



## VIARIS GRAVITY



# Operation Manual

First revision – 15/10/2022

## Notice

The purpose of this manual is to provide explanations and procedures for the operation of the Charging station. This manual should be read carefully before the operation.

Compliance with the "Safety Instructions" is mandatory, the user being legally responsible for their observance.

The equipment described here can cause physical damage due to improper manipulation. For this reason, installation, commissioning and maintenance or repair must be carried out by qualified and trained personnel. Therefore, Vega Energy Technologies S.L. assumes no responsibility for direct or indirect damages derived from the incorrect use of this document or if the manipulation of the Charging station has been carried out by unqualified personnel.

The content of this manual is subject to change without prior notice to improve its quality and does not represent a commitment on the part of Vega Energy Technologies S.L.

Keep this manual for future reference.

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# 1. Introduction

Before all else, we thank you in advance for the trust placed in us by purchasing this Charging station. We appreciate your business, and we will do our best to continue to provide you with the products and services you deserve. We remain at your entire disposal for any additional information or queries that you wish to make.

Vega Energy Technologies' Charging stations have been designed under the applicable international regulations and following a rigorous control of the manufacturing process that guarantees safe use by users.

The ALOHA DC fast Charging station complies with all DC charging protocols, thus providing service to all users, regardless of the electric vehicle used. It can be used in both public and private spaces as well as indoors or outdoors.

Thanks to its intuitive interface, it is giving the user a pleasant and effective experience by displaying the charging information in real time.

## 2. Safety information

### 2.1 Symbols used in this document

Following symbols can be used both at the charger and in the written documentation:



***ELECTRIC RISK:*** symbol of «Hazardous voltage». Pay special attention to this symbol, it indicates an electrical hazard that can produce injury or death by electrocution.



***WARNING:*** symbol of «General warning». Pay special attention to this symbol, it indicates a possible hazard that can produce injury to the personnel and/or damage to the charger.

## Electric risk



- The charger must be installed by a trained and qualified electrician in accordance with this Installation and Operation manual and to the national or local safety regulations. Improper manipulation of the charger can result in injury or death by electrocution.
- Be sure to use the personal Electrical Protective Equipment during the installation and repair of the charger.
- Use the proper tools for electricians and the recommended ones by this Installation and Operation manual.
- Switch off the power at the main panel before doing the electrical connection of the charger or repair.
- The charger must be grounded before powering it up.
- Do not connect the power until the charger is fully installed with its covers installed and secured.
- Be sure that there is no water ingress into the charger during the installation or repair.
- Do not use the charger with visibly damaged charging cables.
- Do not use the charger if the enclosure is broken, cracked, open, or shows any other signs of damage.
- In the event of danger or an accident, a certified electrician must immediately disconnect the electrical supply from the main panel.
- Do not repair or service the charger by yourself, contact with ORBIS customer service.

## Warning



- Use this charger only for the purpose for which it was designed; otherwise, the warranty and liability may be voided.
- Check your vehicle's owner's manual to see if your vehicle is compatible.
- Confirm that the environmental requirements for the charger installation are adequate; use the charger under the specified operating conditions.
- Check if the installation site has enough load capacity to support the charger.
- Observe the minimum distances for the installation and do not block the air inlet and outlet grille.
- Make sure the charging cable is positioned so that it will not be stepped on, tripped over, damaged or strained. Also, check that the connectors do not come into contact with sources of dirt or water.
- During charging, the charging cable should be totally unrolled and connected to the vehicle's charging port without loops to avoid overheating of it.
- When disconnecting the charging cable from the vehicle's charging port, tire from the charging connector grip and never from the charging cable itself.
- If you are unsure about how to use a charger read the Installation and Operation manual or ask for help.

## 3. Product description

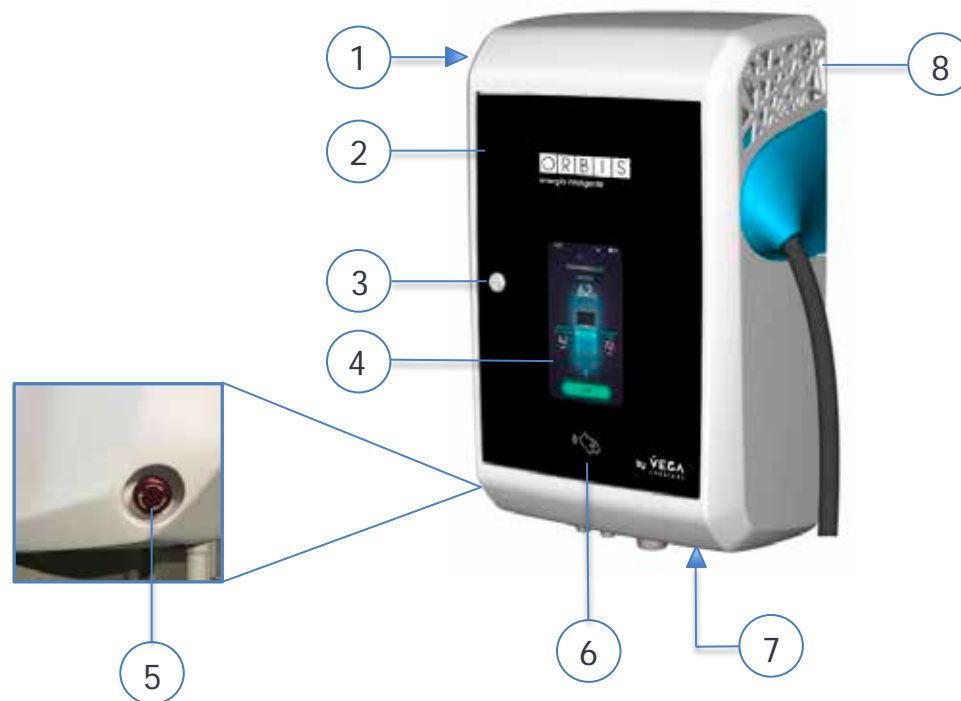
### 3.1 Overview

#### *Outside view I*



| N° | Description            | N° | Description                           |
|----|------------------------|----|---------------------------------------|
| 1  | CHAdeMO connector      | 5  | Removable outer case                  |
| 2  | CHAdeMO LED bar (H1)   | 6  | CCS2 connector                        |
| 3  | Customizable logo area | 7  | AC input cable gland                  |
| 4  | CCS2 LED bar (H2)      | 8  | Ethernet input and output cable gland |

## Outside view II



| N° | Description               | N° | Description               |
|----|---------------------------|----|---------------------------|
| 1  | Left air outlet + filter  | 5  | Emergency button (S3)     |
| 2  | Front access door         | 6  | RFID reader (A4)          |
| 3  | Opening key               | 7  | Bottom air inlet + filter |
| 4  | Touch screen - 10,1" (A7) | 8  | Right air outlet + filter |

## 3.2 Features

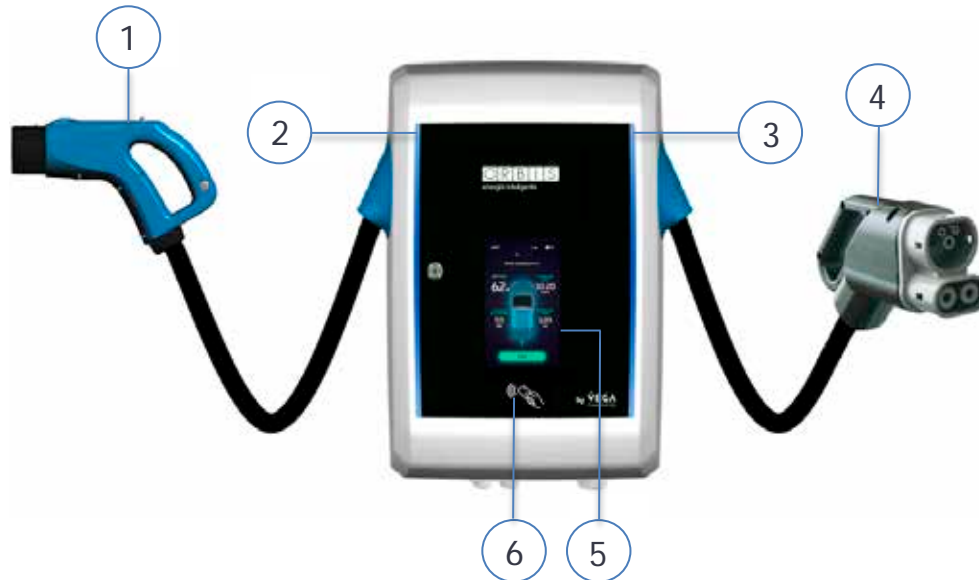
- Fully compatible with current and future electric vehicles.
- Built in accordance with the latest industry standards for DC charging.
- Modular design and ultra-compact size, ensuring easy and cost-effective installation.
- Friendly user interface and easy to operate thanks to its 10,1" touch screen.
- Version for wall or pole mounted.
- Single or multi standard connector.
- Easy maintenance thanks to its front access door.
- Low standby power consumption.
- Thanks to its charging power, it maximizes revenue opportunities for operators offering around 200 km of range per connection hour.
- Additional functionalities, such as authorization and billing systems.
- OCPP connectivity for authentication and remote control.
- Preconfigured and ready to install.
- Logo displayed on screen and housing colors according to your brand.
- Indoors or outdoors, IP54 protection and IK08 vandal resistant housing.

## 3.3 Applications

- Shopping centers, supermarkets, and convention hotels.
- Car manufacturers and dealers.
- Parking areas at the workplace.
- Public and private car parks.
- Corporate fleets and carsharing.
- Condominium parking areas.
- Public transport depots.

## 4. Operation






### 4.1 Charger interface



| N° | Description          | N° | Description    |
|----|----------------------|----|----------------|
| 1  | CHAdeMO connector    | 4  | CCS2 connector |
| 2  | CHAdeMO LED bar (H1) | 5  | HMI screen     |
| 3  | CCS LED bar (H2)     | 6  | RFID reader    |

### 4.2 LED bars

There are two LED bars, the left is for the CHAdeMO connector, and the right is for the CCS connector.

|   |   |
|---|---|
|  | Green. Connector available                                      |
|  | Cyan. Connector occupied  |
|  | Blue. Connector charging  |
|  | Red. Connector faulted or the emergency button has been pressed |
|  | Orange. Connector reserved or unavailable                       |

## 4.3 Connectors

The Charging station, depending on the needs, can be offered with up to two connectors. It can be CHAdeMO and/or CCS2.

### *CHAdeMO connector:*

UP to 80 A / 500 V



1. Connector with retractable contacts inside. It has power and comm. contacts.
2. After mating, "OK mark" will appear.
3. LED lamp turn on when charging begins and the connector cannot be released until charging stops and the lamp is off. The block is sent by the charger.

### *CCS2 connector:*

UP to 80 A / 1000 V



1. Connector. Upper side dedicated for communication contacts and ground, lower side for power contacts.
2. The block is done by the vehicle closing a latch in the locking hole.

## 4.4 HMI description

During the charging process, the Human Machine Interface (HMI) gives instructions to the user along the different stages.

After powering up the charger, the screen will show the *ORBIS* logo, after around 15 seconds, the main screen will be shown:



*NOTE: ORBIS logo shown in the middle of the screen is for example only, can be customized for each customer.*

**Main screen:**

Next, we can see the main screen and its description.

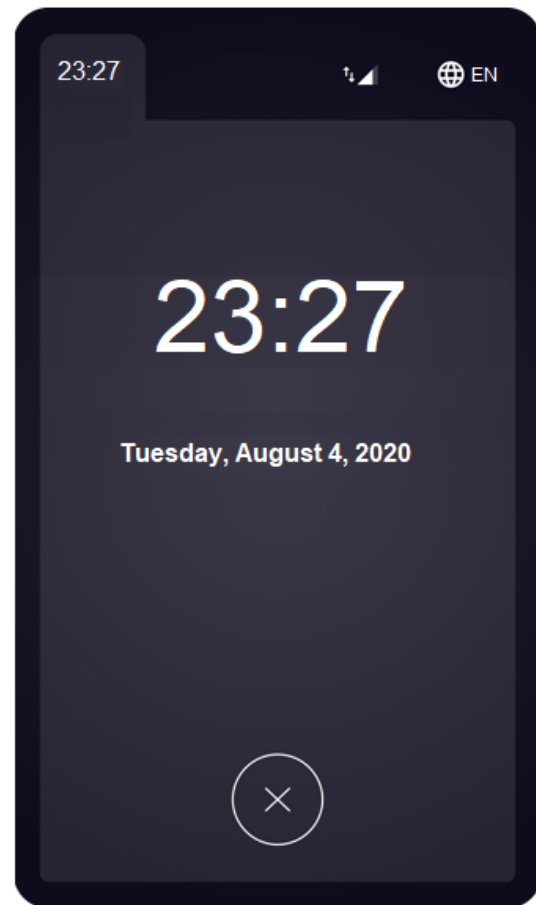


| Nº | Description  | Nº | Description   |
|----|--|----|---|
| 1  | Current time information. It is a touchable button.                                  | 4  | Start button.                                       |
| 2  | Message area. Here, it can be seen different information while the charging session. | 5  | Connectivity information. It is a touchable button. |
| 3  | Customizable logo area. The logo can be personalized for each customer.              | 6  | Language selection. It is a touchable button.       |

Below we can see the options after tapping over the touchable buttons:

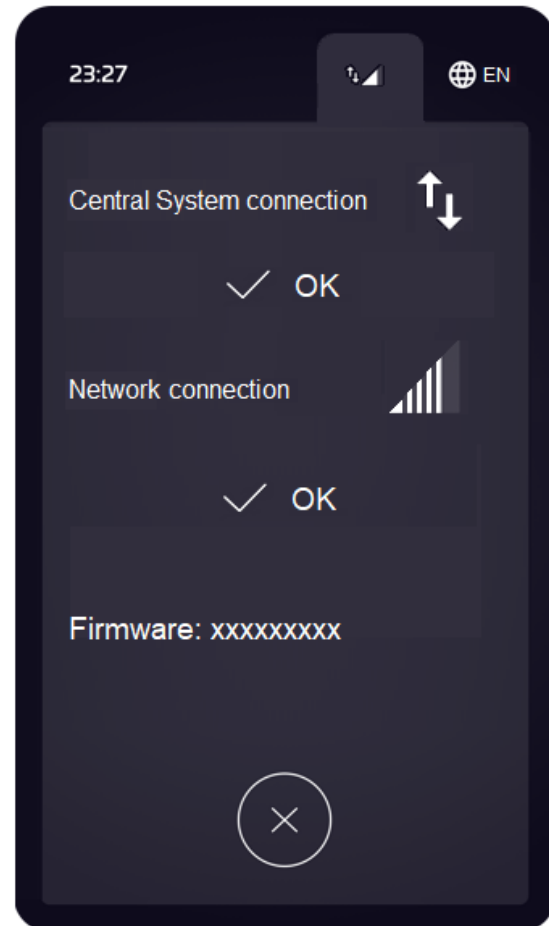
*Current time information:*

By touching on the *Time* icon, we can see the current time plus the date.



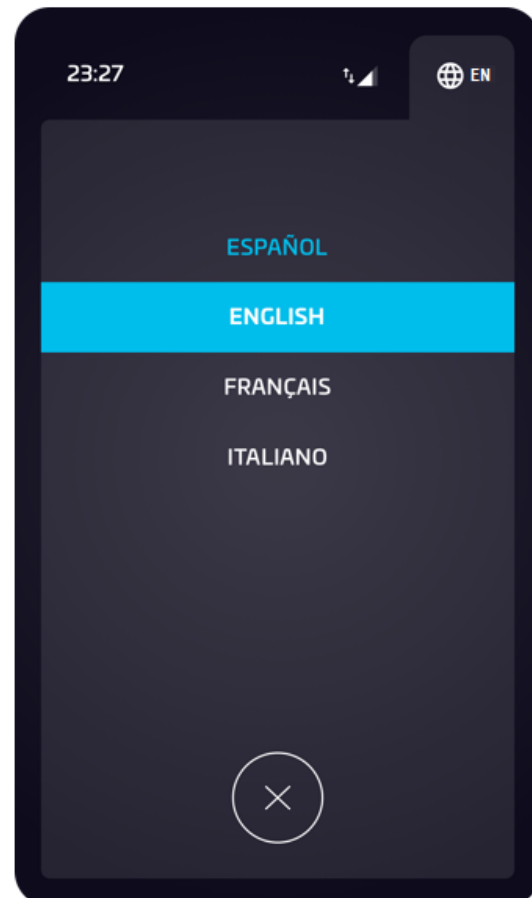
*Connectivity information:*

By touching on the *Connectivity* icon, we can see the status of the Central System and/or the network connection. Besides, it can be seen the firmware version of the charger.



Language selection:

By touching on the *Language* icon, the user can choose the language according to their preferences.



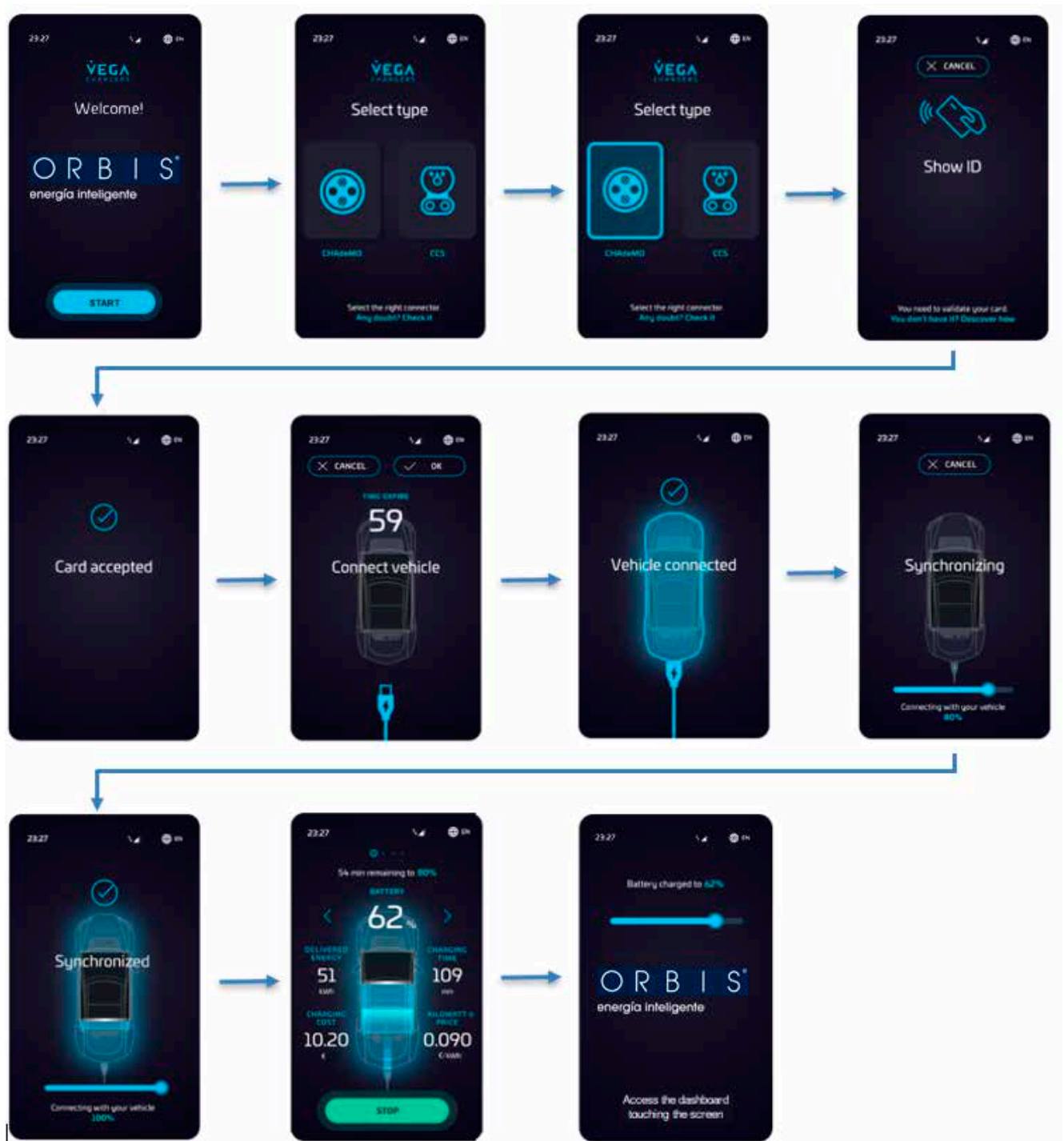
**NOTE:** for every screen before the charging session is established, after 20 seconds of inactivity, the charger will go back to the main screen with the default language.

## 4.5 Opening a charging session

There are different ways of authentication for opening the charging session, next we can see the different options:

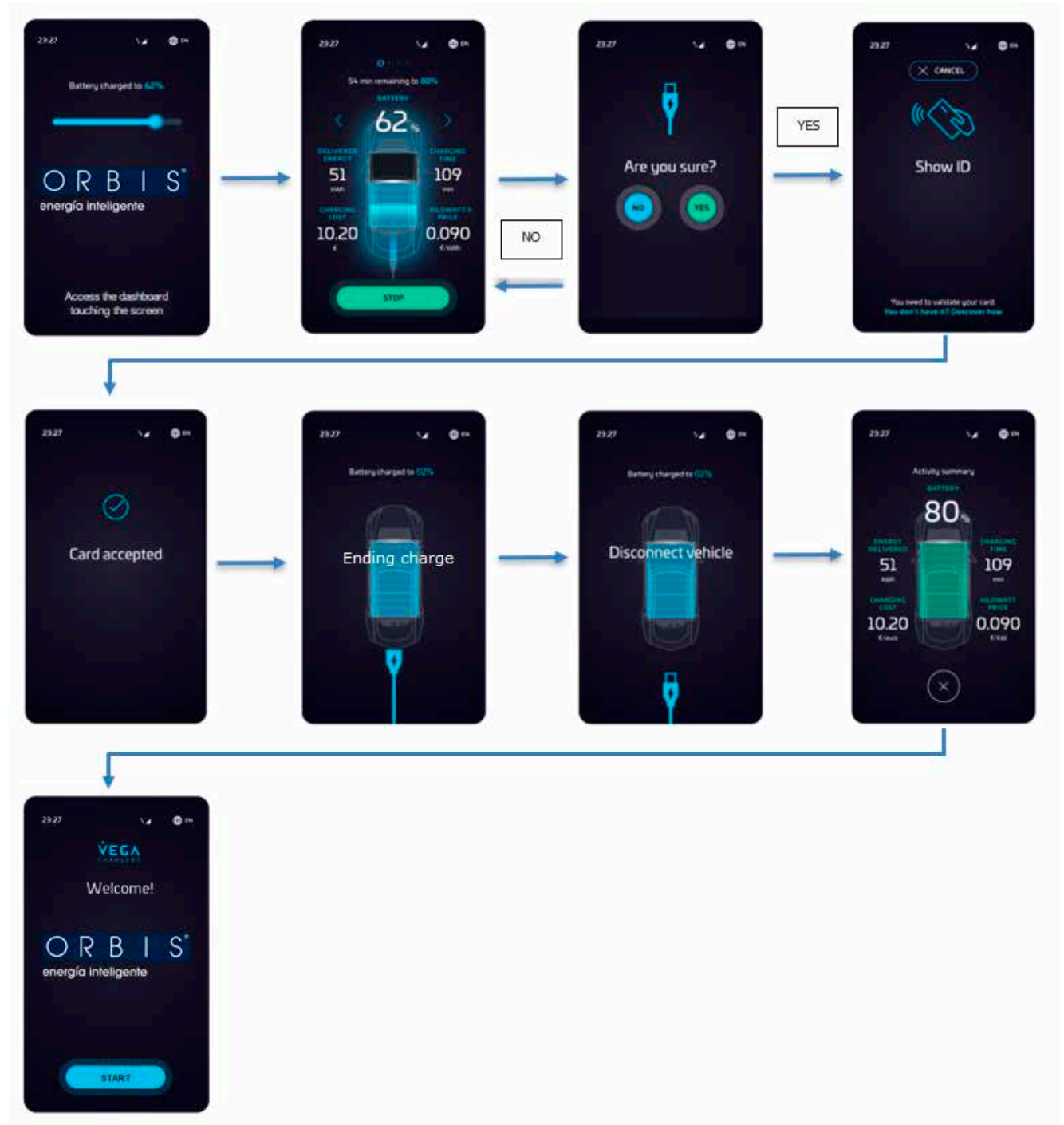
### 4.5.1 Starting and stopping with *Authentication ON* – RFID authentication

#### Starting



## Stopping

The charging session can be stopped at any time by touching the screen, pressing the stop button, and showing the identification, otherwise the charging session will end when the vehicle reaches its maximum battery SoC.

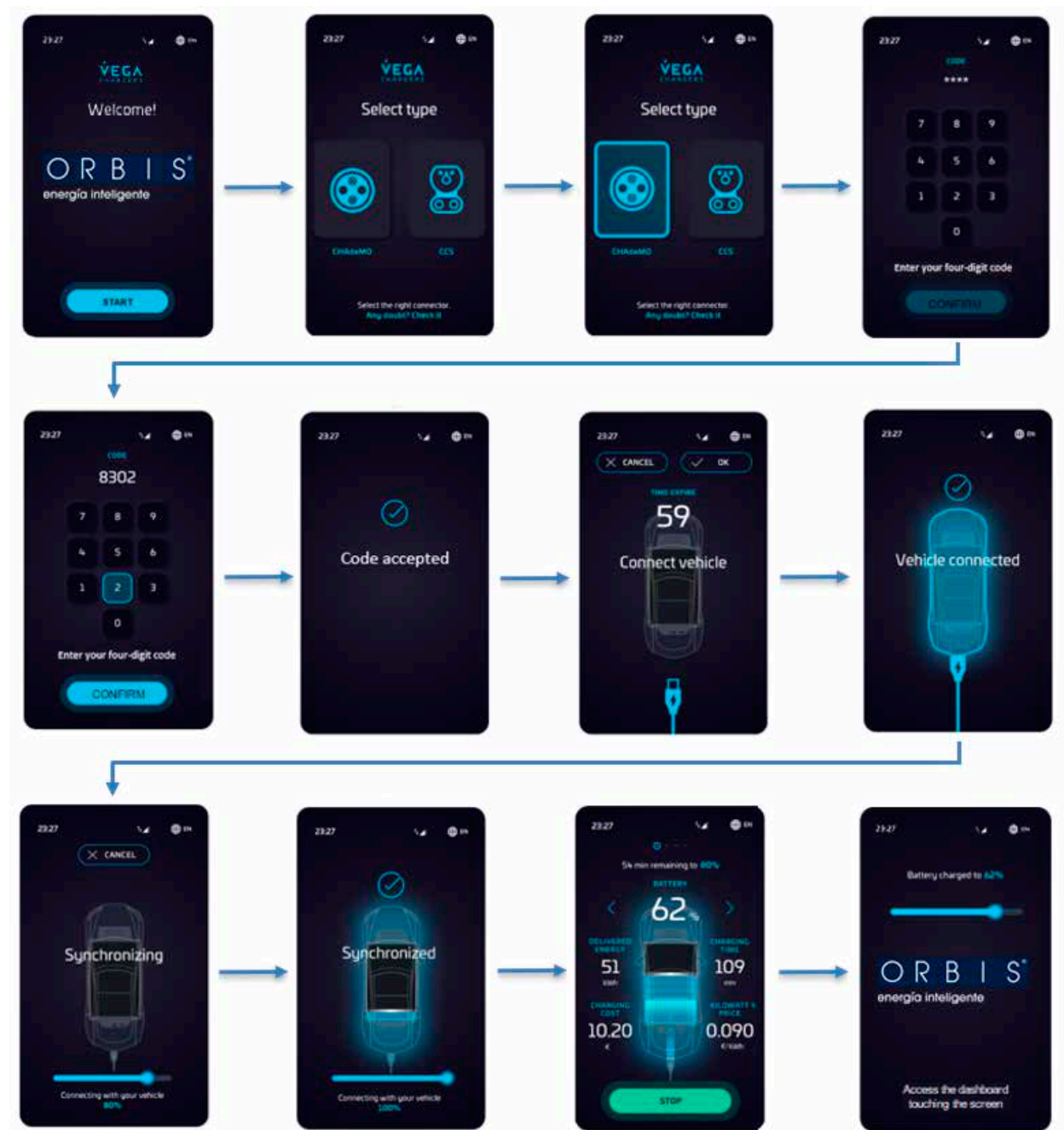


*NOTE: starting with an RFID authentication can be under OCPP connection, under an internal whitelist of the charger or open for all the RFID cards or NFC devices. It can be selected through the EWS (Embedded web server) during the commissioning.*

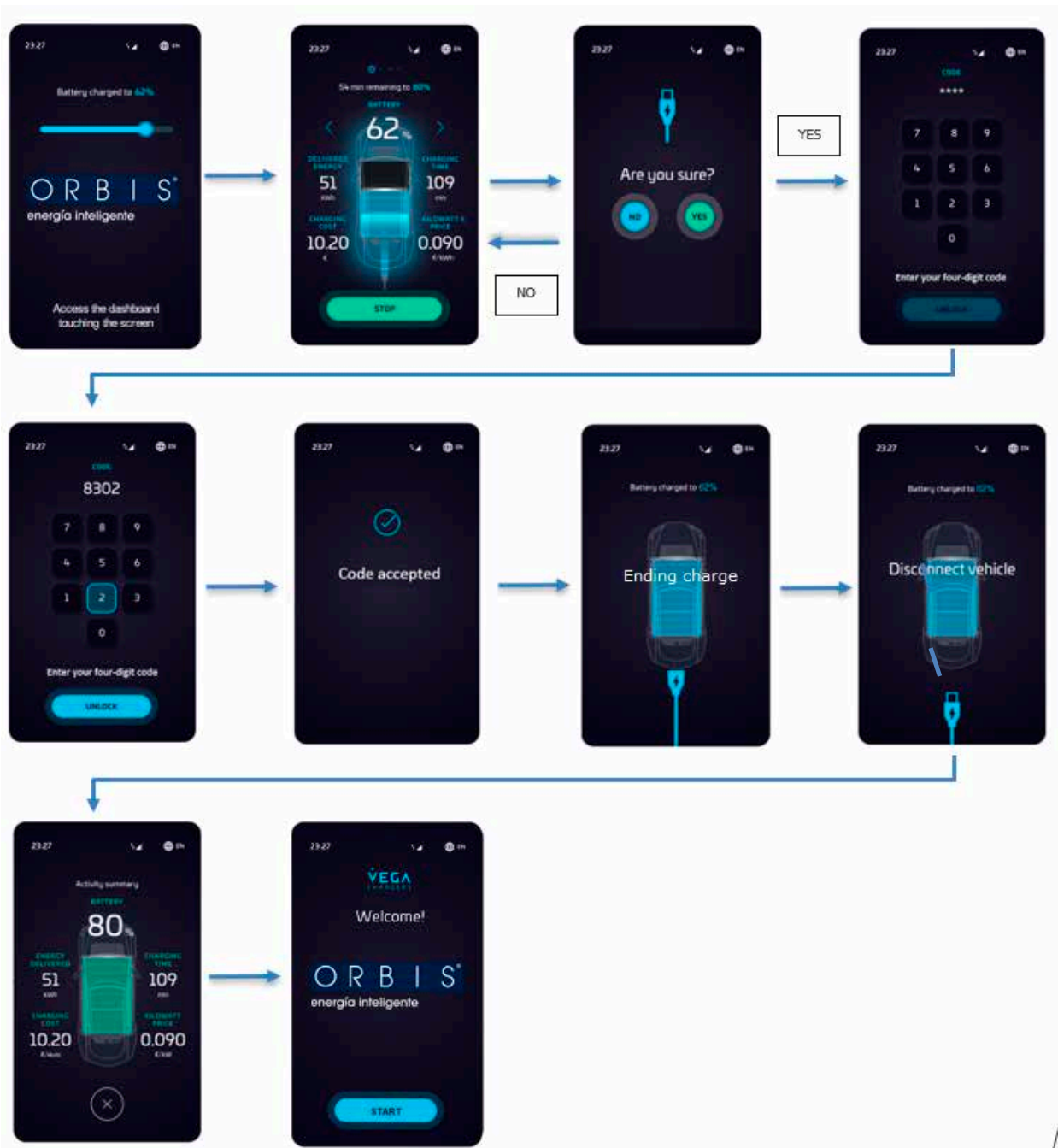
### 4.5.2 Starting and stopping with Authentication ON – PIN code authentication

With this option, no physical authentication is required, but a PIN code established by the operator is required.

#### Starting



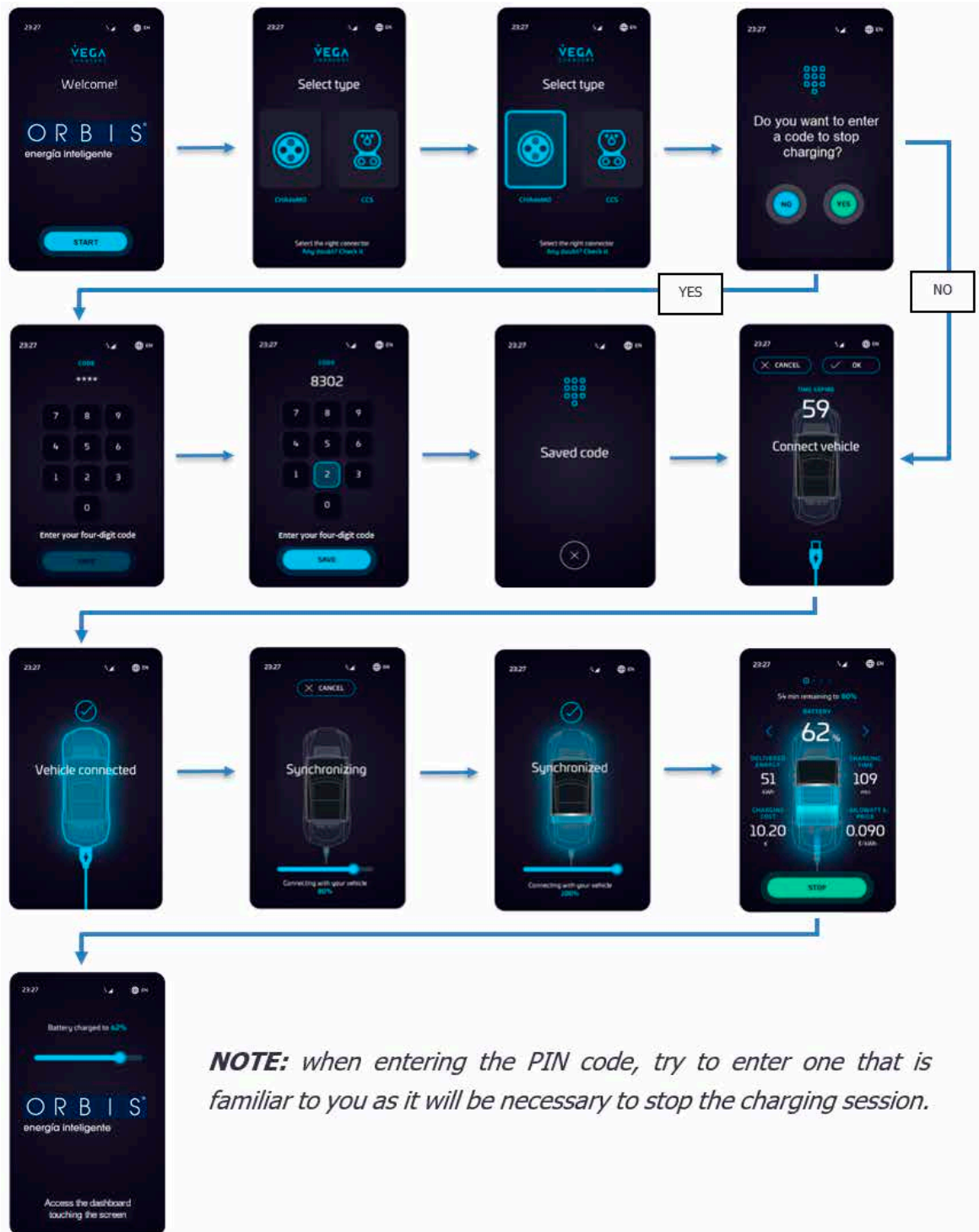
## Stopping



### 4.5.3 Starting and stopping *with Authentication OFF – Plug & Charge*:

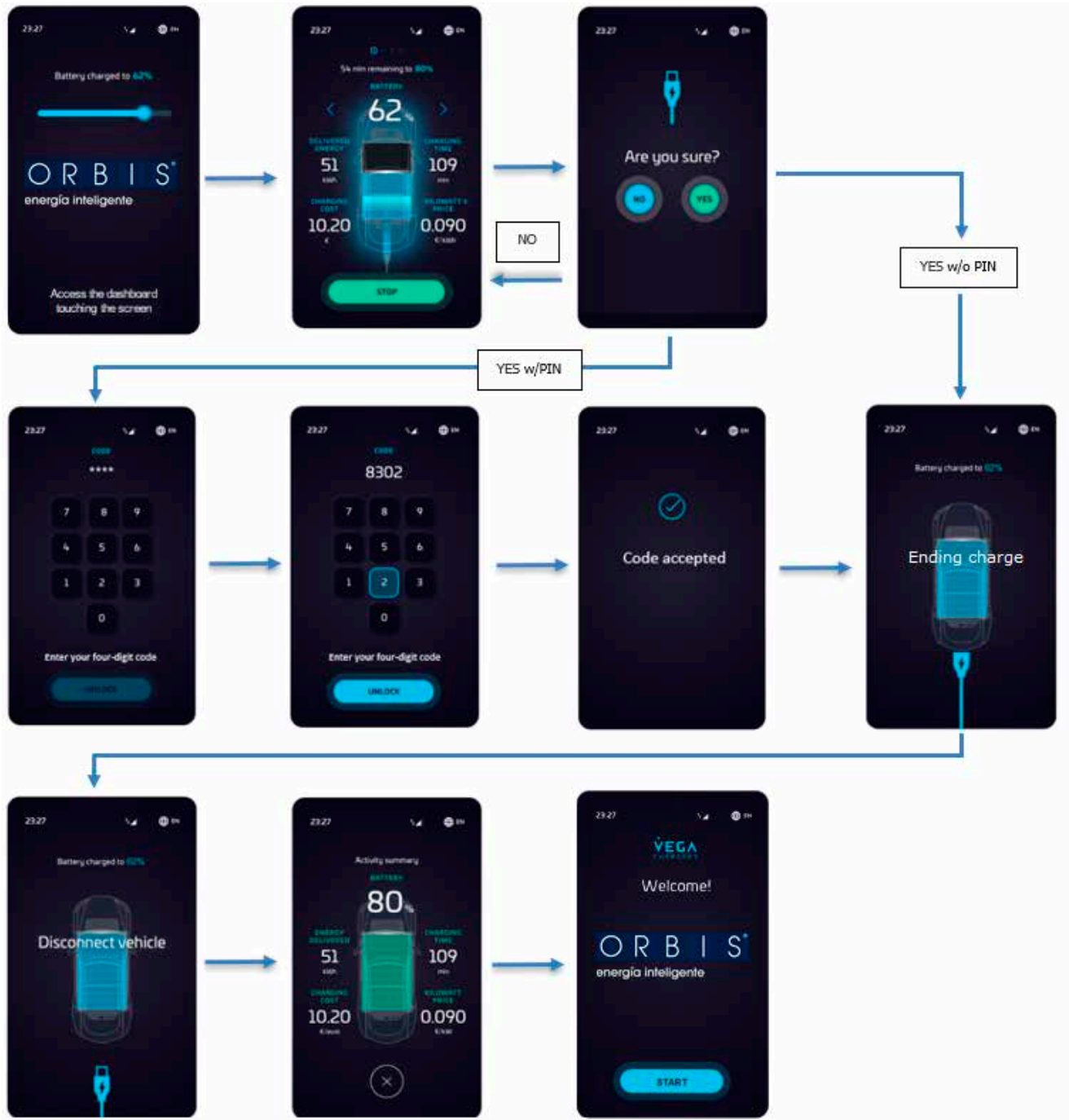
This option allows the user to start and stop the charging session without any means of authentication offering the possibility to introduce a PIN code in advance for stopping later.

#### Starting



## Stopping

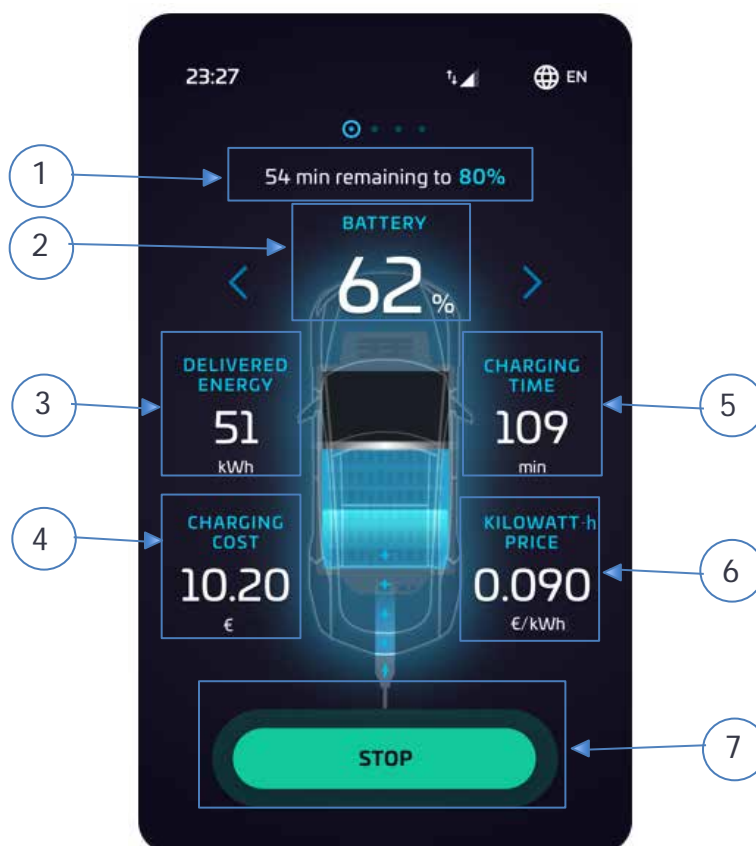
The charging session can be stopped at any time by simply pressing the stop button or after pressing it, entering the PIN code, otherwise the charging session will end when the vehicle reaches its maximum battery SoC.



## 4.6 Charging information

During the charging session, the screen shows different information that offers to the user all the details of the process. This is displayed on four different screens.

A) General



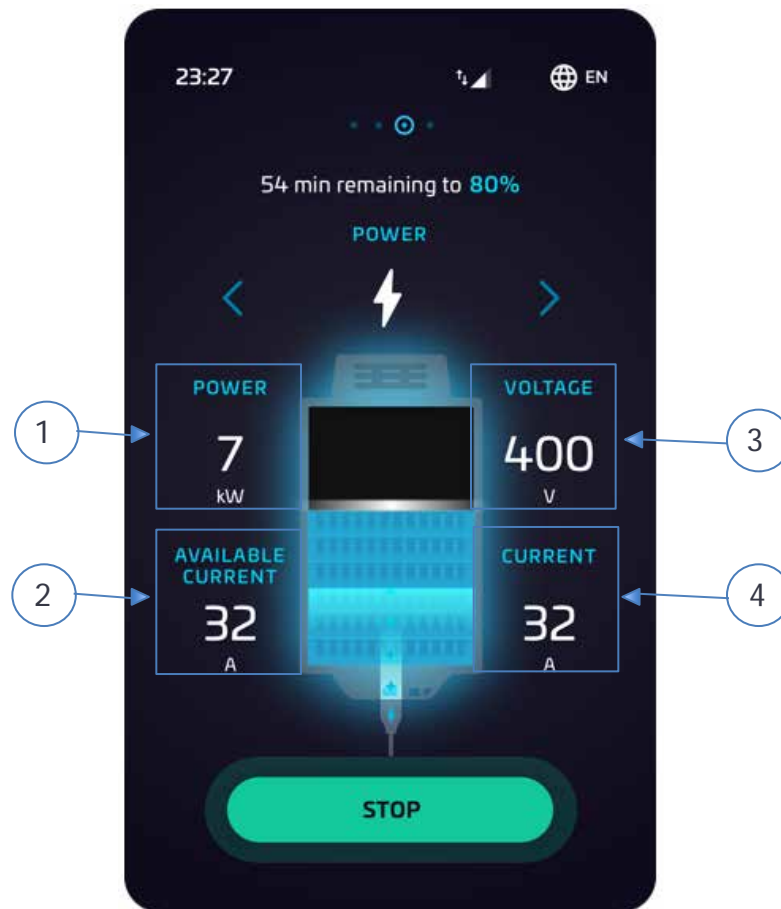
| N° | Description   | N° | Description                                      |
|----|---|----|--|
| 1  | Remaining time to reach the 80% of the battery state of charge (SoC). | 5  | Time elapsed so far.                             |
| 2  | Current battery SoC.  | 6  | Price for each kWh delivered during the session. |
| 3  | Delivered energy so far.  | 7  | Stop button.                                     |
| 4  | Charging cost depending on the kWh price and the delivered energy.    |    |  |

B) Currency



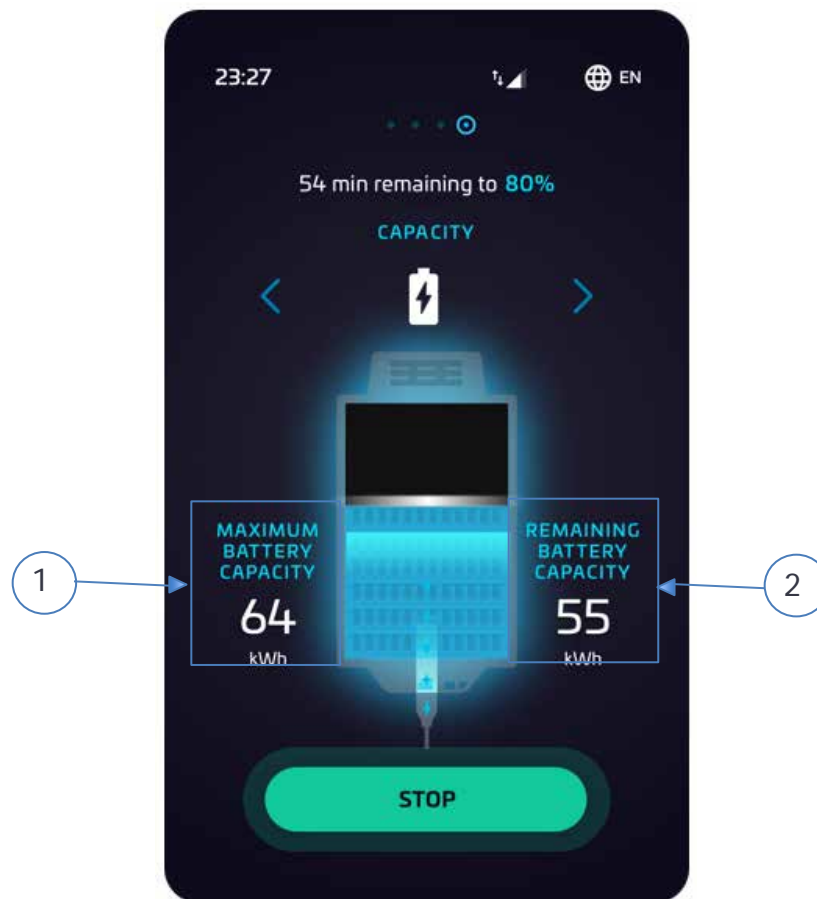
| N° | Description                                      | N° | Description  |
|----|--|----|--|
| 1  | Currency selected.                               | 4  | Charging cost depending on the kWh price and the delivered energy. |
| 2  | Slide left button.                               | 5  | Slide right button.  |
| 3  | Price for each kWh delivered during the session. | 6  |  |

C) Power



| N° | Description                 | N° | Description                   |
|----|-----------------------------|----|-------------------------------|
| 1  | Instantaneous output power. | 3  | Instantaneous output voltage. |
| 2  | Available charger current.  | 4  | Instantaneous output current. |

D) Capacity

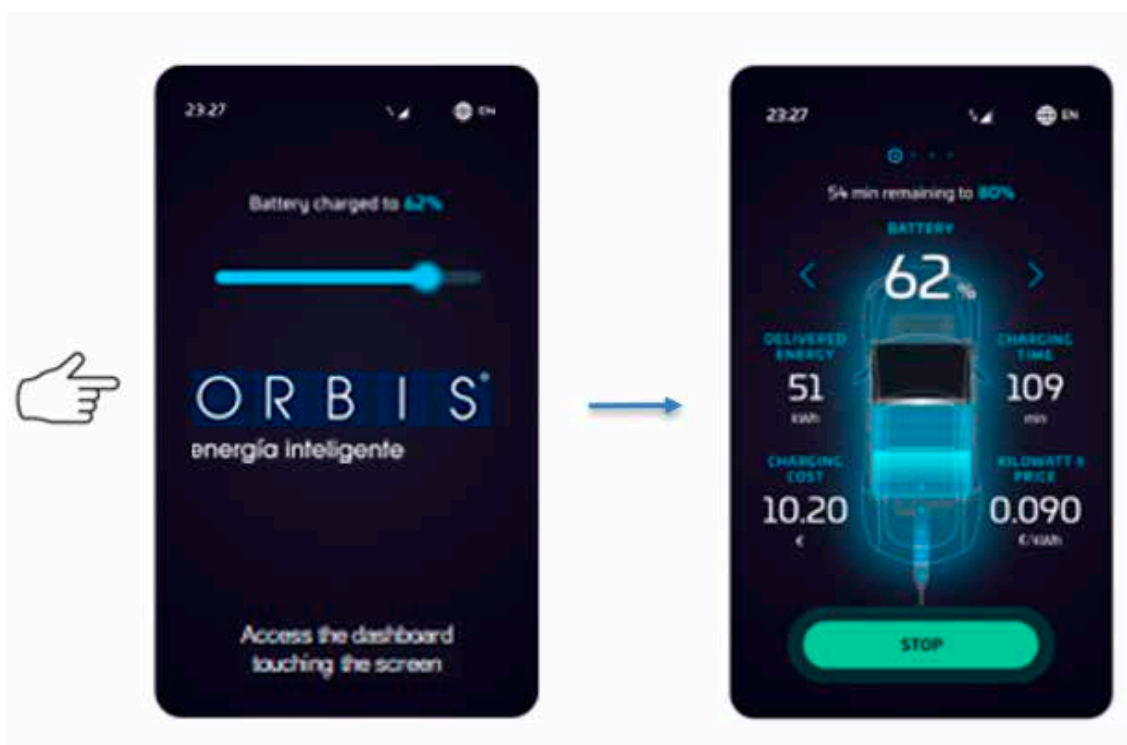


| N° | Description   | N° | Description  |
|----|---|----|--|
| 1  | Maximum battery capacity allowed by the vehicle side. | 3  | Remaining battery capacity to reach the 80% of the SoC |
| 2  | xxxxxx.   | 4  | xxxxxx.  |

The user can navigate for all the screens shown above to know the details of the charging session but after 30 seconds of inactivity the screen will go to the charging screen saver:

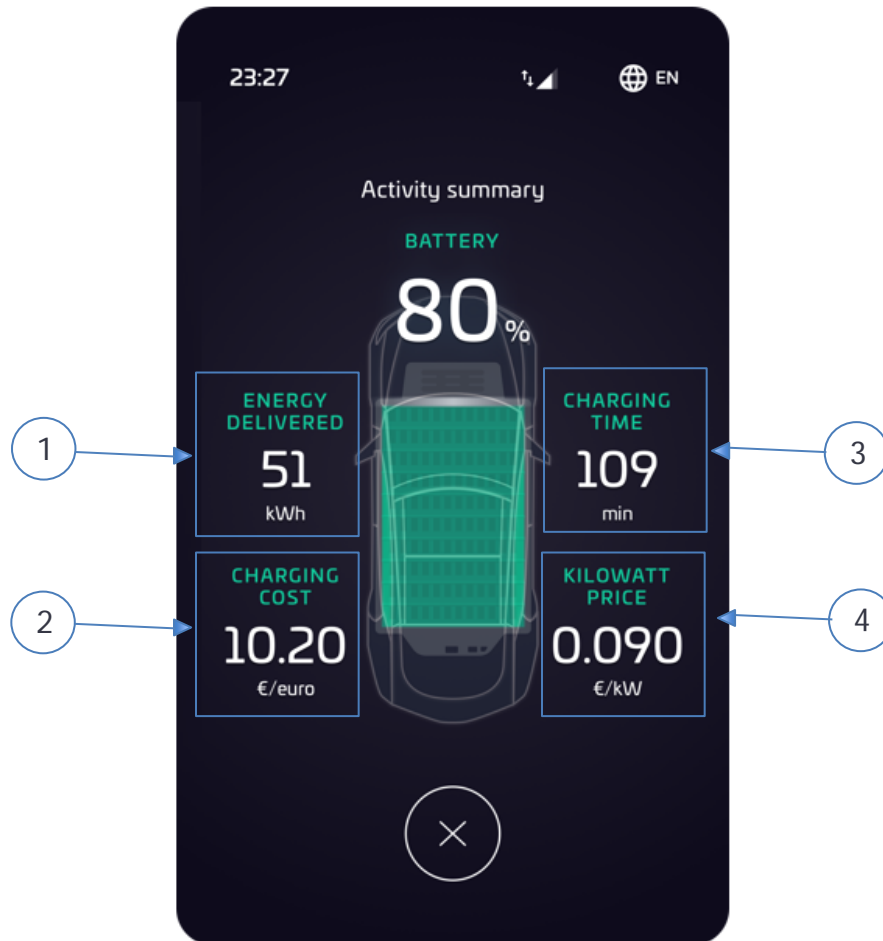


Just by tapping on the screen, the dashboard will reappear and show the charging process:



## Charging summary

Once the charging session is finished, before going to the main screen, the screen will show the summary of the session:

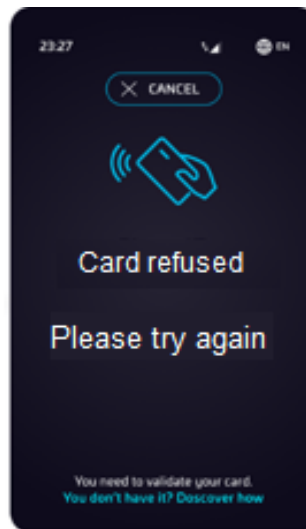


| N° | Description                           | N° | Description   |
|----|---------------------------------------|----|---|
| 1  | Total delivered energy to the vehicle | 3  | Total charging time                                       |
| 2  | Total cost of the charging session    | 4  | Price for each kilowatt hour delivered during the session |

## 4.7 Issues when opening a charging session

When opening a charging session, an issue may appear, such as:

- A) The RFID authentication is not recognized.



If the charger does not recognize the RFID authentication, it will request the presentation again. This problem can arise if the RFID card or key fob is broken, not recognized by the charger, or not recognized by the central system due to:

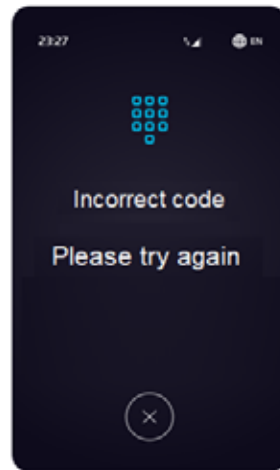
### **Authentication not recognized by the charger:**

- If the charger is operating under the *Internal whitelist* option and the user authentication is not noted in it.
- If the charger works with the option *Open for all RFIDs* and the authentication shown does not work at 13.56 MHz

### **Authentication not recognized by the Central System:**

- User authentication is not registered in the Central System.
- If there is any communication problem with the Central System.
- User authentication is already involved in another charge transaction.
- Perhaps, the Central System has set a deadline for your authentication card and this date has already expired.
- It is possible that the Central System has temporarily blocked your authentication card.

B) The PIN code for the authentication is wrong.



If the PIN code is wrong, the charger will ask again for entry it.

C) After accepting the authentication, there is a 59 second countdown to be able to connect the vehicle. At the time of connection, the charging session must begin immediately.



If the vehicle has been connected and does not start it is because the charger does not recognize it and will ask you to try again. It can be because the connector is not well plugged in the vehicle, or the vehicle gearshift is not in the *Park* position.

## 4.8 Connector status

The screen can show different texts under the connectors, depending on their status, as follows:



When the connector and its name is in blue it means that there is no problem in it, and it is available for charging.



When the connector is in gray and there is a yellow warning symbol on it means that the connector is faulted and cannot be used.



When the connector is in gray, there is a white warning symbol on it, and the word *Reserved* below it means that the connector is reserved by the Central system for use only by a specific idTag.



When the connector is in gray, there is a white warning symbol on it, and the word *Unavailable* below it means that the Central System does not allow this connector to charge.

### NOTES:

- *The status is valid for the CHAdEMO or CCS2 connector indistinctly.*
- *Touching over the connector's icons, the screen offers more detailed information.*

## 4.9 Emergency button

It is strictly forbidden to use the emergency button to stop a normal charging session. The emergency button should be pressed if a dangerous or abnormal situation occurs, such as:

- Floods or severe weather conditions that can cause water to come into contact with live electrical cables or devices.
- Noises of electrical crackling, smoke or fire affecting the vehicle, charging cable or the charger itself.
- An impact to the vehicle being charged or the charger that causes it to move, fall, or come loose from where it is installed.
- If the screen does not follow the user's request and does not stop charging and does not unlock the connector.
- Any other event that could put the user at risk.

*To stop the charger in an emergency situation:*

- Press the emergency button located on the front left side of the charger. If there is an electric vehicle charging, the charging session stops, the two LED bars light up red and the screen shows the message "Emergency".
- When charging has stopped and it is physically safe to do so, remove the connector from the side of the vehicle and return it to the charger holder.

*To reset the charger after an emergency stop:*

- First of all, visually inspect the charger, charging cables and connectors and make sure there is no damage or risk to the user.
- If there is not any damage around, you can reset the charger yourself.
- Release the emergency stop button by turning it clockwise until it comes out, the display shows a 10 second countdown while the charger is recovering and then shows the summary of the charging session.

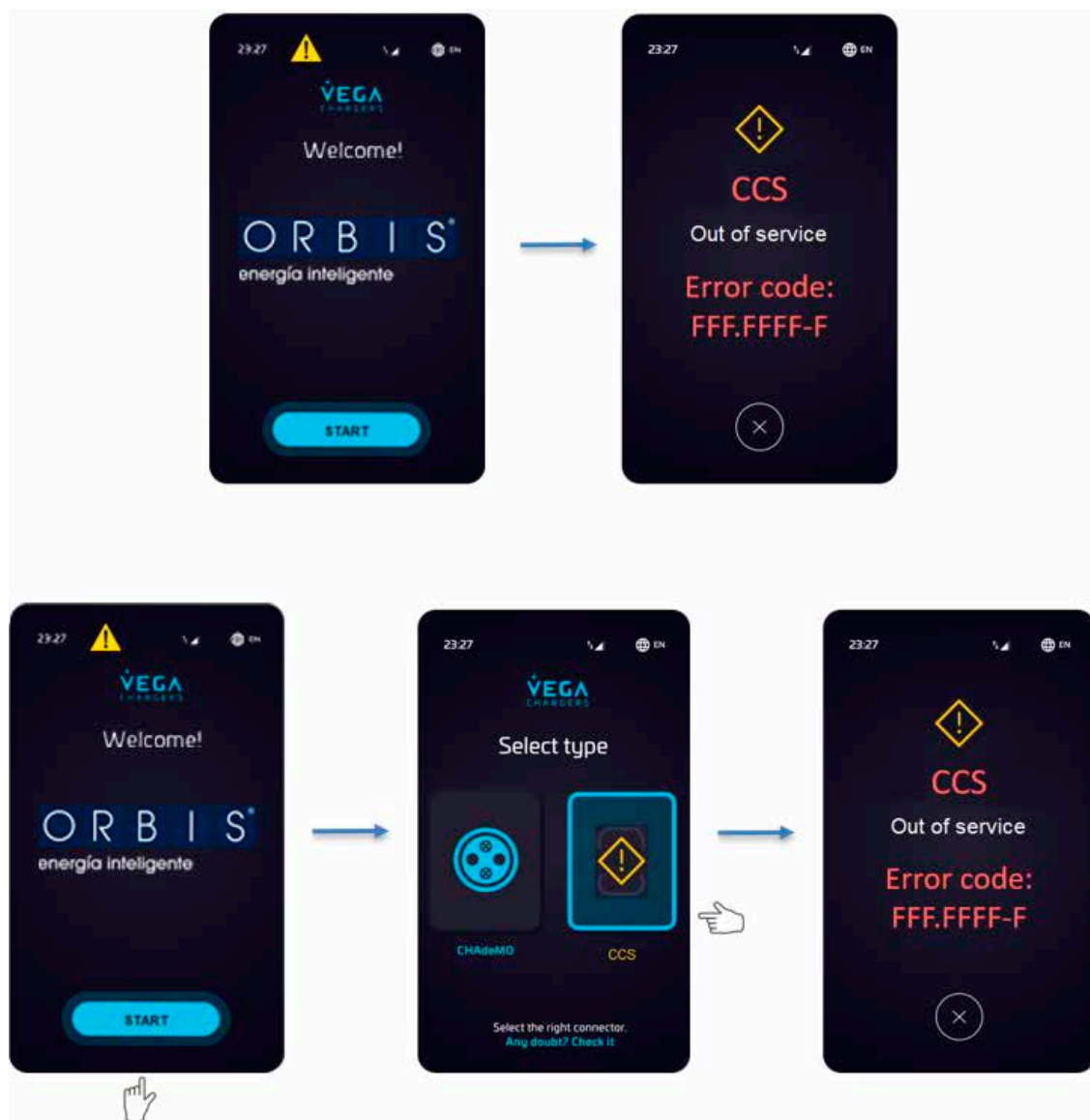


## 4.10 Errors

The charger can report different types of errors, it can be from different parts or devices inside itself. Also, some of the errors can affect to only one of the connectors or even to the whole charger.

### Error affecting to only one connector

If the problem arises for only one of the connectors, there are two ways to know what is happening, it can be seen by pushing over a warning symbol that appears on the top side of the screen or pushing directly on the affected connector icon.



### Error affecting to the whole charger

If the problem arises for the whole charger as is not possible to charge, the main screen will directly show the error:



### **NOTES:**

- *When the problem arises for only one of the connectors, the LED bar of it will be in red and the user can still use the other connector.*
- *When the problem arises for the whole charger, both LED bars will be in red and it is not possible to use the charger.*

