

# User Manual

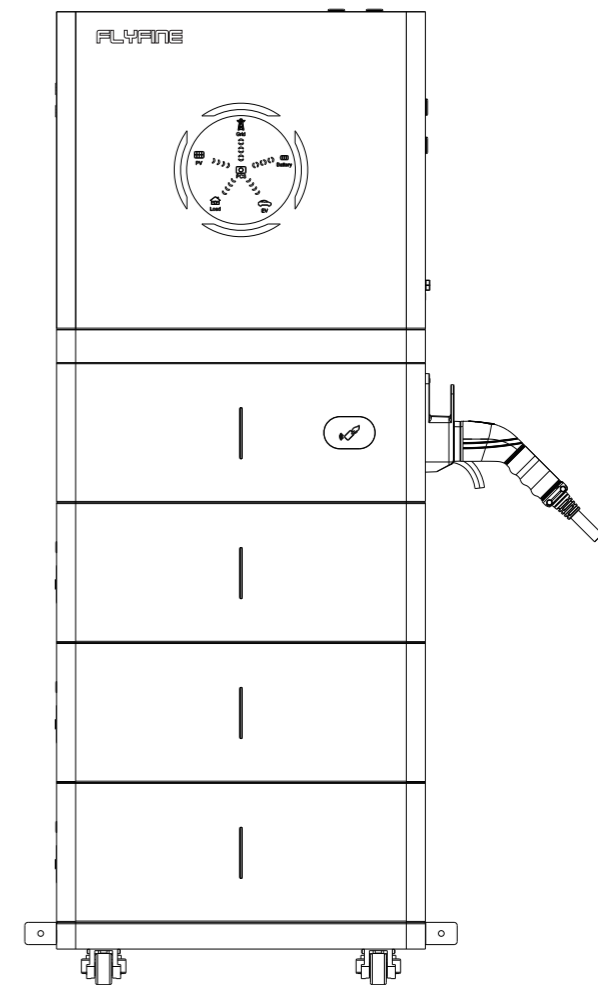
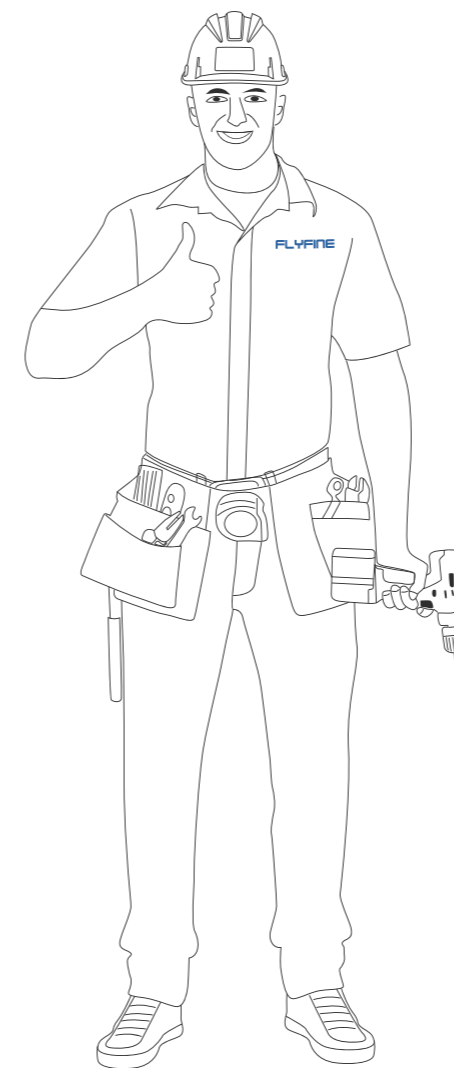
Energy Storage System With EV Charger

All In One Residential solution

Model: FEA7K



**FLYFINE DIGITAL ENERGY CO.LTD**




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## 1. Notes On This Manual

### 1.1 Clarification

This manual applies to the assembly, installation, commissioning and maintenance of the ESS with EV Charger. It does not cover any details of peripheral equipment and accessories (e.g. PV modules) connected to this product. For details on this device, please refer to the respective manufacturer's manuals.

#### Target People:

 <b>CAUTION</b>	This manual is qualified for persons who have received electrical training, demonstrated knowledge and skills in operation this equipment. This person is able to deal with the dangers and hazards involved in installing electrical devices.
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### 1.2 Additional Information




Visit our official website for more product information.



### 1.3 Storage of Instructions

Please keep this user manual in a safe place for future use. The manufacturer is not responsible for any damage or harm caused by failure to operate in the manner instructed in the manual.







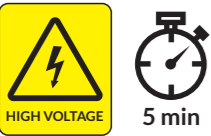
### 1.4 Symbol Description

The icons in the following tables will appear in subsequent text and are annotated below.

 <b>MANUAL</b>	<b>MANUAL:</b> Please read this manual carefully before use.
 <b>DANGER</b>	<b>DANGER:</b> This symbol indicates a dangerous situation that, if not avoided, could result in death or serious injury.
 <b>WARNING</b>	<b>WARNING:</b> This symbol indicates a dangerous situation that, if not avoided, could result in death or serious injury.






 CAUTION	<b>CAUTION:</b> This symbol indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.
 NOTE	<b>NOTE:</b> Failure to follow this warning could result in damage to the equipment.

### 1.5 Warning symbols

Symbol	Description
	<b>Dangerous voltage warning!</b> This product works under high voltage. All operations on this product must be performed as described in the documents and by qualified professionals.
	<b>CAUTION HOT!</b> This product may become hot during operation. Do not touch the product while it is in operation.
	<b>Follow Operating Instructions!</b> Before using this product, please read the product manual carefully. Follow all safety precautions and instructions described in the documents.
	Grounding Protection Connection Point.
	Direct Current (DC)
	Alternating Current (AC)
	<b>Dangerous Signal!</b> Risk of electric shock! The installation operation can only be performed after the inverter has been switched off and disconnected for at least 5 minutes.

## 2. Safety and conformity

### 2.1 Safety Instructions

	<b>Danger To Life Due To Lethal Voltages!</b> High voltage exists inside this inverter and on the power cord. Therefore, only authorized electricians should install and operate this equipment. Even if the inverter is disconnected, there may still be a risk of electric shock from high voltage!
	<b>Danger Of Burn Injuries From Hot Housing Parts!</b> During operation, the four sides of the housing cover and the heat sink may become hot. Only touch the front cover of the inverter during operation.
	<b>PV Modules &amp; Grounding Equipment</b> Comply with the local requirements for grounding the PV modules and generator. We recommend connecting the generator frame and other electrically conductive surfaces in a way that ensures continuous conduction with ground, to provide optimal protection for the system and people.
	<b>Capacitor Discharge Currents</b> PV modules with a larger capacity than the ground, such as thin-film photovoltaic modules on metal substrates, can only be used if their coupling capacity does not exceed 470nF. During the charging and discharging operation, a leakage current will flow to the ground, and its magnitude depends on the installation of the PV modules such as aluminum foil on a metal roof) and the weather conditions (such as rain and snow). Generally, the leakage current does not exceed 30mA. If it exceeds this range, the inverter will trigger protection and automatically disconnect from the grid.
	Do not attempt to open the device during operation!

## 2.2 DC and AC circuit breakers

Disconnecting the unit securely from the grid, the PV generators, and batteries by using DC and AC breaker. The DC and AC breakers should be capable of disconnect all non-ground conductors after installation.

## 2.3 PV module grounding

This unit has a built-in transformerless isolated inverter. It is strictly forbidden to ground the PV module directly. Only the mounting frame must be earthed. Otherwise, you will receive the error message "PV ISO Low".

## 2.4 Use of Charging modules

- Keep the charging head clean and dry, if it is dirty, please wipe it with a clean cloth, it is strictly prohibited to touch the charging core with hands when it is charged.
- It is strictly prohibited to use the charging gun or the charging cable when it is defective, cracked, worn, broken, or when the charging cable is exposed. (etc. to use the charging module, if any, please contact staff promptly.)
- It is strictly prohibited to unplug and unload the gun head during the charging process to ensure personal and vehicle safety during the charging process.
- If there is a dangerous situation during use, press the emergency stop button immediately to cut off all input and output power.
- In case of thunderstorms, please charge with caution.
- It is strictly prohibited for children to approach or use the charging post during the charging process.
- Electric vehicles can only be charged when the engine is switched off; during the charging process, the vehicle is prohibited from travelling.

## 2.5 Qualification of skilled technicians

- Understand how this product works and how to operate it.
- Know how to deal with the hazards and risks associated with the installation and use of electrical equipment and devices.
- Attended training in the installation and commissioning of electrical equipment and devices.
- Be familiar with all applicable standards and guidelines
- Know and follow this manual and all safety instructions.

## 3. Product description

### 3.1 ESS with EV charger Overview ( Model: FEA7K )

Product appearance ( Figure 1 )

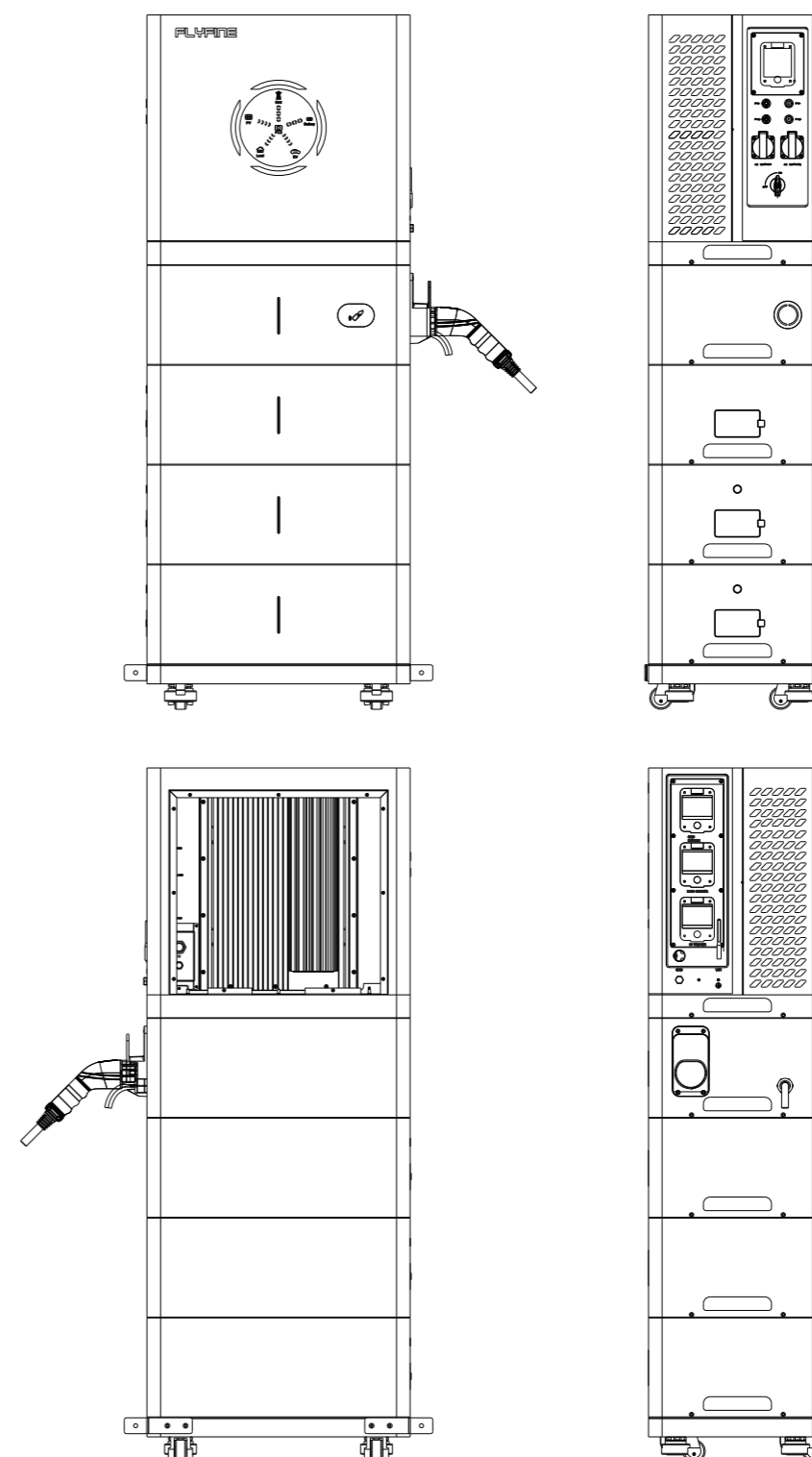


Figure 1

### 3.2 Equipment Information

The device is bi-directional and is suitable for PV systems with battery storage. The energy produced by the PV system is prioritised for load consumption (including EV charging), with excess energy used to charge the batteries, and any excess fed directly into the public grid. When the PV output is not sufficient to support the connected loads, the system automatically obtains energy from the batteries if they are sufficient. If the battery energy is not sufficient to meet its own consumption needs, energy is obtained from the public grid.

#### Product Interface Description (Figure 2)

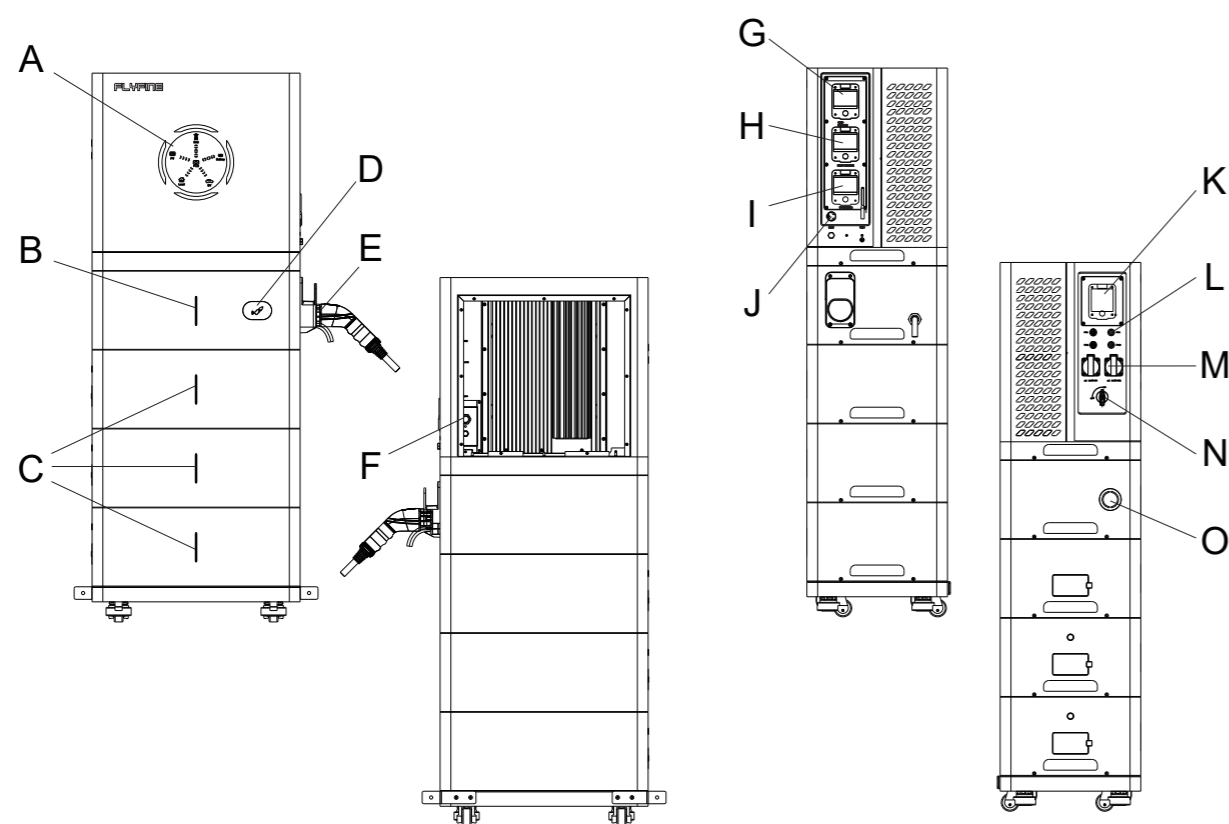


Figure 2

A	LED Display
B	Charging Status Indicator
C	Battery Status Indicator
D	NFC Swipe Terminal
E	Charging Gun
F	CT Port
G	Utility Switch
H	Load switch

I	EV Charging Switch
J	Utility Port
K	Battery Switch
L	PV Input Terminal
M	AC Output Port
N	PV Input Switch
O	EV charging emergency stop button

### 3.3 Product Storage Conditions

- Equipment must be stored in its original box
- The ambient storage temperature should be between -25°C and +55°C.
- The relative humidity of the storage environment should be maintained between 0-95% at all times.
- Bulk equipment storage, original cartons can be stacked up to 5 levels

### 3.4 Unpacking Inspection

Upon receipt of the product, please check the packaging first, if you find any damage to the packaging, or if you find damage to the unit after unpacking, please save the original packaging and contact your dealer immediately. If you need to transport the unit, the original packaging is recommended!

#### Product Accessories (Figure 3)

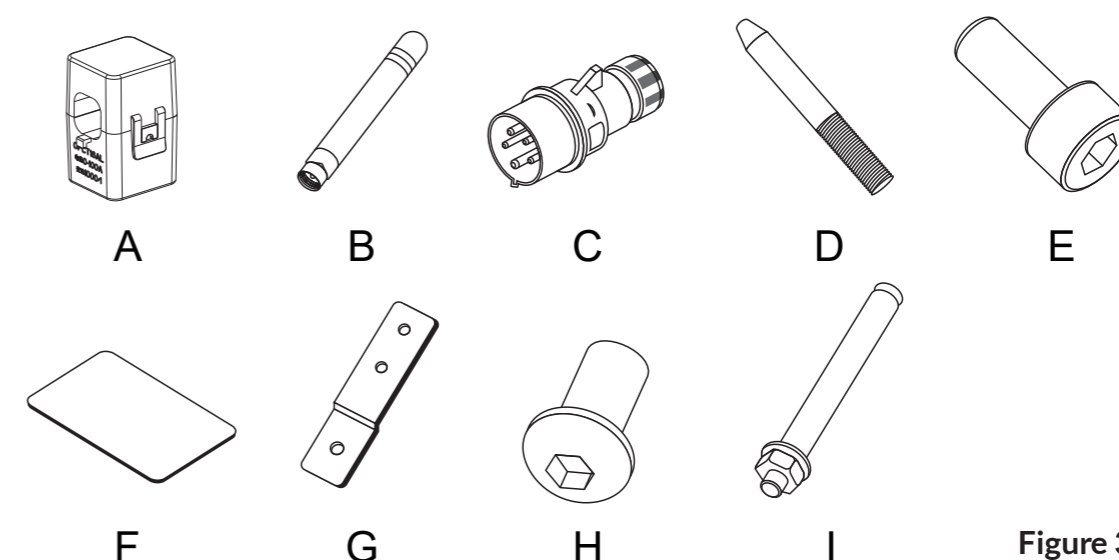





Figure 3

No	Components	Quantity(PCS)
A	CT	1
B	Antennas	1
C	AC Airline Plug	2
D	Positioning steel pin	2
E	M5x12 round head Hexagon socket set screws	8
F	EV Charger Card	1
G	Retainer	2
H	M6x12 round head Hexagon socket set screws	4
I	M8x100 expansion screw	2

### 3.5 Installation and Electrical Connection

	<p><b>Danger to life due to fire or explosion</b> Despite careful construction, electrical devices have the potential to cause fires. Do not install the inverter near flammable and explosive materials!</p>
	<p><b>Risk of burns due to hot housing cover and radiator</b> The device should be installed in an inaccessible place.</p>
	<ul style="list-style-type: none"> <li>• All electrical installations must adhere to the IEE wiring rules. It is important to avoid removing the case of the inverter, as it does not contain user-serviceable parts. Please seek assistance from qualified service personnel for any repair work.</li> <li>• All wiring and electrical installations should only be performed by a qualified electrician.</li> <li>• Carefully remove the unit from its packaging and inspect it for any external damage. If you find any issues, please contact your supplier.</li> <li>• This inverter is designed to be used with PV generation, and cannot be connected to other renewable energy devices.</li> <li>• Both AC and DC voltage sources are terminated inside the PV Inverter. All AC and DC input and output must be disconnected before performing any maintenance.</li> <li>• This unit is intended to supply power to the public grid only. Do not connect it to a generator or any other external power generating device, as it may cause severe damage to your equipment.</li> <li>• Due to the DC capacitance inside the inverter, there may still be high voltage inside the PV inverter even after the device is disconnected from the grid and PV panels.</li> <li>• Although the product is designed to comply all safety regulations, some parts and surfaces of the inverter generate high heat during operation. To reduce the risk of injury, avoid touching the heat sink on the sides and back of the unit while the inverter is in operation.</li> </ul>

### Basic Installation Requirements



This section of the guide is for the installer to select a suitable mounting position to avoid damage to the machine or injury to the operator.

- This product must not be installed in direct contact with water
- In order to avoid over-temperature which may reduce the output power of the product, please do not expose the device to direct sunlight.
- This product should be installed at least 91.4cm (3ft) above the floor
- Ambient humidity around the equipment should be 0 - 95 per cent, non-condensing
- Installation location must be convenient for future maintenance
- Do not install the product in buildings constructed of flammable or non-heat-resistant materials.
- Keep out of reach of children
- Do not cover this product, do not put anything on the device
- Do not install the product near strong magnetic signals such as TV aerials or other antennas or cables.
- The equipment requires adequate cooling space. Provide the unit with optimum ventilation to ensure adequate heat dissipation. The ambient temperature should be below 40°C for optimal operation.
- Although the electrical part of this product is IP65 rated, it is recommended that it be installed in such a way as to avoid prolonged operation under sun, rain and snow pressure.

### 3.6 Equipment Installation Status Check

- Be sure to select a suitable mounting surface to ensure that the unit is stable and free of wobbles.

### Electrical connection

<p><b>High pressure hazard!</b> The conductive parts of the device are subject to high voltages that can cause electric shocks. Disconnect the AC side, the PV side and the battery side of the inverter before performing any operations on the device. Battery positive and negative connections must not be reversed! Failure to do so will damage the inverter and void the warranty!</p>	
	<p>There is a risk of damage to electronic components from electrostatic discharge and appropriate anti-static measures should be taken when replacing and installing equipment.</p>
	<p>Grounding: The AC power supply must be grounded before connecting the DC power cord.</p>

### 3.7 System Diagram

See details (Figure 4, Figure 5)

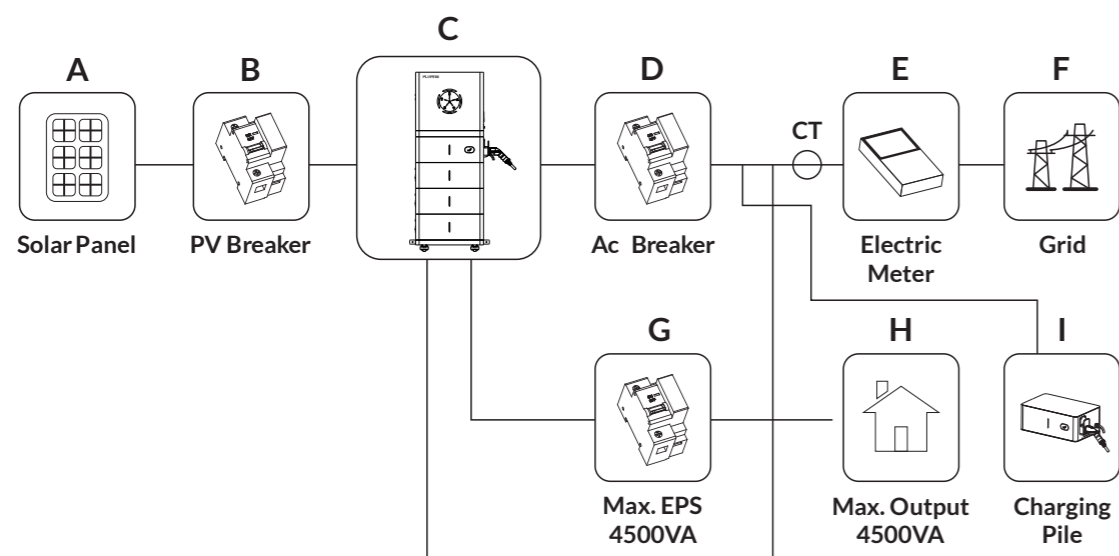


Figure 4

	<p><b>NOTE</b></p> <p>Ensure that all wiring is correctly selected and constructed to comply with wiring regulations.</p>
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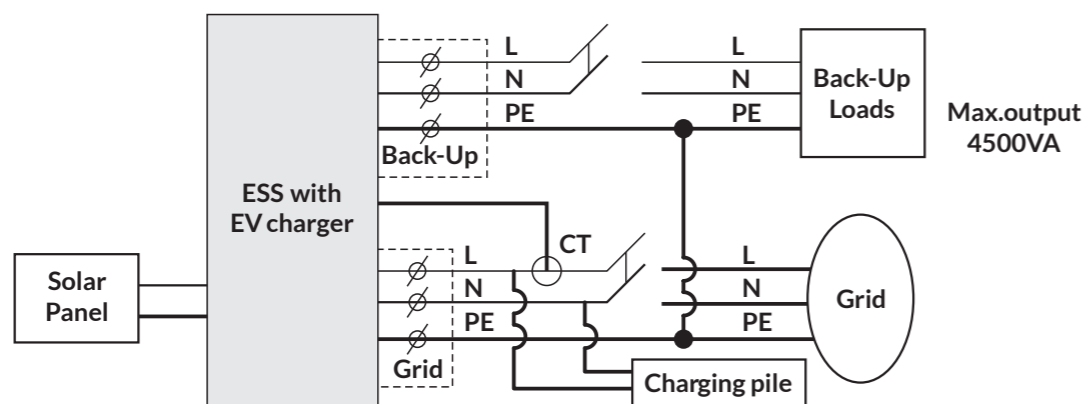


Figure 5

#### 3.7.1 EPS Connection

The EPS can provide a maximum output power of 4500w. Emergency loads can be connected to the EPS port. Be sure to install an AC isolator or other load disconnect device between the inverter's EPS output and the emergency load to ensure that the inverter can safely disconnect the load in an emergency. We recommend that the AC leakage disconnect be at least 32A.

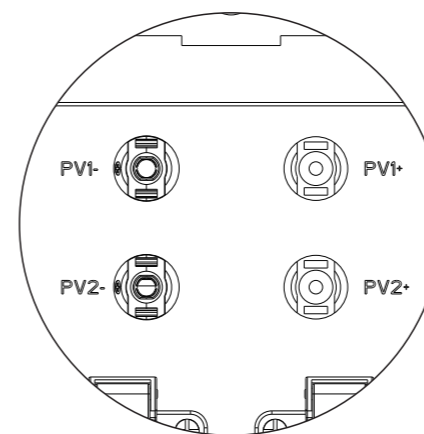
<p><b>WARNING</b></p>	<p>The maximum output power of the EPS is 4500 w. If the load is continuously greater than 4500 w, the inverter will stop outputting. The output power of the EPS depends on the capacity of the battery. <b>Note: It cannot be connected to the grid to prevent damage to the machine due to incorrect wiring!</b></p>
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#### 3.7.2 Solar Panel Connections (Figures 6 and 7)

<p><b>DANGER</b></p>	<p>1. Risk of electric shock and fire, with a maximum input voltage of 500VDC per string. 2. Transformerless design with no grounding at positive or negative ends.</p>
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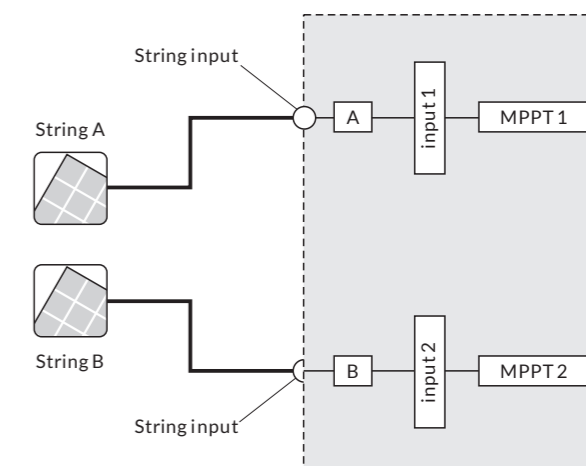
This device supports two-way PV access, refer to Figure 7.

Figure 6



PV input Connection Terminal

Figure 7



There are two MPPTs on this device

- The maximum open-circuit voltage of each PV input must not be higher than 500VDC.
- Check the design of the PV plant. The maximum open-circuit voltage may occur at an ambient temperature of -10°C for the PV panels, where the input voltage must not exceed the maximum input voltage of the inverter (500 V).
- Before connecting the PV panels to the DC terminals, make sure that the positive and negative are correct. Incorrect polarity connections may damage the inverter.

- Check the short-circuit current of the PV bank. The total short-circuit current of the PV bank should be less than the maximum DC current of the inverter.
- Connect the positive and negative PV panel outputs to the positive (+) and negative (-) terminals of the PV inverter. Each PV port on the inverter can withstand 15A
- When PV is connected, the same positive and negative connections are made to the same PV terminals (e.g. positive to PV1 positive, negative to PV1 negative).
- Do not mix input areas A and B when the PV has only one set of group string inputs.
- High-voltage electricity exists when the PV panels are exposed to sunlight. To reduce the risk of electric shock, avoid contact with live parts and handle the connection terminals with care.

Cable cross-sectional area requirements

Model	Current (A)	Cross-sectionalArea(mm <sup>2</sup> )
FEA7K	20A	4.0-6.0

3.7.3 Airline plug wiring

Cable cross-sectional area requirements

Model	Current (A)	Cross-sectionalArea(mm <sup>2</sup> )
FEA7K	35A	6.0-8.0

3.7.4 CT or meter connection of the inverter

In the system, a CT (current transducer) or meter must be installed to monitor the electrical energy of the house and to set the status of the inverter (charging or discharging).

The CT current sensor or meters shall be installed at the mains input. In this case, the inverter can monitor all the power consumption of the household. Based on the sensors, the inverter will control the PV power delivered to the grid in order to balance the level of electricity consumption in the home (refer to Figure 8).

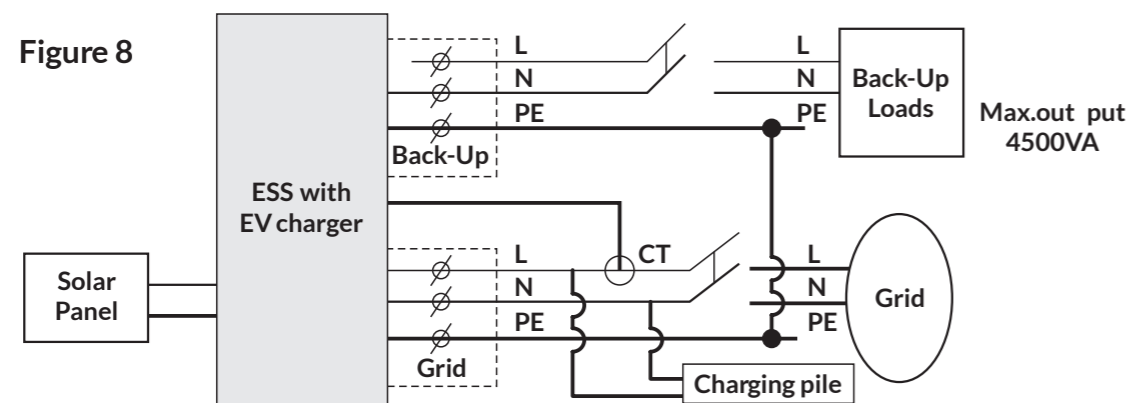


Figure 8

Place the CT between the grid and the inverter. And it must be placed in front of the local load, around the live conductor, with the arrow pointing towards the grid (refer to Figure 9).

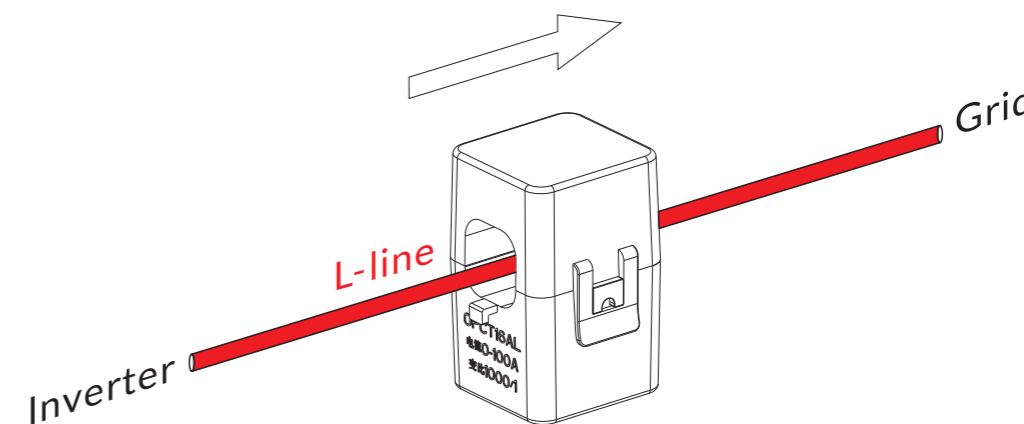
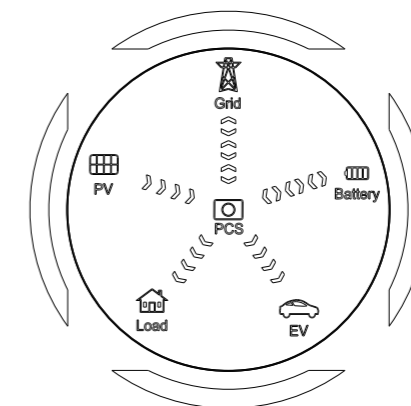


Figure 9

Chapter 4. Inverter Function Introduction

4.1 LED Display



Light Status:

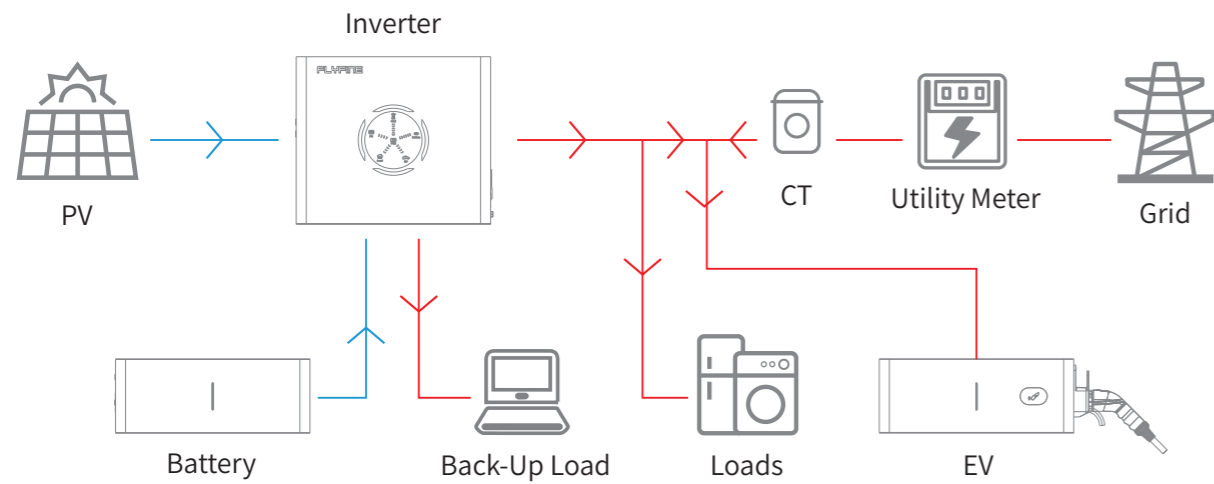
Status	Indicator Light
Stand by	Green light flashing
Normal Working	Green light always on
Warning	Yellow light always on
Error	Red light always on
Upgrade	Red light flashing



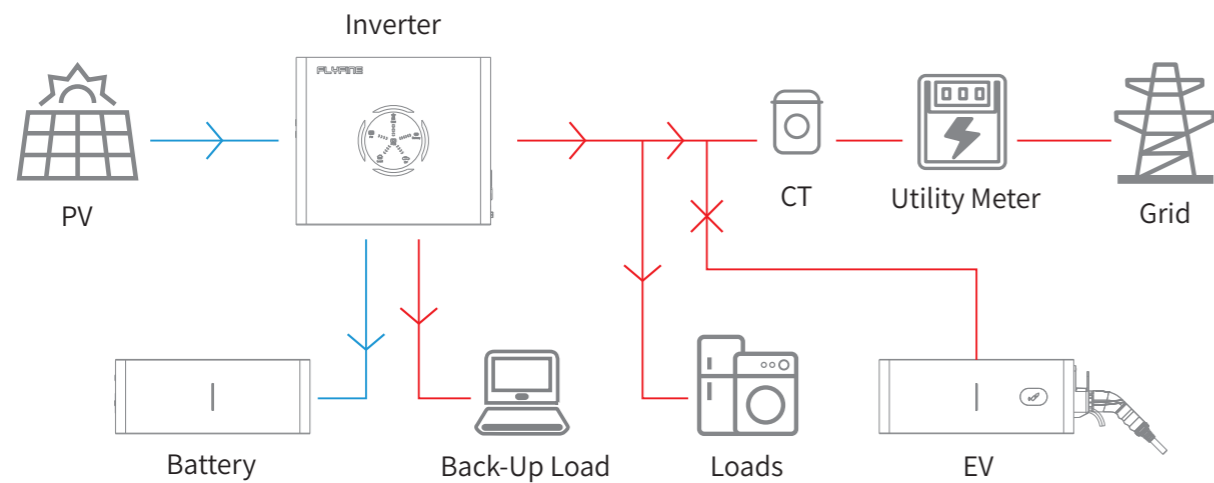
### 4.2 Working modes

#### Self Used Mode:

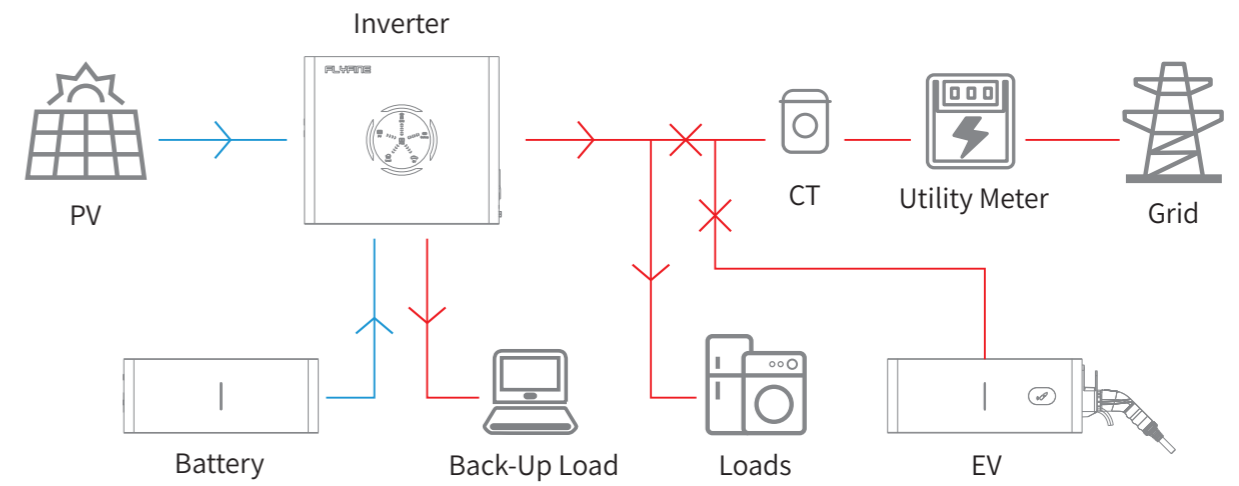
When the EV is in the charging state:



EV is not charged, when PV energy is sufficient:

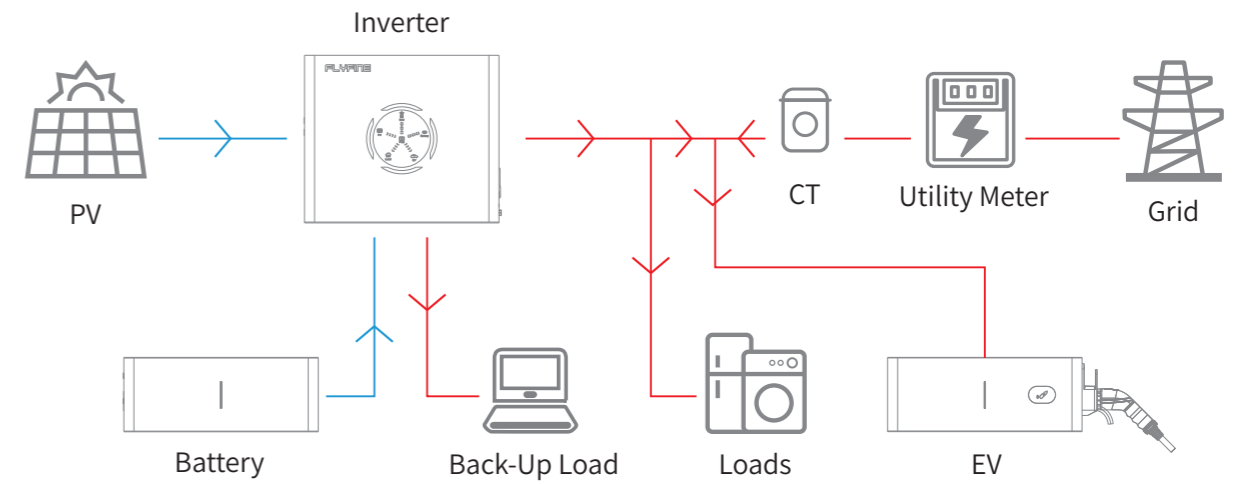


EV not charging, when PV energy is not sufficient:

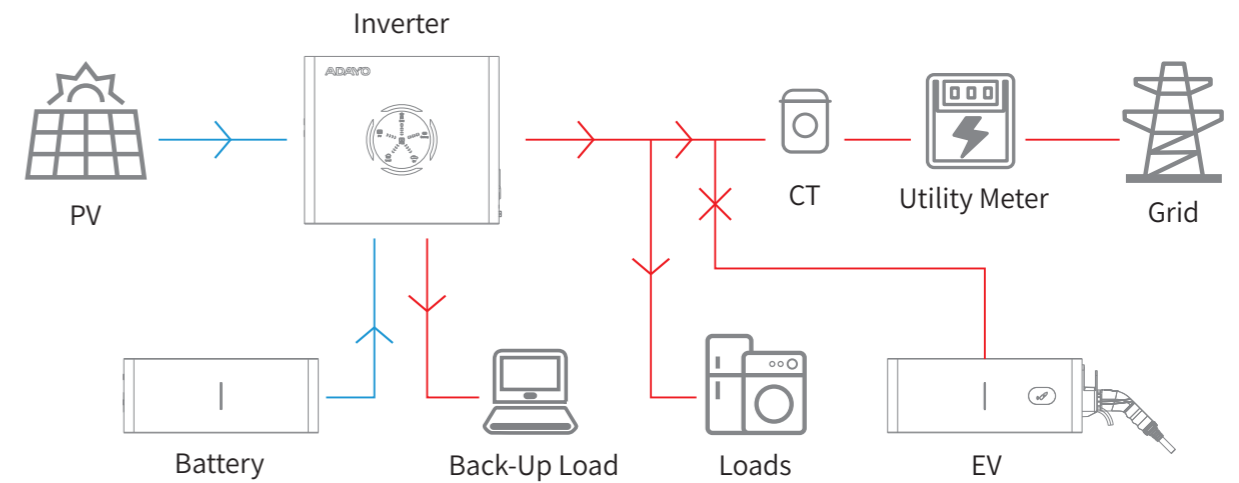


#### Selling Electricity Mode:

When the EV is in the charging state:



When the EV is in a non-charging state:



## 5. Introduction and Installation of Energy Storage Battery

### 5.1 Safety Precautions

- If the battery is stored for a long period of time, it needs to be recharged every three to six months and the SOC should be no less than 80%.
- If the battery is fully discharged, it needs to be recharged within 12 hours.
- Do not connect the battery to the photovoltaic solar energy directly with.
- It is prohibited to insert any foreign object into any part of the battery.
- Always disconnect power from the grid and make sure the battery is in the off mode before installation.
- The embedded BMS in the battery is designed for 48VDC, please do not connect the batteries in series.
- Prohibit connection of batteries to different types of batteries
- Before connecting more than two batteries in parallel, make sure that the battery SOC and voltage should be at the same level.
- If it is necessary to move or repair the battery system, the power must first be disconnected and the battery completely shut down.
- In the event of a fire, only dry powder fire extinguishers may be used, and the use of liquid fire extinguishers is prohibited.
- Do not open, repair or disassemble the battery. We do not accept any responsibility or liability for the consequences of any violation of safe operation or of design, production and equipment safety standards.

### 5.2 Introduction to Interfaces

The interface is schematically shown below:

PCS bottom		1.NC 2.NC 3.AC-L 4.AC-N 5.PE 6.NC	7.NC 8.NC 9.NC 10.NC 11.NC 12.NC 13.485A 14.485B		1.BAT- 2.BAT+ 3.BAT+ 4.BAT- 5.NC 6.NC	7.CANH 8.CANL 9.NC 10.NC 11.NC 12.NC 13.NC 14.NC
EV upper cover		1.NC 2.NC 3.AC-L 4.AC-N 5.PE 6.NC	7.NC 8.NC 9.NC 10.NC 11.NC 12.NC 13.485A 14.485B		1.BAT- 2.BAT+ 3.BAT+ 4.BAT- 5.NC 6.NC	7.CANH 8.CANL 9.NC 10.NC 11.NC 12.NC 13.NC 14.NC
EV bottom	/	/	/		1.BAT- 2.BAT+ 3.BAT+ 4.BAT- 5.NC 6.NC	7.CANH 8.CANL 9.NC 10.NC 11.NC 12.NC 13.NC 14.NC

### 5.3 Description of the LED Display

Figure 1: Battery Status Display

RUN	ALM	SOC					

Figure 2: Battery Capacity

State of a	Fig. rest and recuperate						Electrical discharge						
	L6 	L5 	L4 	L3 	L2 	L1 	L6 	L5 	L4 	L3 	L2 	L1 	
SOC	0-17%	Off	Off	Off	Off	Off	Flash2	Off	Off	Off	Off	Off	On
	18-33%	Off	Off	Off	Off	Flash2	On	Off	Off	Off	Off	On	On
	34-50%	Off	Off	Off	Flash2	On	On	Off	Off	Off	On	On	On
	51-66%	Off	Off	Flash2	On	On	On	Off	Off	On	On	On	On
	67-83%	Off	Flash2	On	On	On	On	Off	On	On	On	On	On
	84-100%	Flash2	On	On	On	On	On	Off	On	On	On	On	On
Operational	Ever-bright						Flashing (flash 3)						

Figure 3: Battery Status

Status	Normal Alarm Protect	RU	ALM	Capacity LED						descriptions	
Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	shut out
Standby	Normal	Flash	Off	Off	Off	Off	Off	Off	Off	Off	Standby
Charge	Normal	On	Off	Charge						/	
	Alarm	On	Flash	Charge							
	Protect	On	On	Charge							
Discharge	Normal	On	Off	Discharge						/	
	Alarm	On	Flash	Discharge							
	Protect	Off	On	Off	Off	Off	Off	Off	Off		Off
Fault	/	Off	On	Off	Off	Off	Off	Off	Off	Off	Stop charging and discharging

### 5.4 Connections

Batteries are combined by stacking

### 5.5 Parallel Use of Batteries

After the batteries are combined by stacking, press the power-on keyswitch in sequence, the sequence first presses the slave power-on switch, and finally opens the power-on switch connected to the system host battery, the system is powered on and auto-encoded. Press and hold the main unit for more than 15 seconds to reassign the address.

**Note: The last battery that pressed the switch button is the main unit battery.**

## 6. Charging Module Operation Guide

### 6.1 System Overview

This product is an intelligent AC charging pile, which is a brand-new auto AC charging pile system designed according to the requirements of the latest auto charging related standards such as "GB/T 18487-2015 Electric Vehicle Conductive Charging System" and "IEC 61851-2017 Electric Vehicle Conductive Charging System". The selection of components and safety protection performance fully meet the requirements of the standards.

This product integrates AC power supply, charging control, management, query and communication, and realizes intelligent control of the whole charging process by connecting it with the AC charging socket of the electric vehicle.

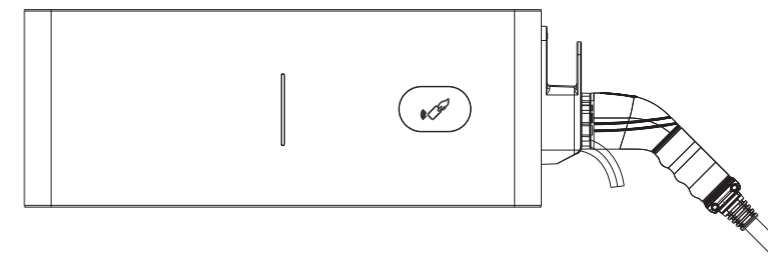
### 6.2 Configuration Instructions

The system is centred on a highly integrated charging control board. The charging control board integrates power supply, metering, control and communication, which effectively reduces the size of the AC charging pile, has a simple and reliable layout, and the wiring is simple and easy to operate, which provides a good user experience.

This system can use non-contact card swiping device (physical IC/ID card, support mobile phone NFC function). The mobile phone with NFC function can swipe the card through (simulate/copy) the function of physical card, and achieve hardware encryption and authentication processing of the card to ensure the security of card account data. This system adopts mobile phone APP to start remotely and supports both online and offline modes, users can bind the equipment through APP to achieve equipment control as well as data observation.

### 6.3 Functionality

Facing the module, from left to right are the indicator light, swipe card area and charging gun, as shown below. The AC charging gun is inserted in to the slot on the right side of the charging module when it is not in use, and on the left side of the module is the emergency stop button, which can be pressed to stop the machine when there is an emergency to protect the user's personal safety.



Indicator light bar: The indicator light is RGB light bar, showing different colour effects in different states.

No#	Device Status	Indicator light
1	Standby trouble-free	Blue light is always on
2	Plug-in gun connection	Blue light flashing
3	Running Charge	Blue Breathing Light
4	End of charging	Green light always on
5	emergency stop	Red light always on
6	malfunctions	Yellow light is always on

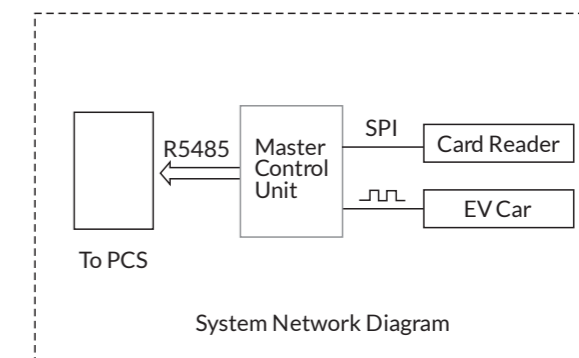
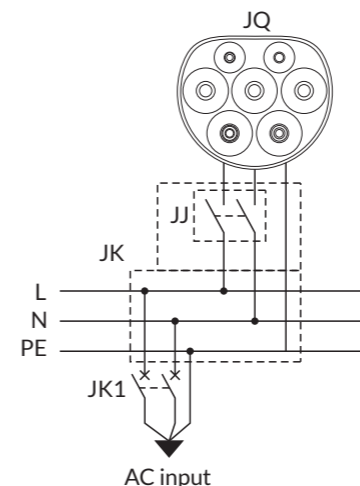
**Swipe Zone:** Users swipe their cards in this area when charging.

**Emergency Stop Button:** When charging encounters danger, users can press the emergency stop button to protect personal safety.

**Charging gun:** The charging gun is the interface of the charging pile to charge the electric vehicle, with high protection level to ensure the safety of users.

### 6.4 How the System Works

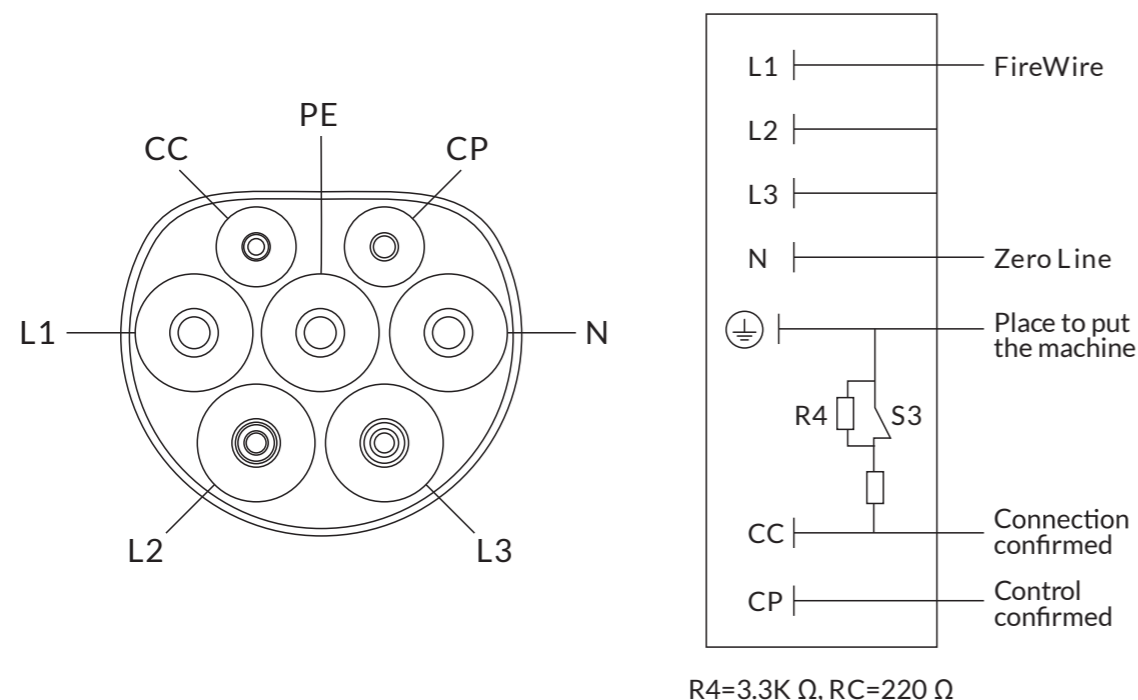
The utility power goes through the AC inlet switch, charging control module, AC charging gun to the EV on-board charger and then outputs DC power through AC/DC conversion to charge the EV battery. The charging pile communicates with the electric vehicle through PWM signal transmission to supply the AC power required by the electric vehicle.



### 6.5 Product Interface

The 7kW AC charging module interface consists of two parts: the AC inlet interface and the AC output interface:

- The AC inlet connector is a quick-connect terminal.
- The AC output interface is a charging interface that meets the standard for electric vehicle chargers, and the interface structure and electrical schematic diagram are shown below.



### 6.6 Operating Instructions

#### 6.6.1 Installation Method

The charging module uses a quick-plug connection for stacked installation with other modules.

#### 6.6.2 Equipment Operating Procedure

- Product installation, wiring, operation, maintenance and other operations shall be completed by technicians trained as relevant electricians.
- Strictly follow the operating procedures to avoid danger to personnel and damage to equipment.

Step 1: Before the power supply is energised, make sure that the charging module relay is disconnected; and use a multimeter to measure whether the voltage at the incoming terminals is normal, and enter the next operation only after the voltage is normal.

Step 2: Close the circuit breaker of the charging pile; check whether the indicator lamps, etc. are normally energised; check whether the display shows fault information; if there is no abnormality, the charging pile enters the normal standby state.

### 6.6.3 Charging Procedure

Step 1: Plug in the gun Make sure the charging gun is reliably connected to the charging port.

Step 2: Start charging Start charging by sticking the charging card close to the card swiper (swipe charging) You can also start charging by swiping the card through the mobile phone NFC analogue card, or remotely give the command to start charging through the mobile phone APP.

Step 3: Stop charging Swipe the card again to stop charging or remotely give the command to stop charging via mobile phone APP.

### 6.6.4 Charging Methods and Settings

- Swipe card for instant charging
- APP or PC server to book power charging
- APP or PC server appointment charging time period (a section) setting

### 6.6.5 Troubleshooting and Handling Methods

 <b>Warnings</b>	<p><b>Failure to operate in a fault condition may result in personal injury or death and damage to the equipment system!</b></p> <ul style="list-style-type: none"> <li>• A trained professional must perform all operations described in this chapter. This operator must be familiar with all the contents of this chapter;</li> <li>• All safety instructions in this manual must be observed when working on the charging post;</li> <li>• If troubleshooting is not possible by consulting this manual, contact our company.</li> </ul>
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If a fault occurs during operation, the charging pile will automatically stop operation and the device fault light will illuminate.

#### AC Charging Pile Troubleshooting and Handling Methods Instruction

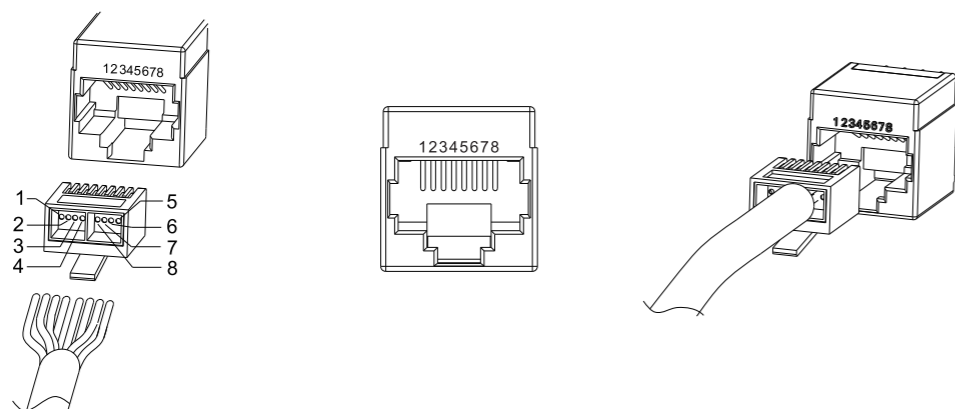
No#	Trouble-shooting	Phenomenon	Handling Methods
1	Emergency stop	Red light is always on	1. Check to see if the emergency stop button is pressed, if the button is pressed the emergency stop button needs to be restored. 2. If checking the emergency stop button is not pressed still display emergency stop fault, contact the after-sales service.
2	Relay sticking	Yellow light is always on	Contact the after-sales service to deal with it.
3	Leakage fault	Yellow light is always on	Contact the after-sales service to deal with it.

4	Overvoltage, overcurrent, undervoltage and other faults	Yellow light is always on	You can try to disconnect the charging module power supply connection, to be eliminated after the fault AC charging pile will be automatically reset, if the fault is repeated several times to start, you need to contact the after-sales service.
5	Malfunction of an electrical meter	Yellow light is always on	Contact the after-sales service to deal with it.
6	Other faults	Yellow light is always on	Contact the after-sales service to deal with it.

## 7. Notes on communications

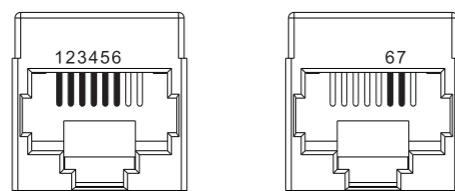
### 7.1 Communication Port Connection

DRM in the front panel connects CN5 and CN2



NO.	Function
1	DRM
2	DRM
3	DRM
4	DRM
5	REFG
6	GND-S
7	/
8	/

NO.	Function
1	/
2	/
3	/
4	/
5	/
6	LM485+
7	LM485-
8	/



## 8. Technical Parameters

Model	FEA7K
<b>Inverter Data</b>	
Maximum Input Power(W)	7000W
PV Input Voltage Range (V)	150-500
MPPT Voltage Range (V)	120 to 430
Number of MPPT	2
Maximum Number of Input Strings per MPPT	1
Maximum input current per MPPT	15A/15A
Nominal grid voltage (V)	220/230/240
Nominal grid frequency (Hz)	50Hz / 60Hz
Rated power for grid discharge (W)	5000
Maximum apparent power discharged to the grid (VA)	5500
Backup power rating (W)	4500
UPS Switching time	<10ms
<b>Battery Data</b>	
Battery Type	LiFePo4
Individual battery nominal capacity (kWh)	5.12
Number of expandable batteries	6
Usable battery power range (kWh)	5.12-30.72
Battery voltage range (V)	41.6 to 58.5
<b>Charging Pile Data</b>	
Rated power (W)	7000
Nominal voltage (V)	220/230/240
Nominal frequency (Hz)	50Hz / 60Hz
Operating method	Swipe card/APP/Insert gun self-start
Output line	Total length 5 meters of AC charging gun output
<b>Conversion Efficiency</b>	
Maximum efficiency	98%
European efficiency	97%
Maximum battery to AC efficiency	95%
MPPT efficiency	99.9%
<b>System Parameter</b>	
Operating temperature (°C)	-25 to 55°C
Relative humidity	≤95% (25°C)
Vibratory	<0.5G
Static (in a signal)	<35 dB
Height above sea level	<2000 meters
Protection class	IP65
Cooling method	Natural cooling
Communication method	RS485/ CAN/WiFi
Inverter Dimensions (L X H X W mm)	645 x 557 x 370
Charging Post Dimensions (L X H X W mm)	650 x 270 x 370
Individual Cell Size (L X H X W mm)	585 x 270 x 370
Base Dimensions (W X H X Thickness mm)	680 x 110 x 378