

# USER MANUAL

HOME-ESS-LV-3.2K





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# 1. Foreword

## 1.1 Purpose




This document describes the Home-ESS-LV-3.2K by developed HANCHU ESS in terms of its overview, application scenarios, installation, commissioning, system maintenance and technical specifications. Please read it carefully before operation.

## 1.2 Target Audience

This manual is intended for:

- Sales engineers
- System engineers
- Technical support engineers
- End usersTasks described in this manual can only be done by qualified electricians.

## 1.3 Symbol Conventions

Symbol	Description
 <b>DANGER</b>	"DANGER" indicates a hazard with a high level of risks which, if not avoided, could result in death or serious injuries.
 <b>WARNING</b>	"WARNING" indicates a hazard with a medium level of risks which, if not avoided, could result in death or serious injuries.
 <b>ATTENTION</b>	"ATTENTION" indicates a hazard with a low level of risks which, if not avoided, could result in minor or moderate injuries.

Thank you very much for choosing Home-ESS-LV-3.2K developed by HANCHU ESS. We sincerely believe that our products can meet your needs and look forward to your feedback.

- Please read and understand all the contents of this manual before installing and operating the product. Any loss caused by ignoring the contents of this manual may void the warranty.
- This product can only be used in accordance with the manual, local standards, laws and regulations. Any other use may cause personal injury and property damage.
- The illustrations provided in this manual are used to illustrate product concepts, including product information, installation guidelines, instructions for use, safety information, FAQs, and maintenance, etc.
- Unauthorized changes or modifications to the product are not permitted, any unauthorized changes will void the Home-ESS-LV-3.2K warranty and HANCHU ESS will not be liable for any damages caused thereby.
- This manual and other product-related manuals are an integral part of the product and need to be kept properly for on-site installation personnel and related technical personnel to consult.

## **2.Safety requirements**

### **2.1 Statement**

When installing, operating and maintaining the equipment, please read this manual first and follow the signs on the equipment and all safety precautions in the manual.

The 'Caution', 'Warning' and 'Danger' items in the manual do not represent all safety precautions to be followed, but as a supplement to all safety precautions. HANCHU ESS disclaims any liability arising from violations of general safety operation requirements or violations of safety standards for the design,

manufacture and use of equipment.

HANCHU ESS is not responsible for any of the following situations:

- Operations beyond the conditions specified in this manual.
- Installation or use in environments that do not meet relevant international, national or local standards..
- Disassemble and alter equipment or modify software code without authorization. Failure to follow the operation instructions and safety precautions in this manual.
- The equipment damage caused by abnormal natural environment (force majeure, such as earthquake, fire, storm, flood, mudslide, etc) .
- Damages caused during transportation by the customer.
- Storage conditions do not meet the requirements of product manual.
- Damage of the hardware or data of the equipment due to customer's negligence or intentional damages.
- System damages caused by improper operations of a third party or customer, including those in transportation, installation, adjustment, alteration or removal of identification marks.

## 2.2 General requirements



The equipment has a high voltage. Irregular operation may generate electricshock or fire which may causes death, severe personal injuries or serious property damages. Please standardize the operation :

- It is strictly prohibited to install or operate outdoor equipments and cables (including handling equipment, operating equipment and cables, plugging and unplugging signal interfaces connected to the outdoors, working at heights, outdoor installation, etc.) in severe weather such as thunderstorm, snowy weather, strong breeze, etc.

- Please observe the operation sequence and safety precautions in this manual and other related manuals.
  - Follow the warning signs, cautions and precautions on the equipment.
  - Follow the manual to use correct tools, and master the correct use of tools.
  - Do not install and connect cables, maintain, or replace equipments with power on.
    - Do not wash the equipment.
    - Do not open the panel of the equipment.
    - Measure the voltage before touching conductor surface or terminal to verify that there is no risk of electric shock.
    - Repair the scratches that occur during equipment transportation and installation in time. It is strictly forbidden to expose the scratched parts to the outdoor environment for a long time.
      - It is forbidden to lift and transport the batteries through the battery terminals or bolts.
      - Do not alter the internal structure or installation procedure of the equipment without prior consent from the manufacturer.
      - Leave the building or the equipment area and turn on the fire alarm bell or make an emergency call immediately in the case of a fire. Do not enter the building on fire in any case.



## 2.3 Personnel requirements



- Personnel installing or maintaining HANCHU ESS equipment must be trained, understand all necessary safety precautions, and be able to correctly perform all operations.

- Only qualified professionals or trained personnel are allowed to install, operate and maintain the equipment.

- Only qualified professionals are allowed to remove security facilities and overhaul equipment.

- Personnel who will operate the equipment, including operators, trained personnel and professionals should possess local national required qualifications in special operations such as high-voltage operations, working at heights and operations of special equipment.

- Only professionals or authorized personnel are allowed to replace the equipment or components (including software).

- Professionals: personnel who are trained or experienced in equipment operations and are clear of the sources and degree of various potential hazards in equipment installation, operation and maintenance.
- Trained personnel: personnel who are technically trained, have required experience, are aware of possible hazards on themselves in certain operations and are able to take protective measures to minimize the hazards on themselves and other people.
- Operators: operation personnel who may come in contact with the equipment, except trained personnel and professionals.

## 2.4 Electrical requirements

### 2.4.1 General requirements



Before connecting cables, ensure that the product is intact. Otherwise, electric shocks or fire may occur.

- Ensure that all electrical connections comply with local electrical standards.
- Ensure that the cables you prepared meet local regulations.
- Use dedicated insulated tools when performing high-voltage operations.

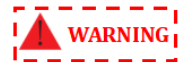
#### 2.4.2 DC operation



Do not connect or disconnect power cables with power-on. Transient contact between the core of the power cable and the conductor will generate electric arcs or sparks, which may cause fire or personal injury.

- Before connecting cables, cut off the power supply if people may contact energized components.
  - Please ensure that the label on the power cable is correct before connecting the power cord.
  - Disconnect all inputs and operate the equipment only after the equipment is powered off.

#### 2.4.3 Cabling requirements



When routing cables, ensure that a distance of at least 30 mm exists between the cables and heat-generating components or areas. This prevents damage of the insulation layer of the cables.

When the temperature is low, violent impact or vibration may damage the plastic cable sheathing. To ensure safety, comply with the following requirements:

- Cables can be laid or installed only when the temperature is higher than 0°C. Handle cables with caution, especially at a low temperature.
- If the storage environment temperature of the cables is below 0°C, the cables must be stored at room temperature for more than 24 hours before laying the cables.



## 2.5 Personal safety

Wear proper personal protective equipment during operation. If there is a probability of personal injury or equipment damage, stop the operations and take feasible protective measures immediately.

- Use tools correctly to avoid hurting people or damaging the equipment.
- The anti-static gloves must be worn when contacting the equipment. Do not wear clothes that can easily generate static electricity.
- Do not touch the shell when the equipment is running, the temperature of the shell is high, which may cause burns.
- To ensure personal safety and normal use, it should be grounded reliably before use.
- When the battery is faulty, the temperature may exceed the burn threshold of the touchable surface. Therefore, avoid touching the battery.
- Do not disassemble or damage the battery. The released electrolyte is harmful to your skin and eyes. Avoid contact with the electrolyte.
- Do not place irrelevant objects on the top of the equipment or insert them into any position of the equipment.
- Do not place flammable objects around the equipment.
- To prevent explosions and body injuries, do not place batteries in a fire.
- Do not place the battery module in water or other liquids.
- Do not short-circuit the battery terminals or it will cause a fire.
- Batteries may cause electric shocks and high short-circuit currents. When using the battery, pay attention to the following points:
  - a) Remove all metal objects from yourself, such as watches and rings.
  - b) Use tools with insulated handles.
  - c) Wear rubber gloves and boots.
  - d) Do not put tools or metal parts on the top of the battery.
  - e) Disconnect the charging power supply before connecting or

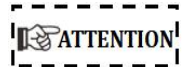
disconnecting the battery terminal.

f) Determine if the battery is unexpectedly grounded. Please remove power from the ground if accidental grounding occurs.

- Do not use water to clean electrical components inside or outside of a cabinet.
- Do not stand, rely or sit on the equipment.
- Do not destroy any module of the equipment.

## 2.6 Battery safety

### 2.6.1 Statement



HANCHU ESS shall not be liable for equipment functional abnormality, component damage, personal safety accidents, property loss, or other damage caused by the following reasons.

- The batteries are not charged as required during storage, resulting in capacity loss or irreversible damage to the batteries.
- Battery damage, drop, or leakage caused by improper operations or failure to connect the batteries as required.
- After being installed and connected to the system, the batteries are not powered on in time, which causes damage to the batteries due to Over-discharge.
- The battery running management parameters are set incorrectly.
- Customers or a third party uses the batteries beyond the scenarios specified by HANCHU ESS. For example, connect extra loads or use with other batteries, including but not limited to batteries of other brands or batteries of different rated capacities.
- Damages are caused to batteries because the battery operating environment or external power parameters do not meet environment requirements. The

actual operating temperature of batteries is too high or too low or the power grid is unstable and experiences outages frequently.

- Batteries are frequently over-discharged due to improper maintenance, capacity is incorrectly expanded or the batteries have not been fully charged for a long time.
- Batteries are not maintained based on the operation guide, such as failure to check battery terminals regularly.
- Batteries are stolen.
- Beyond the warranty period.

### 2.6.2 Basic requirements

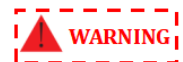


Do not expose batteries at high temperatures or around heat-generating sources, such as sunlight, fire sources, transformers and heaters. The battery may cause a fire if overheated.

- To avoid leakage, overheating or fire, do not disassemble, alter or damage batteries, do not insert foreign objects into batteries or place batteries in water or other liquids.
- The fire hazard of the lithium-ion battery energy storage system is high.

Consider the following safety risks before handling batteries:

- Battery electrolytes can be combustible, toxic and volatile.
- Battery thermal runaway can generate flammable gas and harmful gas such as CO and HF.
- The concentration of flammable gas generated from battery thermal runaway may cause combustion and explosion.

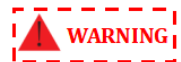


- The batteries must be stored separately inside the packaging. Do not store batteries together with other materials or in the open air. Do not stack batteries

too high.

- Do not use batteries beyond the warranty period.
- Do not remove the battery packaging before use. Batteries should be charged during storage by professionals as required. Put batteries back into their packaging after charging during storage.
- Move batteries in the correct direction. Do not place a battery upside down or tilt it.
- Protect batteries from impact.
- Do not perform welding or grinding work around batteries to prevent fire caused by electric sparks or arcs.
- Use batteries within the temperature range specified in this manual.
- Do not use damaged batteries (such as damages caused when a battery is dropped, bumped or dented on the enclosure). Damaged batteries may release flammable gases. Do not store damaged batteries near undamaged products.
- Do not place damaged batteries in close proximity to flammable materials.
- Monitor damaged batteries during storage for signs of smoke, flammable electrolyte leakage, or heat.

## 2.7 Installation Environment Requirements



- The installation and operating environment must comply with international, national and local standards for lithium batteries and with local laws and regulations.
- Install in a location out of the reach of children.
- Garage installation needs to be far away from the direction of vehicle travel, it is recommended to install the energy storage on the wall above the body bumper to avoid an accidental collision.
- When installing the battery in a basement, keep good ventilation. Do not place flammable or explosive materials around the battery. It is recommended

that the battery be mounted on the wall to avoid contact with water.

- Install the battery in a dry and well-ventilated environment. Secure the battery on a solid and flat surface.
- Install the battery in a sheltered place or install an awning over it to avoid direct sunlight or rain.
- Install the battery in a clean environment that is free from sources of strong infrared radiation, organic solvents, and corrosive gases.
- Precautions should be taken for installation in areas with frequent natural disasters such as floods, mudslides, earthquakes and typhoons.
- Keep the battery away from fire sources. Do not place any flammable or explosive materials around the battery.
- Keep the battery away from water sources such as taps, sewer pipes, and sprinklers to prevent water seepage.
- Do not install the battery in a position where it is easy to touch as the temperature of the chassis and heat sink is high when the battery is running.
- To prevent fire due to high temperature, ensure that the vents and the cooling system are not blocked when the battery is running.
- Do not expose the battery to flammable, explosive gas or smoke. Do not perform any operation on the battery in such an environment.
- Do not install the battery on a moving object, such as ship, train or car.
- Do not install the system outdoors in a salt-affected area because the system may be corroded. A salt-affected area is an area within 500m from the coast or affected by sea breeze. The area affected by the sea breeze varies according to meteorological conditions (such as typhoons and seasonal winds) or topographical conditions (such as DAMS and hills).

## 2.8 Emergency measures

### 2.8.1 Battery emergency measures



- Avoid contact with leaked liquids or gases in the case of battery leakage or abnormal odor. Do not approach the battery. Contact professionals immediately. Professionals must wear safety goggles, rubber gloves, gas masks and protective clothing.

- Electrolyte is corrosive and can cause irritation and chemical burns.

Should you come into direct contact with the battery electrolyte, do as follows:

Inhalation: Evacuate contaminated areas, get fresh air immediately and seek immediate medical attention.

Eye contact: Immediately flush your eyes with water for at least 15 minutes, do not rub your eyes and seek medical attention immediately.

Skin contact: Wash the affected areas immediately with soap and water and seek medical attention immediately.

Ingestion: Seek immediate medical assistance.

### 2.8.2 Fire emergency measures



- If a fire occurs, power off the system if it is safe to do so.
- Use carbon dioxide, FM-200 or ABC dry powder extinguishers to extinguish the fire.
- Ask firefighters to avoid contact with high-voltage components during fire fighting to prevent the risk of electric shock.
- Overheating may cause batteries to deform and leak corrosive electrolyte or toxic gas. Keep away from the batteries to avoid skin irritation and chemical burns.



### 2.8.3 Damaged battery



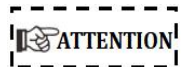
- If the battery is damaged or flooded, it may leak the electrolyte and cause a short circuit fire.
- If the battery is wet or immersed in the water, do not try to touch it.
- If the battery seems to be damaged, they are not suitable for use and may be dangerous to persons or property.

### 2.8.4 Battery drop emergency measures



- If a battery is dropped or violently impacted during installation, internal damage may occur. Do not use such batteries. Otherwise, safety risks such as cell leakage and electric shock may arise.
- If a dropped battery has obvious damage or abnormal odor, smoke or fire occurs, evacuate the personnel immediately, call emergency services, and contact professionals. Professionals can use fire extinguishing facilities to extinguish the fire under safety protection.
- If a dropped battery has no obvious deformation or damage and no abnormal odor, smoke or fire occurs, contact professionals to transfer the battery to an open and safe place or contact a recycling company for disposal.

### 2.8.5 Battery recovery process



- Dispose of used batteries in accordance with local laws and regulations. Do not dispose of batteries as household waste.
- If the batteries leak or are damaged, contact technical support or a battery recycling company for disposal.
- If the batteries are out of service life, contact a battery recycling company for disposal.

- Do not expose batteries to high temperatures or direct sunlight.
- Do not expose batteries to high humidity or corrosive environments.

### **3. Product description**

The HOME-ESS-LV-3.2K is a new generation of home energy storage equipment systems that can meet the diverse needs of global users. High- performance lithium iron phosphate battery is used for functional integration and modular structure design. It has realized convenient expansion and rapid product installation, load matching, remote control, emergency power supply and other functions.

#### **3.1 Product description**

##### **3.1.1 System composition**

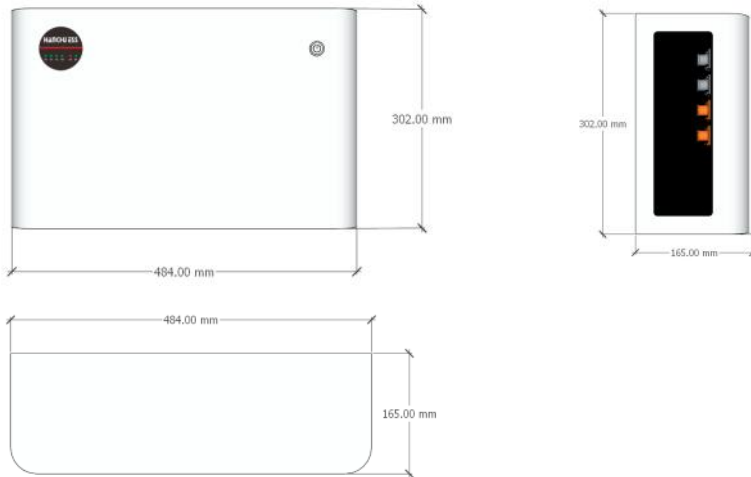
The battery system consists of BMS and battery.

The battery consists of a high performance-lithium iron phosphate cell that can be charged and discharged to the load.

A battery management system (BMS) is an intelligent electronic system that manages the charge and discharge of batteries and system safety protection.

### 3.1.2 Dimensions and Weight









Length	Width	Height	Weight
484mm	165mm	302mm	34.9KG



### 3.2 Interface description



### 3.3 Nameplate identification description

Symbol	Description
	CE certification
	Battery systems should be disposed of at an appropriate facility for environmentally safe recycling
	The battery system should not be placed with household waste
	The danger of electric shock!
	Follow the attached manuals
	Do not touch the product for 90 seconds after shutting down
	Hot surface
	Keep ventilated

### 3.3.1 Product parameters

No.	Project	Parameter	Remark
1	Specifications/Models:	HOME-ESS-LV-3.2k	
2	Dimensions (mm) W*D*H:	484*165*302	
3	Protection rate:	IP54	
4	Series and parallel mode:	1 parallel 16 strings	1P16S
5	Rated voltage (V):	51.2	
6	Operating voltage range (V):	43.2~57.6	
7	Capacity (Wh):	3225.6	
8	Standard discharging current (A):	60	
9	Maximum continuous discharge current (A):	65	
10	Standard charging current (A):	40	
11	Maximum continuous charging current (A):	65	
12	System charging operating temperature (°C):	0~50	
13	System discharge working temperature (°C):	-10~55	
14	Total weight (Kg):	34.9	
15	Communication method:	RS485/CAN	
16	Maximum parallel number:	8	

### **3.4 Features**

#### **3.4.1 Ultra Safe**

Built with safe lithium ion phosphate battery cells

#### **3.4.2 Smart BMS & IOT Monitoring**

Built-in intelligent BMS provides strong protection, Free & handy monitoring on mobile & PC

#### **3.4.3 Flexible & Easier Installation**

Optional installation design for floor standing & wall-mounted

#### **3.4.4 Modular Design**

3.2KWh Modular Design, Max 8pcs paralleling connection

#### **3.4.5 Long Life Span**

6000 cycles, 10 years life design

#### **3.4.6 Wide Compatibility**

Compatible with main brands of inverters in the market

## **4. Install**

### **4.1 Installation notes**

Please read and understand this section carefully before installing the product!

#### **4.1.1 Personnel qualification**

Product installers should have local electrician qualifications, have received safety technical training, obtain product installation authorization qualifications, have experience in the installation and use of electrical equipment and have the

following capabilities, including but not limited to:

- Setup, startup, shutdown, grounding, short-circuiting and repair of electrical equipment.

- Standardized maintenance and use of protective equipment for electrical equipment.

- Provide emergency assistance for the injured.

- Comply with local laws, regulations, standards and directives.

#### **4.1.2 Installation Environment**

The building where the battery is installed should be designed to withstand earthquakes; the location is far away from the sea, salt water and humid air;

Install in a dry, well-ventilated environment and secure the equipment on a sturdy level support surface.

There are no flammable and explosive items nearby; the surrounding environment is cool, away from heat sources and direct sunlight.

Temperature and humidity are kept at a constant level.

The area has minimal dust and dirt; no corrosive gases, including ammonia and acid vapors.

Notice:

If the ambient temperature exceeds the operating range, the battery will stop working to protect itself. The optimal temperature range for battery operation is 15°C to 35°C. Frequent exposure to harsh temperatures may reduce battery performance and life.

## **4.2 Installation preparation**

### **4.2.1 Personal Protective Equipment**

The product is a household energy storage system. Improper operation may cause personal injuries and property damages.

Personal protective equipment products must be worn during installation.

The following personal protective equipment is recommended:

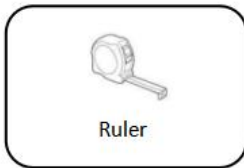
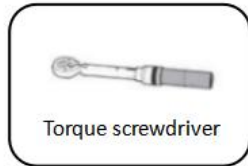
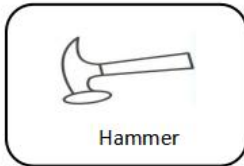
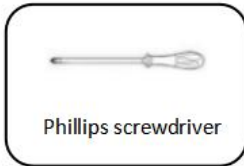
Safety gloves: Prevent the risk of electric shock and scratches during installation.

Safety glasses: Prevent eye damage from splashing foreign objects during installation.

Safety Shoes: Ensure safety in case the module is accidentally dropped during installation.



#### 4.2.2 Installation tools



#### 4.2.3 Open box to check

Make sure the battery is intact during shipping. If there is any visible damage such as cracks, please contact your dealer immediately.

Tear off the packaging tapes to unpack the battery, please check that the battery packaging and all related items are in good condition.

Please check the packing list carefully referring to Section 4.2.4 Packing Items. In case of missing items, please contact your dealer directly.



#### 4.2.4 Product accessories

Label	Name	Quantity	Function description
A	Power cable 1 Quick plug terminals at both ends/black/400mm	1	Connect the negative pole between the battery modules
B	Power cable 2 Quick plug terminals at both ends/red/400mm	1	Connect the positive pole between the battery modules
C	Power cable 3 Quick plug terminal+SC25-6 /black/1000mm	1	Connect the negative pole between the battery and the inverter
D	Power cable 4 Quick plug terminal+SC25-6 /red/1000mm	1	Connect the positive pole between the battery and the inverter
E	RS485 communication line/500mm	1	Connect the communication interface between battery modules
F	CAN communication line/1000mm	1	Connect the communication interface between battery and inverter
G	Metal bracket	1	Fix battery
H	Expansion tube/screw	6	Fixed bracket
I	Ground screw/M4-6	1	Connected to ground terminal

J	Terminal/SC25-6	2	Spare terminals
K	Terminal/OT4-4	1	Connected to ground wire
L	Logger	1	System Status Monitoring
M	User Manual	1	Product usage guide
N	Battery	1	System core components

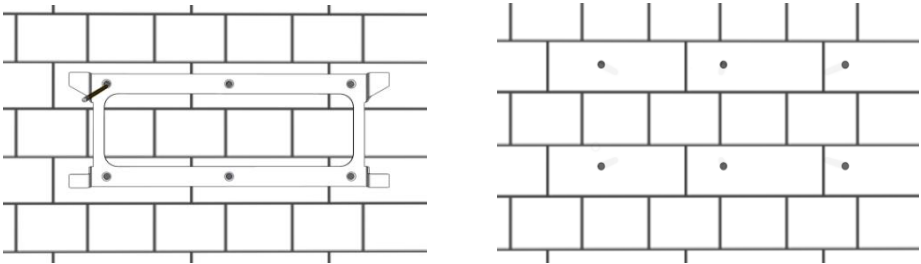
### 4.3 Installation

Make sure the wall is strong enough to bear the weight of the battery system.

Make sure there is no water source above or near the battery, including downspouts, sprinklers, or faucets.

#### Step 1: Drill positioning holes on the wall

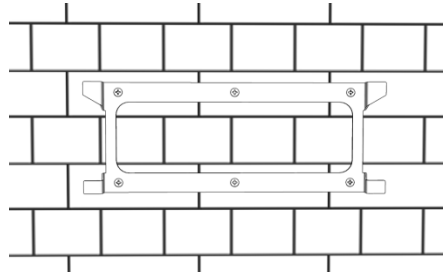
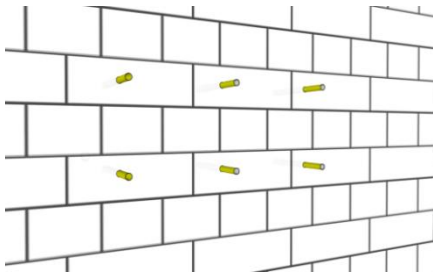
Use the bracket as a template to mark the position of the 6 holes, then drill 10mm wide holes and make sure the hole depth is greater than 60mm.



#### Step 2: Fix the Wall Mount Bracket

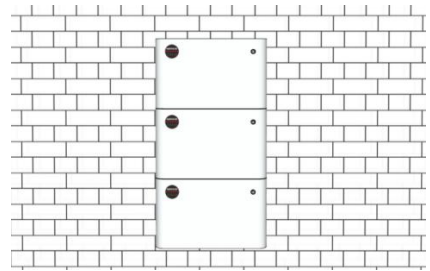
Fit the expansion tube into the hole and pull tight, then use the expansion screw (packaged with expansion tube for use) to install and secure the wall mount

bracket to the wall.



### Step 3: Fix the battery

There is a hook design on the back of the battery box, align and fix it to the positioning groove of the wall bracket for firm support.



## 4.4 Electrical connections

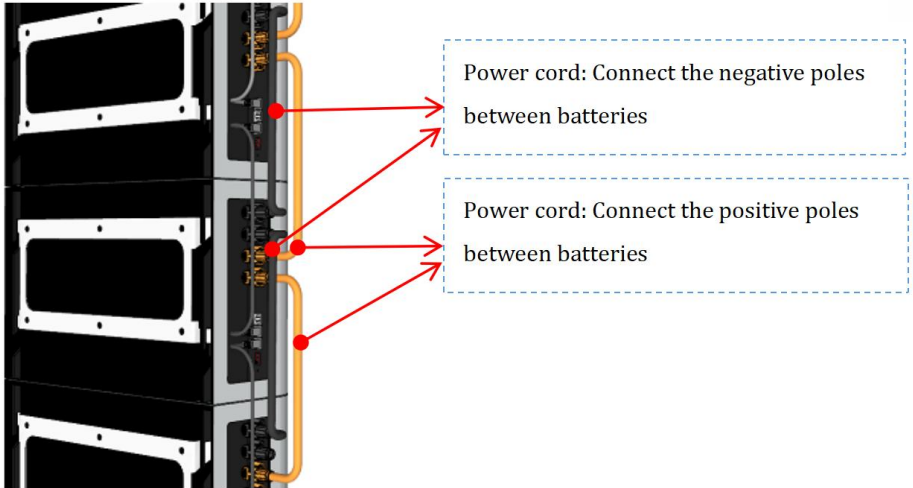
The batteries are connected in parallel. The negative terminal is connected to the negative terminal and the positive terminal is connected to the positive terminal between the battery strings and the inverter.

### 4.4.1 Battery ground connection

Ground the battery with a ground wire through the ground screw and terminal.

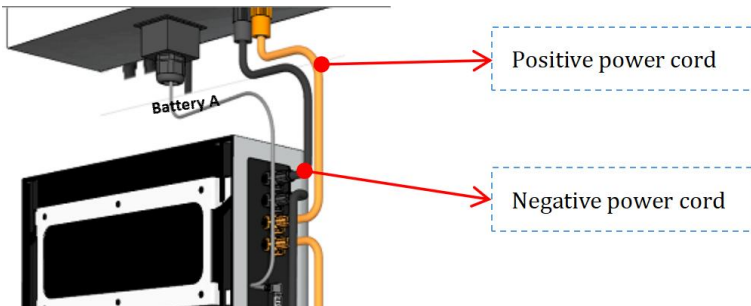
### 4.4.2 Power connections between batteries

Use power cords to connect the batteries in parallel.



#### 4.4.3 Connect the primary battery with the inverter through power cord

After the batteries are connected according to 4.4.2, connect the primary battery with the inverter through power cords.



#### Notes:

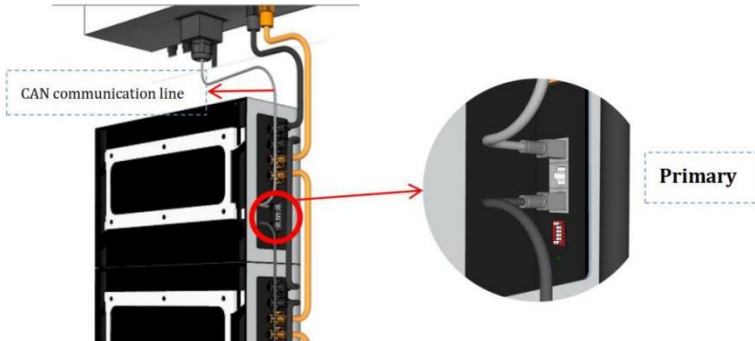
When the inverter is electrically connected, the inverter needs to be powered off.  
When the cable is connected to the terminal, an audible sound indicates that the cable is installed properly.

It is forbidden to mix batteries of different brands, specifications and batches, otherwise it will cause a system failure.

## 4.5 Communication connection

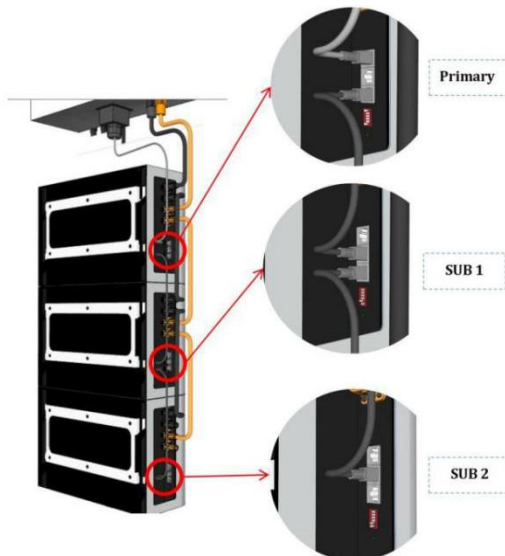
### 4.5.1 Connect the CAN communication line

Use the CAN communication line to connect the inverter with the primary through CAN protocol.



### 4.5.2 Connect the RS485 communication line

Use the RS485 communication line to connect the battery in sequence through the RS485 port.




## 4.6 Setting up


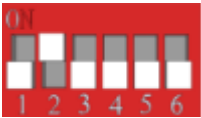
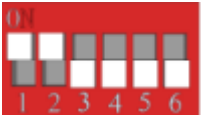


### 4.6.1 Primary and Subordinate DIP Address Settings




**Primary dip setting:** The battery factory defaults to master mode and does not need to be changed (1:ON,6:ON, 2-5:OFF)

**Subordinate dip setting:** Dip address is 2-8, #5&#6 need to be dipped off.

Definition of dip code: The dip code adopts BCD code format, and the Address 1

is defined as . Others adopt secondary system as shown in the table below.

Greenlinx No.	Address Settings	DIP ON	DIP OFF	UNIT
1		1、 6	2、 3、 4、 5	Primary
2		2	1、 3、 4、 5、 6	SUB
3		1、 2	3、 4、 5、 6	SUB
4		3	1、 2、 4、 5、 6	SUB
5		1、 3	2、 4、 5、 6	SUB

6		2、3	1、4、5、6	SUB
7		1、2、3	4、5、6	SUB
8		4	1、2、3、5、6	SUB

Notes: The battery directly connected to the inverter is the primary and the rest are subordinates.

The Primary protocol address(5:OFF,6:ON)supports the HANCHU ESS /Lux Power protocol, and address (5:ON, 6:ON) supports Victron and SMA protocols.

The battery address setting in the same system cannot be repeated.

#### 4.6.2 Starting up

Confirm again that the cables are connected in correct order and the connection is firm before turning it on.

- 1) Close the circuit breaker switch on the inverter.
- 2) Press the power switch in turn to start up the battery.
- 3) Observe whether the status of the indicator light on the battery panel is normal( 'RUN' green light flash, 'ALM' light off ).

Notes: The shutdown procedure is the opposite of the startup procedure Turn off the battery first, then disconnect the circuit breaker of the inverter. When the system starts, ensure the boot sequence of each piece of equipment, otherwise it may cause pre-charging and trigger the circuit breaker protection fault.

#### **4.6.3 Inverter protocol selection**

1) On the inverter, choose the HANCHU ESS protocol (the battery manufacturer) or the inverter's own protocol: Luxpower or other mainstream protocols.

2) Then you should see the normal status information of the battery such as voltage, SOC, etc. from the inverter.

Notes: HANCHU ESS is compatible with Growatt, SMA, GoodWe, Deye, Victron, LuxPower, Voltronic Power, Sofar Solar and other mainstream inverters in the market.

#### **4.6.4 Logger installation**

Please refer to the attached Monitor Usage Guide for the installation and registration of the logger.


### **4.7 Definition of indicator lights**

The indicator light consists of 6 lights, the first 4 lights indicate the SOC of the battery, which are 25%, 50%, 75% and 100% respectively. The fifth 'ALM' light (Red light) is a fault indicator, which will light up when the system has a fault. The sixth 'RUN' light is the normal operation light, and the green light will light up when the system is operating normally. When the system shuts down, all lights go out.



### 4.7.1 Capacity indicator

The definitions of the indicator lights during the charging and discharging process of the battery are shown in the following table.

State	Charge				Discharge			
capacity indicator	L1●	L2●	L3●	L4●	L1●	L2●	L3●	L4●
0~25%	FLASH 2	OFF	OFF	OFF	ON	OFF	OFF	OFF
25~50%	ON	FLASH 2	OFF	OFF	ON	ON	OFF	OFF
50~75%	ON	ON	FLASH 2	OFF	ON	ON	ON	OFF
75~100%	ON	ON	ON	FLASH 2	ON	ON	ON	ON
Running lights	ON				FLASH 3			
								

### 4.7.2 Status Indicator

State	Abnormal event	RUN	ALM	LED				Remark
		●	●	●	●	●	●	
Shutdown		OFF	OFF	ALL OFF				
Standby	Normal	FLASH 1	OFF	ALL OFF				
	Alert	FLASH 1	FLASH 2	ALL OFF				
	Protect	OFF	ON	ALL OFF				
Charge	Normal	ON	OFF	According to the battery indicator Highest indicator LED flash 2				
	Overvoltage alarm	ON	OFF	According to the battery indicator Highest indicator LED flash 2				

	Overcurrent, temperature alarm	ON	FLASH 2	According to the battery indicator Highest indicator LED flash 2	
	Overvoltage protection	FLASH 1	OFF	ON	
	Overcurrent Protection	ON	OFF	According to the battery indicator Highest indicator LED flash 2	
Discharge	Normal	FLASH 3	OFF	According to the battery indicator	
	Alert	FLASH 3	FLASH 2	According to the battery indicator Highest indicator LED flash 3	
	Undervoltage protection	FLASH 1	FLASH 2	According to the battery indicator	
	Overcurrent, short circuit, temperature, reverse connection, protection	OFF	ON	ALL OFF	

### 4.7.3 Flash Description

Flashing method	ON	OFF
Flash 1	0.25s	3.75s
Flash 2	0.5s	0.5s
Flash 3	0.5s	1.5s

## 5. Common troubleshooting

Accident	Fault description	Solution
External_Err	Communication interruption between BMS and inverter	Check if the communication cable between BMS and inverter is correct and well connected.
Internal_Err	<ol style="list-style-type: none"> <li>The DIP switch is in the wrong position;</li> <li>Communication lost between batteries</li> </ol>	<ol style="list-style-type: none"> <li>Move the DIP switch to the correct position;</li> <li>Check if the communication cable between the batteries is correct and well connected.</li> </ol>
OverVoltage	Battery overvoltage	Wait for the battery voltage to return to normal.
LowerVoltage	Battery voltage is too low	Please contact HANCHU ESS after-sales service department or your dealer directly
ChargeOCP	Battery charging overcurrent protection	Please contact HANCHU ESS after-sales service department or your dealer directly

DishargeOCP	Battery discharge overcurrent protection	Please contact HANCHU ESS after-sales service department or your dealer directly
TemHigh	Battery temperature is too high	Wait for the cell temperature to return to normal.
TemLow	Battery temperature is too low	Wait for the cell temperature to return to normal.
CellImblance	The capacity of the battery is different	Please contact HANCHU ESS after-sales service company or your dealer directly
Hardware_Protect	Battery hardware is under protection	Please contact HANCHU ESS after-sales service company or your dealer directly
Insulation_Fault	Battery insulation failure	Stop using, Please contact HANCHU ESS after-sales service company or your dealer directly
VoltSensor_Fault	Battery voltage sensor failure	Please contact HANCHU ESS after-sales service company or your dealer directly
TempSensor_Fault	Battery temperature sensor failure	Please contact HANCHU ESS after-sales service company or your dealer directly
CurrSensor_Fault	Battery current sensor failure	Please contact HANCHU ESS after-sales service company or your dealer directly

SelfChk_Fault	BMS self-check failure	Please contact HANCHU ESS after-sales service company or your dealer directly
CellTempDiff_Fault	The temperature between the cells is different	Stop charging and discharging. Please contact HANCHU ESS after-sales service company or your dealer directly

## 6. Battery maintenance

### 6.1 Battery storage requirements

The battery is required to be stored in a temperature range of  $-10^{\circ}\text{C}$  to  $+45^{\circ}\text{C}$  for charging after normal storage. Routine maintenance is required for batteries that have been stored for a long time. Please charge the battery to 50% SOC at 0.2C as required by the table below.

Storage ambient temperature	Relative humidity in storage environment	Storage time	SOC
$<-10^{\circ}\text{C}$	/	prohibit	/
$-10\sim 25^{\circ}\text{C}$	5%~80%	$\leq 12\text{month}$	$30\%\leq\text{SOC}\leq 60\%$
$25\sim 35^{\circ}\text{C}$		$\leq 6\text{month}$	
$35\sim 45^{\circ}\text{C}$		$\leq 3\text{month}$	
$>45^{\circ}\text{C}$	/	prohibit	/

- For extended storage, it can only be used after being checked and tested by professionals.

- When storing the battery, it should be placed correctly according to the label of the packing box, and should not be placed upside down or sideways.

- The battery boxes should meet the stacking requirements on the outer packaging when stacked.
- When handling the battery, take care not to damage the battery.
- Storage Environment Requirements :
  - Ambient temperature:  $-10\text{ }^{\circ}\text{C} \sim 55\text{ }^{\circ}\text{C}$  ;Recommended storage temperature:  $20\text{ }^{\circ}\text{C} \sim 30\text{ }^{\circ}\text{C}$ .
  - Relative humidity:  $5\%RH \sim 80\%RH$ 。
  - Store in a dry, clean, ventilated place and prevent the erosion of dust and water vapor. No exposure to rain or groundwater erosion.
  - Avoid contact with corrosive organic solvents, gases and other substances.
  - Avoid directing sunlight.

## 6.2 Charging requirements after over-discharge

Charge the over-discharged battery according to the time specified in the table below. Otherwise, the discharging battery module may be damaged.

Storage ambient temperature	storage time
$-10\sim 25\text{ }^{\circ}\text{C}$	$\leq 15\text{days}$
$25\sim 45\text{ }^{\circ}\text{C}$	$\leq 7\text{days}$

- During the storage period, record temperature, humidity and storage environment in accordance with storage requirements in this manual.
- Long-term storage of batteries is not recommended. Long-term storage of lithium batteries will cause capacity loss. Generally, an irreversible capacity loss of lithium batteries is 3%-10% after 12 months of storage at the recommended storage temperature.
- The storage environment must meet local regulations and standards.

### 6.3 Long-term idle maintenance requirements

In the process of use, you can use the following two methods to ensure that the battery is not damaged if you need to leave for a long time ( $\geq 30$  days).

1) Ensure that the SOC system of the battery is above 60% and the power switch is kept OFF. The system should restart to charge the battery within 90 days.

2) Prior to leaving, check whether the whole system works normally, especially whether it can be charged. Please ensure that the whole system works properly in case that nobody is at home.

### 6.4 Battery maintenance requirements

When the equipment is running, a high voltage may cause electric shocks, which may result in death, serious injuries or property damage. Before performing any maintenance, power off the equipment and strictly follow the safety precautions listed in this manual and other related manuals.

- Ensure that you are familiar with the contents of this manual and have appropriate tools and test equipment to maintain the equipment.
- Before performing maintenance, power off the equipment and wait for a certain period of time to ensure that the equipment is powered off according to the instructions on the delay discharging label.
- During maintenance, prevent unnecessary personnel from entering the maintenance site. Temporary warning signs or fences must be erected to isolate the site.
- If the equipment fails, please contact your dealer in time to deal with it.
- The equipment can be powered on again only after the fault has been dealt with. Otherwise, the fault may expand or the equipment may be damaged.
- Do not open the battery without authorization. Otherwise, there is a danger of electric shock and the resulting failure is not covered by the warranty.
- Operation and maintenance personnel and professional and technical

personnel should take sufficient training on safe use and equipment maintenance and perform operations after taking preventive measures and wearing protective equipment.

- When it is necessary to move or rewire, the input power must be cut off. After 5 minutes, the internal energy of the machine has been discharged and the maintenance can be started after confirming with a multimeter that there is no dangerous voltage on the DC bus and the parts to be repaired inside the machine.

- Maintenance of batteries should be performed or supervised by someone who is familiar with batteries and required precautions.

- Please use the same type of cell when replacing cells.

- Check to ensure that no tools or other parts have been left inside the equipment immediately after maintenance operations,.

- If the equipment has not been used for a long time, you need to store and charge the battery according to this manual.

All operators of the energy storage system shall comply with the user manual, installation and service manual and warranty. Any equipment damage caused by neglecting or misreading the user manual, installation and service manual and warranty will void the product warranty.



# Consumer Warranty

## 1. Limited Warranty

### 1.1 Warranty Scope

This product warranty only supports the Home-ESS-LV-3.2K series products produced by HANCHU ESS.

### 1.2 Limited Product Warranty

HANCHU ESS provides a 10-year limited product warranty. HANCHU ESS guarantees that the battery capacity is not less than 70% of the nominal capacity during the warranty period. It is free to replace or repair the battery if it is less than 70% of its capacity. Free repair or replacement service is available within 5 years from the warranty start time for normal use. After more than 5 years, other components other than batteries, such as BMS, chassis, connectors, recorders, etc., will be repaired for a fee.

HANCHU ESS covers all defects in workmanship and materials during the warranty period under normal conditions of application, installation, use and service as specified in HOME-ESS-LV-3.2K manual.

The warranty is subject to the following conditions ("Limited Product Warranty"). Limited Product Warranties are not intended and are not durability warranties because end-user conditions and usage are variable. (ie, warranty products are not guaranteed for continuous use in the building in which they are installed.)

Warranty start time is calculated from the earlier of the following:

- 1) Date of the installation of the product.
- 2) 3 months from the date the product arrives at the dealers' or users' warehouse.

This warranty does not cover any accessories and kit items provided with the product.

The actual storage capacity of the original battery modules included in the HANCHU ESS Limited Performance Warranty product will not be less than 70% of the nominal capacity during the 10-year warranty period (specific capacity test conditions are as follows):

NOTES: The product needs to be successfully registered on the official website for the client (<https://client.hanchuess.com>), and the performance warranty of unregistered products will be reduced to 5 years.

Test ambient temperature: 25±1°C

Charging and discharging method:

1. Constant current discharge the system at 30A until the battery reaches the termination voltage (single to 2.5V or a total of 40V).
2. Leave the battery for 30 minutes.
3. Charge the system with constant current with a current of 30A. When the single cell reaches 3.6V or the total voltage reaches 57.6V, switch to constant voltage charging.

When the current drops to 1A, stop charging.

4. Leave the battery for 30 minutes.
5. Constant current discharge the system at 30A until the battery reaches the termination voltage (single to 2.5V or a total of 40V).

Calculate the battery discharge capacity in step 5.

During the warranty period, the total guaranteed watt-hours by model are listed as follows:

Model	Number of battery modules	Maximum Throughput Capacity/MWh
HOME-ESS-LV-3.2K	1	12.8

## 2. Replace or Repair

Subject to the provisions below, if such products are defective or defective in manufacture or material, HANCHU ESS will repair or replace the products or any part thereof at its option.

- HANCHU ESS will endeavour to replace any product replaced under this warranty with a product of the same appearance, size and function. The quality and specifications can match the product specifications though the replaced product may not be brand new. If it is not feasible, HANCHU ESS will offer another product of at least the same value and standard, although it may be of different sizes, shapes, colours or capacities due to technological advancements.

- If the product is replaced within the warranty period, the remaining warranty period will be automatically transferred to the replaced product.

This warranty does not cover:

- Any costs incurred by the end-user or installers in normal or scheduled maintenance of the product.

- Or any other costs, such as transportation (other than the cost of delivery of parts or products replaced under this warranty to the original purchaser), traveling and lodging for on-site support personnel, etc.

- Any property damages, personal injuries, direct or indirect damages or other expenses arising out of a breach of this warranty under any law.

- Any costs for making a warranty claim are void under the terms of this warranty.

## 3. Preconditions for Warranty

This warranty is subject to the following conditions:

- The product must be installed and properly commissioned by an installer properly trained and certified by HANCHU ESS or the original purchaser of the

product. Evidence of correct commissioning of the product (eg. a certificate of compliance) may be required. Claims for failure due to incorrect installation or commissioning are not covered by this warranty.

- The original serial number and rating label of the product must be complete and readable.

- Batteries should be stored indoors in a dry, clean environment and should meet the conditions defined below for short- and long-term. Avoid contact with corrosive substances and keep away from sources of ignition and heat.

Short term: less than 1 month at an ambient temperature of  $-10 \sim 45^{\circ}\text{C}$

Long term: more than 1 month at ambient temperature of  $0 \sim 35^{\circ}\text{C}$

- Batteries that have not been used for a long time should be fully charged and discharged at least every 6 months.

- This warranty does not apply to any product that has been disassembled or modified in whole or in part unless such disassembly is carried out by HANCHU ESS.

- The discharge operating temperature during the operation of the product shall not exceed the temperature range of  $-10^{\circ}\text{C} \sim 50^{\circ}\text{C}$  while the charging operating temperature shall not exceed the temperature range of  $0^{\circ}\text{C} \sim 50^{\circ}\text{C}$ . And the product shall not be exposed and stored at a temperature higher than  $50^{\circ}\text{C}$  and not be exposed to direct sunlight in the installation area. The location of the product installation must be ventilated in accordance with the requirements of the user manual and the installation guide.

- The commissioning report should be signed by the end user and installer after commissioning and may need to be submitted to HANCHU ESS when required.

- Upon receipt of a replacement product, the product owner must return the allegedly faulty unit in the same packaging as the replacement product. HANCHU ESS will provide all labels, manual and shipping details for the return of allegedly faulty equipment. All allegedly faulty equipment must be returned within 10

business days of the receipt of the replacement product.

- A qualified installer must be available for product replacement and recommissioning.
- The original purchaser shall be responsible for working directly with HANCHU ESS in good faith. HANCHU ESS will support the correction of faults or fault messages through telephone support or direct PC link.

## **4. Product Suitability**

Due to different local safety standards and regulations associated with different installation locations, HANCHU ESS can not guarantee that products meet all applicable requirements for each installation location. It is the customer's responsibility to check and verify national and local laws and regulations to ensure that the product is purchased, shipped, installed and operated in compliance with requirements prior to purchase.

## **5. After-sales Application Process**

After-sales applications can only be made by the original purchaser of the warranty product if the warranty product has been registered by an authorized installer through HANCHU ESS product registration website during installation, or that title has been transferred by a person with a properly registered warranty product if it covers the product remains in its original location and configuration (including but not limited to purchasers of buildings where the covered product is a fixture of the building).

The dealer who sells the product is obliged to connect with the applicant first and provide after-sales support within the scope of its obligation.

To make a claim under this Factory Limited Warranty, the owner of the covered product must submit a written request during the applicable warranty period to

HANCHU ESS at the above address or future address as HANCHU ESS may provide from time to time. The application must include the following information:

- The serial number of the covered product for which the notification of application is being sent.
- Reasonably detailed defect information.
- Submit product purchase invoice with the delivery date.
- Provide HANCHU ESS data recorded by the product as an indication of Whether the minimum capacity is reached (but this is not conclusive).

HANCHU ESS may contact you for more information about the defect and may require you to complete root analysis testing of the product to provide supporting evidence. It will be finally verified by HANCHU ESS.

During processing, HANCHU ESS may recommend an authorized certified dealer or authorized certified installer for repairs. Owners can also recommend an authorized, certified dealer or installer for repairs. However, under no circumstances shall the owner begin repairs without prior notification of HANCHU ESS and authorization to begin repairs. HANCHU ESS will work in good faith with the selected authorized, certified dealer or installer to develop a scope of work document ('Warranty Labor Work Order') outlining the repair program. The warranty labor work order will outline the cost of installation or reinstallation, removal costs and repair labor costs to be borne by HANCHU ESS. Under this factory limited warranty, HANCHU ESS will only cover installation or re-installation costs, removal costs and/or repair costs that are approved by HANCHU ESS on the Warranty Labor Work Order prior to commencing work.

If you object to the verification of your application by HANCHU ESS, the product must be evaluated by a government-accredited testing laboratory or an accredited third-party testing company. You will be responsible for the cost of any third party assessment services (unless your application is proven to be valid, in which case HANCHU ESS will be responsible for the cost of the test).

If the capacity of the product needs to be tested, it must be tested under the

conditions specified in the specification.

If a product is no longer available, HANCHU ESS may replace it at its sole discretion with a refurbished product or a different product or part with equivalent functionality and performance based on the latest technical information.

## **6. Exclusions from Warranty**

To the extent permitted by law, HANCHU ESS excludes all liability for the product when any damage or defect is caused or contributed to by the following:

- Inverter or charger failure.
- The product is installed with an uncertified inverter or charger.
- The battery does not operate correctly according to the product manual.
- Your mishandling, negligence or any other improper way of handling the products, including not using the product by the product instructions or not under the recommended ambient temperature conditions.
  - Transportation including but not limited to dropping, stepping on, deforming, striking or puncturing with sharp objects.
  - Storage, installation, commissioning, modification or maintenance of the product by persons other than HANCHU ESS or installers certified by HANCHU ESS.
  - Abuse, misuse, neglect, accident or force majeure event, including but not limited to lightning, flood, fire, extremely cold weather or other events beyond the reasonable control of HANCHU ESS.
  - Any attempt to prolong or shorten the life of the product, whether by physical means, programming or otherwise without written confirmation from HANCHU ESS.
  - Removal and re-installation from the original installation location without written confirmation from HANCHU ESS.

- Water, conductive dust or corrosive gas.
- The product is connected to different types of battery modules.
- The battery is connected with batteries other than HANCHU ESS batteries.
- Failure to install, operate or maintain the product by the product regulations.
- Normal wear or aging, or surface defects, dents or marks that affect the performance of the product.
  - Theft or destruction of the product or any of its components.
  - Unauthorized wiring and use with faulty or incompatible equipment.
  - The end user fails to provide the correct product serial number, the product serial number is illegible or modified without the permission of HANCHU ESS.
    - The product defect is caused by the update of national or regional laws or regulations.
    - The product failure is not reported to HANCHU ESS within 2 weeks after it occurs.
    - Purchasing and installing the product in countries other than the UK.
    - Use of any spare parts not manufactured, sold or approved by HANCHU ESS when repairing or replacing the products. Continued use of the product after it is defective or known to be defective through regular maintenance. Caused by external force, force majeure (cause of natural disasters, such as unforeseen, unavoidable and insurmountable objective events, including but not limited to war, civil war, strikes, riots or other government intervention activities, terrorism, war, riots) product damage, strikes, lack of suitable and adequate labor or materials and other events beyond the control of HANCHU ESS or other third parties.

## 7. Internet Requirements

As an express condition of HANCHU ESS's obligations under this Factory Limited Warranty, HANCHU ESS requires continuous online access to covered products



via internet connection. This Factory Limited Warranty requires that covered products are properly connected to the internet through your internet provider and expressly excludes any defects resulting from actions or omissions that prevent HANCHU ESS from accessing covered products online, as software uploads or performance data downloads may be required. Failure to meet such conditions may void HANHUESS's obligations under this Factory Limited Warranty.

The products that are not connected to the internet during warranty period is then reduced to 3 years.

In case of a temporary internet connection failure or interruption lasting 48 hours or less:

If the failure lasts for more than 20 minutes, the product owner shall notify HANCHU ESS as soon as possible and take own measures to monitor the product for defects during this failure.

The product owner shall develop and implement processes if possible to collect and maintain system and product data locally to retain data generated by the system during internet outages and send such data to HANCHU ESS as soon as possible when the internet reconnects.

HANCHU ESS shall not shoulder any responsibilities and the warranty shall not cover any failures to provide product or system updates which had been planned to occur remotely by internet connection during outage.

HANCHU ESS shall not be responsible and the warranty shall not cover any resultant failure to remotely monitor/pick up on system or product defects or irregularities.

Any defects discovered and reported during internet outage should be accompanied by sufficient evidence (including relevant photographs) to allow a full investigation of the defect and to show that the problem was not caused by the internet outage itself if possible.

Every time a warranty claim is made for a product when not connected to the

Internet, the product owner is obliged to organize an on-site inspection and data collection by qualified personnel under the direction of HANCHU ESS.

HANCHU ESS will monitor the performance of the product and notify the owner of the product via the Internet of any defects found during the warranty period if the products are connected to the Internet. Otherwise, once the product is found to be defective or latently defective during the warranty period, the product owner shall notify HANCHU ESS as soon as reasonably practicable.

## **8. General Provisions**

This warranty is governed by local laws.

If any term in this document is unenforceable, illegal or invalid, or makes this document or any part thereof unenforceable, illegal or invalid, that term will be severed while the remainder of this document remains in effect.

If any provision of this document is unenforceable, illegal or invalid in one jurisdiction but enforceable in another, then this provision relates only to the operation of this document in the jurisdiction in which it is enforceable, legal or valid.

## **9. Warranty Limitations**

Unless otherwise specified herein, the warranty document and the remedies above shall be exclusive and replace all other guarantees and remedies to the extent permitted by applicable laws, no matter whether they are oral or in writing, expressed or implied. To the extent permitted by applicable law, HANCHU ESS expressly rejects all legal or implied warranties, including but not limited to warranties of merchantability, fitness for a particular purpose and hidden or potential defects. If HANCHU ESS can not abandon the implied warranty as prescribed by applicable law, all of such guarantees and warranties

shall be limited to the implied warranty as prescribed by applicable laws or the scope within applicable laws and shall be under mandatory application according to applicable laws.

To the extent prescribed by Applicable Law, it shall be enforced under Applicable Law. Neither the dealers, agents or employees of HANCHU ESS nor the HANCHU ESS authorized service partners are authorized to make any modifications, extensions or additions to the warranty.

Unless otherwise specified herein, HANCHU ESS will not be liable to the maximum range permitted by applicable law for any direct, indirect, special, accidental or derivative losses caused by the purchase or use of products and its system, including but not limited to the loss of use and income, actual or expected loss in revenue (including contract revenue losses), loss of the use of money, loss of anticipated savings, loss of business, loss of opportunity, loss of goodwill, loss of reputation, personal injury or damage loss, or the indirect or derivative loss or damage (including any expense arising from the replacement of equipment and property, resumption of production, etc.) caused by any reasons. Under no circumstances shall HANCHU ESS' liability for any reason exceed the purchase price paid by the user to HANCHU ESS for such products. Liability beyond this scope is mandatory based on culpable injury to life, bodily injury or health and intentional or gross negligence.

## **10. Out of Warranty**

For product services beyond the scope of warranty, HANCHU ESS can provide users with certain after-sales services. Users can make requests in writing to authorized service partners of HANCHU ESS. All costs and expenses including but not limited to materials, parts or labor costs are borne by the user. If the user notifies in writing that out-of-warranty service is required, the user shall provide a detailed description of the defect so that the HANCHU ESS authorized service

partner can detect whether such defect can be repaired.

For the avoidance of doubt, HANCHU ESS shall never be liable for services beyond the scope of the warranty and this clause 10 does not constitute a commitment by HANCHU ESS to provide such services beyond the scope of the warranty.

## **11. Dispute Resolution**

If there is a dispute over the warranty claim, HANCHU ESS and the product owner will entrust a world-class testing organization to provide third-party verification and opinions upon mutual agreement. Unless otherwise agreed, all fees and expenses are borne by the party requesting such verification procedures.

Chinese local courts have non-exclusive jurisdiction for further disputes over warranty claims arising out of this warranty.

In the case of judicial claims, HANCHU ESS authorized service partners to have no rights to send or receive litigation documents.

This warranty is governed and construed by the laws of the People's Republic of China, excluding the Convention on Contracts for the International Sale of Goods.

## **12.Contact Details**

This Warranty is offered by HANCHU ESS Co., Ltd., No. 588, Jinhui Road, Huishan Economic Development District, Wuxi City, Jiangsu Province, China

Phone for more support: +86-0510-82331917

E-mail for more support: [service@hanchuess.com](mailto:service@hanchuess.com)

## Warranty Card

Please fill the required information in and send this page back to HANCHUESS or their authorized distributor when you need to apply warranty service support.

### User Information:

User Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Email: \_\_\_\_\_

### Product Information:

Battery Model: \_\_\_\_\_

Purchase Date: \_\_\_\_\_

Product Serial Number: \_\_\_\_\_

Invoice Number: \_\_\_\_\_

Installation Location: \_\_\_\_\_

Distributor: \_\_\_\_\_

### Fault Description:

- Date of failure: \_\_\_\_\_
- Inverter brand and model: \_\_\_\_\_
- Status of the battery front panel lights: \_\_\_\_\_
- Real-time battery information displayed on the inverter or inverter

monitoring system

Voltage: \_\_\_\_\_

Current: \_\_\_\_\_

SOC: \_\_\_\_\_

Temperature: \_\_\_\_\_

- Fault description :

- Can not boot
- Can't communicate
- Can't charge
- Unable to discharge
- ALM is on
- others\_\_\_\_\_

How long has the system been used?

- Crash on arrival, failure after installation
- within 6 months
- 6 months to 1 year
- 1 year to 3 years
- over 3 years

How often does the failure occur?

- once or twice
- 3 times or more
- every day
- others\_\_\_\_\_

Detailed Description of The Fault: \_\_\_\_\_  
\_\_\_\_\_

**Please attach all necessary photos or videos to help find and resolve the cause of the problem in a more timely manner.**

**Applicant:** \_\_\_\_\_

**Date:** \_\_\_\_\_





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