OCPP EV Charger Network Configuration Guideline

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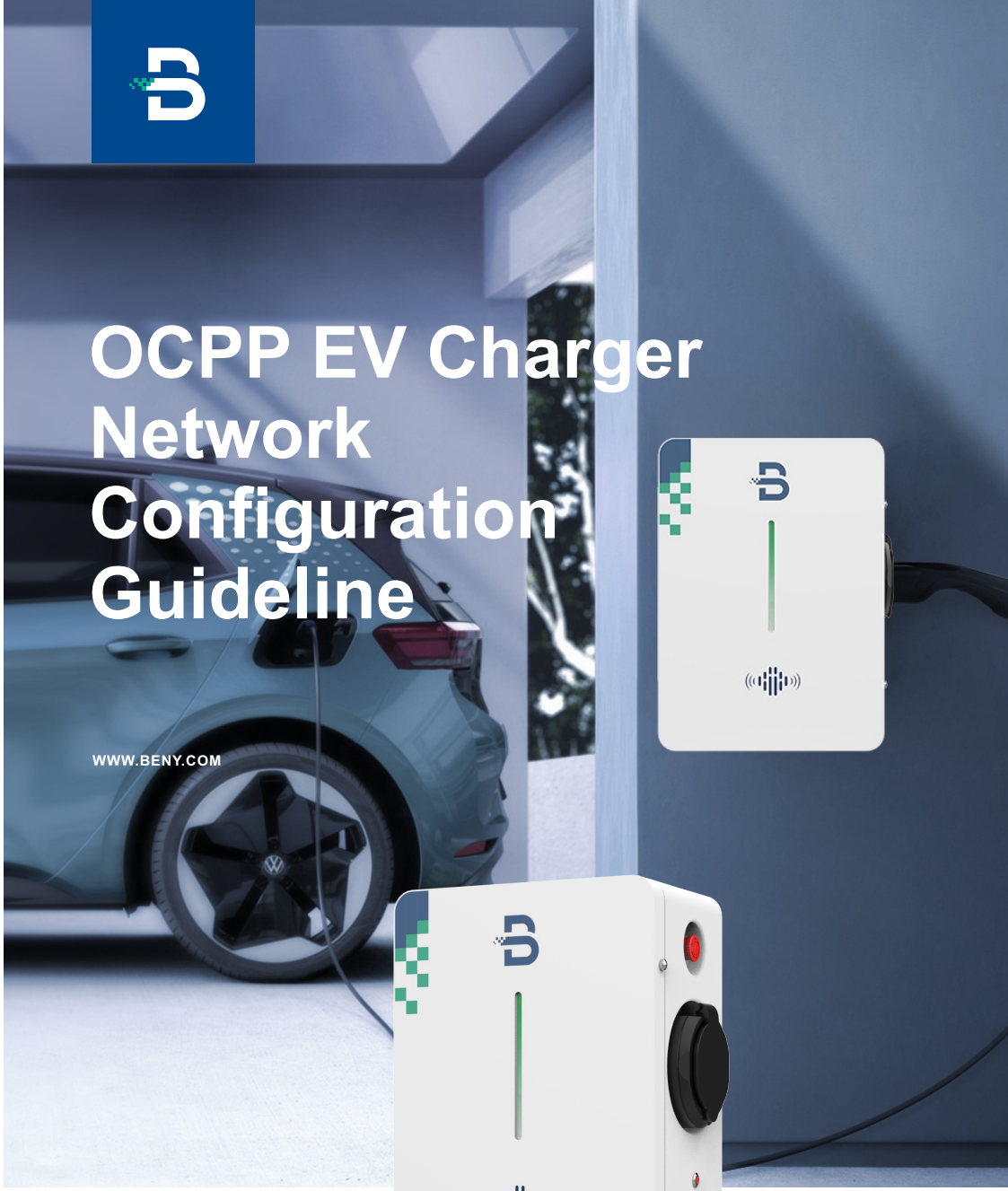

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G R E E N S M A R T

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Step 1 : Enter AP Configuration Mode

The network configuration of the EV charger needs to be done when the connector is disconnected from the EV. If the connector is already plugged into the car's charging socket, please unplug it first.

The method for the charger to enter AP configuration mode:

- Disconnect the charger.
- Press the emergency stop button.
- Press and hold the leakage test button and do not release it.
- Power on the charger.
- Release the leakage test button and emergency stop button after the charger beeps.

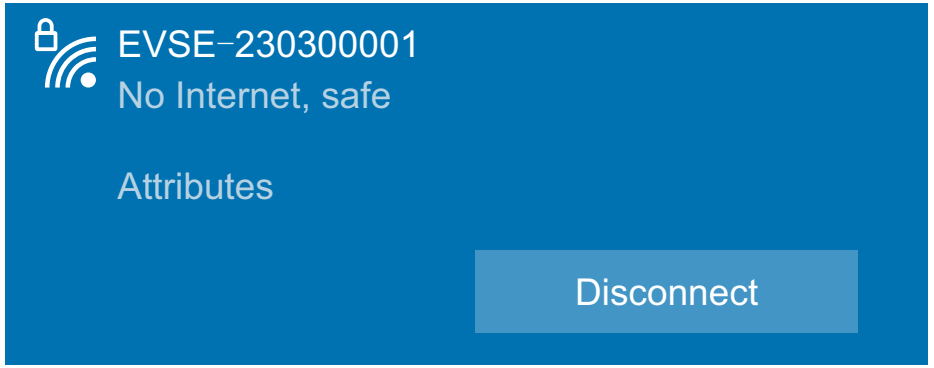
When the yellow light in the LED flashes, the charger has successfully entered AP configuration mode.

Step 2 : Enter the configuration interface

- A Wi-Fi routing signal via a computer or mobile phone connected to the charger, where the Wi-Fi name starts with EVSE plus a combination of numbers. The default Wi-Fi password is "12345678".

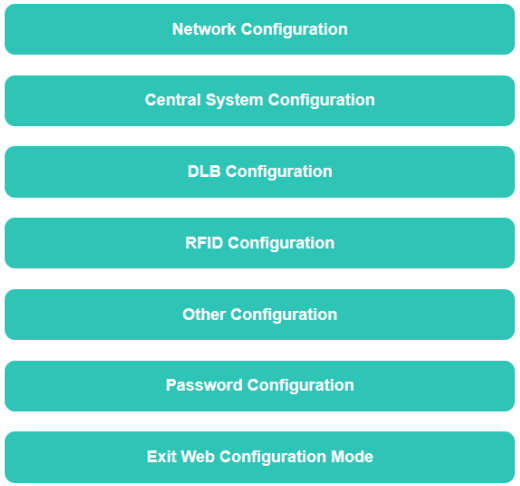
You can reset the default password: turn on the charger; find the reset button on the internal PCB of the EV charger; press and hold it for 5 seconds.

WEB configuration



- Use your browser to access 192.168.1.1, just like configuring your router. Google Chrome is recommended for better compatibility.

Accessing the charger via a browser will take you to the configuration interface where you can see a number of configurations. These are: Network Configuration, Central System Configuration, DLB Configuration, RFID Configuration, Other Configuration, Password Configuration and Exit Web Configuration mode.



WEB configuration

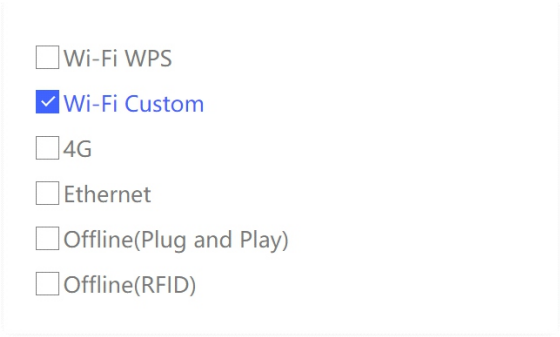
Details of each configuration item in the configuration interface are shown in Table 2.1:

Table 2.1 Details of each configuration item in the configuration interface

Configuration Item	Details of Configuration Item
Open The Network Configuration Interface	NetWork setting, Wi-Fi Config, LTE Config
Open The Central System Configuration Interface	Security, Server, HTTP Basic Authentication, Custom Vendor Info
Open The DLB Configuration Interface	General, Normal DLB, Solar DLB, DLB on cloud
Open The RFID Configuration Interface	General, RFID Unique Config, Reader mode Config
Open The Other Configuration Interface	Parameter configuration, Ground Fault Detection, External Meter Enable, Dry Contact Enable, Authorization Cache
Open The Password Configuration Interface	Change Password
Exit Web Configuration mode	Exit Web Configuration mode

Step 3 : Make network configuration

- Click on the Network Configuration button to enter the network settings interface, where you can see a number of NetWork setting options.



WEB configuration

Details of the network settings items are shown in Table 3.1:

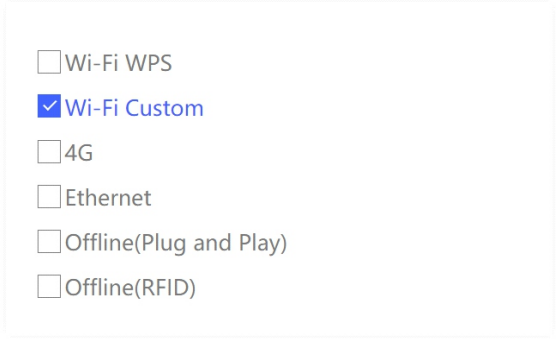
Table 3.1 Network setup item details

Configuration Item	Explanation of Configuration Items	Related configuration items
Wi-Fi WPS	Wi-Fi WPS means that the terminal can connect to Wi-Fi via wps. WPS, a wireless encryption authentication method, is used to simplify the security setup and network management of Wi-Fi wireless. Instead of entering the wireless network password, the terminal can connect wirelessly to the router by pressing the WPS button directly.	
Wi-Fi Custom	Connect to Wi-Fi by entering the wireless network name and password.	Wi-Fi SSID Wi-Fi Password
4G	4G is optional. Please note if the EV charger supports 4G networking. If 4G connectivity is needed, please insert the SIM card into the EV charger, and ensure that the SIM card is not encrypted by PIN code.	LTE APN LTE APN User LTE APN Password
Ethernet	Connect the network cable into the Ethernet RJ45 port of the EV charger for networking.	
Offline(Plug and paly)	With this option enabled, the OCPP EV charger will be disconnected from the OCPP platform. It can be used as an unsmart EV charger with the plug-and-charge mode.	
Offline(RFID)	With this option enabled, the OCPP EV charger will be disconnected from the OCPP platform. It can be used as an unsmart EV charger with the RFID card swiped charging mode.	RFID Unique RFID Unique ID

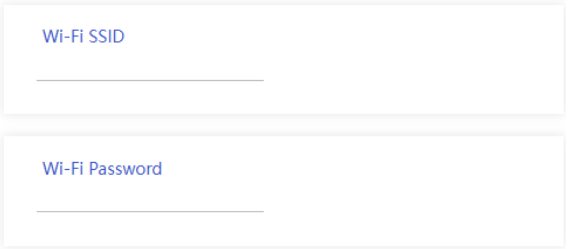
WEB configuration

If you want the charger terminal to connect to Wi-Fi by entering the wireless network name and wireless network password, you will need to select the Wi-Fi Custom mode network settings and configure the network according to the following steps:

- Click to select "Wi-Fi Custom".



- Scroll down the interface to find WIFI Config and enter the corresponding Wi-Fi name (Wi-Fi SSID) and Wi-Fi password.



The descriptions of the Wi-Fi configuration items are shown in Table 3.2:

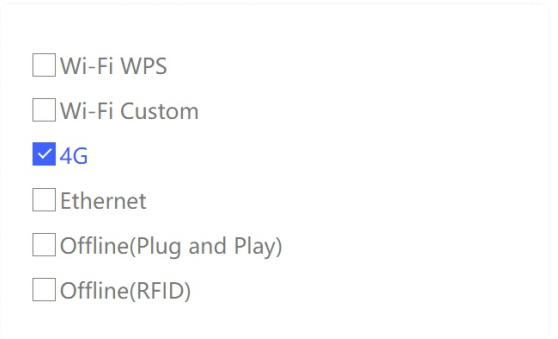
Table 3.2 Wi-Fi configuration item descriptions

Configuration Item	Explanation of Configuration Items	Maximum Length
Wi-Fi SSID	This configuration requires entering the name of the Wi-Fi. The Wi-Fi will be connected to the EV charger when “Wi-Fi Custom” is selected in the networking mode.	30
Wi-Fi password	This configuration requires entering the Wi-Fi password when Wi-Fi Custom is selected in the networking mode.	30

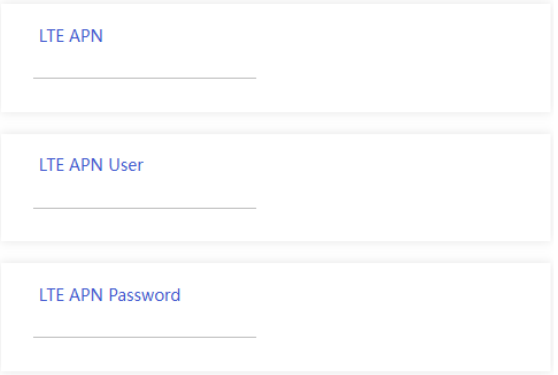
WEB configuration

If you wish to configure the charger for network via a 4G connection, you will need to confirm that your charger supports 4G networks, that the SIM card is inserted into the charger and that the SIM card is not PIN encrypted, and then configure the network according to the following steps:

- Click to select "4G”.



- Scroll down the interface and find LTE Config and fill in the LTE configuration fields.



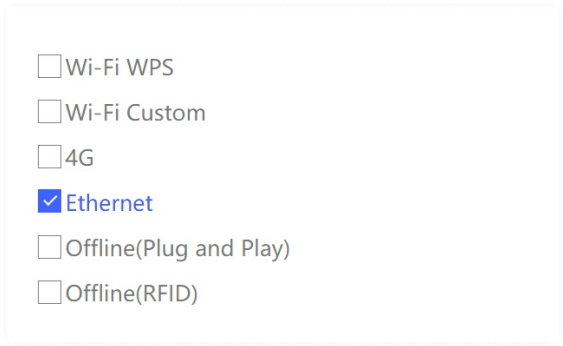
The descriptions of the LTE configuration items are shown in Table 3.3:

Table 3.3 Description of LTE configuration items

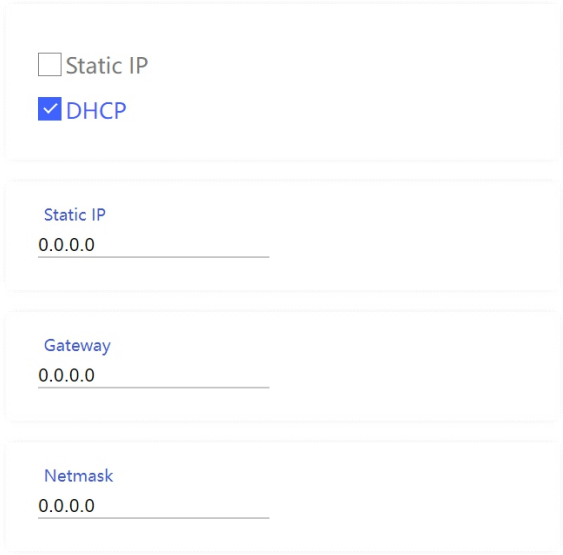
Configuration Item	Explanation of Configuration Items	Maximum Length
LTE APN	You need to enter the name of the 4G network access point of the SIM card when selecting 4G connectivity mode.	
LTE APN User	APN username, not required if it is unavailable.	30
LTE APN Password	APN user password, not required if it is unavailable.	30

If you want the charger terminals to be networked via Ethernet, you will need to connect a network cable to the Ethernet RJ45 port of the EV charger and then configure the network according to the following steps:

- Click to select "Ethernet".



By default, the IP Config of an EV charger is a Dynamic IP (DHCP) configuration, i.e. the server automatically assigns an IP address to the internal network or to the ISP. If you need to set a fixed IP address to access the Internet, you need to select Static IP Config and fill in the appropriate Static IP, Gateway and Netmask, otherwise you can leave it as default.

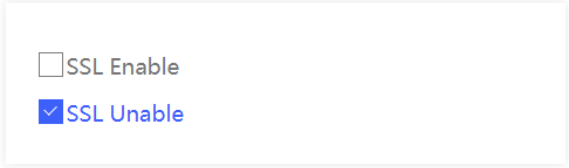


- Click the SAVE button to exit the Network Configuration interface and return to the Configuration Page.

Step 4 : Make OCPP Central System Configuration

Note: If you selected a non-offline network setting (Wi-Fi WPS, Wi-Fi Custom, 4G, Ethernet) when you made your network settings, you will need to make OCPP central system configuration, otherwise please kindly ignore this step.

- Click on the "OCPP Central System Configuration" button to configure the OCPP central system.
- Make security settings. You can choose whether or not to enable SSL encryption depending on the server.



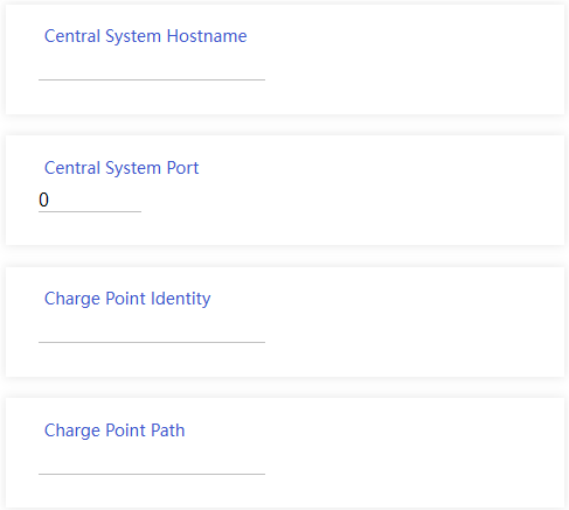
The setting items for Security are described in Table 4.1:

Table 4.1 Description of the setting items of the security settings

Configuration Item	Explanation of Configuration Items
SSL Enable / Unable	This configuration means that, based on the server, you can choose whether to enable SSL encryption or not.

- Set up the Server.

Please fill in the Central System Hostname, Central System Port, Charge Point Identity and Charge Point Path as appropriate for your server.



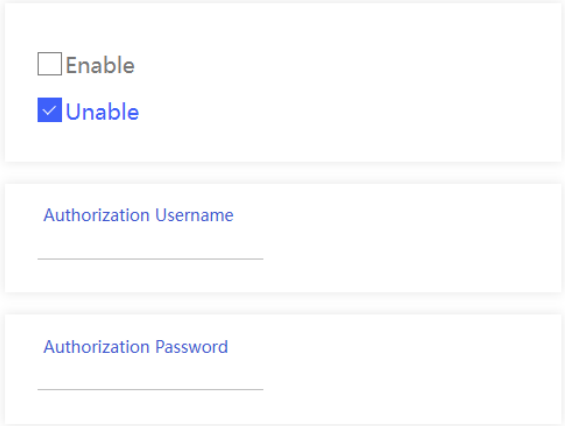
The settings of the Server are described in Table 4.2:

Table 4.2 Description of the server's setup items

Configuration Item	Explanation of Configuration Items	Maximum Length
Central System Hostname	Server domain name or IP address	50
Central System Port	If the URL does not specify a special port, the default port is 443 when SSL is enabled. Otherwise the default port is 80.	
Charge Point Identity	Charge point number	30
Charge Point Path	For example, in the URL, the URL is: ws://<central system hostname>:<port>/ocpp/16J/<charge point identifier> The charge point path is ocpp/16J	50

- Make HTTP Basic Authentication settings.

Please choose whether to enable HTTP basic authentication according to the needs of the OCPP cloud platform service. If you choose to enable, you need to fill in the corresponding Authorization Username and Authorization Password, otherwise you do not need to fill in.



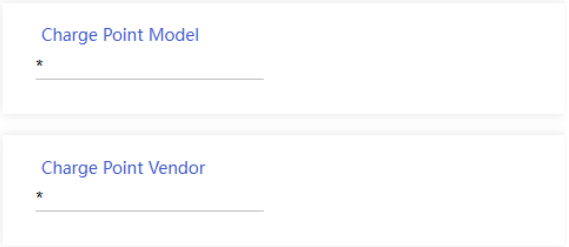
The HTTP Basic Authentication settings are described in Table 4.3:

Table 4.3 Description of the setting items for HTTP Basic Authentication

Configuration Item	Explanation of Configuration Items	Maximum Length
HTTP Basic Authentication Enable / Unable	Whether this option is turned on or not depends on whether the OCPP Cloud Platform service requires it. If it is required, you need to enter a different check name and password for each EV charger. If you enter it incorrectly, the EV charger will fail to connect to the server.	
Authorization Username	HTTP authentication username generally matches the charging station identity	50
Authorization Password	HTTP Authentication password	20

- Make Custom Vendor Info settings.

This setting requires you to fill in the Charge Point Model and Charge Point Vendor. When you fill in, the functionality will achieve: The custom EV charger model and manufacturer name will be submitted to the server, when the EV charger is logged into the server. Please ignore this step if you do not require this functionality.



The settings for Custom Vendor Info are described in Table 4.4:

Table 4.4 Description of setting items for customized supplier information

Configuration Item	Explanation of Configuration Items	Maximum Length
Charge Point Model	This configuration is that, customized EV charger model will be submitted to the server, when the EV charger is logged into the server.	50
Charge Point Vendor	This configuration is that, customized EV charger manufacturer name will be submitted to the server, when the EV charger is logged into the server.	20

- Click the SAVE button to exit the OCPP Central System Configuration interface, and return to the Configuration Page.

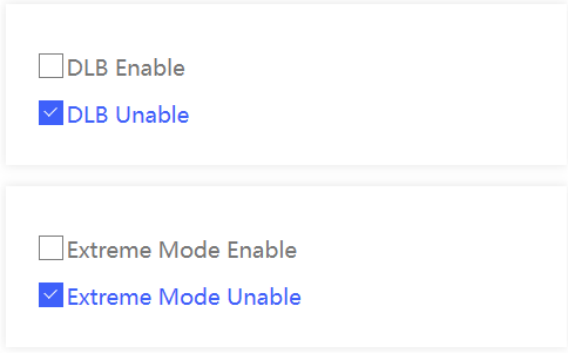
Step 5 : Make DLB Configuration

Note: EV chargers can be fitted with DLB boxes for dynamic load balancing or PV energy management functions. If the charger is fitted with a DLB, you will need to configure the DLB. Otherwise, please kindly ignore this step.

Note: The configuration items on this interface allow you to configure the DLB function of the EV charger. Please check the "DLB manual" for details of the DLB function.

- Click on the "DLB Configuration" button to configure the DLB.
- Make general settings.

In the DLB general settings, you can choose whether to use the DLB function and set whether to enable the DLB extreme mode. When you activate the DLB extreme mode, the charger will stop charging according to certain conditions set by the DLB. Otherwise the charger will maintain a charging current of greater than or equal to 6A.



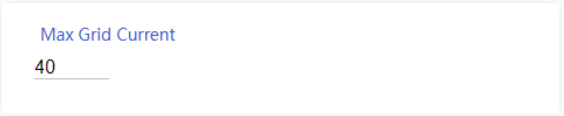
The setting items for the DLB General settings are described in Table 5.1:

Table 5.1 Description about the setting items of the DLB General Settings

Configuration Item	Explanation of Configuration Items
DLB Enable / Unable	It is the general switch for the DLB function. When “Unable” is selected, all the configuration items will not take effect
Extreme Mode Enable / Unable	When this mode is enabled, the EV charger will stop charging under certain conditions due to the DLB setting. If it is unabled, the EV charger will maintain a charging current ≥ 6A.

- Make Normal DLB settings

In this configuration, you can set the overload current of the DLB. The normal DLB overload current setting range is 6-99A.



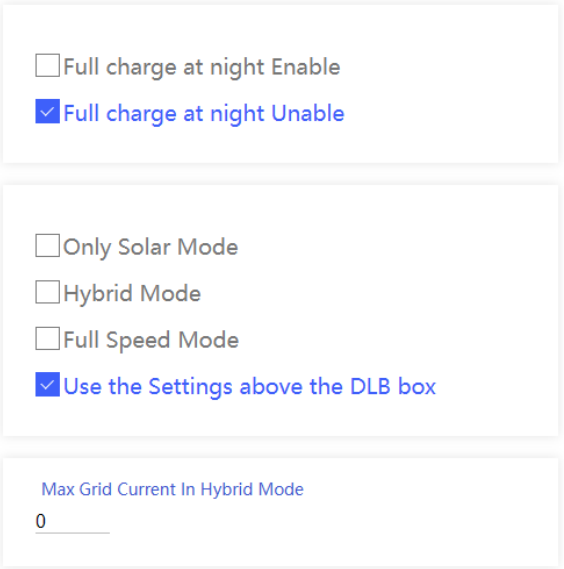
The setting items for the Normal DLB are described in Table 5.2:

Table 5.2: Description about the setting items of the Normal DLB

Configuration Item	Explanation of Configuration Items
Max Grid Current	Normal DLB overload current setting with a setting range of 6-99A.

- Make Solar DLB setup.

In this configuration, you can set whether to enable the full speed charging mode at night and select the charging modes as required, including Only Solar Mode, Hybrid Mode, Full Speed Mode and “Use the Settings above the DLB box”. When selecting Hybrid Mode, you can set the maximum grid current allowed in Hybrid Mode.



The setup items for the Solar DLB are described in Table 5.3:

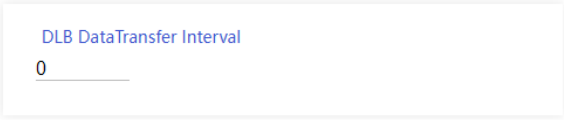
Table 5.3 Description of the setting items of the solar DLB

Configuration Item	Explanation of Configuration Items
Full charge at night Enable/Unable	When this mode switched on, the EV charger will automatically switch to “full charge mode” from 8pm to 6am.
Only Solar Mode	When Only Solar mode is selected, the electricity from PV will be possibly used to charge the EV charger.
Hybrid Mode	When the hybrid mode is selected, a certain amount of grid electricity is allowed to charge the electric vehicle.
Full Speed Mode	When full speed mode is selected, the EV charger will work at the maximum charging rate.
Use the Settings above the DLB box	This configuration is enabled, and the EV charger will charge the electric vehicle based on the mode set on the DLB box.
Max Grid Current In Hybrid Mode	When selecting the hybrid mode, you can set how much grid electricity is allowed.

- Make DLB on cloud setup.

In this configuration, you can set the DLB Date Transfer Interval. If you need to enable it, it has a minimum setting of 10 seconds and stop the process when the setting is 0.

Note: DLB data is customised data outside of the OCPP protocol. Therefore it requires an OCPP server to support this customization, otherwise enabling reporting will not work.



The setup items for DLB on cloud are described in Table 5.4:

Table 5.4 Description of DLB Cloud setup items

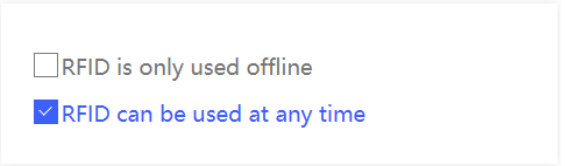
Configuration Item	Explanation of Configuration Items
DLB Date Transfer Interval	It means that setting the time interval for the DLB to report logs during the charging time period. The minimum setting time is 10 seconds. A setting value of 0 will stop the process: the DLB data is reported to the server. (DLB data is custom data outside of the OCPP protocol. So it requires the OCPP server to support this custom function. Otherwise, enabling reporting will not work).

- Click the SAVE button to exit the DLB Configuration interface and return to the Configuration Page.

› Step 6 : Make RFID Configuration

Note: If you have selected the Plug and play mode when doing the network setup, RFID configuration is not required. Please ignore this step, otherwise please do the RFID configuration.

- Click on the "RFID Configuration" button to configure the RFID.
- Make the General setting. In this setting, you can set the RFID card to be used only when the charger is offline or at any time.



The descriptions of the RFID General Settings items are shown in Table 6.1:

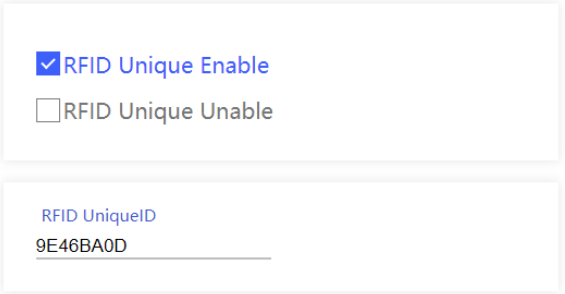
Table 6.1 Description of the general setting items for RFID configuration

Configuration Item	Explanation of Configuration Items
RFID is only used offline	When you enable this configuration, the online EV charger will disable the use of RFID to start charging. Only the function of local authentication is available when the network is abnormal and the EV charger is offline.
RFID can be used at any time	When this configuration is enabled, you can swipe the RFID card to charge at any time.

- Do the RFID Unique Config.

In this configuration, you can choose whether or not to enable the RFID Unique configuration. If so, you will need to fill in the corresponding RFID Unique ID.

Example: If your IC card number is "9E46BA0D", you need to configure Unique ID as "9E46BA0D".



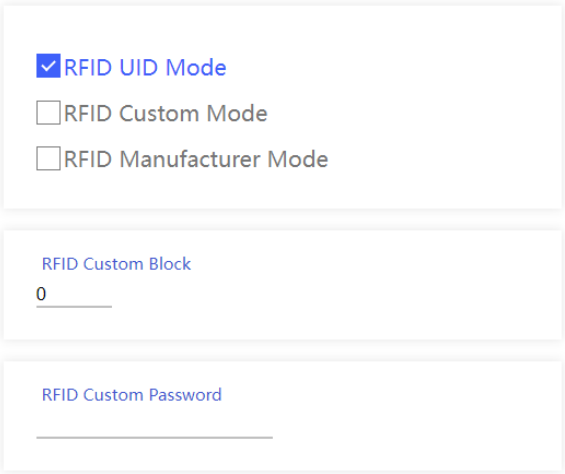
The configuration items for RFID unique configuration are described in Table 6.2:

Table 6.2 Description of each configuration item for RFID unique configuration

Configuration Item	Explanation of Configuration Items	Maximum Length
RFID Unique Enable/ RFID Unique Unable	Select offline swiping card mode in the network configuration page. After this mode has been activated, you can start charging in the permanently offline mode with the set card.	
RFID Unique ID:	Card Number Configuration	20

- Make Reader mode configuration.

This configuration allows you to set the reader mode of the charger, including RFID UID mode, RFID Custom mode and RFID Manufacturer mode. If you select RFID Custom mode, you will need to enter the card number storage address and set the RFID Custom Password in the RFID Custom Block.



The configuration items for the reader mode configuration are described in Table 6.3:

Table 6.3 Description of configuration items for reader mode configuration

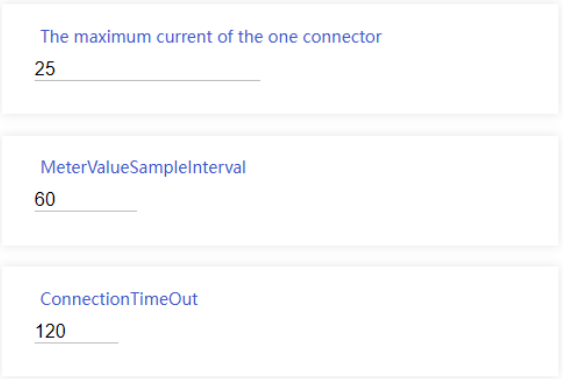
Configuration Item	Explanation of Configuration Items	Maximum Length
RFID UID Mode	IC card manufacturer offers its own physical card numbers. If the card is the M1 card, EV charger can recognize its physical card number.	
RFID Custom Mode	In custom mode, the EV charger will read the IC card number based on the encryption method configured by the user.	
RFID Manufacturer Mode	In the default reading card mode, the EV charger only recognizes IC cards configured by the manufacturer's specified writing tool, and IC card offered by manufacturer will have their card numbers configured by manufacturer in this way.	
RFID Custom Block:	Card Number Storage Address	0-63
RFID Custom Password:	Card PIN must be 12 characters	0-9, a-f, A-F

- Click the SAVE button to exit the RFID Configuration interface and return to the Configuration Page.

Step 7 : Do other configuration

- Click on the "Other Configuration" button to enter the other configuration interface.
- Do parameter configuration.

In this configuration you can set The maximum current of the one connector, the Meter Value Sample Interval and the ConnectionTime Out setting.



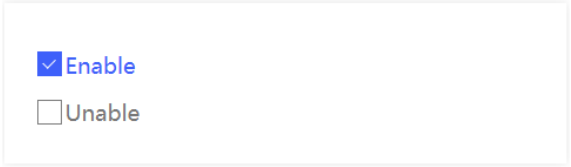
The configuration items for the parameter configuration are described in Table 7.1:

Table 7.1 Description of configuration items for parameter configuration

Configuration Item	Explanation of Configuration Items
The maximum current of the one connector	This item sets the maximum allowable charging current for a single connector.
Meter Value Sample Interval	Sets the interval for Meter report logs. The minimum setting time is 10 seconds.
ConnectionTime Out	Timeout setting for swiping the card when the connector is unplugged. When it is set to 0, swiping the card is forbidden in the condition that the connector is unplugged.

- Do the ground fault detection.

When the charger encounters a ground failure or poor grounding, which the function of the ground fault detection is to report a ground disconnection warning, which triggers ground protection. Thus, it prevents the charger from charging the vehicle.



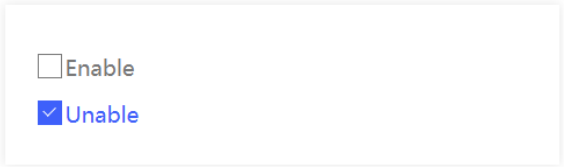
The ground fault detection options are described in Table 7.2:

Table 7.2 Description of ground fault detection options

Configuration Item	Explanation of Configuration Items
Ground Fault Detection Enable / Unable	Ground detection function can be configured according to actual requirements.

- Make the External Meter Enable setting. If this configuration is enabled, the charger will use the data from the external meter as its own metering data. Turn this on if an external meter is already installed.

Note: The brand and type of external meter used for the charger should be specified by the manufacturer, and it is recommended that the user only change this configuration on the first installation.

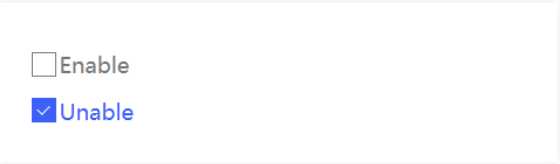


The external meter enablement options are described in Table 7.3:

Table 7.3 Description of external meter enablement options

Configuration Item	Explanation of Configuration Items
Use External Meter Enable/Unable	When this configuration item is enabled, the EV charger uses the data from the external meter as its own metering data. It should be noted that, the brand and type of used meter should be specified by the manufacturer. It is recommended that the user only changes this configuration item on the first installation. In addition, due to the same hardware interface the DLB and the external meter use, either external meter or DLB function can be enabled at the same time.

- Make the Dry Contact Enable setting. If this configuration is enabled, the charger will determine if the charger is in a period where charging is allowed based on the status of the dry contacts.

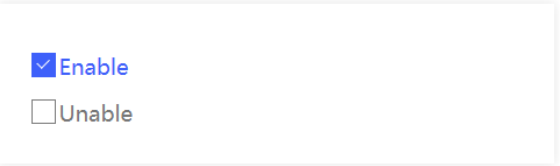


The dry contact enablement options are described in Table 7.4:

Table 7.4 Description of dry contact enable options

Configuration Item	Explanation of Configuration Items
Dry Contact Enable/ Dry Contact Unable	Dry Contact is an optocoupler isolated input interface. When this function is enabled, the EV charger will determine whether or not it is in the allowable charging period based on the status of this interface.

- Make Authorization Cache setting. If this configuration is enabled, the card will have a cache record and the charger will still be able to be charged for a certain period of time when the server is unexpectedly offline.



The cache authorization options are described in Table 7.5:

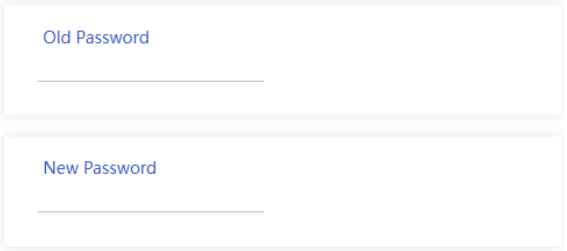
Table 7.5 Description of cache licensing options

Configuration Item	Explanation of Configuration Items
Authorization Cache Enable/ Authorization Cache Unable	If this configuration is enabled, the card will have a cache record. Therefore, when the server is unexpectedly offline, the card can be swiped to start charging. (there is a term of validity). When the server is restored, the data will be automatically uploaded for deducting the charging consumption, etc.

- Click the SAVE button to exit the Other Configuration interface and return to the Configuration Page.

Step 8 : Make Password Configuration

- Click on the "Password Configuration" button to enter the password configuration interface.
- The password configuration interface allows you to change the charger Wi-Fi password. If you need to change the charger Wi-Fi password, you will need to enter the Wi-Fi password you are currently using in the old password entry field, and then enter the new password you wish to change and use in the new password entry field.

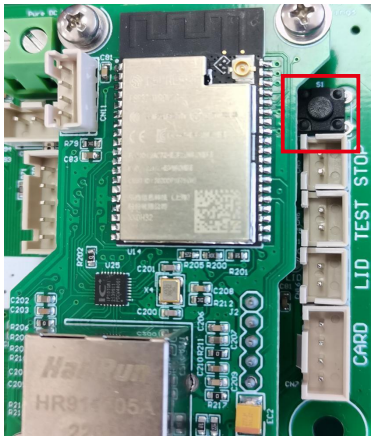


The settings for Change Password are described in Table 8.1:

Table 8.1 Description of setting items for password change

Configuration Item	Explanation of Configuration Items
Old Password	When you want to change your password, you need to enter your old password.
New Password	Enter the old password, and then enter the new password to change it.

When you forget your password, you can restore it to its default value through the following ways: You can press and hold the reset button inside the EV charger for 20 seconds after pressing the emergency stop button.



- Click the SAVE button to exit the Password Configuration interface, and return to the Configuration Page.

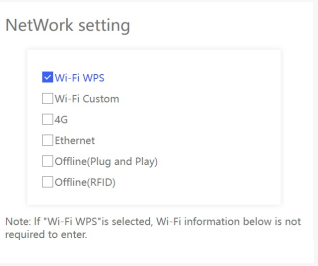
Step 9 : WPS Connection Method

Ready for WPS connection

The EV charger is in offline mode by default, please confirm whether it is in WPS connection mode

No

Enter the WEB configuration mode and set the WiFi WPS connection.



Yes

Press and hold the leakage test button for 5S until you hear a beep from the EV charger.

Yes

Start the WPS function of the router within 120 seconds.

WPS matching
The first green light flashes quickly
(ON for 0.25 seconds, OFF for 0.25 seconds)

WPS pairing times out

The first green light flashes slowly
(ON for 1 second, OFF for 1 second)

WPS pairing is successful

The first green light flashes.

Step 10 : Exit Web configuration mode

- When the settings are complete, click on the "Exit Web Configuration Mode" button. The EV charger will automatically connect to the server according to the parameters set.
- Network configuration is successful when you see the charger's first green light in a breathing light state. If the charger's first green light blinks slowly (on for 1 second, off for 1 second), then the configuration has failed. You should go back and reset the network settings.