

# **USER MANUAL**



# H-SERIES SMART EV CHARGE POINT

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# 1. Introduction

# 1.1 Product overview

## ① Socket (CASE B)



Anti-theft screw Sealing cover screw Back bracket screw Expansion bolt Hex wrench

### 1.2 Features



(1) Light ring: The light ring communicates the status of the charger at all times. Read more about this on page 4.

(2) RFID area: The integrated RFID reader enables access control of the charger and identify different users. Read more about this on page 26.

(3) Charging socket: The Type 2 socket is completely universal and allows you to charge any type of electric vehicle using the appropriate charging cable.

(4) Wiring area: The layered design makes the wiring and maintainance much more easier, which will save you a lot of time, and much more safer.

(5) Cable entry: This is where the power line will go through to connect with the charger.

(6) Charging lead: Type 2 Tethered Cable (5m) is completely universal and allows you to charge any type of electric vehicle.

# 1.3 Light ring

Color	Light mode	Status
White	Flashing	Power on and self-inspection
White	Constant light	Updating
Green	Slow flashing	Standby
Green	Constant light	OCPP platform connected
Blue	Fast flashing	Plug in or end charging
Blue	Slow flashing	Charging in the progress
Blue	Constant light	End charging
Red	/	Fault alarm

Note: When the light ring is white, please wait until it turns into green(about 2 minutes), then you can connect with LINCHR App to set the charger.

# 1.4 Technical specifications

Rated Power	7.4kW, 11kW, 22kW
Type of Connection	1P+N+PE, 3P+N+PE, 6-10mm <sup>2</sup>
Nominal Supply	230V AC±15%, 400V AC±15%
Rated Frequency	50Hz/60Hz
Adjustable Current	6A-32A Variable(Via APP)
RCD Protection	Built-in 30mA Type A RCD + 6mA DC Protection(Equivalent to Type B)
Earthing Arrangement	Built-in O-PEN Protection
Standby Power Consumption	<8W
Integrated Distoction	Over and under voltage, power overload, short circuit, dispersion
	current, missing ground connection, surge, over temperature
Connectivity	Bluetooth/WiFi/Ethernet/4G/RS485
Start Mode	Smart APP/RFID/OCPP 1.6J
Solar Compatibility	ECO, ECO+, FAST
Load Balancing	CT clamp or smart meter
Installation Network	TN, IT, and TT
Housing Material/Enclosure	PC+ASA(UL94 V-0 Fire Rated-the Highest Flame Classification)
Mounting	Wall mounting, pedestal mounting
Socket	IEC62196 Type 2, IP55 hinged lid, electrical lock(Compliance required)
Protection(Enclosure)	IP55(Socket), IP65(Tethered), IK10
Operating Temperature	-25℃-50℃
Humidity	5%-98% non-condensing
Application	Indoor/Outdoor
Dimension(H $\times$ W $\times$ D)	260*260*100mm
Woight	Socket(2.5kg for 7kW/11kW, 2.7kg for 22kW)
weight	Tethered(4.0kg for 7kW/11kW, 5.0kg for 22kW)
Certification	CE, UKCA, RoHS, REACH (TUV)
Back Office	MONTA

# 2. Safety instructions

This product adopts the most advanced technology and complies with safety and health regulations. In case of violation of regulations or failure to follow the requirements of this manual, there may be the following risks:

- Cause harm to the life or body of users or third parties.
- Cause harm to product and other major assets of operators.
- The product is damaged and there is a risk that it cannot be used.

Please strictly follow the following guidelines when operating:

- Before maintenance, the input power supply must be disconnected.
- Please use professional tools and measures to ensure the power supply has no voltage.
- Please ensure the ground wire is connected reliably before the charger powered on.
- Power cables, sockets and all accessories required for installation must meet the current laws and regulations.
- Please install short-circuit protection device at the power supply input end of the charger.
- Cable adapter, conversion terminal or power cord extension line shall not be used for the power line of the charger.
- Before charging, the electric vehicle and the charger shall be reliably connected through the charging cable.
- It is strictly forbidden to move, modify or connect the charger without using protection devices, safety or monitoring equipment.
- It is strictly forbidden to reconfigure or modify product.
- Product can only run under permitted conditions.
- Do not open the charger.
- Do not touch circuit boards and electronic components.
- If the charger is damaged, do not install and use it.
- The charger can only be repaired by professionals.
- The charger can be cleaned with neutral cleaner (cleaner suitable for plastic parts).

The charging plugs and sockets meet the requirements of IEC 62196 (AC charging, mode 3). The charger is suitable for indoor and outdoor use.

If the product is faulty or damaged, please contact the technician and inform the manufacturer.

The charger must be installed on the wall or matched pedestal, and the installation must be reliable and stable. It is not allowed to operate the charger in a loose state (not installed reliably), which does not meet the use requirements.

Do not disassemble, tamper with or deactivate the safety device.

No technical changes shall be made to the product without the permission of the manufacturer! In addition, if the operation is illegal, no warranty and claim are allowed.

The product can only be operated under the conditions specified in the manual.

Product installation and use, must be conducted by professional or trained personnel in accordance with the installation and use requirements.

The users must:

Read and understand this manual. All safety instructions have been read and understood.

The professionals (Electrical Engineer/Technical Specialist), are only allowed to carry out installation, initial operation, inspection and configuration, and the professionals must have read and understood this manual.

# 3. Installation

# 3.1 Before installation

#### 3.1.1 Installation conditions

The charger must operate in the environment required by the manual, otherwise the life of the charger will be affected. The installation and operation must meet the following conditions:

- Temperature -25  $^{\circ}$ C ~ 50  $^{\circ}$ C.
- Humidity ≤ 95% RH.
- Altitude ≤ 2000 m.
- The installation position shall not have strong vibration or mechanical impact.
- The charger must be away from explosives or dangerous goods, conductive medium and harmful gas.
- The charger must be clean, mildew-free, away from wet dust/flammable and explosive gas and liquid/ heat sources and corrosive environment.

#### 3.1.2 Installation accessories

The following accessories are required for the installation:

- User manual (1 copy, in the accessory bag).
- Expansion bolt (4pcs for Socket and 7pcs for Tethered version, in the accessory bag).
- Small-sized hexagon wrench (1pc, in the accessory bag).
- Positioning cardboard (1pc, in the box).
- Back bracket (1pc, fixed on the back of the charger already, it need to be disassembled and fix it on the wall/pedestal when installation).
- Cable holster (1pc, in the box, for Tethered version only).

#### 3.1.3 Install short-circuit protection device

There is overcurrent protection detection assembly inside the charger. However, a short circuit protection device must be installed at the front end of the charger's power line, for example, an

MCB must be installed at the front end of the charger's power line.

Do not use without short circuit protection device(MCB) installed. The rated current of MCB is about 1.2 times of the maximum current of the charger. If the charger runs at full load, the recommended capacity of MCB is 40A.

Class B or Class C MCB must be installed at the front end of the charger's power line. If any questions about the selection of the MCB, contact the manufacturer directly.

#### 3.1.4 Overvoltage protection

The overvoltage level of the charger meets Class III overvoltage protection.

#### 3.1.5 Power line

The cross-sectional area of the power line connected to the charger shall be 6-10 mm<sup>2</sup>.

Power line must be selected by professional installers, please refer to national safety regulations and the latest electrical installation technology!

#### 3.1.6 Power supply system

Both single-phase and three-phase chargers support the following power supply systems:

- TN-S
- TN-C
- TN-C-S
- TT
- IT (only support single-phase charger)

For single-phase charger, the voltage between phase line and neutral line(or P line) cannot exceed rated voltage (240VAC).

For three-phase charger, in the power supply system with neutral line, the voltage between phase line and neutral line cannot exceed rated voltage (240VAC).

## 3.2 Wall mounting

## (1) Remove the back bracket

- a. Remove the anti-theft screw with the hexagon wrench and remove the front cover.
- b. Remove the screw on the sealing cover and remove the sealing cover.
- c. Remove the screw on the back bracket, slide the back bracket down to remove it.



(2) Drill holes and fix the back bracket

- a. Place the positioning board against the wall horizontally, 1.3m away from the ground.
- b. Drill the holes as per the positioning board and insert expansion tubes into place.
- c. Fix the back bracket reliably by using screws.



③ Fix the charger and cable holster

a. Slide the charger from the top into the back bracket, and fix it with screw.

b. Fix the cable holster with screws.







(4) Wiring

a. Remove protection cover, measure/strip power line, crimp into the tube-shaped terminal.

b. Pass power line through and connect as per the diagram on the sealing cover(1 or 3-phase).



c. Install the protection cover, install the sealing cover and fix it with screw, install the front cover and fix it with screw, then the installation is done!



#### 3.3 Pedestal mounting

If the customer prefer to install on the pedestal, please follow below steps, and the installer needs to prepare matching screws and accessories according to different installation sites (taking tethered version as an example).

#### 1 Find or build a stable concrete platform

a. The installation platform must be level, stable and safe.

b. M8 expansion bolts and PVC pipe with a diameter of 40mm are needed.

c. The depth of M8 expansion bolts embedding into the platform shall not be less than 80mm, and the exposed length is recommended to be  $15 \sim 30$ mm. The length of the power line passing through the PVC on the ground shall not be less than 1300mm, which is convenient to install the power line.



## 2 Routing

a. Tilt the pedestal and make power line pass through until it can be seen at the cable outlet in the middle of the pedestal.

b. Pull out the power line from the cable outlet, remove the left and right side plates of the pedestal base (red column in below figure), then vertically pass through M8 expansion bolts on the installation platform, and fix the pedestal with M8 screws and flat pad. At last, install the

left and right side plates of the pedestal base.



(3) Install the charger & cable holster

- a. Remove the back bracket of the charger.
- b. Remove the 4pcs M6 ×20mm screws of the pedestal suspension plate.
- c. Fix the back bracket on the pedestal with screws, fix the cable holster with screws.
- d. Slide the charger from the top into the back bracket and fix with screws.





a. Remove protection cover, measure/strip power line, crimp into the tube-shaped terminal.

b. Pass power line through and connect as per the diagram on the sealing cover(1 or 3-phase).



c. Install the protection cover, install the sealing cover and fix it with screw, install the front cover and fix it with screw, then the installation is done!



# 4. Mobile APP

## 4.1 Quick guide

Step 1: Power on the charger and wait until the LED light turns into green(slow flashing). Step 2: Download LINCHR App and connect with the charger via Bluetooth.



Step 3: Connect the charger to the internet through WiFi(or 4G/5G, Ethernet).



Step 4: Click "Confirm", there will be a beep sound, and Bluetooth will be disconnected, then the charger will automatically restart, this process will last 2-3 minutes, after that, LED light will turn into solid green, it means the WiFi and OCPP backend (MONTA) are connected successfully.



Note: If the LED light doesn't turn into solid green, check troubleshooting on page 37.

Step 5: Guide EV driver to use Monta App to control charging.

a. Download and create account, then directly click "skip" and " $\times$ ".



b. Use Monta App to scan the QR code on the charger.



c. Name the charger and select the location, and then all is done!



Note: All configuration about Mobile App needs to be carried out in standby mode.

## 4.2 LINCHR App----for installer

The LINCHR App is mainly for installers to configure the chargers for EV drivers, it has 5 communication interfaces:

- Bluetooth: used to connect LINCHR App.
- WiFi: used to connect OCPP platform.
- 4G/5G: used to connect OCPP platform.
- Ethernet: used to connect OCPP platform, or realize networking among multiple chargers through switchboard.
- RS485: used to connect external smart meter or CT, realize load balancing function.

#### 4.2.1 APP installation





#### 4.2.2 APP functions

- Start or end charging.
- View the charger parameter.
- View the charging parameters, charging records, fault records.
- Configure the charger, like RFID card, online mode, operation mode.
- Load balancing, solar charging, schedule charging and etc.
- Firmware update.

#### 4.2.3 APP interfaces

Figure 1 & 2: Turn on Bluetooth and enter into main interface.

Figure 3 & 4: Click the button (red circle) to set profile photo, nickname, gender and language. And you can find the Help and Support.



Figure 5 & 6: Click the button (red circle) to find your charger and connect.

Figure 7 & 8: The name of the connected charger will be displayed in the middle of the main interface, click to enter into operation interface.



Figure 9 & 10: Set password, you need to input the same password twice, 6 digits (a-z, A-Z, 0-9) Figure 11 & 12: When you log out, you will need to input the password to enter Home Page.

← Password settings	← Password settings	Password Confirmation	Password Confirmation
6	•	6	6
(o* &	of 123456	(of the two sets of two sets of the two sets of two se	(o <sup>r</sup> )
(o* · · · · · · )	(d* · · · · · · ]	A password is only required for the first connection	A password is only required for the first connection     Confirm
A parameter is justy magnetic file for a sinvesture     Confirm	© construct any regime for the feet scenario. Confirm		Contractor
The two passwords are inconsistent			Wrong Password

Figure 13: Home page: 1. Charger name. 2. Maximum charging current. 3. Electronic lock. 4. Start/stop button. 5. Fast (click this at ECO/ECO+ mode to switch to FAST mode, click again to cancel). 6. Charger status. 7. Schedule charging. 8. Charging statistics.

Figure 14: Different charger status.



Figure 15: Slide the dial to adjust the charging current.

Figure 16: Lock and unlock the charger.

Figure 17: Click "Boost timer" to enter into the timing charging list.

Figure 18: Timing charging list.



Figure 19: Click "Charging Statistics" to view all the detailed charging statistics. Figure 20: Day by day, or month by month.



Figure 21 & 22: Click setting icon (red circle) to enter into setting interface.

Figure 23 & 24: Charging Info interface and Networking Mode interface.

- (1) Default: The priority is Ethernet > WiFi > 4G.
- ② WiFi: If select WiFi, configure user name and password.
- (3) 4G/5G: If select 4G/5G, insert SIM card into the charger.
- (4) Ethernet: If select Ethernet, configure IP according to internet requirements.

E LINCHR-H-220400666	← Cha	arger Sett	ings	← Charger info	¢ 1	Networking M	ode
AST	() Charger Info	Networking	<b>ES</b>	Board serial number 7122030000203101050100A01	<b>(()</b>	Default	۲
$\bigcirc$	()		0	Charger serial number 7122030000203101050100A01	([[+	WIFI	0
	Charge Mode	Charging	Self-inspection	Software Version 83105120000_JLS2103_V000B01D03;V000B01D0 2	att	4G/5G	0
	6	0		IEMI 893412FX215EDGY	20	Ethernet	0
	Password	Operation	OCPP	ICCID 898600MFSSYYG123456P1			
	🔥			IMSI 310150123456789		Confirm	

Figure 25 & 26: ES Configuration (TN/IT/TT) and Operation Mode (enable or disable).

Figure 27 & 28: Charging Record interface, Charging Record File can be exported in Excel format.

← ES Configuration	← Operation Mode	Charging Record	← Charging Record
8	Offline/Online Operation	No.1 Inserted Time 2022-04-06 14:37:04 Pull Out Time 2022-04-06 14:85:33	No.1 Insense 2022-04-06 14:56:17 Put Cot Time 2022-04-06 14:56:17
TN System		Stop Time 2022-04-06 14-85-59 StartMode App StopMode Background termination ChargingCapacity 0.04Wh Gun No. 2	Step Time StateMode Chargeng by vent StateMode Ummonen mannen File exported
IT System		No.2 Inserted Time 2022-04-06 14-27.04	successfully file:/storage/emulated/D/Android/data/ com.lc.linkcharge/files/
TT System		Pull Out Time 2022-04-05 14:44-50 Stop Time 2022-04-05 14:45:00 Star Titolo App StopMode Background terminution Charging/Cipacity 0 04:14/14 Gun No. 2	OrderList-2022-04-96 14:57:15.txt Conform Gentle 2010
		No.3           inserted Time         2022-04-00 14:27:04           Full Out Time         2022-04-00 14:27:04           Start Time         2022-04-00 14:27:04           Start Time         2022-04-00 14:27:04           Start Time         2022-04-00 14:27:04	No.3 sevented Taxe 3032-04-05 11-22 56 aut Oor Taxe 2077 56 66 5 10 aut 20 aut Borne 2077 56 66 5 10 aut 20 aut Borne 2077 56 66 5 10 aut 20 aut Borne 2077 56 6 5 10 aut 20 aut Borne 200 56 56 56 56 56 56 56 56 56 56 56 56 56

Figure 29 & 30: Self-inspection and Password Reset interface.

Figure 31 & 32: Charge Mode interface and OCPP interface.

1 Authentication-free charging can be enabled under offline mode, plug in and play.

(2) Electronic lock failure can be shield when enabled.

← Password Reset	← Self-inspection	← Charge Mode	← OCPP
6	e	Authentication-free chargin	OCPP server address
0 <sup>e</sup> Original Password	Recording Files	Electronic lock fault enable (	Settings
Of New Password	/storage/emulated/0/Android/data/ com.lc.linkcharge/files/ FaultSelfDiagnosis-2022-04-06 10:25.txt		
O <sup>6</sup> New Password	/storage/emulated/0/Android/data/ com.ic.linkcharge/filez/ FaultSelfDiagnosis-2022-04-06 10:25.txt		
Confirm			

Figure 33 & 34: Homepage of the Master charger/Slave charger.

Figure 35 & 36: Administrator interface(click the icon 5 times and input 123456 to enter).

← Load Balancing Load Balancing Enable		← Charger Settings	← Charger Settings
Phase Not Set >	← Load Balancing	Charger Info Networking ES	Ourger Info
Charging Mode ECO+ >	Load Balancing Enable	Charge Mode Charging Self-inspection	0 Darge Mode Charging Self-inspection
Network ConfigurationEthernet > ECO+ Max Current 0-5	Phase Not Set > Master	Password Operation OCPP	Password Operation OCPP
Grid Side Meter Not Set >	Charging Mode ECO+ >	Load Fault Record RFID Card	Load Fault Record RFID Card
Grid Side Fuse Blowing Current	Network ConfigurationEthernet > Confirm	Remote Device Type Administrato	P B B

Figure 37: Fault Record interface, view or export charging fault records:

Figure 38: RFID card interface, read or add RFID card number.

Figure 39 & 40: Remote upgrade interface, copy and paste the upgrade URL and start upgrading.

(The charger should connect to the internet)

Fault Record     total: 1	← RFID Card	← Remote upgrade	EINCHR-H-220300002
A No. 1 Fault Start Time Fault Description CP voltage shormal		Start upgrade Press Walt	<b>6 C</b>
	1 1234567890123456 -	ftp://10.0.10.149/upgradeA7 targg/X4TGOOD //igrocy2123456864646881b347 c2122665622868664497ad	Remote upgrade Upgrade Complete Confirm
	Card read successfully	Start upprade	

Figure 41- 44: Device Type Settings interface

①Set charger power(7kW/11kW/22kW) and charger type, Socket(CASE B) or Tethered(CASE C).

(2) Abnormal range of CP: 0.8 V and 1.0 V.

③ Electronic Lock Authentication: a. Enable: the charging plug cannot pull out. b. Disable: the electronic lock will automatically unlock after charging, and the charging plug can be pulled out.

← Device Type Settings	← Device Type Settings	← Device Type Settings	← Device Type Settings
Device power settings 7kW >	Device power settings 7kW >	Device power settings 7kW >	Device Power Settings 7kW >
Connection method settingsCASE C >	Connection method settingsCASE C >	Connection method settingsCASE C >	Connection Method SettingsCASE C
CP type 0.8V >	CP type 0.8V >	CP type 0.8V ⇒	CP Type 0.8V →
Electronic lock authentication	Electronic lock authentication	Electronic lock authentication	Electronic Lock Authentication
	CASE B O CASE C	● 0.8V ○ 1.0V	Confirm

Figure 45: Administrator Password Rest(original password is 123456).



## 4.3 MONTA App---for EV driver

The Monta backend is the default OCPP platform for LINCHR chargers. With Monta, EV drivers get access to thousands of public charge points, multiple payment methods and smart features for a better charging experience. And it is completely free for home charging!

Customers can also use their own OCPP platform according to their demand.



# 4.4 Advanced functions

### 4.4.1 RFID card

#### (1) Configure RFID card by MONTA App

Each charger comes with 2 RFID cards as standard, which are already configured in MONTA App, so once connected with MONTA successfully, EV driver can directly use RFID to control charging.

If customer need to use their own RFID cards, there are 3 methods to configure:

Method 1: place the card on the back of mobile, use NFC function to read and configure.

Method 2: place the card on the charger, read and configure.

Method 3: enter RFID number manually.



### (2) Configure RFID card by LINCHR App

Can only be used under Offline Mode(refer page 22) for emergency, such as when MONTA backend cannot connect.

Click "RFID Card" under administrator mode(refer page 23), place the RFID card on the charger, click "Read Card Number", then copy and paste to below blank area, after that, click "Write Card Number" to finish.

17:08 💷 🕫 🔊	17:0	8				17:08		at 🗢 60	17:08		
< RFID Card	<		FID Car			<	RFID Card		<	RFID Card	
6071222500001321      Mard Care Mantae      Mard Care Mantae      Mark Dash The Care Dash The Isolate And Of the Origon	• Press	Cut B0712225 Rea Book The Card C	Copy 00001321 d Card Nun	ntber Arpaing Arpas Of Th	e Chirger	© Plase Stor, The C	22500001321 Read Card Numbe	r to Aves Of The Charger	6071     677     77	222500001321 Read Card Number • Card Case to The Greens area Of The Charge	
()	123	,a ?1	ABC	DEF	$\otimes$	1	2	3	1 60	71222500001321	
	#@¥	GHI	JKL	MNO	^^	4	5	6	2	Write Card Number	
	ABC	PQRS	τυv	WXYZ		7 PORS	8	9 wx yz			
		选拼音	9	档	54.00		0	$\otimes$			
	۲	_		_	₽		-	_			

Daily use: after entering the RFID card, ensure the charger is reliably connected to the electric vehicle, put the RFID card in the card swiping area, when there is a "beep" sound, and LED light changes from the "constant blue" to "slow flashing blue", then charging begins. Swipe the card again, there will be another "beep" sound, charging stops.

#### 4.4.2 SIM card

#### 1 Installation & Removal

- a. When using 4G/5G to access the internet: press the SIM card into the card slot.
- b. When not using 4G/5G: press the SIM card first, and then take out after it popup.



2 After SIM card is installed in place, open LINCHR APP, select 4G/5G in the Networking Mode

interface, and configure the SIM card APN information, as shown below:



#### 4.4.3 OCPP configuration

Before configuration, ensure Operation Mode is enabled(refer page 22), and the charger connect with internet, then open OCPP settings, input server address and CPID.



The example of OCPP server address as follow:

OCPP server address: ws://13.200.14.12:58080

CPID: 7121050066603101050600A03

Different platforms have different CPID values, before configuration, you shall obtain the corresponding CPID value from the platform.

#### 4.4.4 Load Balancing

Load Balancing is a feature that allows you to safely balance the power consumption between your Electric Vehicle and your other electrical household appliances.

For example, if a washing machine is turned on, the charger will calculate the available power and if necessary, reduce the output to the electric vehicle to ensure an overload isn't caused and the homes fuse is protected.

Devices required:

- The charger.
- Smart meter or current transformer clamp(CT clamp).
- Router.
- Network cable.

1 Smart meter: port 24 is RS485 A, port 25 is RS485 B.



Single phase

Three phase

2 CT clamp:

Cable Color	Code	Function	Remark
Yellow	А	RS485 A	
Green	В	RS485 B	
Black	G	working power-Ground	0V
Red	+	working power-Positive	12V DC



(3) The charger: port 4 is RS485 A1, port 5 is RS485 B, port 6 is +12V, port 8 is GND.



#### (4) The wiring between charger and smart meter:

The charger's port 4(RS485 A1) connect with smart meter's port 24(RS485 A).

The charger's port 5(RS485 B) connect with smart meter's port 25(RS485 B).



#### **(5)** The wiring between charger and CT clamp:

The charger's port 4(RS485 A1) connect with the "yellow" cable of CT.

The charger's port 5(RS485 B) connect with the "green" cable of CT.

The charger's port 6(+ 12V) connect with the "red" cable of CT.

The charger's port 8(GND) connect with the "black" cable of CT.



#### NOTE:

Single-phase grid system, 1 CT or 1 smart meter needed.

Three-phase grid system, 3 CT or 1 smart meter needed.

#### 6 Configuration

Open LINCHR App, open "Load Balancing" and Enable, set Phase, Master and Charging Mode. Make sure that the settings are consistent with the actual situation, otherwise the load balancing may not work normally.

#### Phase:

Configure the phases of the power grid system where the single-phase charger is located. If it is connected to Phase A of the power grid, configure this parameter as A.

#### Master:

Enable the master, set the master/slave mode of the charger. The charger connected with smart meter is the master, and the rest is the slave.

#### Charging mode:

According to the actual usage scenario, configure the charging mode(FAST/ECO/ECO+).

- FAST: charge with the maximum charging power.
- ECO: It is a continuous charging mode. When solar energy is sufficient, consume the solar energy as much as possible, and when solar energy is insufficient, it charges the vehicle at the minimum charging current.
- ECO+: Green and economic charging mode. When solar energy is sufficient, consume solar energy as much as possible, and when solar energy is insufficient, charging will stop when the consumption exceeds the maximum consumable non-solar current.

Network Configuration: WiFi or Ethernet (chargers communicate through WiFi or Ethernet).

- 1) WiFi: Input correct WiFi name and password.
- (2) Ethernet: Users can choose fixed IP or dynamically allocated IP addresses.



Note: Ensure that the load balancing configuration is same for all devices, otherwise communication may fail and the load balancing function will not work normally.

ECO+ Max current: under ECO+ mode, maximum consumable non-solar current.

Grid Side Meter: Configure the address of power grid side smart meter (address is in red column), and the address of smart meter is 2 by default.

⊙ DTSU666 (		2	
O DDSU666	1)(	1)	1)
O VDG035	1)	1) (	1)

Grid Side Fuse Blowing Current: the user can set the maximum current for current system.

Three-phase current balance: when enabled, will adjust the current to make them balance, the imbalance rate is less than 15%.

#### 4.4.5 Networking

#### • Two chargers Networking (via WiFi or Ethernet)

Turn on load balancing on LINCHR App for both chargers, set the master and slave charger (1 master and 1 slave), set the "Networking Configuration" as WiFi or Ethernet(WiFi name and password should be same, when setting Ethernet, ensure two chargers are with different IP addresses in the same network segment, and then connect directly with a network cable), wait for 3min. If the APP interface doesn't display networking failure, then the networking succeed.



#### Multiple chargers Networking

Multiple chargers networking via WiFi or Ethernet (router or switchboard required). Turn on the load balancing on LINCHR App for all chargers, set master and slave chargers (1 master and multiple slaves), and set "Networking Configuration"(WiFi or Ethernet). When setting WiFi, WiFi name and WiFi password must be the same. When setting Ethernet, ensure that in the same network segment, there are different IP addresses, and wait for 3min. If the APP interface doesn't display networking failure, then the networking succeed.



#### 4.4.6 Firmware update

- Update through LINCHR App
- a. Connect to the internet through WiFi(4G or Ethernet), enter into Remote Upgrade interface.
- b. Copy and paste the URL link of the upgrade package to the blank area(see below pic).
- c. Click "Request Upgrade", and then click "Start Upgrade".
- d. Update completed.



- Update through OCPP platform
- a. Connect the charger to OCPP platform through WiFi (4G or Ethernet).

b. Send the URL link of the upgrade package to OCPP platform, OCPP platform will issue the upgrade package to the charger, the upgrade is completed.

# 5. Troubleshooting

Fault info	Reason	Solution
Abnormal Grounding	The PE cable is not connected or there is a problem with the system settings.	Check whether the TT, IT, TN systems are set correctly. If yes, check whether the PE cable is connected.
Overvoltage	Single phase: input voltage is greater than 276V±3 for 5s: Three phase: input voltage is greater than 460V±3 for 5s.	Single phase: recover when voltage is lower than 254±3VAC. Three phase: recover when voltage is lower than 450±3VAC.
Undervoltage	Single phase: input voltage is lower than 154V±3 for 5s. Three phase: input voltage is lower than 340V±3 for 5s.	Single phase: recover when voltage is higher than 164±3VAC. Three phase: recover when voltage is higher than 350±3VAC.
Metering Communication Failure	Communication problem between metering chip and the main chip.	Restart the charger 3 times in a row to see if the fault eliminated. If not, the metering chip is damaged, return charger for replacement.
Metering Failure	Metering module chip reading incorrectly or metering chip failure.	Restart the charger 3 times in a row to see if the fault eliminated. If not, the metering chip is damaged, return charger for replacement.
CP voltage abnormal	When charger detects the CP signal is between -11~2V, it will report a fault.	When charger detects the CP signal is between -11~2V, it will report a fault.

Overcurrent Protection	The charging current is greater than the preset current limit(1.1 times) and remains above 5 seconds.	Plug out and re-plug in to see if the fault eliminated. If not, means current can't be limited by vehicle. Set the current limit to max.32A.
Relay Overtemperature	The relay temperature is higher than protection threshold (115 $\pm5^{\circ}$ C).	Stop charging and wait until the relay cool down.
Input Overtemperature	The temperature of the power input terminal is higher than protection threshold (115±5℃.)	Check if the power line is in poor contact or the power line is aging. Stop charging and wait until the power input terminal cool down.
Socket overtemperature	The temperature of the socket is higher than protection threshold(115 $\pm$ 5 $^{\circ}$ C.)	Stop charging and wait until the socket cool down.
Leakage Protection	AC leakage current ≥30mA or DC≥ 6mA (RCD is not applicable to TN-C system).	Restart the charger 3 times in a row to see if the fault eliminated. If not, return for replacement.
Electronic Lock Protection	Enabled electronic lock, it is detected that the state of the electronic lock is still the initial state, the charger will report failure within 5s	Start or stop charging 3 times in a row to see if the fault eliminated, if not, return for replacement.
Power Failure	The charger is powered off during the charging process.	Restart the charger and recover.

Abnormal Charging Circuit	The relay is not closed when start charging or the relay is suddenly disconnected during the charging process.	Start charging 3 times in a row to check if the fault eliminated, if not, return charger for replacement.
LN Reverse Connection	The L-N line is reversed.	Exchange the L-N line wiring.
Phase Failure	3-phase charger phase missing or single-phase charger was set as 3-phase.	Check if the charger type is set correctly in APP. If yes, check if phase missing. If not, check if the 3-phase voltage input is normal.
PEN Fault	PE line leakage current ≥30mA or three-phase unbalanced, N line voltage ≥70V and PE disconnected.	Restart the charger 3 times in a row to see if the fault eliminated, if not, return for replacement.
Networking failure	Communication between slave charger and master charger failed.	Check if the IP of the slave charger and master charger are in the same network segment.
Backend Connection Abnormal	Not connected OCPP backend.	Check the internet configuration and whether the charger is connected to the internet normally
Vehicle Leakage Alarm	Electric leakage of vehicle	Recover after unplugging the charging gun and making it normal

# 6. Warranty

The manufacturer, LINCHR, provides on-site 3-year warranty for all the H-Series charger (LCHS07B, LCHS07C, LCHS11B, LCHS11C, LCHS22B, LCHS22C), and replace the defective ones with completely new ones for free.

It would be considered in the warranty when following:

> The EV charger has been installed according to the instructions, maintenance and warnings published in the documentation and operated correctly.

- > The charger has been only used to charge an electric vehicle.
- > The charger has been only used on the electricity supply printed on the rating plate.
- > The charging lead has been replaced in the holding socket when not in use (tethered only).
- > Any repair work must be guided or undertaken by LINCHR or appointed agent.

The warranty shall not apply where defects or damage to the products are caused by improper installation, negligence, manipulation of the charger.

The warranty does not cover:

- > Damage caused by improper use, wear and tear, transportation, or improper installation.
- General appearance or damage to paint, including chips, scratches, dents and cracks.
- > Replacement of any accessory not supplied by LINCHR.

The charger has been altered, serviced, maintained, dismantled or otherwise interfered by any person unauthorized.

Force majeure, including but not limited to, fire, earthquake, water, lightning and other environmental conditions.

#### **Further Support**

Email: <a href="mailto:service@linkcharging.com">service@linkcharging.com</a>