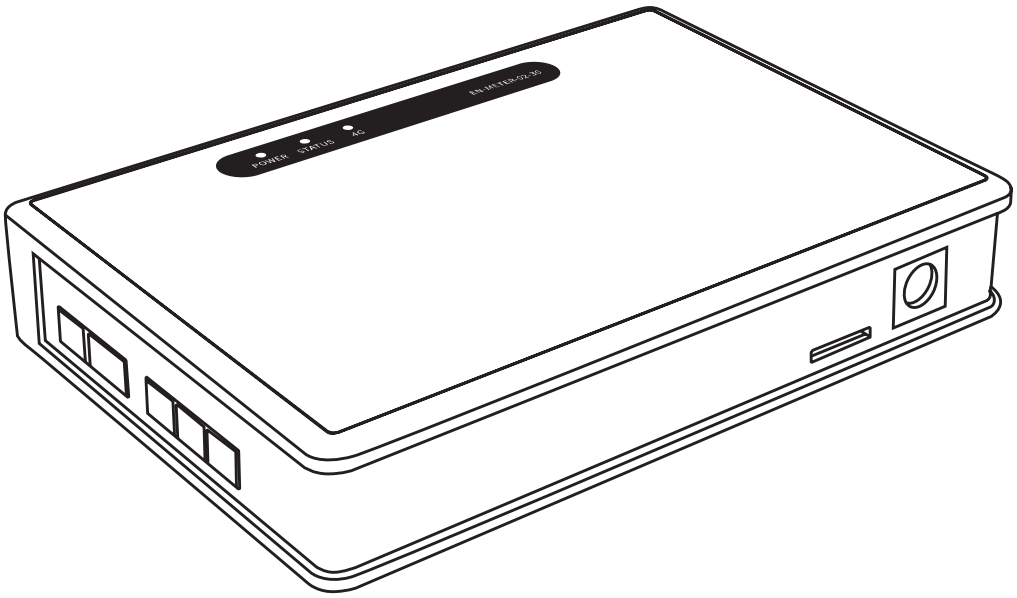
99 090 01

MALMBERGS

Load Balancing Controller



EN NOTE! Please read through the manual carefully before using the appliance and keep it for future reference.

EN

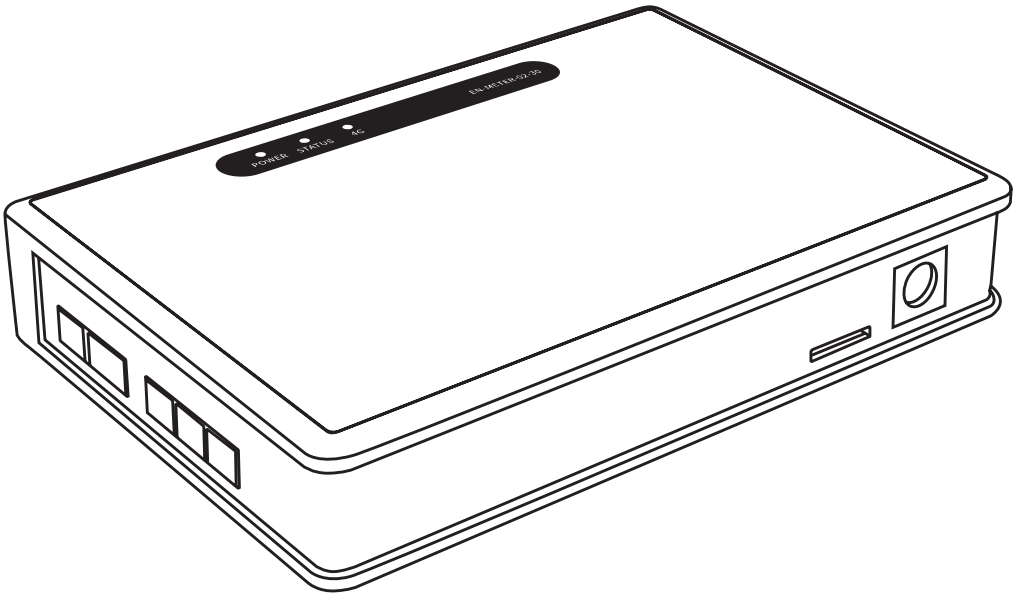
LOAD BALANCING CONTROLLER

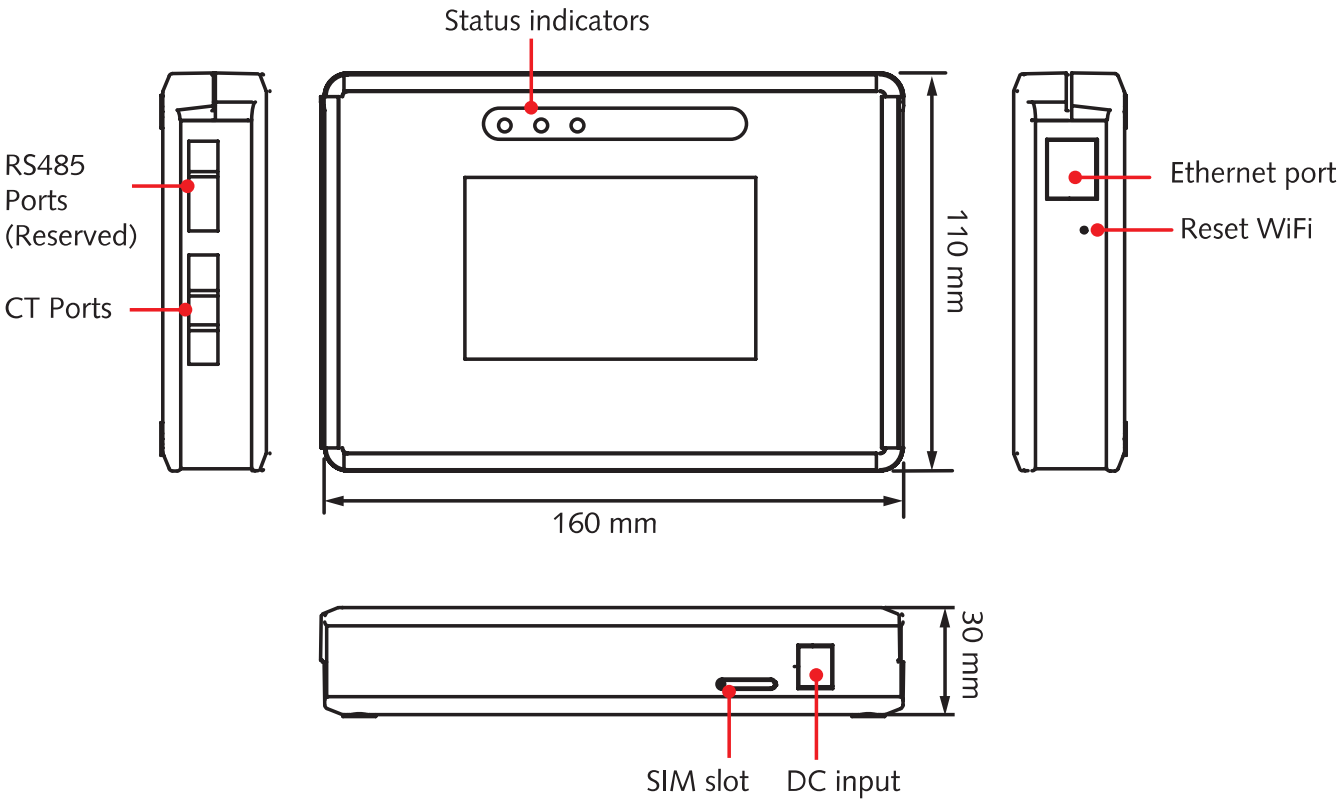
CONTENT

1 PRODUCT OVERVIEW	4
2 TECHNICAL SPECIFICATIONS	5
3 PACKING LIST	6
4 CT CLAMP DESCRIPTION	7
5 WIRING	7
6 CONFIGURATION TO NETWORK	8
7 APPLICABLE SCENARIOS	10
8 LOAD BALANCING STRATEGY	14

1 PRODUCT OVERVIEW

This gateway device is a novel load-balancing controller with multiple current distribution strategies that improve the stability of your charging system. The load-balancing controller has three CT connections and supports three different communication methods (WiFi, 4G, and Ethernet), allowing it to be used in a variety of installation scenarios.

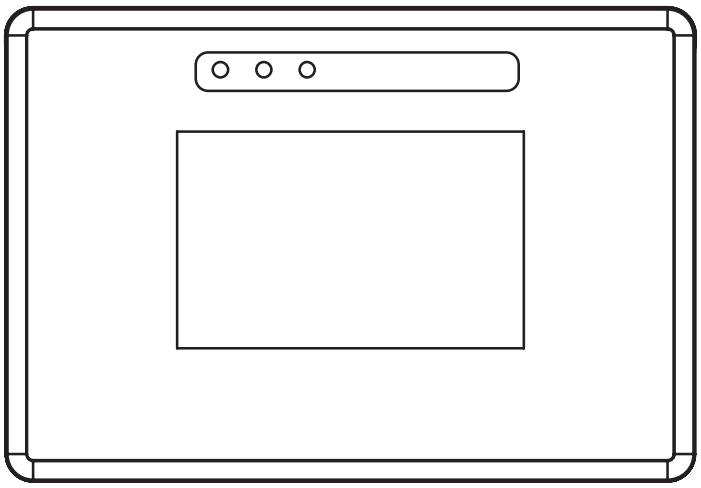




2 TECHNICAL SPECIFICATIONS

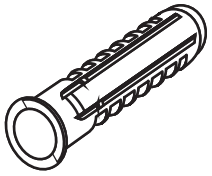
	Art.no.	99 090 01
Power supply	DC	5V DC (±5%)/3000mA Isolation
Connection	CT	Single phase: 1x CT clamp (CT ratio:5000:1) Three phase: 3x CT clamps (CT ratio:5000:1)
Communication	WiFi	2412-2472MHz IEEE802.11b/g/n
	WiFi power	<20dBm
	4G-LTE	FDD B1/B3/ B5/ B7/B8/B20
	4G power	<23dBm
	LAN	RJ45 port
LED indicator	Power	Indicator “on” upon power on
	Status	Indicator “on” upon transferring data
	Communications	Indicator “on” upon 4G communications
Protection	Ingress protection	IP20

3 PACKING LIST

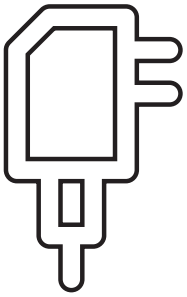


Load balancing controller

Wall mounting screw
x2

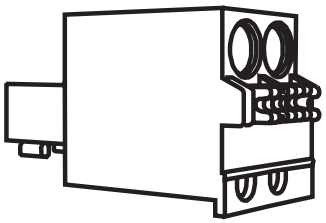


Wall plug
x2



Power adapter
x1

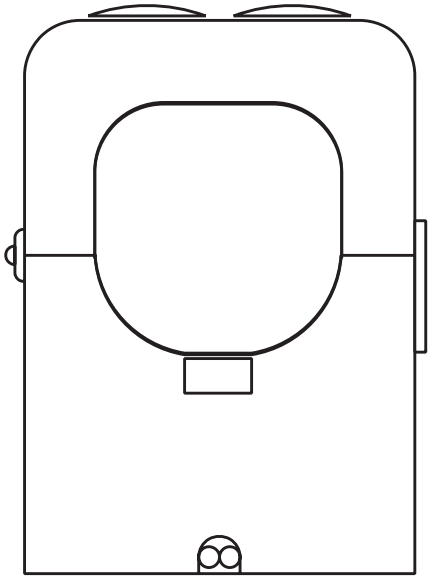
User manual
x1



CT connector
x4

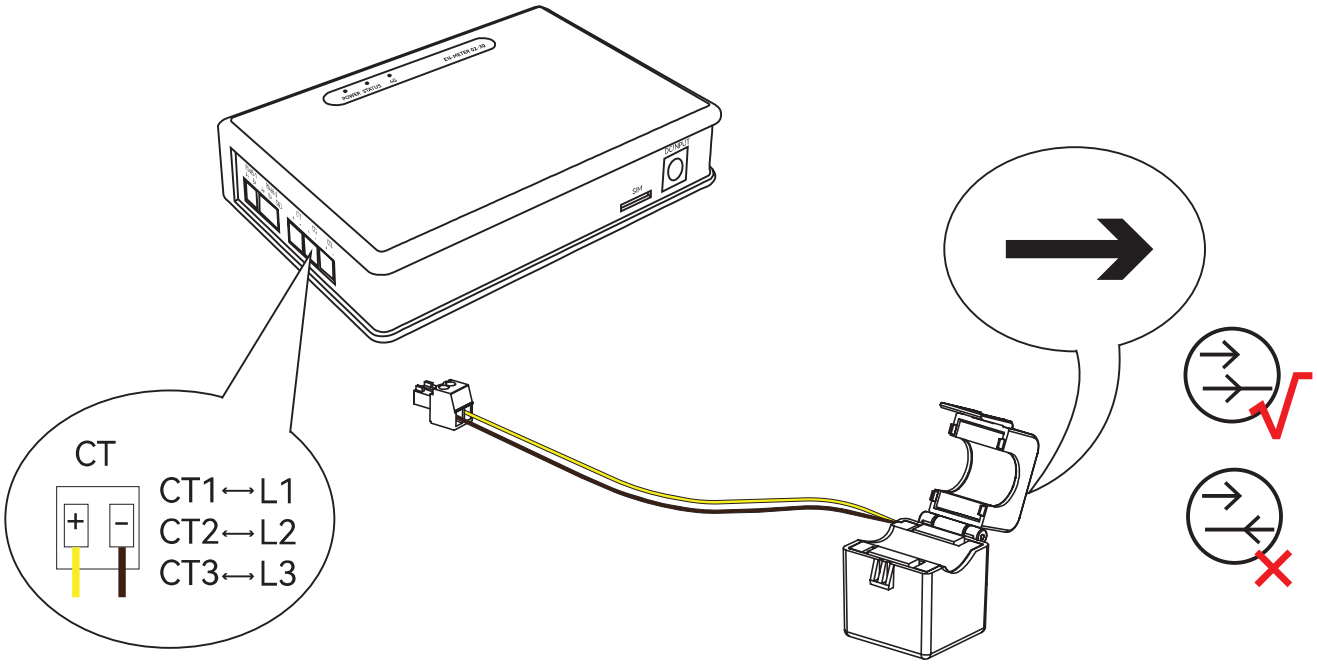
4 CT CLAMP DESCRIPTION

CT clamp is a spare part, you need to configure it based the actual needs.



Art.no.	Specification
99 090 02	50A CT clamp 5000:1
99 090 03	100A CT clamp 5000:1
99 090 04	400A CT clamp 5000:1
99 090 05	600A CT clamp 5000:1
99 090 06	1000A CT clamp 5000:1

5 WIRING



Note: The direction of the "arrow" **MUST** be consistent with the direction of actual current.

6 CONFIGURATION TO NETWORK

If you select WiFi or 4G for communication, you need to use the AP mode to configure the network for the load balancing controller.

The AP mode, which is similar to a local area network, operates the internet locally between you mobile phone and load balancing controller.

Configuration steps as below:

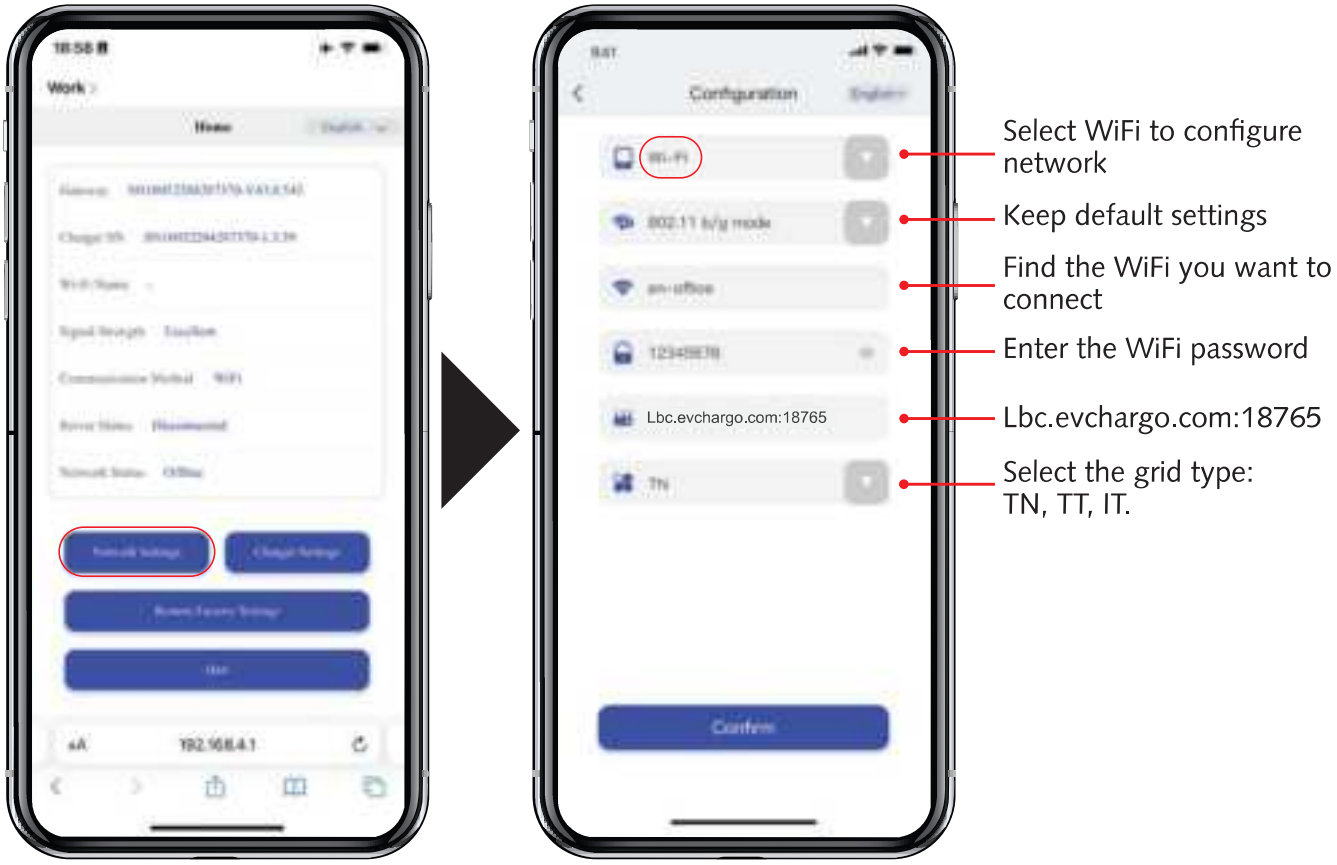
1. Set your phone to flight mode and make sure that the WLAN is turned on.
2. Restart the power supply of the load balancing controller to activate the hotspot.
3. Locate the load balancing controller's WiFi hotspot (wifi name: the serial number of the load balancing controller) in your phone's WiFi list.
4. Enter the password to connect the load balancing controller to your phone (a dedicated password is 8-digit depending on the SN of the load balancing controller, which is case sensitive and can be found on the last page of the manual).
5. To access the Login page of AP mode, enter the IP address 192.168.4.1 in a browser, followed by the 4-digit network password: a PIN number, which can be found on the last page of this manual.

The hotspot of the load balancing controller remains available for 15 minutes after it is restarted.

Your load balancing controller will automatically restart once the network configuration is complete, ending communication between your phone and the load balancing controller. At this point, your phone may automatically join other WiFi hotspots, preventing you from accessing the network configuration page. As a result, before accessing the network configuration page, please ensure that your phone is connected to the WiFi hotspot of the load balancing controller.

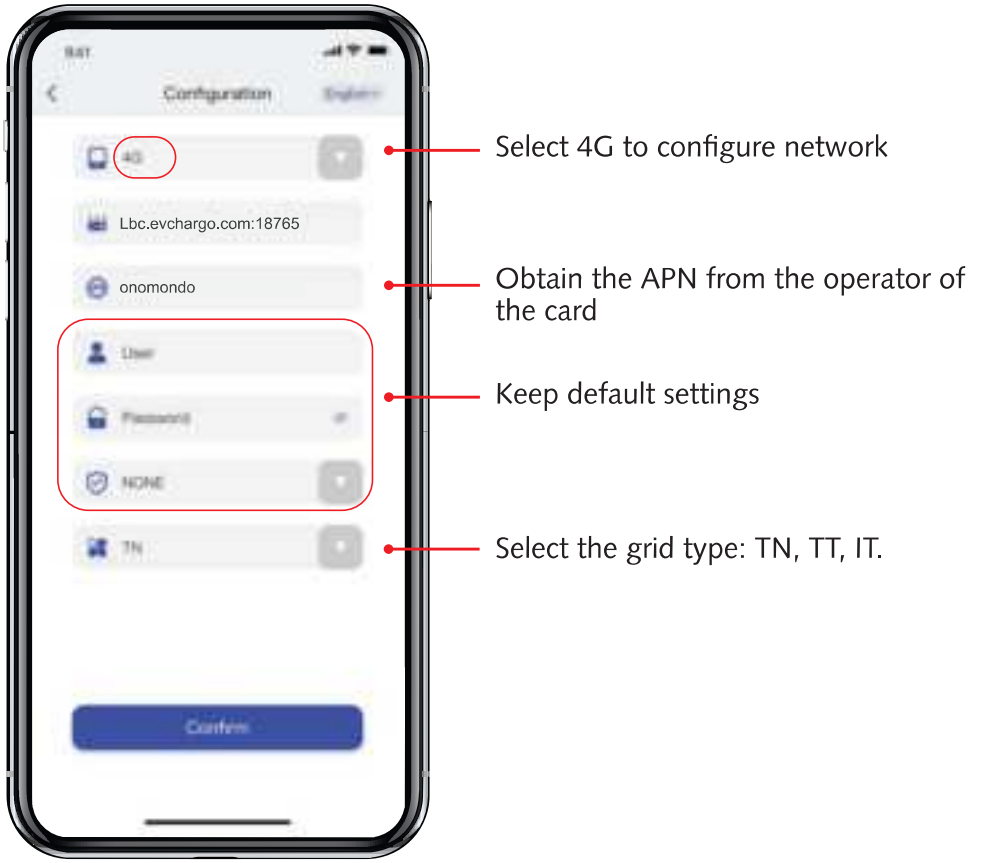
6. Select communication mode

Use WiFi for communication



Support 2.4G WiFi only. If your router uses WiFi 6, make sure the LBC is linked to a 2.4G WiFi hotspot with compatible settings.

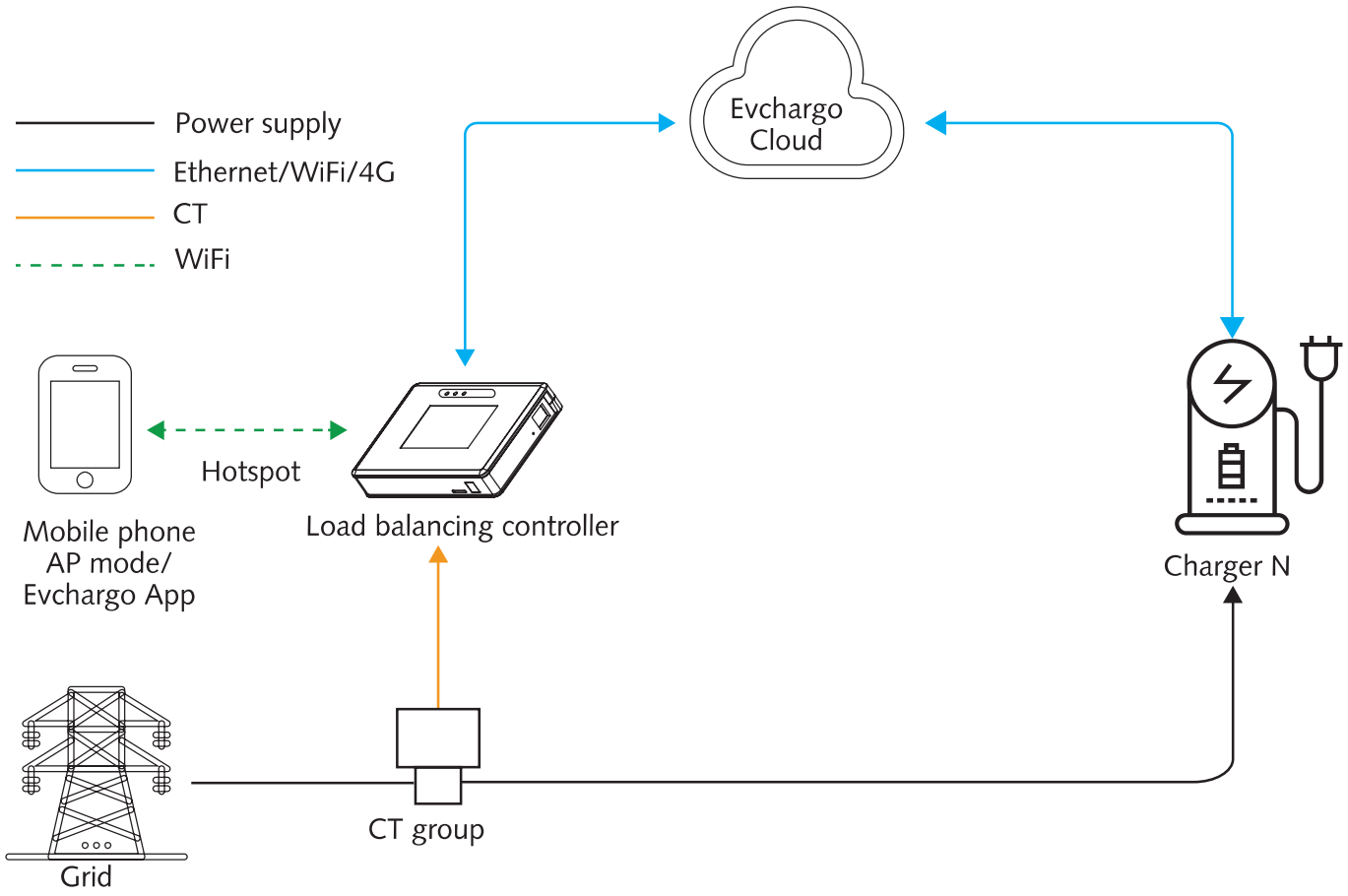
Use 4G for communication



7 APPLICABLE SCENARIOS

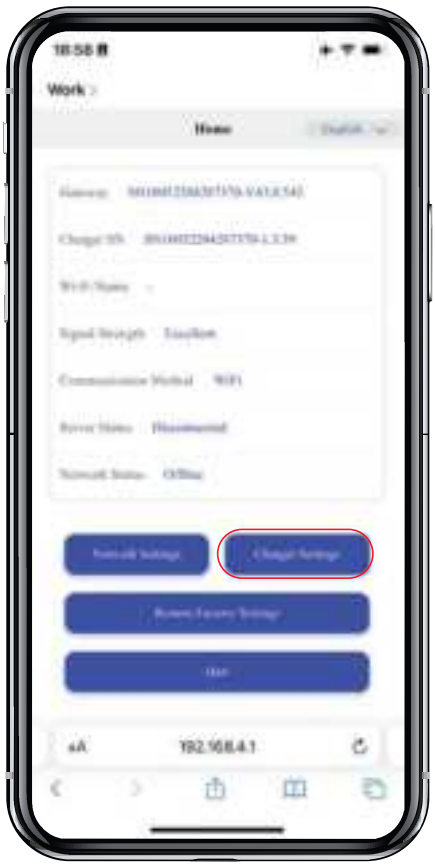
7.1 Residential Scenario

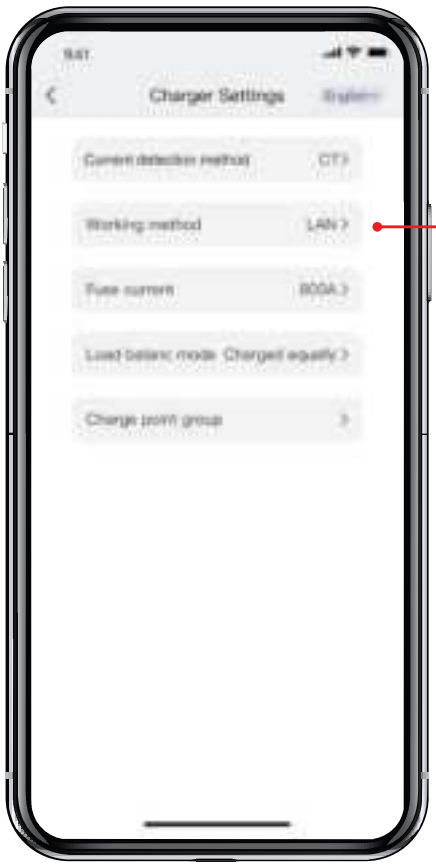
Residential load management is recommended for home-based installations with cloud, load managed via Evchargo APP.



This scenario is compatible with all kinds of chargers that support OCPP 1.6J running on the EVchargo platform.

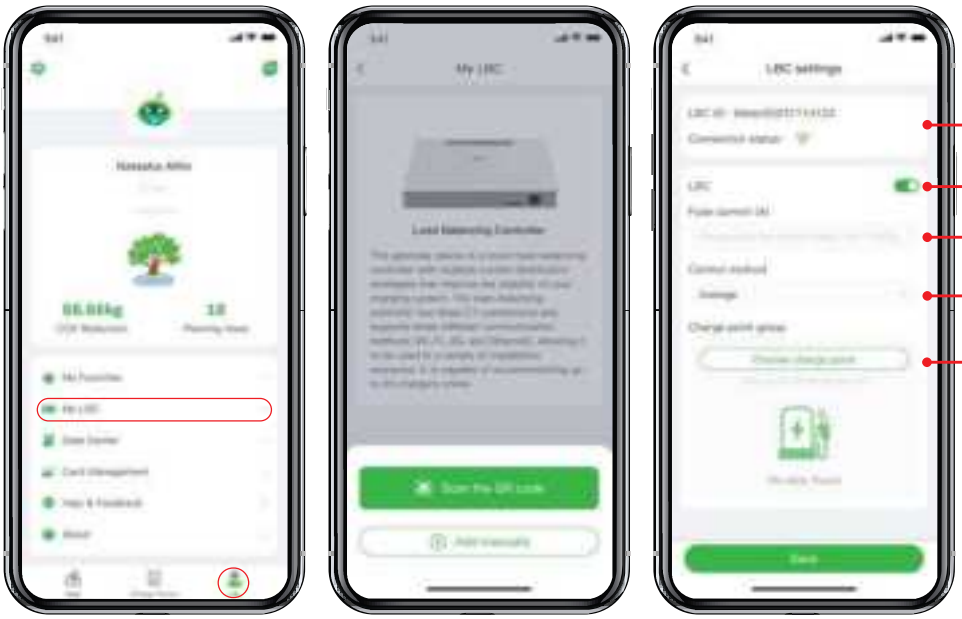
Settings in AP Mode





When you select to control the load through the Evchargo cloud, you only need to configure the working mode to platform communication and disregard the other options.

App-Based Load Balancing



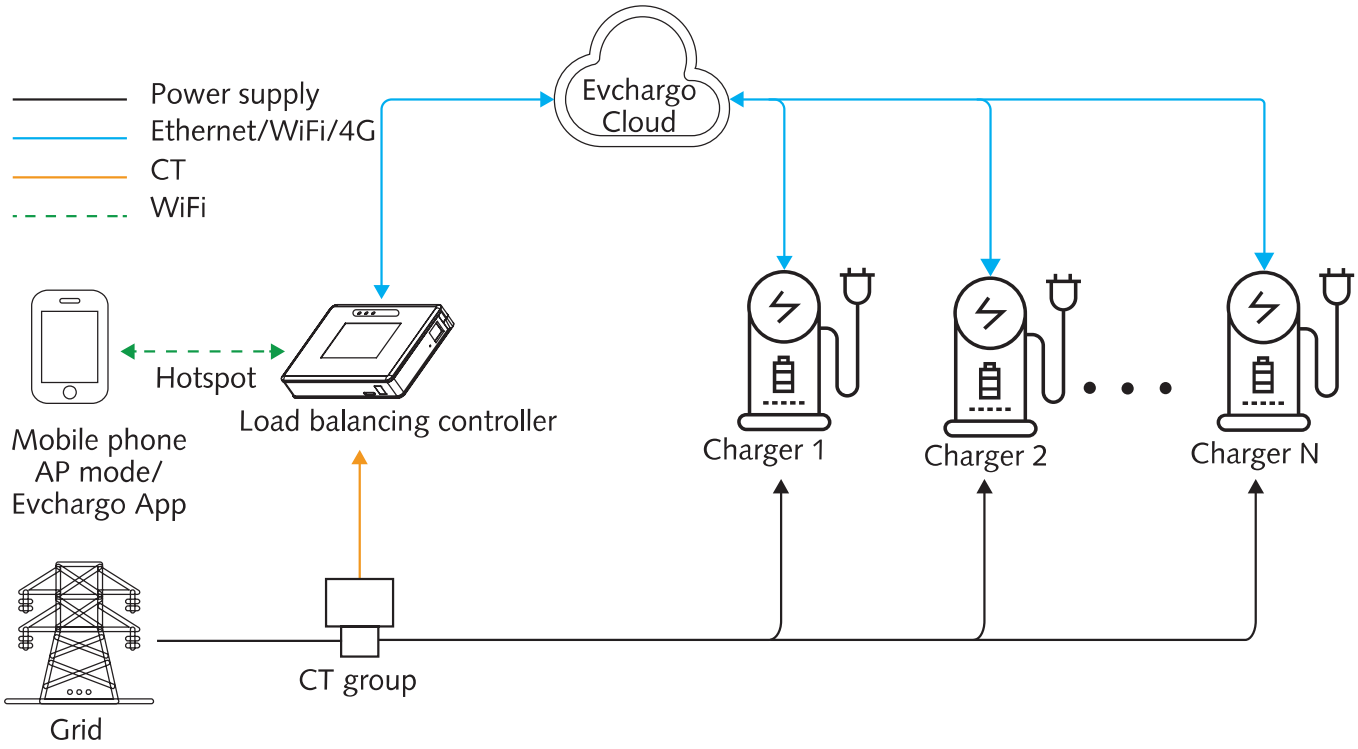
For details, please download the Evchargo App and refer to the instructions.

Evchargo App

App instructions

7.2 Commercial Hybrid Scenario

Hybrid load management is recommended for multiple charger installations. Load managed via Evchargo cloud.



This scenario is compatible with all kinds of chargers that support OCPP 1.6J running on the EVchargo platform.

Connect Load Balancing Controller To Evchargo Cloud

The load balancing controller must be associated with your charging station via Evchargo cloud. There are two steps to complete the configuration:

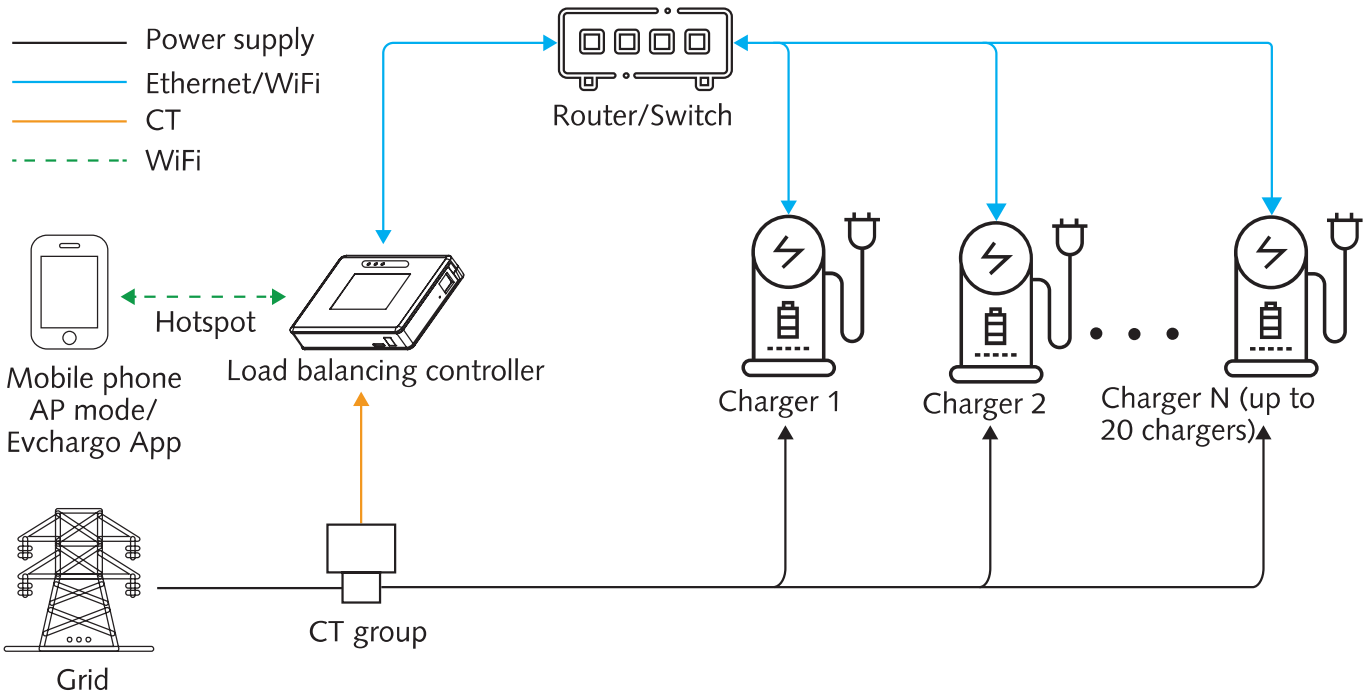
1. Add load balancing controller information to Evchargo cloud by clicking **LBC > Add LBC > Save**.
2. Link the load balancing controller with your charging station by clicking **Charge station > ... > Home page > Settings > Load balance (Edit) > Choose load balance > Save**

For details, please scan the QR code with instructions for Evchargo cloud.

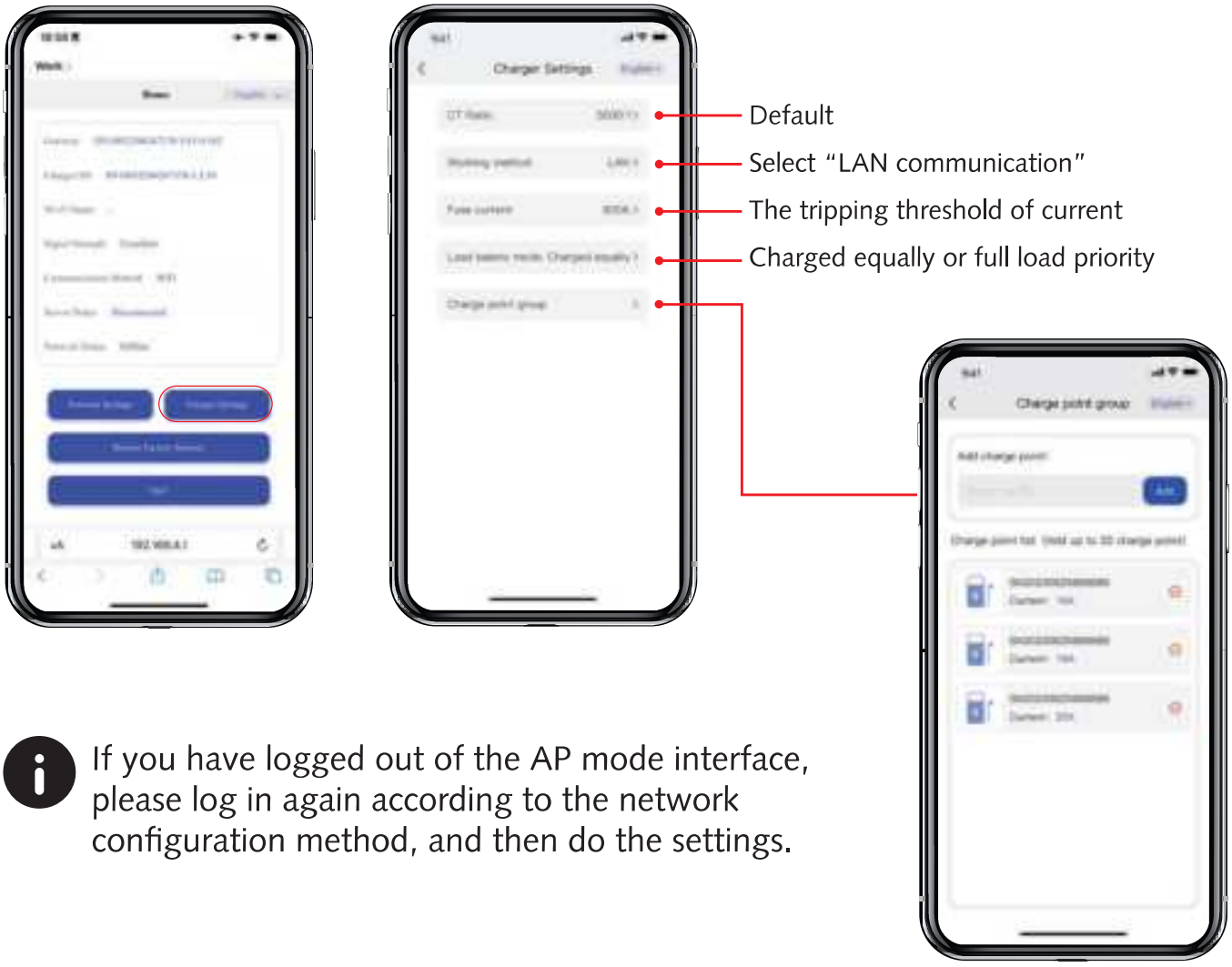
Instructions for Evchargo cloud

7.3 Commercial Local Scenario

Local load management is recommended for multiple charger installations without cloud connections.



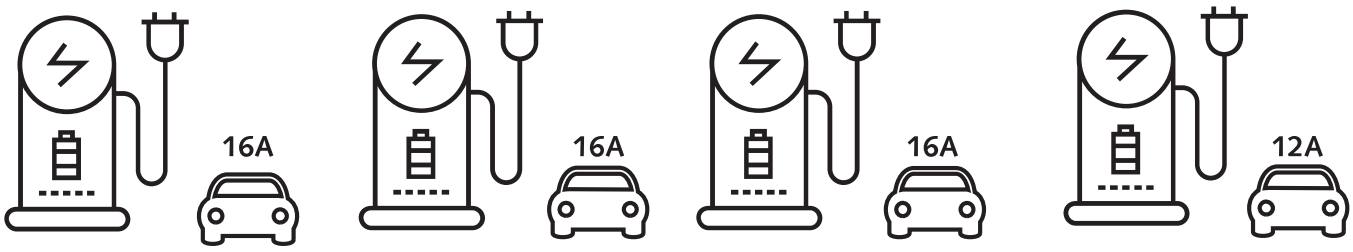
Load Balancing via AP Mode



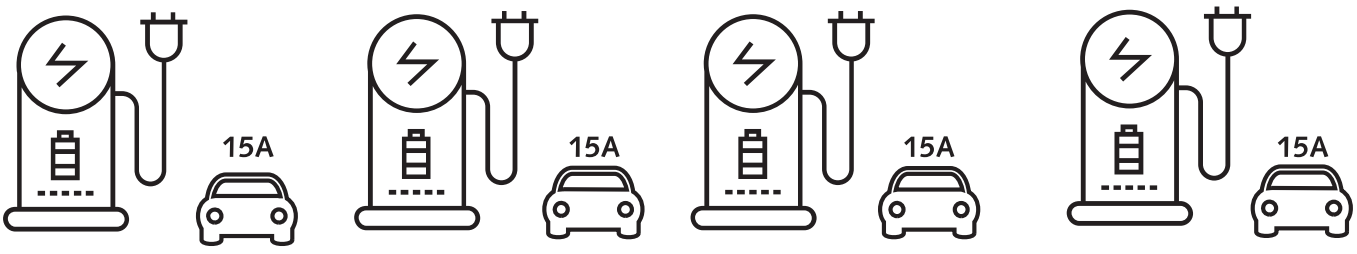
If you have logged out of the AP mode interface, please log in again according to the network configuration method, and then do the settings.

8 LOAD BALANCING STRATEGY

Full Load Priority
Sample scenario:
Assume that the quota of fuse current is 60A, and the rated current of the charger is 16A.
Four chargers.
In this scenario, the first three cars begin charging at the rated current, while the fourth car begins charging at 12A.



Charged Equally
Sample scenario:
Assume that the quota of fuse current is 60A, and the rated current of the charger is 16A.
Four chargers.
In this scenario, the 60A will be distributed equally to every car.



AF-JA/JZ-240729

MALMBERGS

Malmbergs Elektriska AB, PO Box 144, SE-692 23 Kumla, SWEDEN
Phone: +46 19 58 77 00 info@malmbergs.com www.malmbergs.com