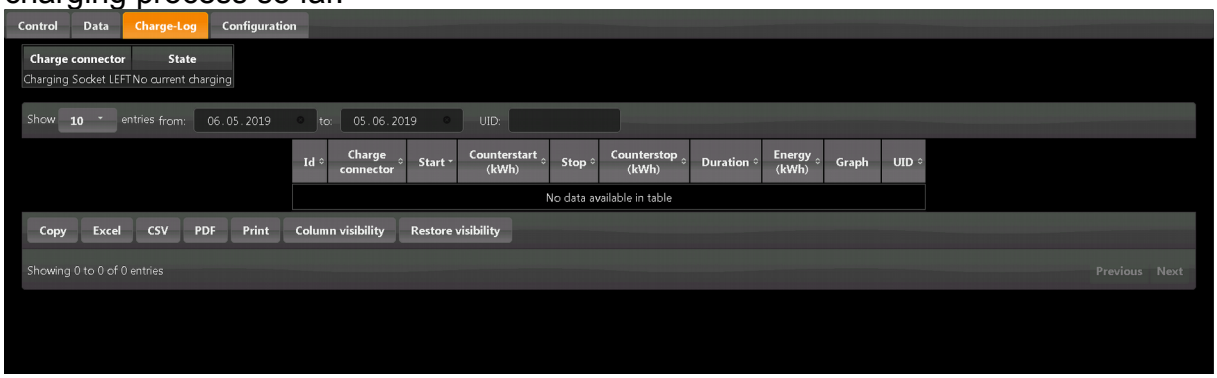
Summary of settings



In section “info” all information of the eCB1-PV and network settings are summarized.

Charge log

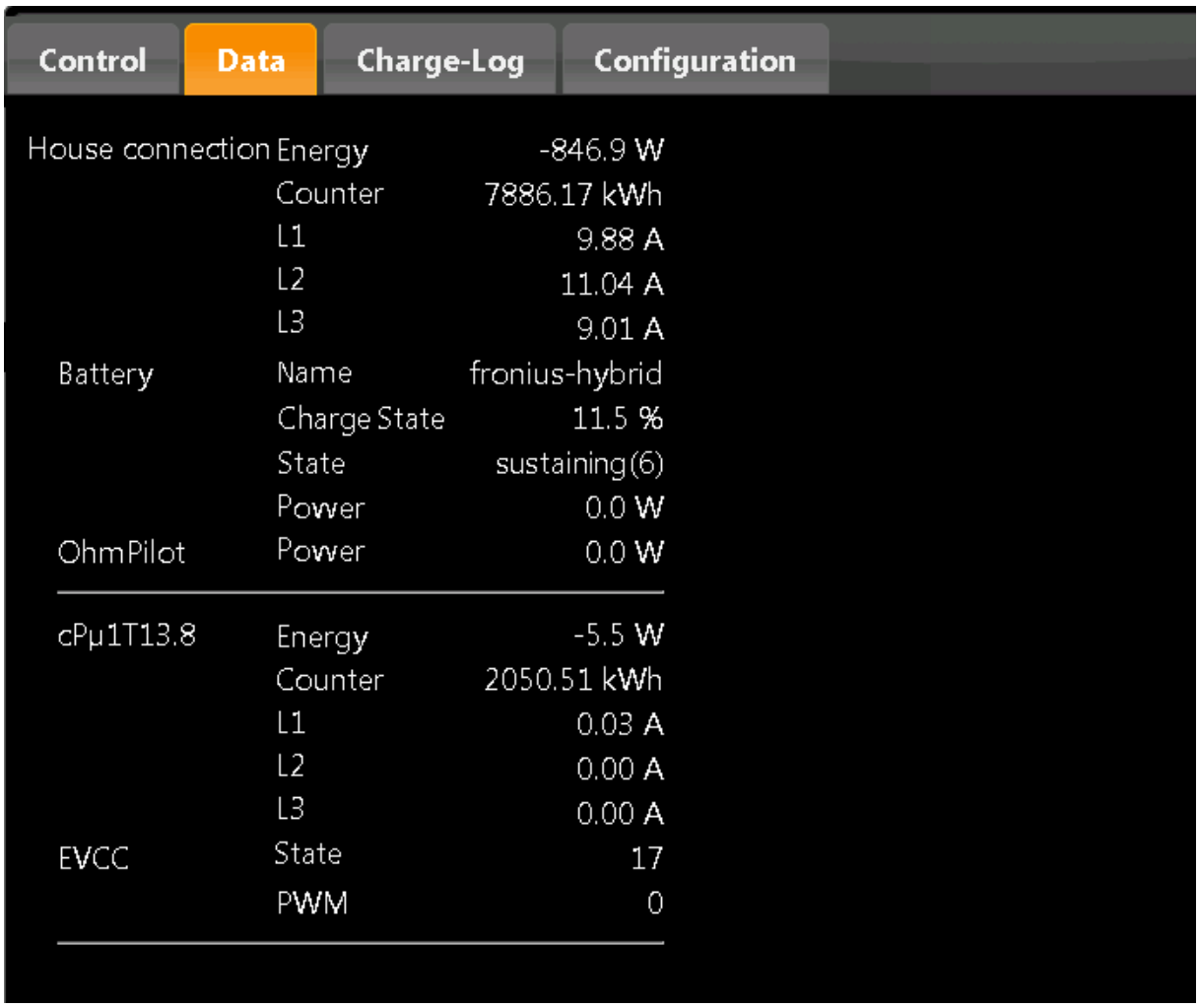
In this section all charging processes are listed.
Please note: In this example, the ecb1 was newly configured and there has been no charging process so far.



Copy	Copy single charging processes
Excel	Exports the charging processes into Excel
CSV	Exports the charging processes into CSV
PDF	Exports the charging processes into PDF
Print	Prints directly
Column visibility	Hide single columns
Restore visibility	Restore visibilty settings

Additionally you can find the current state of all your charging points.
When charging instead of “**No current charging**”, the state will change to “**charging since 1 Minute, 0,8 kWh**”

Visualization of graphic table in tabular form
(This is an example with solar battery, Fronius OhmPilot, a cPµ1T13.8 Wallbox)



The section “Data” lists up the values from the graph.
(PV-System, Solarbattery, cPµ1T12.8, Fronius Ohm Pilot)

Explanation

House connection	Energy	846,9 W is drawn from the grid
	Counter	7886,17 kWh was drawn in total
	L1, L2, L3	current flow in the individual phases
Battery		The charge state of the battery, charging and. discharging is shown. Only possible in combination with the Fronius Hybrid-Series.
Ohmpilot		The power consumption is displayed. Only possible in combination with the Fronius Ohmpilot
cPµ1T13.8		Energy: power consumption of 5,5 W
	Counter	the cPµ1 drew 2050,51 W in total
	L1, L2, L3	current flow in the individual phases
EVCC		internal data