circontrol

User Manual

Wallbox eNext

Wallbox eNext
User Manual

COPYRIGHT INFORMATION
This document is copyrighted, 2023 by Circontrol, S.A. All rights are reserved. Circontrol, S.A. reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual can be reproduced, copied, translated or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, or for any infringements upon the rights of third parties athat may result from its use.

All other product names or trademarks are properties of their respective owners.

Here's your guide to use and configure eNext

1 — So, hello! 04

2 — Features 06

3 — First Steps 08

A - Download 'HiCharger' App 08

B - QRSCAN 10

C - Manual 10

4 — How to use it? - Plug&Charge 12

A - Standby 12

B - Start Charging 12

C - Charging 12

D - Charge Stopped 12

E - EV Fully Charged 13

F - Stop Charging 13

5 — 'HiCharger' App - List 14

A - Overview 14

B - Status 15

6 — 'HiCharger' App - Dashboard 16

A - Overview 16

B - Status 17

C - Error Information 18

D - Management Options 19

7 — 'HiCharger' App - Charger Options 20

A - Overview 20

B - Identification Method 21

C - Time Schedule 21

D - Diagnostic 22

E - Firmware 24

F - Advanced Settings 25

8 — 'HiCharger' App - Settings 28

A - Overview 28

B - About 29

C - General 30

9 — Factory Reset 32

10 — LED Beacon Notifications - Legend 33

A - Blinking Red Errors 36

B - Blinking Yellow Status 37

11 — Technical Data 38

12 — Need help? 40

1

This manual provides information about the usability and configuration of the Wallbox eNext, which has been designed and tested to allow electric vehicle charging, specified in IEC 61851.

It contains all the necessary information for safe use and help to get the best performance from it with step-by-step configuration instructions.

THE FOLLOWING SYMBOLS ARE USED FOR IMPORTANT SAFETY INFORMATION IN THIS DOCUMENT

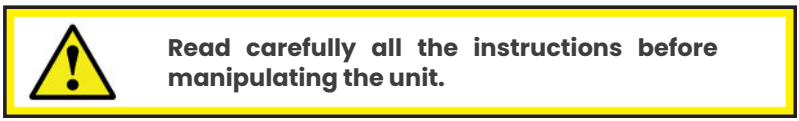
ATTENTION!
Indicates that the damage to property can occur if appropiate precautions are not taken.

INFORMATION
Informs about useful information to take on account.

- Complies with IEC 61851, Electric vehicle conductive charging system (IEC 61851-1 and IEC 61851-21-2).
- Complies with IEC 62196, Plugs, socket-outlets, vehicle couplers and vehicle inlets (IEC 62196-1 and IEC 62196-2).
- Complies with Directives: 2014/35/UE, LVD;2014/30/UE, EMC.
- Complies with *The Electrical equipment (safety) regulations 2016 guidance* and *The Electromagnetic compatibility regulations 2016 guidance*.

So, hello!

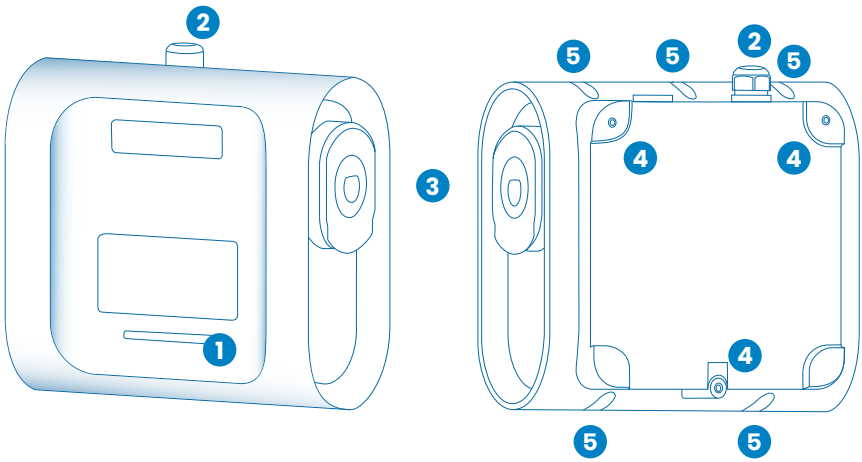
IMPORTANT SAFETY INFORMATION



The Charge Point may not include elements of electrical protection.

- Read all the instructions before using and configurating this product.
- Do not use this unit for anything other than electric vehicle charging.
- Do not modify this unit. If modified, CIRCONTROL will reject all responsibility and the warranty will be void.
- Comply strictly with electrical safety regulations according to your country.
- Do not make repairs or manipulations with the unit energised.
- Only trained and qualified personnel should have access to electrical parts inside the device.
- Check the installation annually by a qualified technician.
- Remove from service any item that has a fault that could be dangerous for users (broken plugs, caps that don't close...).
- Use only Circontrol supplied spare parts.
- Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.
- Adaptors or conversion adapters and cord extensions set are not allowed to be used.

2



1 — LED beacon

2 — Cable glands

3 — Socket-outlets*

4 — Wall support holes

5 — Closing box holes

(*) Socket-outlet may vary depending on the model

Features

MAIN FEATURES OF THE UNIT

Charge Point may not include electrical protection elements.

- **ABS plastic housing:** Robust Plastic material to resist severe environmental conditions including UV rays and mechanical stress.
- **Connector Lock:** Type 2 connector has a locking system to avoid an EV unduly disconnection.
- **LED Beacon:** Colour LED system that indicates the status of the Charge Point.
- **Bluetooth:** Bluetooth v4.2 + BLE wireless communications for remote charge activation and Charge Point configuration.
- **App:** Easy software interface to set up the language configuration, user authentication, Wallbox diagnosis and firmware upgrades, among others.

3

A Download 'HiCharger' App

1. Download the app 'HiCharger',

GET IT ON Google Play

Download on the App Store

2. Enable Bluetooth in your smartphone.

3. Launch the mobile App: 'HiCharger'.

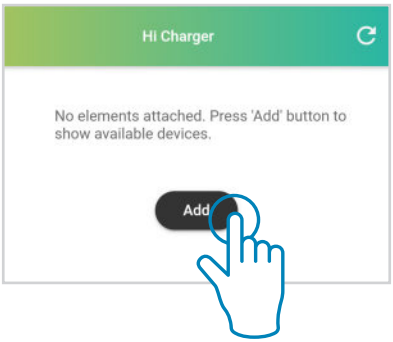
Hi! CHARGER

Compatible with Android version 4.4.2 or later and iOS version 9 or later.

First steps

4. Select your language.

5. **Tap the "Add"** button in order to **pair a new Charge Point.**



6. **Select** the mode.

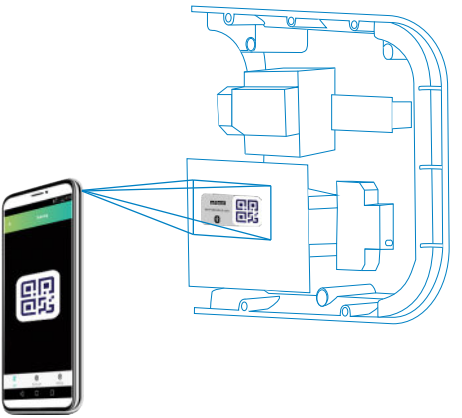
- **QRSCAN:** This option allows to perform the **pairing automatically**, by scanning the **QR code**. For further information please refer to section "B - QRSCAN" of this chapter.

- **Manual:** This option allows to perform the pairing by choosing manually the Charge Point from a list and entering its password. For further information please refer to section "C - Manual" of this chapter.

B QRSCAN

Scan the QR code provided.

There are two identification labels containing the same unique QR code for each Charge Point. One of them is attached to the Installation Manual and the other one is patched inside the Charge Point as shown:



C Manual

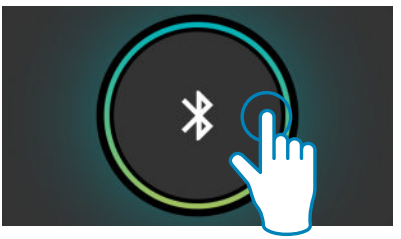
801F12B2XXXX;2;YYYY

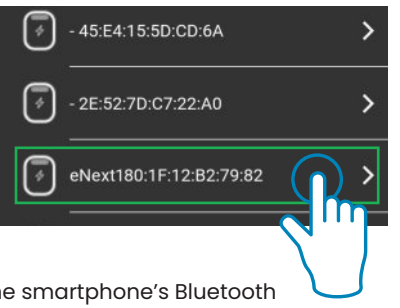
MAC: 80:1F:12:B2:XX:XX

PASSWORD: YYYY

Select the Charge Point and introduce the password.

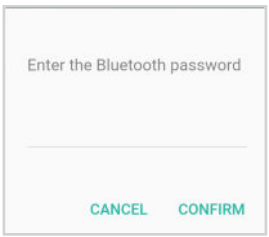
The MAC to identify the Charge Point and the password can be found on the two identification labels as shown in the picture beside. One of them is attached to the installation manual and the other one is patched inside the Charge Point.



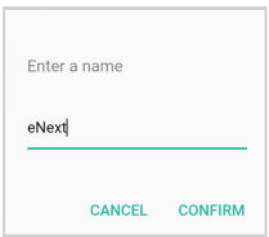


Press to refresh the devices detected through the smartphone's Bluetooth

The password is required after selecting the Charge Point.



7. The Charge Point name can be customized.



8. Once the Charge Point is paired, **its conectivity status is visible** on the 'List' screen. From now on, the **Charge Point can be managed** following the instructions of this manual.

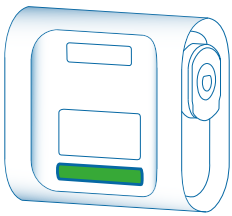
The Password of the Charge Pint can be changed in the "Advanced settings" menu of the App. For further information about how to change the password, please refer to "F - Advanced settings" in section "8 - Charger Options"

Make sure you save the QR label or the Charge Point password in a save place, as you might require them in the future.

4

Plug&Charge identification method is set by factory default and enables the user to start a charging transaction without an identification. This configuration could be adequate for equipment placed in private areas where identification is not required.

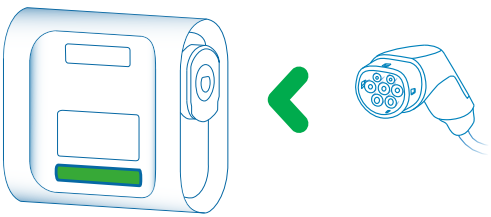
A Standby



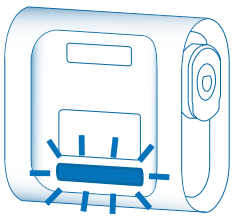
When the Charge Point LED beacon is green in a fade-in/fade-out effect, it means that the unit is available and ready to start a charge transaction.

B Start charging

To start the charge transaction, connect the vehicle to the Charge Point.

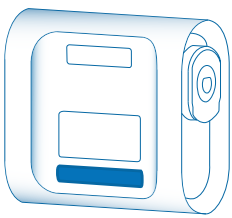


C Charging



Once the charge transaction has started, the LED beacon will turn blue in a fade-in/fade-out effect.

D Charge stopped

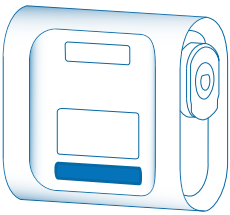


In some cases the charge transaction can be stopped due to different causes such as:

How to use it? – Plug&Charge

- The EV batteries are too warm to continue the charge transaction.
- A “Stop Charging” was programmed through the Time Schedule in ‘HiCharger’ App.
- There is not enough power available in the installation managed by the BeON.
- The Remote Control is not enabling the charge transaction.
- The user has requested to stop the charge transaction through ‘HiCharger’ App.

E EV fully charged

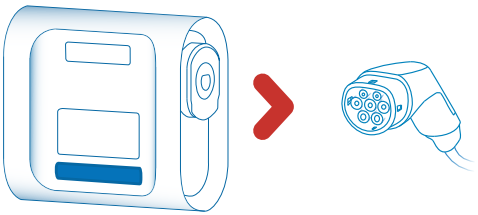


When the EV is fully charged, the LED beacon shows a fixed blue light.

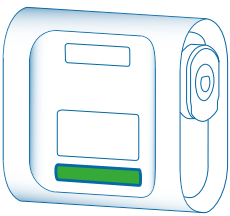
F Stop charging

To finish the charge transaction, stop the charge through the ‘HiCharger’ App (see Section “D - Management options” in Chapter 7) or stop the charge through the Vehicle.

Once the charge transaction has been stopped, the user will be able to un-plug the connector.



Once the connector is un-plugged, the LED beacon bar turns back to green in a fade-in/fade-out effect.

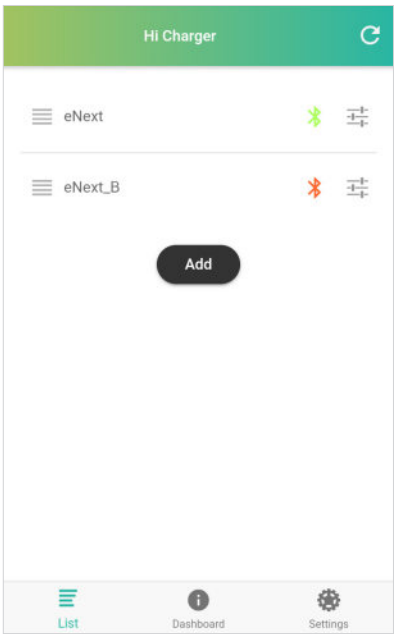


In this status, the Charge Point is available to start a new charge transaction.

> The behaviour described is for a Charge Point set with Plug&Charge identification method. The work flow could be different depending on the Charge Point settings.

5

A Overview



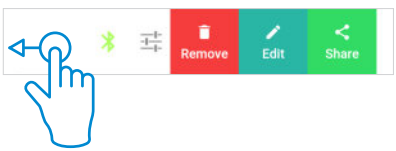
'List' view is an overview screen that shows the Charge Points that have been paired with the smartphone trough 'HiCharger' App. The connection status between the Charge Points and the smartphone is also shown and updated every 15 seconds.

This view allows to:

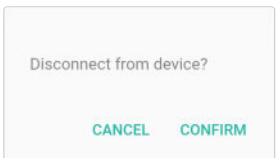
- Add a new Charge Point to manage.

- See the Charge Points that have been paired with the smartphone and their current status connection.
- Select the Charge Point that the user desires to manage.
- Reorganize the order of the Charge Points in the list and remove them from the list.

A menu can be opened by swiping the Charge Point's name to the left. That menu allows to remove, edit Charge Point name and share its pairing data to other users through a QR code.

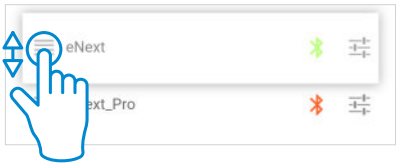


Connect or disconnect the Charge Point to/from the smartphone by taping on the desired Charge Point.



‘HiCharger’ App – List

The order in which the Charge Points appear in the List view is the priority in which the ‘HiCharger’ will automatically connect with.



By pressing on the ‘Share’ button, ‘HiCharger’ will generate a new QR code that contains the Charge Point MAC code and its access password in order to **share access data** easily. This QR code can be scanned by another user using the QRSCAN function of the ‘HiCharger’ App.

B Status

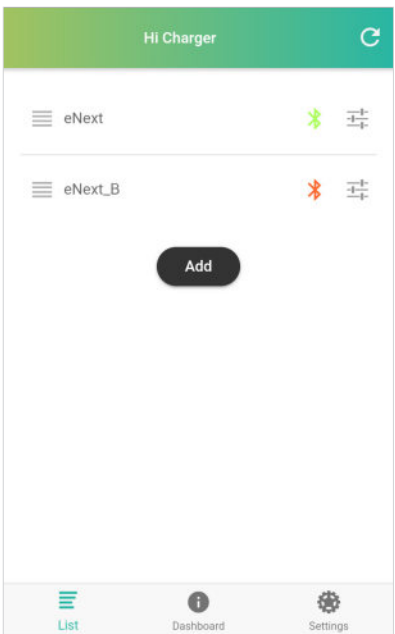
Possible connection status:

Green Bluetooth symbol informs that the smartphone is connected with the Charge Point.

Blue Bluetooth symbol informs that the Charge Point is in Bluetooth range and ready to connect to the smartphone.

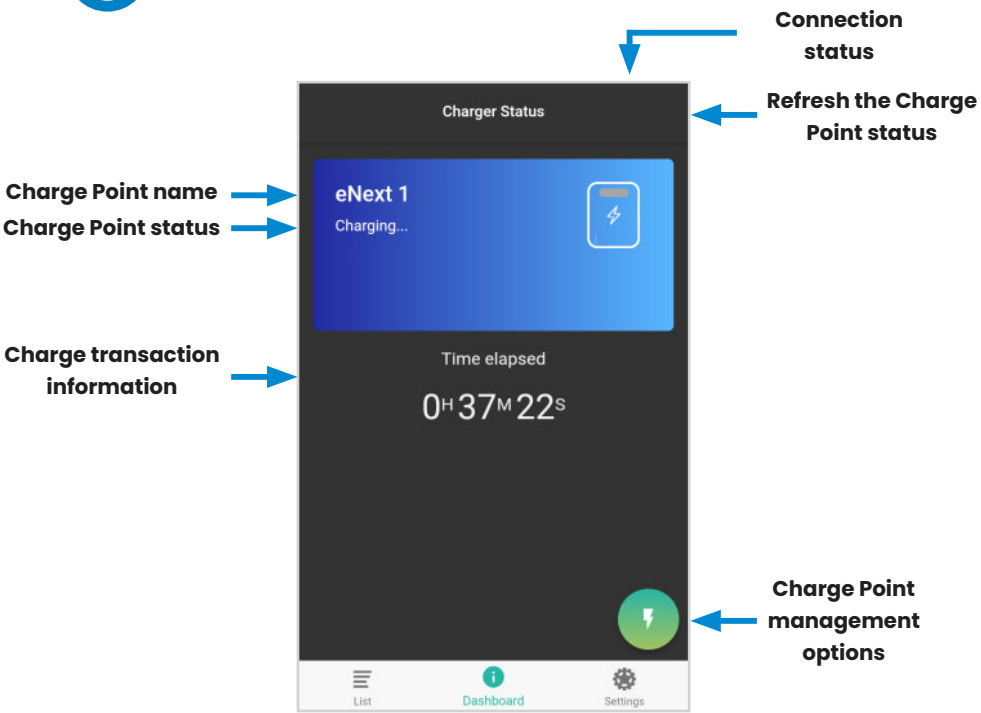
Red Bluetooth symbol notifies the Charge Point is out of Bluetooth range.

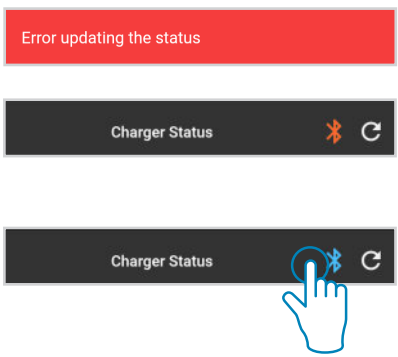
The refresh button at the top right corner of the screen is used to refresh the connection status of the Charge Points.



6

A Overview





The Charge Point status is refreshed every 15 seconds when the Charge Point is within Bluetooth range. Otherwise, a message will appear notifying that there has been an 'Error updating the status' and connection status symbol will turn red.

Once the Charge Point is back in the Bluetooth range, the connection status symbol will turn blue and by tapping it, the 'HiCharger' will connect with the Charge Point again.

‘HiCharger’ App-Dashboard

B Status

AVAILABLE: The Charge Point is available to connect and charge the vehicle.

CHARGING: The Charge Point is charging a vehicle. The blue shape fades-in/ and fades-out and the screen shows the time elapsed of the charge transaction.

PAUSED: The charge transaction has been stopped. Several resasons for stopping the charge transaction are exposed in section “Charge stopped” of chapters 4 and 5.

COMPLETED: The Charge Point has finished the charge transaction. The screen shows information about charge transaction.

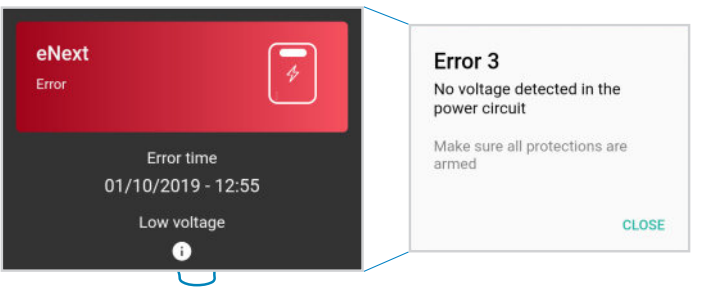
ERROR: The Charge Point has an internal error and it is not possible to perform a charge transaction. For further information please refer to section “C - Error information” of this chapter.

DISABLED: The Charge Point has been disabled by the user. For further information please refer to section “D - Management options” of this chapter.

Error information

If an error occurs, information about the error will be shown in the 'HiCharger' App. Furthermore, LED beacon will performe a blink sequence referring to the eror.

By tapping the information button , a pop-up appears with the error information as shown below:



- Error N°
- Description
- Solution

For further information about the LED beacon blink sequences please refer to Chapter "11 - LED beacon notifications - Legend".

D Management options

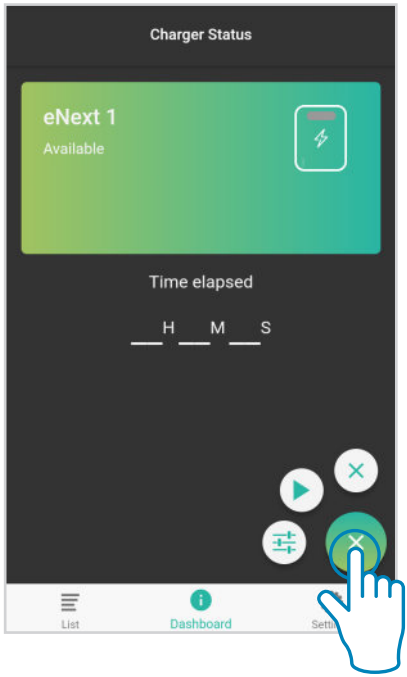
Play: The Charge Point starts the charge transaction.

Stop: If the Charge Point is charging, it stops the charge transaction.

Charger options: It opens the Charger Options menu and shows the information of the Charge Point.

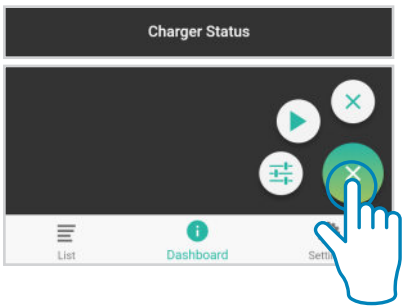
For further information, please refer to Chapter "8 - 'HiCharger' App - Charger Options".

Disable charger: It disables the Charge Point. Once the Charge Point is disabled, the same button enables it.



7

A Overview



Access the Charger Optipons menu by tapping on the left bottom corner button of the Dashboard view.

In the Charger Options menu it is possible to manage the setting options of the Charge Point connected with 'HiCharge' App. Furthermore, it is given basic information about the Charge Point.

The management options given are the following:

Identification method: Charge Point menu to select the desired identification method.

Time schedule: Charge Point menu to adjust the charge schedule.

Diagnostic: Charge Point menu to run diagnostic tests of the Charge Point internal components.

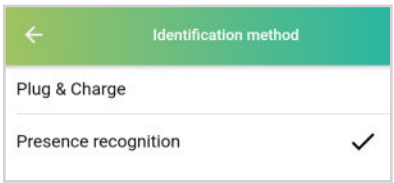
Firmware: Charge Point firmware information.

Advanced settings: Settings that imply major changes on the Charge Point's behaviour.

‘HiCharger’ App – Charger Options

B Identification method

Plug&Charge: The Charge Point will start and finish the charge transaction without the need of user identification. For further information refer to Chapter “4 - How to use it? - Plug&Charge”.



Presence recognition: User identification by proximity using the ‘HiCharge’ App and Bluetooth **Presence Recognition functionality is temporarily disabled. We are working on an update of the application, to expand this information you can contact our technical assistance service.**

C Time schedule

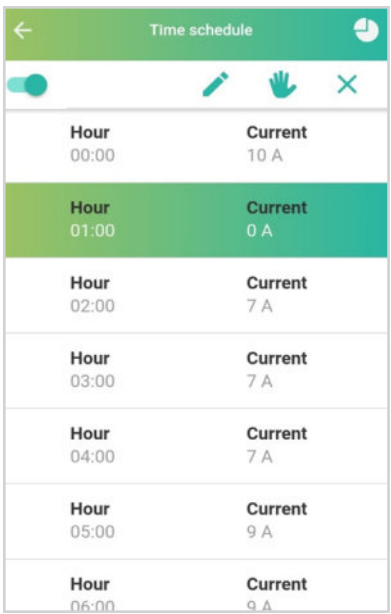
The maximum current that the Charge Point is allowed to deliver at every time can be adjusted in hour intervals.

1. Enable/ disable time schedule

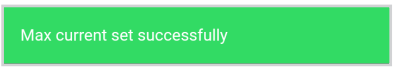
2. Tap on the desired hour intervals to select them (one by one or multiple selection). Edit the maximum current to be supplied at the selected period of time by tapping on . Supplied current can be set between 6 A - 32 A.

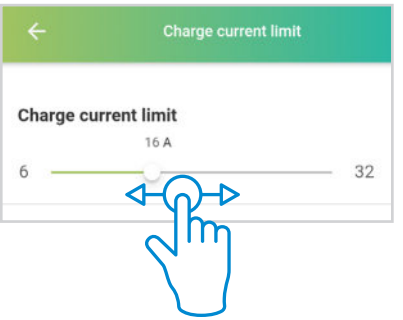
3. By tapping on , the current to be supplied by the Charge Point is set to 0 A, so charges will be disabled at that periods.

All the hours of the schedule can be selected by tapping on .

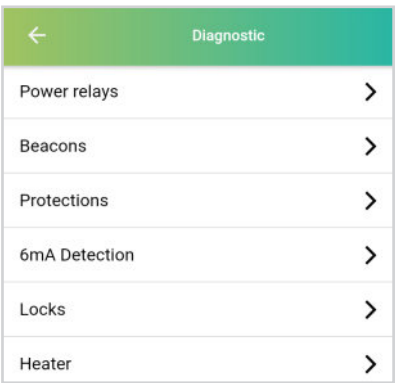


All changes are applied automatically and the following message will pop up to confirm it.

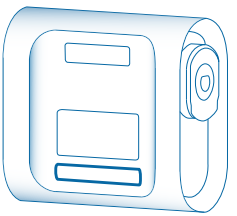




Diagnostic



It is used to check Charge Point internal devices and diagnose possible errors. The LED beacon shows a white color during diagnostic process.



Power relays

Power relays manage the energy that will be supplied to the electric vehicle connected to the Charge Point. This diagnostic will check the internal circuits to verify that the power relays work correctly.

Beacons

The LED Beacon indicates the status of the Charge Point in each moment.

This diagnostic will test that all the LED colors work properly. LED beacon will turn red, green blue and white in this order. The user has to check that all beacon lights work properly.

Protections

This diagnostic will check the electric protections on the Charge Points. Some protections are optionals and may not be implemented in all the equipments.

After this diagnostic, the Charge Point will need to be rearmed manually before it is used again to charge a vehicle.

6mA Detection

This device protects against DC current leakage. The diagnostic test will simulate a DC leakage and verify that the leakage has been detected by the 6mA Detection device. This protection is optional and may not be implemented in all the Charge Points.

This test is performed in two different ways depending on the Charge Point power supply:
Single-phase power supply: The Detection device sends a signal to the Charge Point main PCB, which stops the charge transaction by opening the inner relays. This error is notified with 6 blinking red lights.

In order to restart the charge transaction, unplug the EV. When the LED beacon turns back to green, it will be possible to start another charge transaction.

Three-phase power supply: The Detection device sends a signal to a trip coil that trips the electric protections. Meanwhile, the Charge Point stops the charge transaction and notifies the error with 6 blinking red lights.

In order to restart the charge transaction, unplug the EV. Once the EV is unplugged, the Charge Point will show 6 blinking red lights until the current leak detector is automatically reset. After that, it will show 3 blinking red lights, meaning that no voltage is detected in the power circuit.

In order to fully restore the Charge Point, rearm the electric protections. The beacon lights will turn back to green and it will be possible to start a charge transaction.

Both "Protections" and "6mA Detection" diagnostics shall be performed by qualified personnel.

Locks

The Locking mechanism secures the cable in the socket to prevent an undesired disconnection of the vehicle and to protect the user from a possible electric shock. This functionality is optional and may not be implemented in all the Charge Points

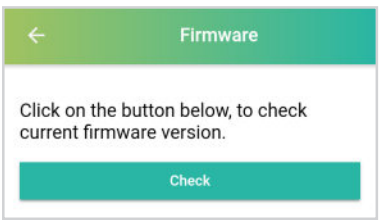
The diagnostic actuates over the locking mechanism of the socket opening and closing it several times. An error will be notified in case the locking system movement is not detected.

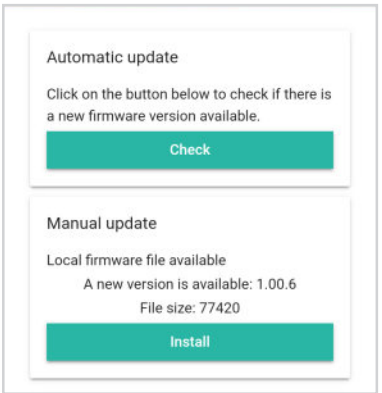
Heater

Heater is a set of devices that supplies heat to prevent devices malfunction due to low temperature. This functionality is optional and may not be implemented in all the Charge Points

The diagnostic will turn on the heater during several seconds and then turn it off. After that, the heater should be warm.

Firmware





The Charge Point firmware can be upgraded through 'HiCharger' app. There are two different ways to perform the upgrade:

Automatic update: This option shall be carried out with **internet connection** in the smartphone. The 'HiCharger' App will check the Charge Point firmware version and if any new firmware version is available. If there is a new firmware version available, a message with the new version code will appear and requesting the user confirmation to perform the installation.

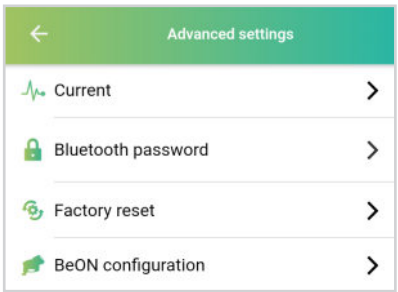
Manual update: This option allows to perform the firmware upgrade **off-line** in case internet is not available near the Charge Point. Firmware can be downloaded to the smartphone when internet is available and later, when the Charge Point and the smartphone are paired, the firmware can be installed. For further information, please refer to chapter "9 - 'HiCharger' App - Settings".

The update process can take several minutes, during this time the application should be kept open and the smartphone in the Charge Point's Bluetooth range.

If an error occurs while updating the Firmware, please try to repeat the process with a different smartphone. If needed, pair the Charge Point with the smartphone using the QR provided in the Installation Manual or inside the equipment or by introducing the password of the Charge Point.

F Advanced settings

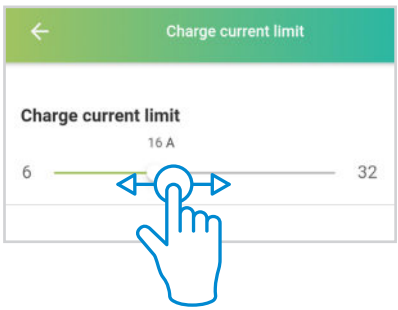
Advanced settings may allow to apply major changes on the Charge Point, such as set the maximum current to be delivered in the charge transaction, change the Bluetooth pasword, perform a factory reset and configurate the BeON device.



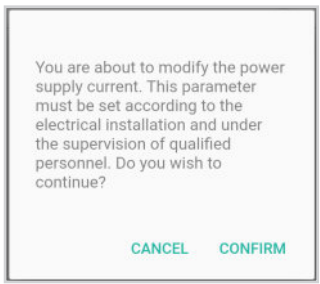
Current

Maximum input current should be selected to avoid an over-current in the main circuit of the electric installation.

The desired current can be adjusted between 6 A and 32 A.



The modification of the supply current value will display a security message. The increase of this value can lead to electrical risks.

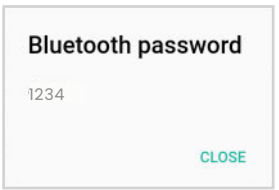


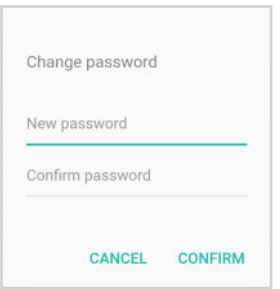
Do not accept this message unless you are a qualified technician.

Bluetooth password

In the 'Bluetooth password' menu, the user can see the current password of the Charge Point and change it. The password shall be a four alphanumeric characters code.

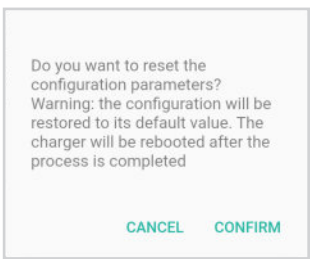
The password can be restored to factory value performing a factory reset as described below.





Factory reset

It performs a reset of the Charge Point settings to factory values. This action makes the system reboot with all parameters changed to factory values.



The settings that will be reset are the following:

- Communication settings
- Password access
- Time schedule
- Power supply current limit
- BeON configuration
- Identification method

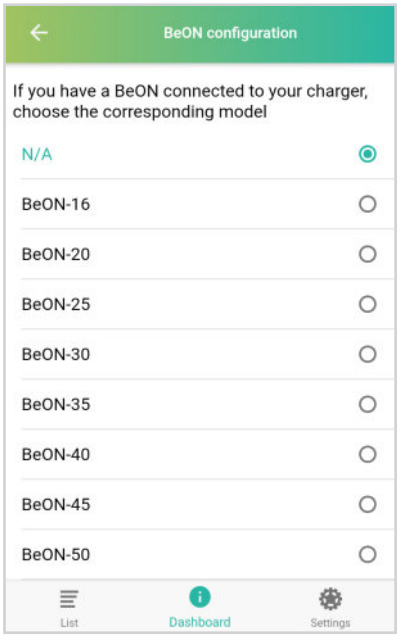
Factory reset can also be performed by a physical button. For further information, please refer to chapter "10 - Factory reset".

Home BeON configuration

The Home BeON device is an optional device that optimises the Electric Vehicle (EV) Charge Point analysing the total current consumption in the residential facilities. Home BeON manages the current that can be supplied to the vehicle considering the consumption of other devices connected to the installation.

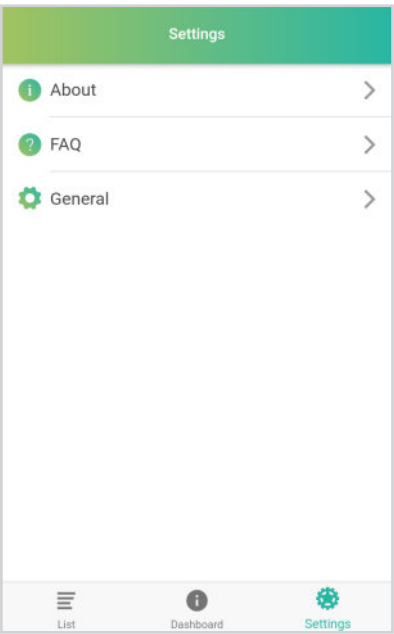
It is necessary to set the model of the Home BeON in the Charge Point through the 'HiCharger' App to manage properly the power supplied to the vehicle.

For further information about Home BeOn configuration , please refer to Home BeON manual.



8

A Overview



About: gives information about Circontrol company and 'HiCharger' App.

FAQ: Frequently Asked Questions.

General: 'HiCharger' App Settings menu.

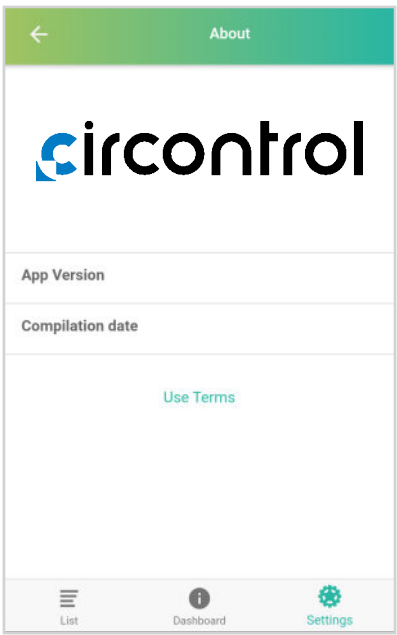
‘HiCharger’ App – Settings

B About

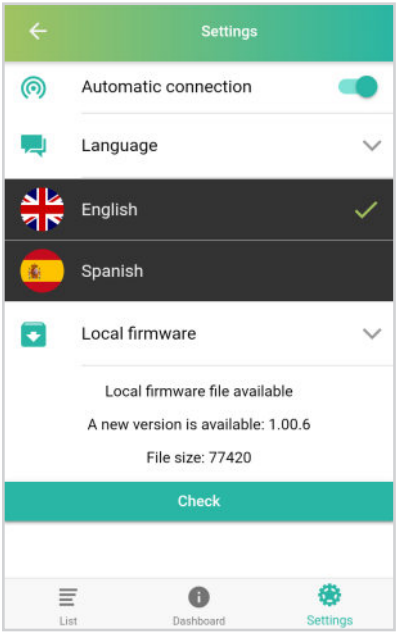
App Version: Current ‘HiCharger’ App version.

Compilation date: Release date of the App version installed.

Use Terms: Terms that the user shall agree in order to use ‘HiCharger’ App.



General



Automatic connection: This option allows the smartphone to directly pair to any Charge Point from the 'List' menu that is available. This option should be enabled to allow the Presence Recognition.

**This function don't have any effect if you are in plug and play mode.*

Language: This option allows to change the language of the App.

Local firmware: This option allows to check the latest Charge Point firmware available and download it to install it later in the Charge Point. This shall be done before upgrading the Charge Point firmware if there is no internet connection near the Charge Point.

Local firmware

'HiCharger' checks the availability of a new Charge Point firmware version when there is internet connection. 'HiCharger' will notify that there is a new firmware with an icon and the user will be able to download it in the smartphone.

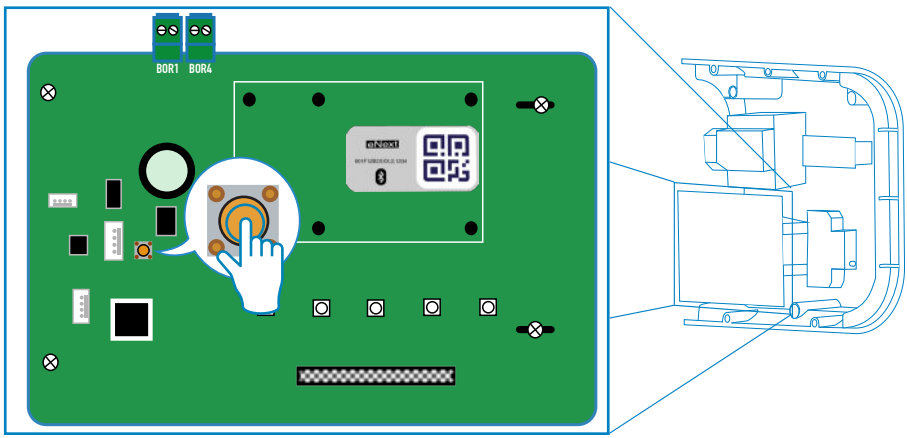
Once the new firmware version has been downloaded, the Charge Point firmware can be upgraded off-line in the 'Charger Options' menu. For further information, please refer to chapter "8 - Charger Options".

9

Factory reset is a function of the Charge point to reset its configuration to factory values.

Factory button

The main PCB is located inside the Charge Point equipment. As shown in the figure below, a yellow button can be found in the main PCB. The factory reset is executed by pressing and holding the yellow button for three seconds.



After that, the Charge Point will perform a system reboot and all the settings will be restored to factory values.

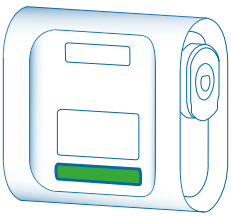
Factory reset

Settings that will be reestablished:

- Communication settings
- Time schedule
- Identification method
- Power supply current limit
- Password access
- Home BeON configuration

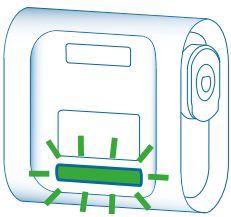
10

The LED beacon on the Charge Point informs about different status or error messages, using different colors and sequences.



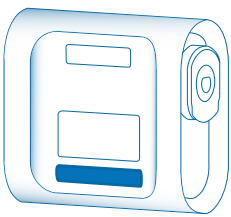
GREEN LIGHT

Green light indicates 'Presence recognition' identification method is enabled and that the Charge Point is waiting for a user identification.



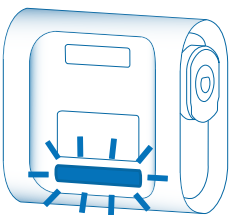
GREEN FADE-IN/ FADE-OUT LIGHT

Green fade-in/fade-out light indicates that the Charge Point is available to start a charge transaction and waiting for the user to connect the vehicle.



BLUE LIGHT

Blue light indicates that the vehicle is connected but charge transaction is not being performed.



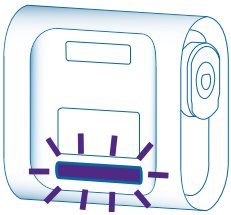
BLUE FADE-IN/FADE-OUT LIGHT

Blue fade-in/fade-out light indicates that the charge transaction is being performed.

LED beacon notifications - Legend

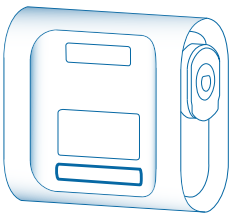
PURPLE BLINKING

Three purple blinks indicate that the user has been identified by the Charge Point through Presence recognition.



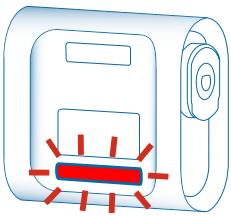
WHITE LIGHT

White light indicates that the Charge Point is running an auto-diagnostic. For further information, please refer to Section “D - Diagnostic” in Chapter 8.



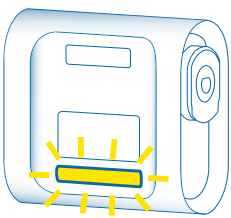
RED BLINKING

Red blinking light indicates that the Charge Point is not working properly. The number of blinks informs about the error type. For further information about the possible errors, please refer to Section “A - Blinking red errors” of this chapter.



YELLOW BLINKING

Yellow light blinking indicates that the Charge Point is not working properly. The number of blinks informs about the error type. For further information about the possible errors, please refer to Section “B - Blinking yellow status” of this chapter.



A Blinking red errors

Nº of blinks	Error	Description	Solution
3	Low voltage	No voltage detected in the power circuit.	Make sure all protections are armed.
5	Electric protection	The electric protections of the unit are tripped.	Rearm the protections. If you have any question, contact technical support.
6	Current leak	A current leakage has been detected.	Rearm the protections. If you have any question, contact technical support.
11	Connector lock	The connector lock has failed.	Try repeating the operation. If the error persists, contact technical support.
12	Welded contact	An internal short circuit has been detected.	Unplug the vehicle, restart the unit and try again. If the error persists, contact technical support.
14	Damaged cable	The cable plugged to the Charge point is damaged.	Try using another cable. If the error persists, contact technical support.
15	Negative PWM	Invalid communication response from the EV.	Unplug the cable and wait until the LED beacons turn green to plug it again. If the error persists, contact technical support.
16	E Status	Communication error between the vehicle and the equipment.	Try using another cable. If the error persists, contact technical support.
17	D Status	Ventilation system is needed because of EV request.	Please contact technical support.
18	Maintenance required (Relays)	Some internal components need maintenance.	Please contact technical support.

B Blinking yellow status

Number of blinks	Error	Description	Solution
7	High temperature	The temperature inside the charger is too high to charge.	Wait until the temperature goes back to normal and try again.
8	Low temperature	The temperature inside the charger is too low to charge.	Wait until the temperature goes back to normal and try again.

11

GENERAL DATA	
LED beacon light	Frontal LED bar
Wireless communication	Bluetooth v4.2 + BLE
Connectors	Type 1 Cable
	Type 2 Cable
	Type 2 Socket

MECHANICAL DATA	
Enclosure rating	IP54 / IK10*
Enclosure material	ABS / PC
Enclosure closure system	Anti-vandalism Allen screws
Net weight	4 kg
Dimensions (W x H x D)	335 x 315 x 200 mm

* IK8 in some components appended to the body, ie: beacon light.

ENVIRONMENTAL CONDITIONS	
Operating temperature	-5°C to +45°C
Operating temperature with Low Temperature Kit (optional)	-30°C to +45°C
Storage temperature	-40°C to +60°C
Operating humidity	5% to 95% Non-condensing

Technical Data

ELECTRICAL DATA	
Power supply	1P+N+PE / 3P+N+PE
Input voltage	230VAC+/-10% / 400VAC+/-10%
Frequency	50Hz / 60Hz
Protections (optional)	MCB IEC 60898-1 (curve C) - includes shunt trip
	DC 6mA leakage detector (MCB/RCBO with shunt trip is required to open the circuit)
	RCBO: RCD Type A + MCB - includes shunt trip

MCB complies with IEC 60898-1
RCD complies with IEC 62955

Some models do not include intern protections, therefore, the required protections shall be placed upstream in the circuit. The applicable regulations must be taken into account.

MODEL*	CONNECTORS BY DEFAULT	OUTPUT CURRENT	OUTPUT POWER	MINIMUM CABLE CROSS SECTION**
eNext S	Type 2 Socket	32A	7,4kW	10mm^2
eNext T	Type 2 Socket	32A	22kW	10mm^2

(*) Please check availability with your local supplier

(**) Minimum cable cross section recommended for the maximum AC input current. The final cross section must be calculated by a qualified technician taking into account the specific conditions of installation.

12

Need help?

In case of any query or if further information is required, please contact our **Post-Sales Department**.

support@circontrol.com

circontrol.com

(+34) 937 362 940

(+34) 937 362 941

CIRCONTROL
WALLBOX eNEXT
USER MANUAL

A comprehensive guide on how to use and configure your Wallbox eNext.

v2.3 - 11th June 2023

CIRCONTROL S.A. - ALL RIGHTS RESERVED