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# Chapter 1 Introduction

This document mainly describes the product information, installation and wiring, configuration, debugging, trouble shooting and maintenance methods of the inverter. Before installing and using the product, please read this document carefully to understand the safety information, functions and characteristics of the product. This document is subject to update from time to time. Please visit our official website or contact relevant personnel for the latest version and more product information.

## 1.1 Applicable product

This document is applicable to the following models:  
EAHI-6000-SL-S

## 1.2 Applicable personnel

This document is only applicable to the professionals who know local regulations and standards and electrical systems well, and have specialized knowledge related to this product after being trained professionally.

## 1.3 Definition of symbols

<b>DANGER</b>
“DANGER” indicates a high potential danger which may cause death or sever injury if not avoided.
<b>WARNING</b>
“WARNING” indicates a moderate potential danger which may cause death or sever injury if not avoided.
<b>CAUTION</b>
“CAUTION” indicates a low potential danger which may cause mild or moderate injury if not avoided.
<b>NOTE</b>
“NOTE” indicates emphasis on and supplement to the contents, or the optimized use skill or know-how of the product, which will help you to solve a problem or save time.

## 1.4 Revision history

V1.0, first release

## Chapter 2 Safety Precautions

Make sure to always follow the safety precautions specified herein during operation of the inverter.

### NOTE

The inverter has been designed and tested in strict accordance with safety regulations. However, for any electrical equipment, the relevant safety instructions should be followed before any operation on the inverter as any improper operation may lead to serious injury or property damage.

### 2.1 General safety

#### NOTE

- This document is subject to update from time to time due to product version upgrading or other reasons. Unless otherwise specified, the contents of this document cannot replace the safety instructions provided in the product label or user manual. All descriptions provided herein are intended as use guidance only.
- Read this document carefully to understand the products and precautions before installing the inverter.
- All operations of the inverter must be conducted by professional and qualified technicians who are familiar with the relevant local standards and safety regulations at the place where the invert is installed.
- When the inverter is operated, it is necessary to use insulating tools and wear personal protective equipment to ensure personal safety. Wear anti-static gloves, anti-static bracelet and anti-static clothing, etc. when touching electronic devices, to protect the inverter against static.
- Any equipment damage or personnel injury caused by failure to install, use or configure the inverter as required by this document is not the equipment manufacturer's responsibility. Contact the supplier for this document.

### 2.2 Safety of photovoltaic module

#### DANGER

Please connect the DC cable of the inverter by using DC wiring terminal supplied with the product. Using other DC wiring terminals may lead to serious consequences, and the equipment damage caused there from is not the equipment manufacturer's responsibility.

#### WARNING

- Make sure to properly earth the component frame and the support system.
- After the DC cable is connected, make sure that the cable is tightly connected without looseness.
- Measure the positive and negative poles of DC cable by a multimeter to ensure that the positive and negative poles are connected correctly and without reverse connection, and

the voltage is within the allowable range.

- Do not connect the same PV string to multiple inverters in series; otherwise the inverter may be damaged.
- The photovoltaic module used with the inverter must comply with Class A standard of IEC61730.

## 2.3 Safety of inverter

### WARNING

- Make sure that the voltage and frequency of the grid connection point meet the grid connection specifications of the inverter.
- It is recommended to provide the protection device such as circuit breaker or fuse on AC side of the inverter, and the specification of the protection device should be greater than 1.25 times the rated AC output current of the inverter.
- The protective earth conductor of the inverter must be connected firmly. When multiple inverters are used, make sure that equipotential connection is made for all protection ground points on the inverter housing.
- If the photovoltaic system is not equipped with a battery, it is not recommended to use the BACK-UP function. The power consumption risk of the system caused thereon is excluded in the warranty of the equipment manufacturer.

### DANGER

- After installation of the inverter, labels and warning signs on the box must be clearly visible, and shall not be covered, changed and damaged.
- The signs on the inverter box are as follows:

	<p>There is high temperature on the surface of the inverter, and it is forbidden to touch the inverter when it is running, otherwise it is possible to cause burns</p>		<p>Delayed discharge. After the inverter is powered down, please wait for 5 minutes till the inverter is fully discharged</p>
	<p>Please read the user manual carefully before operating the inverter</p>		<p>Potential danger may be caused during the operation of the inverter, and protection measures should be taken</p>
	<p>The inverter should not be treated as domestic waste, please dispose the inverter according to local laws and regulations, or send it back to the equipment manufacturer</p>		<p>Connection point of protective earth conductor</p>
	<p>CE Marking</p>		<p>RCM Marking</p>

## 2.4 Battery safety

### CAUTION

- The battery used with the inverter shall be approved by the inverter manufacturer, and the list of approved batteries is available from the official website.
- Before installing the inverter, please carefully read the user manual of the battery to understand the product and precautions, and strictly follow the operation requirements provided in the user manual of the battery.
- If the battery has been completely discharged, charge the battery in strict accordance with the user manual of the battery.
- The battery current may be affected by some factors, such as temperature, humidity and weather conditions, etc., which may cause battery current limit and affect carrying capacity.
- If the battery does not work, please contact the after-sales service center as soon as possible. Otherwise, the battery may be permanently damaged.
- Measure the positive and negative poles of DC cable by a multimeter to ensure that the positive and negative poles are connected correctly, and the voltage is within the allowable range.
- Do not connect a single battery pack to more than one inverter; otherwise the inverter may be damaged.

## 2.5 Personnel requirements

### NOTE

- Installers and maintainers must receive strict training to understand the safety instructions, and correct operation method.
- The inverters or their components are only installed, operated, maintained and replaced by the qualified professional or trained professional.

## 2.6 EU compliance statement

The inverters with wireless communication functions salable in European market meet the following directives:

- Radio Equipment Directive 2014/53/EU (RED)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)
- Waste Electrical and Electronic Equipment 2012/19/EU
- Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006 (REACH)

The inverters without wireless communication functions salable in European market meet the following directives:

- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Electrical Apparatus Low Voltage Directive 2014/35/EU (LVD)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)

- Waste Electrical and Electronic Equipment 2012/19/EU
  - Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006
- Please contact the suppliers for more EU compliance statements (REACH)

# Chapter 3 Product Description

## 3.1 Product description

EAH1-6000-SL-S inverter is used to control and optimize the energy flow in the photovoltaic system through an integrated energy management system. With the inverter, the power energy generated in the photovoltaic system can be supplied for the load, stored in the battery, and outputted to the grid. The inverter integrates with power supply, battery and Internet for connection with grid, photovoltaic panels and the Internet of things to supply the power for families, small supermarkets, farms and other places.

### Product features:

- Grid-tied & off-grid all-in-one machine
- IP66 protection design
- Up to 1.5 PV capacity ratio
- Flexible operating mode setting
- Remote intelligent monitoring
- Integrated power battery stack design
- Up to 6 x 100Ah cells stacked

## 3.2 Application scenarios

### WARNING

- The photovoltaic system is not suitable for connection with the devices requiring stable power supply, such as life-sustaining medical devices. Make sure that no personal injury is caused in case of system failure.
- If the photovoltaic system is not equipped with a battery, it is not recommended to use the BACK-UP function. The power consumption risk of the system caused therefore is excluded from the warranty of the equipment manufacturer.
- The battery current may be affected by some factors, such as temperature, humidity, weather conditions, etc., which may cause battery current limit and affect carrying capacity.
- If overload protection is triggered on the inverter for single time, the inverter can be restarted automatically; if overload protection is repeated, the restarting time of the inverter will be prolonged. If it is required to restart the inverter as soon as possible, the inverter may be restarted immediately by App.
- If, during grid failure, load capacity is more than the rated power of the inverter, the off-grid function of the inverter will be disabled automatically; when the inverter is restarted, close large load to ensure that the load power is less than the rated power of the inverter.
- The inverter has overload capacity and EPS function at the BACK-UP output port (switching time <20ms), and may supply the power for normal use in ordinary domestic load in case of grid failure. To ensure EPS switch over and power supply stability of the

load, do not use the loads requiring high starting current as much as possible, such as high-power water pumps. The supported load sizes are as follows:  
 Total power of inductive load and capacitive load  $\leq 1 \times$  rated output power of inverter

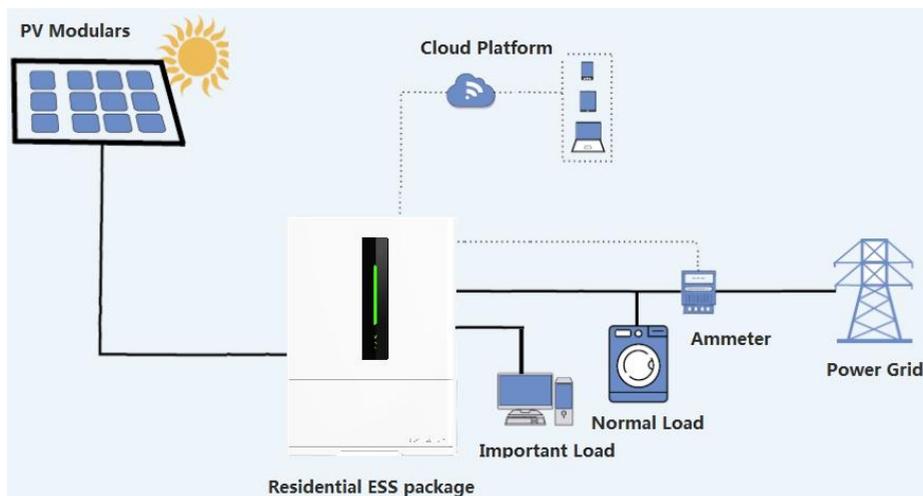


Fig. 3.2.1 General application scenario

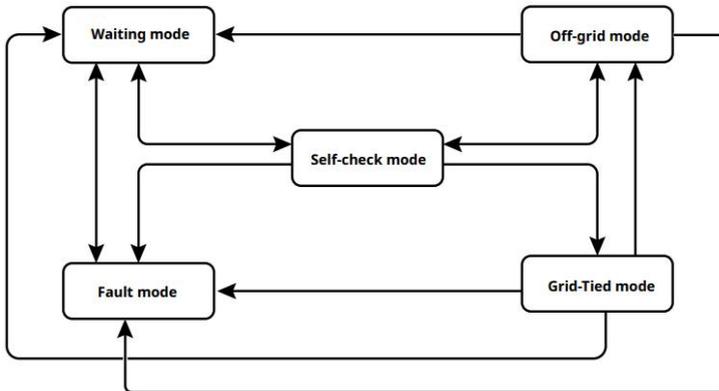
### 3.3 Operating modes

Name		Operation logic
Counter-current protection mode		After connection with the grid, PV does not supply the power to the grid in all operating modes;
Grid-Tied mode	Battery-first mode	<ol style="list-style-type: none"> <li>1. PV gives priority to supply the power for the backup load, followed by charging the battery, and supplies excess energy to the domestic loads and the grid;</li> <li>2. If the power from the PV is less than the power of the backup load, the battery supplies the power for the backup load and the PV does not supply the power to the grid.</li> <li>3. The battery is not charged by the grid.</li> </ol>
	Domestic load-first mode	<ol style="list-style-type: none"> <li>1. PV gives priority to supply the power for the backup load and the domestic load, followed by charging the battery, and supplies excess energy to the domestic loads and the grid;</li> <li>2. If the power from the PV is less than the power of the backup load and the domestic load, the battery supplies the power for the backup load and the domestic load, and the PV does not supply the power to the grid.</li> <li>3. The battery is not charged by the grid.</li> </ol>

Grid-first mode	<ol style="list-style-type: none"> <li>1. PV gives priority to supply the power for the backup load, followed by supplying the power for the domestic load and the grid , and charge the batter by excess energy ;</li> <li>2. If the power from the PV is less than the power of the backup load, the battery supplies the power for the backup load and the PV does not supply the power to the grid.</li> <li>3. The battery is not charged by the grid.</li> </ol>
Full power feed mode	<ol style="list-style-type: none"> <li>1. PV gives priority to supply the power for the backup load, followed by supplying the power for the domestic load and the grid, and charge the batter by excess energy ;</li> <li>2. If the power from the PV is less than the maximum output power of the inverter, the battery supplies the power to make up the difference, so that the inverter outputs maximum power.</li> <li>3. The battery is not charged by the grid.</li> </ol>
Emergency backup mode	<ol style="list-style-type: none"> <li>1. PV gives priority to charge the battery, followed by supplying the power for the backup load and supplies excess energy to the domestic loads and the grid;</li> <li>2. If the power from the PV is not enough to the backup load, the grid supplies the power required for the backup load and the domestic load.</li> <li>3. If the power from the PV is unavailable or extremely low, the grid charges the battery and supplies the power for the backup load and the domestic load;</li> </ol>
AC charging-post backup mode	<ol style="list-style-type: none"> <li>1. PV gives priority to charge the battery, followed by supplying the power for the load and supplies excess energy to the grid;</li> <li>2. If the power from the PV is not enough to the load, the grid supplies the power required for the backup load and the domestic load.</li> <li>3. If the power from the PV is unavailable or extremely low, the grid supplies the power for the backup load and the domestic load, but does not charge the battery;</li> </ol>
PV mode	<p>The battery can be charged but not discharged</p> <ol style="list-style-type: none"> <li>1. PV energy gives priority to the backup load and household load power supply, followed by battery charging, excess energy to the grid;</li> <li>2. The PV energy is less than the backup load plus the household load, and the power grid supplements the backup load and the insufficient part of the household load;</li> <li>3. The grid does not charge the battery.</li> </ol>

	Forced off-grid mode	During the normal operation of the grid, force to operate in the off-grid mode
Off-grid mode (no grid)		<ol style="list-style-type: none"> <li>1. PV gives priority to supply the power for the backup load, followed by charging the battery.</li> <li>2. If the power from the PV is unavailable or extremely low, PV and the battery supply the power for the load.</li> </ol>

### 3.4 Operation status of inverter

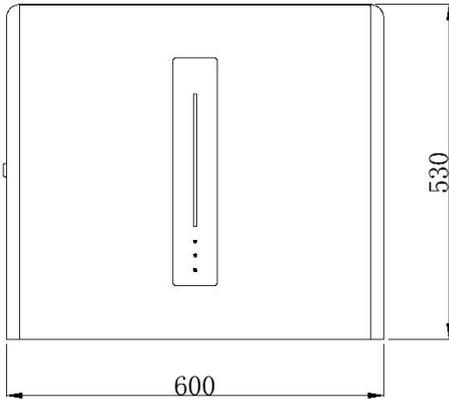


No.	Status	Description
1	Waiting mode Self-check mode	<p>Waiting period after the inverter is turned</p> <ul style="list-style-type: none"> <li>● If the condition is met, the inverter enters the self-check mode</li> <li>● In case of a fault, the inverter enters the fault mode.</li> </ul>
2	Self-check mode	<p>Continuous self-check, initialization and so on before the inverter is started</p> <ul style="list-style-type: none"> <li>● If the condition is met, the inverter enters and starts to operate in the grid-tied mode.</li> <li>● If the grid is not detected, the inverter enters and starts to operate in the off-grid mode; if it has no off-grid function, the inverter enters the waiting mode.</li> <li>● In case of failure in the self-check, the inverter enters the fault mode.</li> </ul>
3	Grid-tied mode	<p>Grid-tied operation of inverter</p> <ul style="list-style-type: none"> <li>● If the grid is not detected, the inverter enters the off-grid mode.</li> <li>● If a fault is detected, the inverter enters the fault mode.</li> <li>● If the grid fails to meet the grid-tied requirements and the off-grid output function is not activated, the inverter enters the waiting mode.</li> </ul>

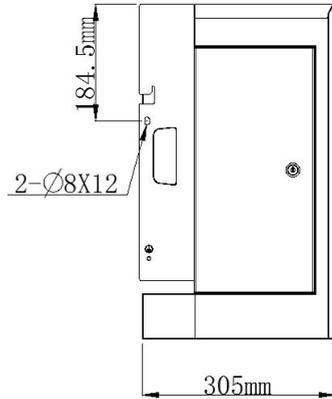
4	Off-grid mode	<p>In case of grid fault, the inverter enters the off-grid mode, and continuously supplies the power for the load by BACK-UP port.</p> <ul style="list-style-type: none"> <li>● If a fault is detected, the inverter enters the fault mode.</li> <li>● If the grid fails to meet the grid-tied requirements and the off-grid output function is not activated, the inverter enters the waiting mode.</li> <li>● If the grid meets the grid-tied requirement and the off-grid output function is activated, the inverter enters the self-check mode.</li> </ul>
5	Fault mode	<p>If a fault is detected, the inverter enters the fault mode. After the fault is removed, it enters the waiting mode.</p>

### 3.5 External dimensions

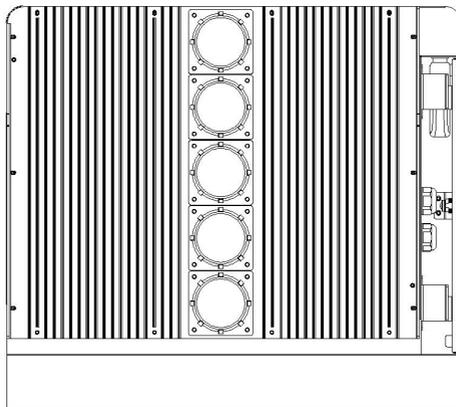
#### 3.5.1 Appearance description



Front of power supply

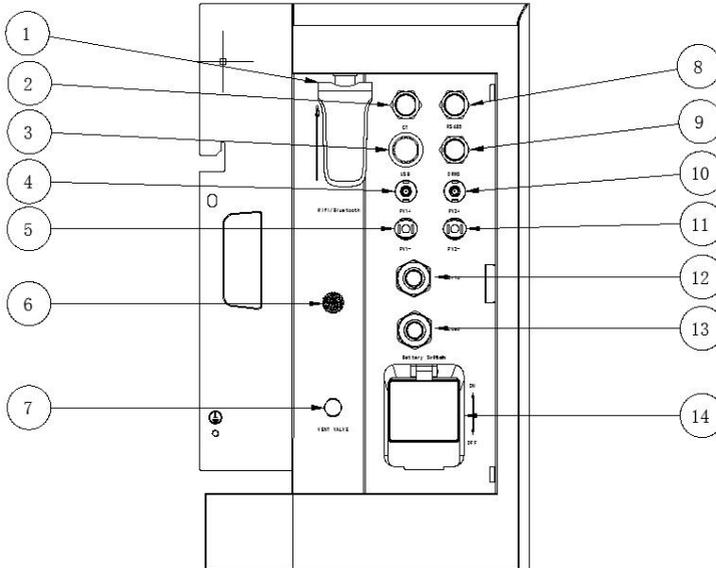


Power supply side



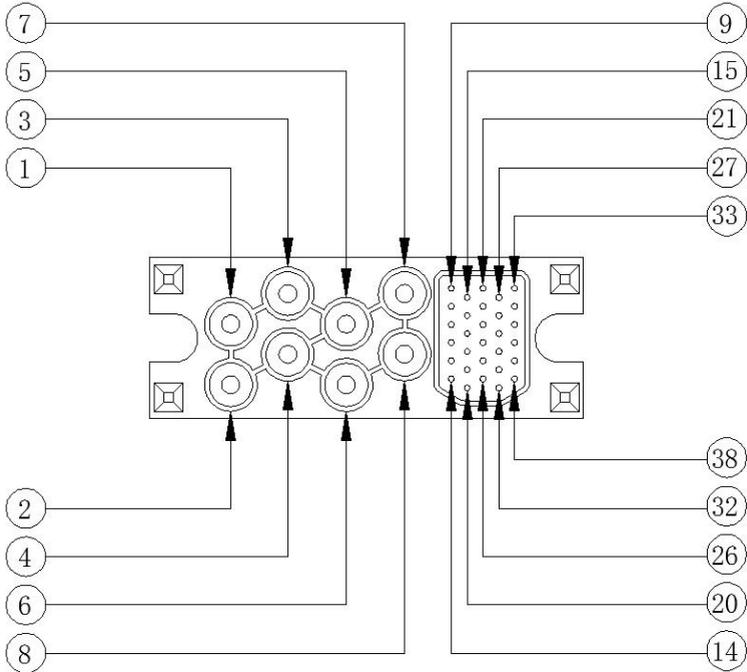
Bottom of power supply

Description of side interfaces of power supply:



No.	Identification	Purpose
1	GPRS/WIFI	Remote communication
2	CT	CT or kilo-watt-hour meter signal input provided externally on the inverter
3	USB	Firmware upgrade
4	PV1+	PV1+ input
5	PV1-	PV1- input
6	No identification	Buzzer hole
7	VENT VALVE	Discharge the growing air from housing
8	RS485	RS485 communication with the upper computer
9	DRMS	Reserved according to Australia safety regulation
10	PV2+	PV2+ input
11	PV2-	PV2- input
12	Grid	Grid input
13	Load	Load input
14	Battery Switch	Waterproof cover for battery air switch

Description of battery terminal at bottom:



No	Name	No	Name
1	PACK-	9	485-B
2	PACK-	10	485-A
3	PACK-	11	GND
4	PACK-	12	GND
5	PACK+	13	SW
6	PACK+	14	SW
7	PACK+	15	485-B reserved
8	PE	16	485-A reserved

### 3.5.2 Nameplate description

A user may identify the inverter by the nameplate provided on the side of the inverter. The nameplate indicates inverter information, such as model, important parameters, certification marks and place of production, etc., and must not be damaged or covered.

**Hybrid Inverter**  
**MODEL : EAHI-6000-SL-S**

**PV input**

Max. input power	8000 W
Rated input voltage	360 Vd.c.
Max. input voltage	550 Vd.c.
MPPT voltage range	100 Vd.c. ~ 540 Vd.c.
PV max input current	15 Ad.c. +15 Ad.c.
Max. short circuit current	20 Ad.c. +20 Ad.c.

**Battery**

Rated voltage	51.2 Vd.c.
Max.charge current	100 Ad.c.
Max.discharge current	120 Ad.c.

**AC grid**

Rated output voltage	230 Va.c.
Rated grid frequency	50 Hz
Rated input/output current	26.09 Aa.c.
Rated input/output power	6000W
Max. apparent power	6000VA
Power factor range	0.8 leading ~ 0.8 lagging
Input voltage range	207 Va.c. ~ 253 Va.c.

**Load output**

Rated output power	6000VA/6000W
Rated output voltage	230 Va.c.
Rated output current	26.09 Aa.c.
Rated output frequency	50 Hz

**General data**

Dimensions(W×H×D)	600x530x305 mm
Weight	36.4 kg
Protection rating	IP66
Operating temperature	-25 ~ 60°C
Protection class:	I



HI06CS2305040001



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 Hotline: +86 769 22898801      ADD: No.6 Northern Industry Road, Songshan Lake Sci&Tech Industrial Park,  
 Dongguan city, Guangdong,China 523808

Fig. 3.5.2 Nameplate information (subject to change without further notice and actual nameplate)

## Chapter 4 Inverter Storage and Inspection

### WARNING

If the inverter is not immediately used, please store the inverter as following:

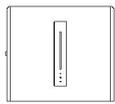
1. Make sure that the external packing is not opened.
2. Make sure that the storage environment is clean and at suitable temperature (-25-60°C, non-condensing).
3. Make sure that the inverter is placed according to the stacking height and direction provided in the label attached on the packing.
4. Make sure that the inverter will not topple over during storage.
5. If the inverter is stored for long period, the inverter should be checked by the professional before use.

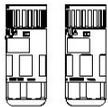
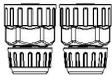
### 4.1 Arrival inspection

Upon reception, please inspect the following carefully.

1. Check the external packing for damage, deformation, hole, crack, and other signs showing inverter damage. If yes, do not open the packing, and contact the distributor.
2. Check the inverter model. If incorrect, do not open the packing, and contact the distributor.
3. Check the type, quantity and appearance of the inverter and its components and accessories. If damaged, contact the distributor.

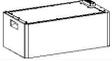
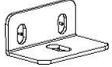
### 4.2 Packing list of EAHI-6000-SL-S

No.	Name	Specification	Quantity	Picture
1	Home power supply	Inverter	1	
2	Wall-mounted support and hanging support	Hanging support 555*121.5*31.5mm (W*H*D) Wall-mounted support 140*60*30 mm (W*H*D)	1	
3	Handing support screw	Cross outer hexagon double washer combination screw, M6*20mm	2	
4	Expansion pipes and bolts	M6*50mm, installed on wall	6	
5	Expansion screw gasket	ID 5mm, OD 12mm, SUS304 gasket	6	

6	PV+ connector	VP-D4B-CHSM4 terminal male housing Including metal terminal	2	
7	PV- connector	VP-D4B-CHSF4 terminal male housing Including metal terminal	2	
8	Intelligent kilo-watt-hour meter	DDS3366D/ DDS3366D-J (Distribution randomly) English, neutral (optional, alternative with CT)	1	
9	kilowatt-hour meter rail	Used to fix the kilowatt-hour meter	1	
10	Communication cable	Single naked cope with RJ45 registered jack on one end, and two pins (pin 4, pin 5), the rest is cut, and 40mm external insulation and 5mm cable insulation removed on another end, 2m long, used to connect Home power supply with the kilo-watt-hour meter	1	
11	Earth conductor screws	Cross outer hexagon double washer combination screw, M6*12mm	1	
12	Earth conductor end soldering lug	RNB5.5-6,48A, $\Phi=6.5\text{mm}$ , 5.6*23mm	1	
13	AC output terminal	Socket, 3-core waterproof female socket (client) + crimped 5.2-6mm <sup>2</sup> cable EN040-2203-101	2	
14	LAN port connector	Waterproof plug for LAN port communication cable (kilowatt-hour meter communication cable *1, standby *1)	2	
15	User manual	EAHI-6000-SL-S, English neutral	1	

16	WiFi data collector	LSW-5A7153, 5-12Vdc	1	
17	Key	Key for side wiring location door	1	

### 4.3 Packing list of 5KWH+household energy storage battery

No.	Name	Specification	Quantity	Picture
1	Battery	5KWH+household energy storage battery		
2	Angle iron fixing screw	Cross outer hexagon double washer combination screw, M4*8mm	4	
3	Waterproof connector jacket	Silicone, black, matt finish 110*39.9*9 mm	1	
4	Foundation bolt	L50*30*22mm	2	
5	Handled screw	M4*30mm flange outer hexagon gasketed inner cross SUS304 screw	4	
6	Expansion pipes and bolts	M6*50mm, installed on ground	2	
7	Expansion screw gasket	ID 5mm, OD 12mm, SUS304 gasket	2	

### 4.4 Base of 5KWH+household energy storage battery

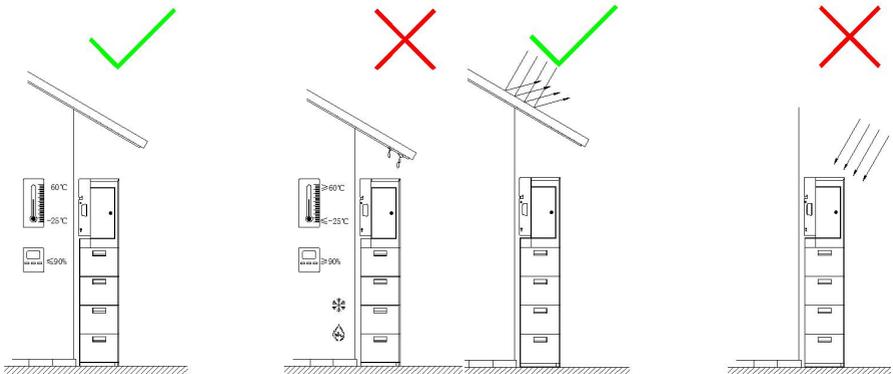
No.	Name	Specification	Quantity	Picture
1	Base support	600mm*305mm*30mm	1	
2	Waterproof connector jacket	Silicone, black, mattfinish 110*39.9*9 mm (installed on the base)	1	
3	Base support installing screw	Cross outer hexagon double washer combination screw, M4*8mm	4	

# Chapter 5 Installation

## 5.1 Preparation before installation

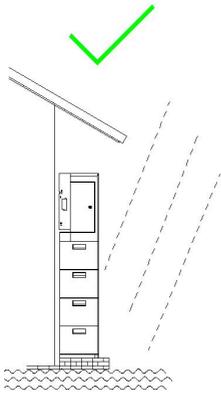
### 5.1.1 Installation environment requirements

- The ambient temperature should be between  $-25^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$ , and the relative humidity should be between 0% and 90% (no condensation).
- The inverter can be installed indoors or outdoors dry and well ventilated environment without excessive dust, but not in direct sunlight or near heating equipment.
- The inverter may generate noise (25dB or less) during operation. Please install the inverter far away from the rest area.
- The inverter should be installed on firm bearing surface, and installation location and method must fit with the weight and dimension of the inverter.
- The inverter should be installed vertically or at not more than  $15^{\circ}$  backward tilt, and must not be installed at forward tilt, or diagonally and horizontally.
- During installation of the inverter, the display panel should be aligned with line of sight to facilitate the operation.
- The wiring terminals should be protected by the waterproof cover and tightened.
- The inverter should be installed at less than 4000m altitude.
- The inverter should be installed away from high-intensity magnetic field to avoid electromagnetic interference. If there is a radio station or less than 30MHz wireless telecom equipment nearby the installation site, the inverter should be installed as following:
  1. Add a ferrite core with multi-turn winding or low pass EMI filter for the DC input cable or AC output cable of the inverter.
  2. The inverter should be more than 30m from the wireless electromagnetic interference equipment.

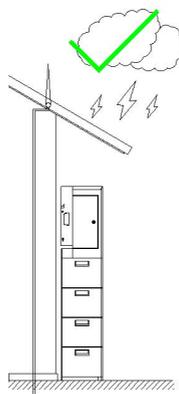
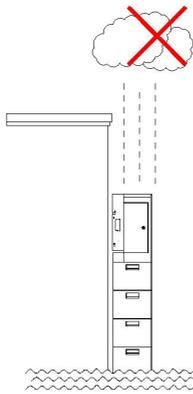


$-25^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  ambient temperature,  
0%-90% relative humidity (non-condensing)

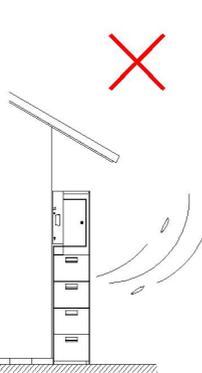
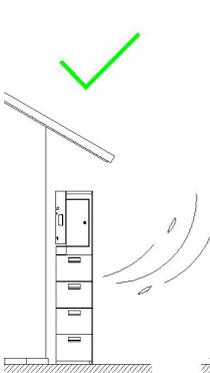
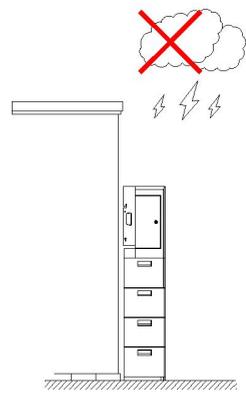
Outdoor installation allowed , kept away  
from direct sunlight



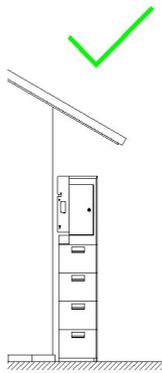
Kept away from wet and soggy environment



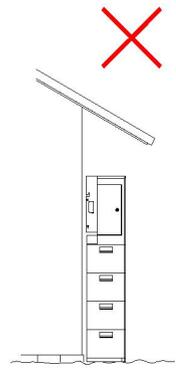
Kept away from lightning stroke



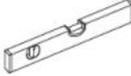
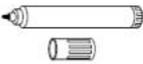
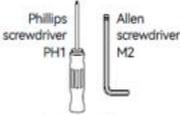
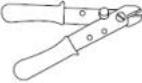
The equipment adopts self-cooling heat dissipation mode, and should be installed in well-ventilated environment in order to ensure good performance.



Install the equipment on solid and flat surface vertical to the ground.



### 5.1.2 Requirements for installation tools

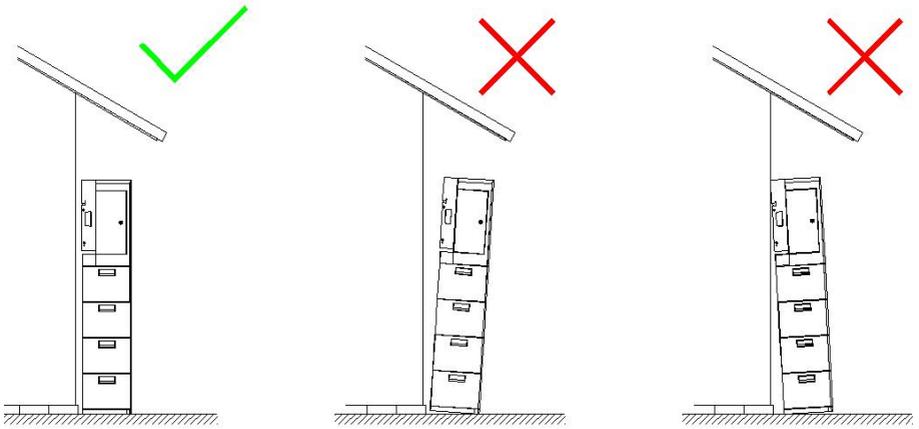
Type	Tools and Descriptions			
Installation	 Electric drill with M6 bit	 Spirit level	 Marker	 Ruler
	 Hammer	 Screwdriver Phillips screwdriver PH1 Allen screwdriver M2	 Diagonal pliers	 Stripping pliers
	 Utility knife	 Crimping pliers	 Network cable crimping pliers	 Open-end wrench S=7mm
Safety	 Safety gloves	 Dust mask	 Goggles	

### 5.1.3 Selection of installation location

The equipment should be installed on the solid and flat surface which can support the equipment weight.

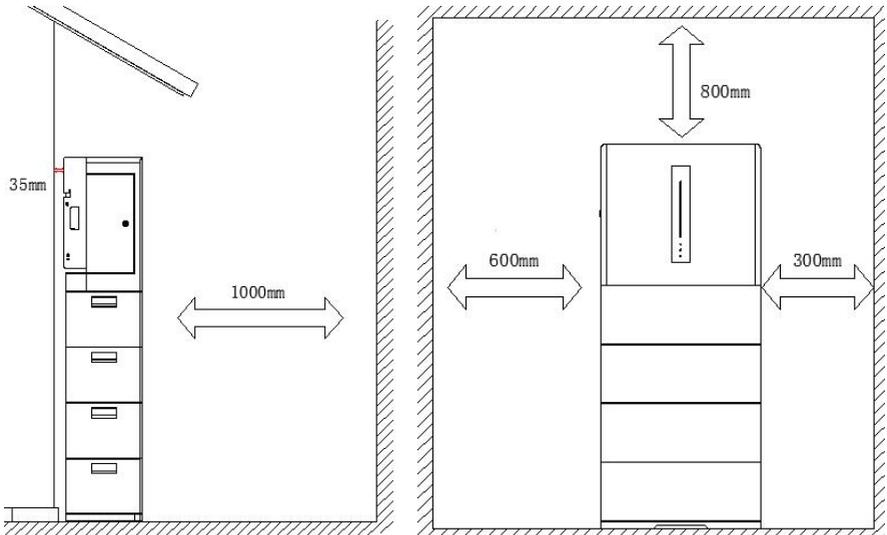
Model	EAHI-6000-SL-S-5	EAHI-6000-SL-S-10	EAHI-6000-SL-S-15
Cell quantity	1	2	3
Weight (kg)	93	143	193
Dimension (W*H*T), mm	600*778*305	600*998*305	600*1218*305
Model	EAHI-6000-SL-S-20	EAHI-6000-SL-S-25	EAHI-6000-SL-S-30
Cell quantity	4	5	6
Weight (kg)	243	293	343
Dimension (W*H*T), mm	600*1438*305	600*1658*305	600*1878*305

Frontward or backward tilting is not allowed in vertical installation.



The gap around the power supply must not be less than the following value.

Top	Front	Back	Left (wiring location)	Right
800mm	1000mm	35mm	600mm	300mm



## 5.2 System installation

### 5.2.1 Handling of inverter and battery

#### NOTE

- Transport, handling, installation and other operations of the inverter should meet the national and local laws and regulations and relevant standards of the installation location.
- Before installation, move the inverter to the installation location, avoid personnel injury or inverter damage and pay attention to the following during handling:
  1. Allocate the personnel according to the weight of the inverter to avoid the injury caused by more inverter weight than the carrying capacity of the personnel.
  2. Please wear safety gloves to avoid injury.
  3. Ensure that the inverter is balanced to avoid falling during handling.

### 5.2.2 System installation

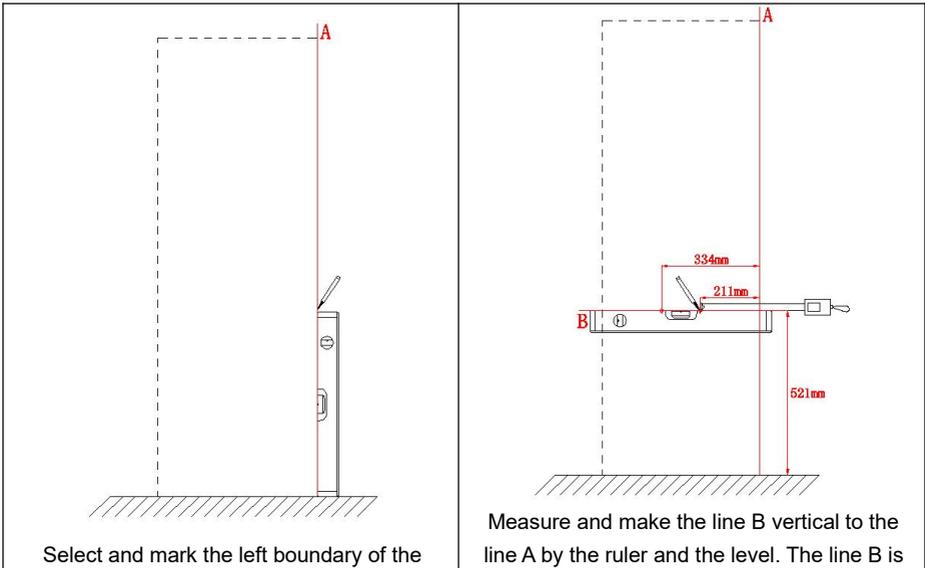
#### NOTE

- During drilling, drill the hole away from the pipe and cables installed in the wall to avoid danger.
- During drilling, wear safety goggles and a dust mask to prevent the dust from entering the respiratory tract or the eyes.
- Make sure to firmly install the inverter to avoid personnel injury caused by falling.

#### Installation procedure:

##### 5.2.2.1 Positioning

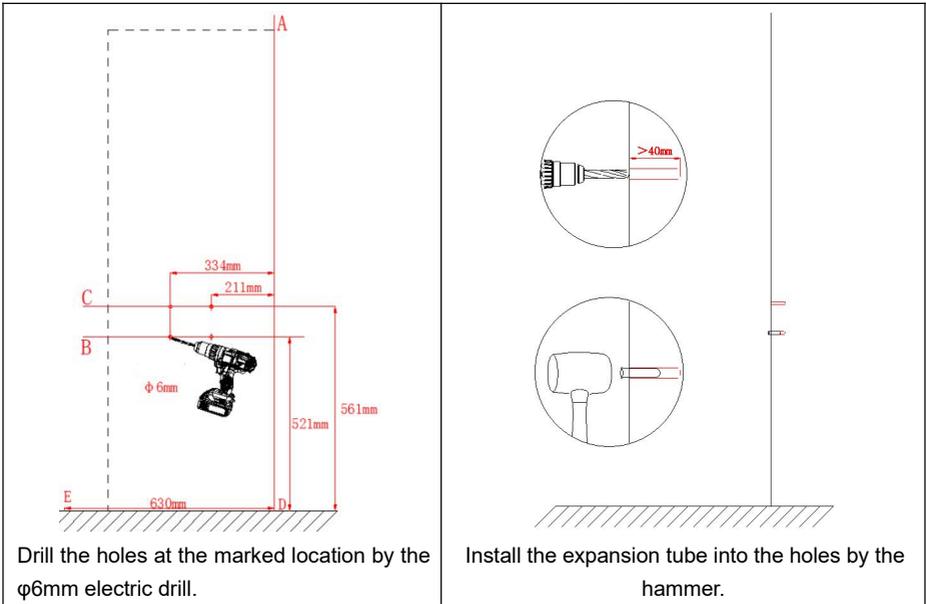
Tools: levels, markers and rulers





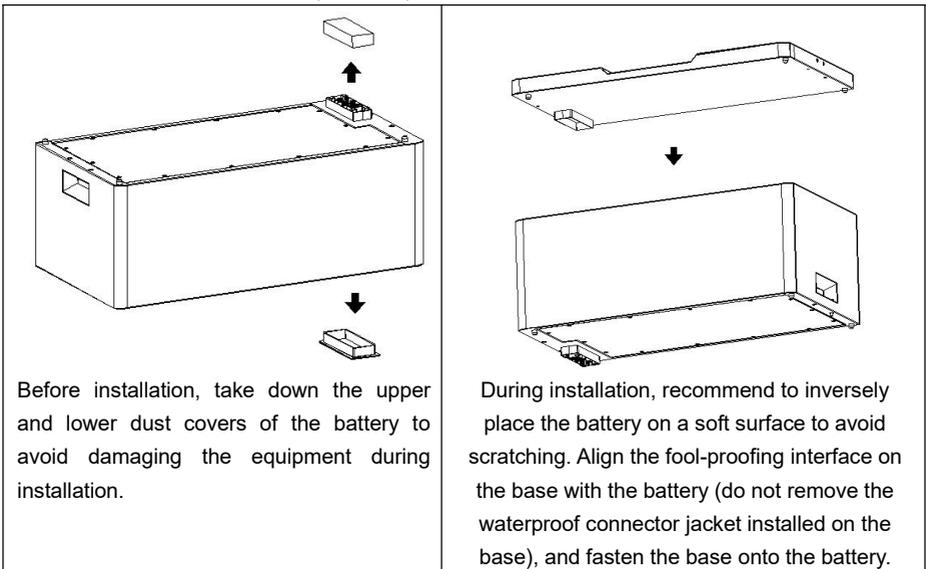
### 5.2.2.2 Drilling

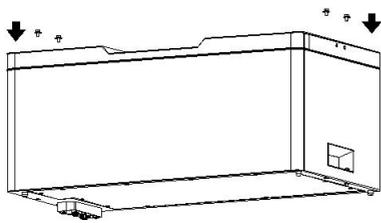
Tools: electric drills (drill size:  $\phi 6\text{mm}$ ), hammers and expansion pipes and bolts (M6\*50mm)



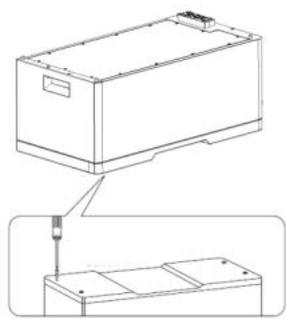
### 5.2.2.3 Installation of base support

Tools: screwdrivers and screws(M4\*8mm)





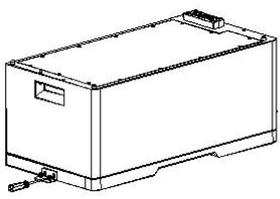
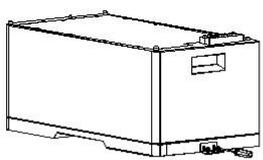
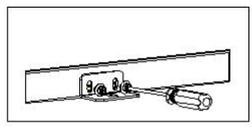
Respectively tighten 4 screws by the screwdriver.



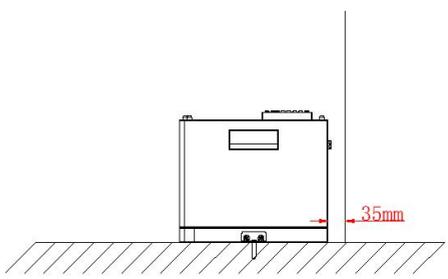
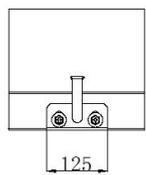
After confirming the location, respectively tighten the screws. Check the base support and the battery for proper and firm installation.

### 5.2.2.4 Installation of single battery

Tools: rulers, screwdrivers, screws(M4\*8mm), angle irons(L50\*30\*22mm), expansion pipes and bolts (M6\*50mm) and expansion screw gasket (SUS304 gasket)



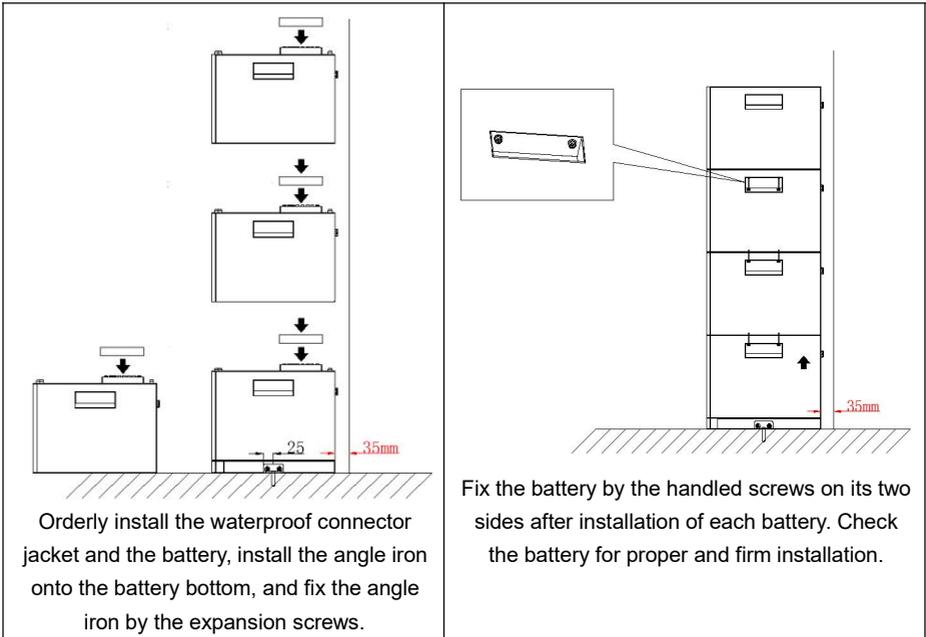
Align the angle iron with the screw holes on the battery, and fix the angle iron by the screws, but do not tighten the screws.



Make a mark at 35mm of the wall, align the battery installed with the base support with the marked location, pass the expansion screws through the gasket, fix the angle iron on the ground, and respectively adjust and tighten the screws.

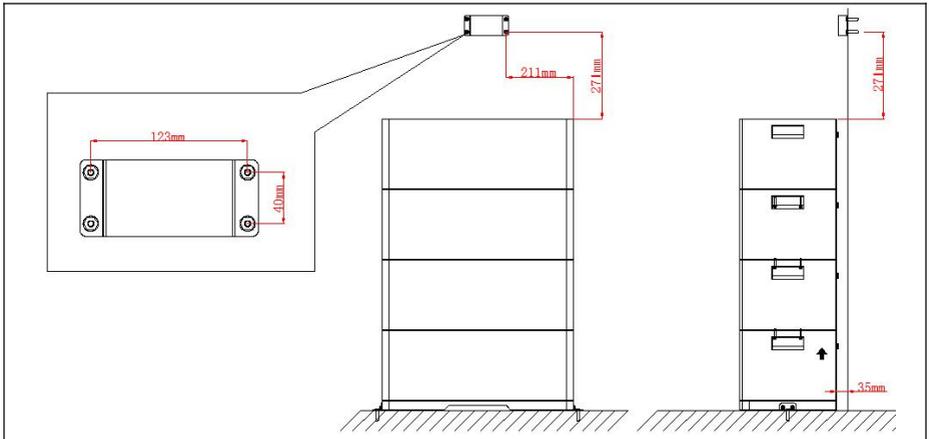
### 5.2.2.5 Stacking of multiple batteries

Tools: rulers, screwdrivers, open-end wrenches(7mm), angle iron screws(M4\*8mm), foundation bolt (L50\*30\*22mm), expansion pipes and bolts (M6\*50mm), handled screws(M4\*30mm), waterproof connector jackets and Expansion screw gasket (SUS304 gasket).

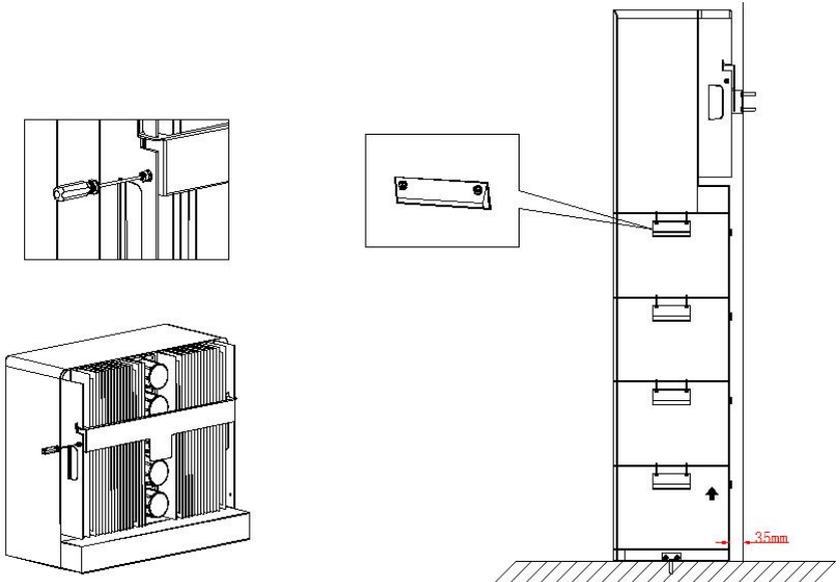


### 5.2.2.6 Installation of power supply

Tools: rulers, screwdrivers, power supply handing support, handing support fasteners, expansion pipes and bolts (M6\*50mm), handed screws (M4\*30mm flange outer hexagon gasketed inner cross), handing support screws (cross outer hexagon double-gasket combination screw, M6\*20mm), waterproof jackets and open-end wrenches (7mm)



Pass the expansion screws through the gasket, fix the hanging support fasteners on the wall, and adjust and tighten the expansion screws.

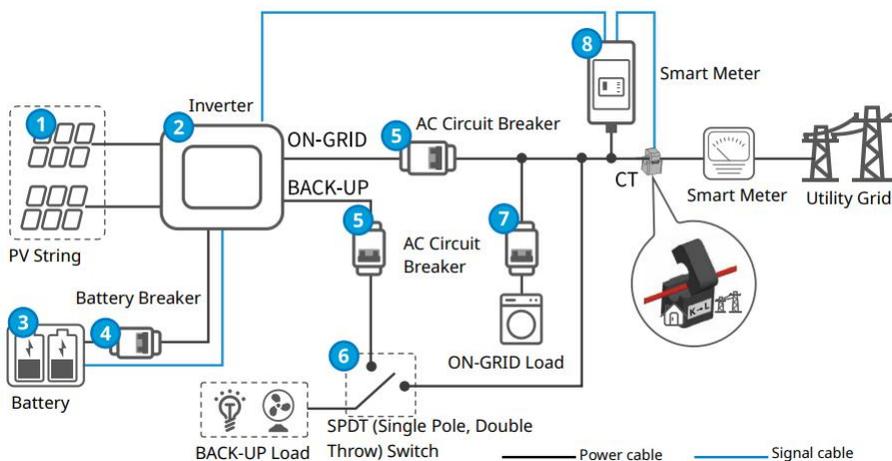


Install the hanging support on the power supply and tighten the hanging support screws, align with the hanging support fastener, and connect the power supply with the battery, fix the battery and the power supply by the handled screws, and finally check the above steps to complete the installation.

## Chapter 6 Electrical Connection

### NOTE

- Before installation and use of the inverter, a conductor with lug (4-6 mm<sup>2</sup>) must be used for special protective earthing.
- Load capacity of BACK-UP output end of inverter is as follows:
  - Inductive load (such as air conditioning, washing machine, motor, etc.): 6KVA maximum total power of inductive load.
  - Capacitive load (such as computer, switching power supply, etc.): 6KVA maximum total power of capacitive load.
- It is required for the above load capacity to connect the system with the grid or provide the battery with enough capacity. If the power is supplied only by PV, largest single off-grid load is generally less than 2KW.

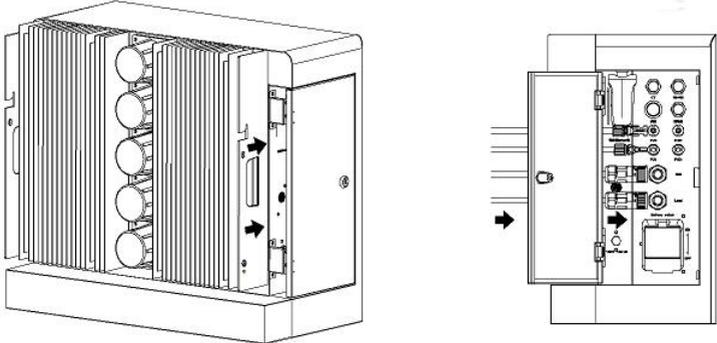


No.	Component	Description
1	PV String	The PV string consists of PV component string
2	Inverter	Support EAH1-6000-SL-S series inverter
3	Battery	The battery matching with the inverter
4	Battery Breaker	Stacking type with the energy storage switch
5	AC Circuit Breaker	<ul style="list-style-type: none"> <li>For same model, the circuit breaker of the BACK-UP load should have same specification with the circuit breaker of ON-GRID load. The user is recommended to buy the AC switch.</li> <li>Ensure that BACK-UP port load continuously operates during stop of the inverter for maintenance. It is</li> </ul>
6	Single-Pole Double-Throw Switch	

		<p>recommended to install the single-pole double-throw switch</p> <ul style="list-style-type: none"> <li>● Specification of AC circuit breaker and single-pole double-throw switch:</li> <li>● EAHI-6000-SL-S: rated current <math>\geq 35A</math>, rated voltage <math>\geq 230V</math></li> </ul>
7	AC Circuit Breaker	Determine the specification according to actual load
8	Smart Meter	Supplied with the inverter, or purchased from the inverter manufacturer, Yada DDS3366D/ DDS3366D-J is recommended

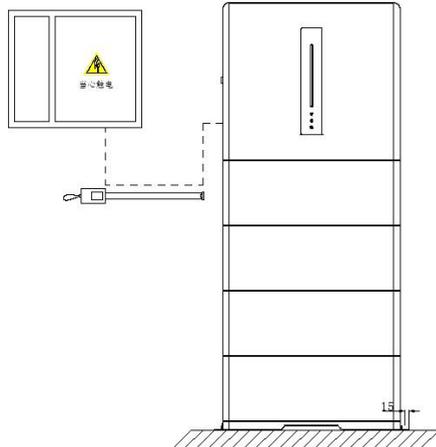
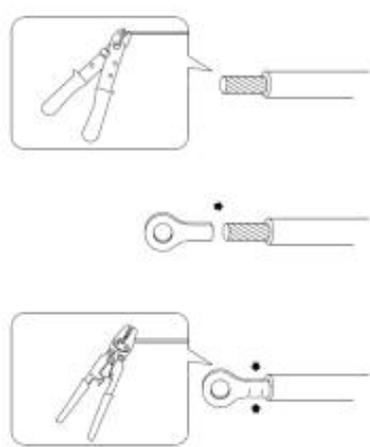
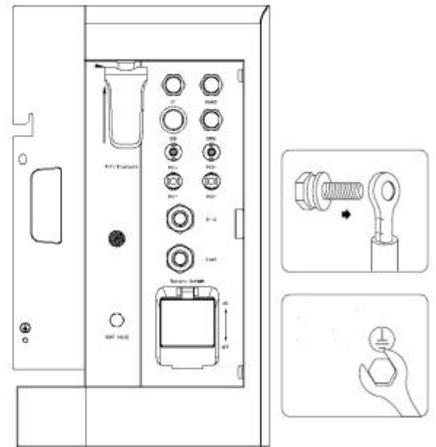
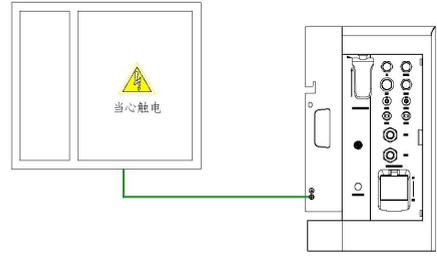
Note: it is necessary to add the DC switch (rated current  $\geq 20A$  and rated voltage  $\geq 550V$ ) at PV end.

### Recommended cable:

NOTE		
<p>When the external cable is selected, consideration should be given to cable current, system overload capacity and ambient temperature. See the following table for the recommended cable. The engineer should select the cable according to local relevant standard and the following table. The cable is 2-10m long generally. Over-long cable may cause deviation of the voltage from its rated value. The cable section area may be increased accordingly.</p>		
Category	Model	Conductor section area
Grid/ AC Input(L, N, PE)	EAHI-6000-SL-S	5-6 mm <sup>2</sup>
BACK-UP/Load Output (L, N, PE)	EAHI-6000-SL-S	5-6 mm <sup>2</sup>
PV1/PV2/PV Input (+, -)	EAHI-6000-SL-S	3-4mm <sup>2</sup>
BAT (+, -)	EAHI-6000-SL-S	Stacked installation without addition
<ol style="list-style-type: none"> <li>1. Install the insulated terminal for grid input, AC load output, PV input cable, battery input cable and power supply connector (accessories attached).</li> <li>2. Firmly fix the terminal by pincers or other tools to ensure more secure and more reliable system wiring.</li> <li>3. Install all cables through the back of the door to avoid potential safety hazard.</li> </ol>		
		

## 6.1 Connection of ground wire

Tools: screwdrivers, ground wire screws ( $\phi 6\text{mm}$ ), wire strippers, ground wire soldering lugs, wire clamps, tape measures, ground wires.

 <p>Measure the distance between the equipment and the distribution box by the tape measure, and select the ground wire with suitable length.</p>	 <p>Remove 4mm insulating layer from the ground wire by the wire stripper for installing the ground wire terminal, and install press the ground wire terminal by the crimping pliers.</p>
 <p>Fix the ground wire terminal onto the right cooling fin of the power supply by the ground wire screw (<math>\phi 6\text{mm}</math>), and ground another end with not more than <math>0.1\Omega</math> ground impedance.</p>	 <p>Check whether the ground wire is properly connected to ensure proper installation and safe use.</p>

## 6.2 PV end connection

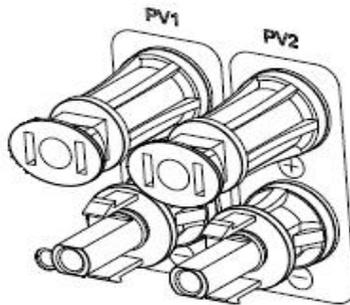
### DANGER

- Do not connect a single PV string with multiple inverters, otherwise it is possible to damage the inverters.
- Before connection of the PV string with the inverter, confirm the following information, otherwise, it may cause permanent damage to the inverter. In serious situation, it may cause fire resulting in personnel injury and property loss.
- Make that the maximum short-circuit current and maximum input voltage of each MPPT are within the allowable range of the inverter.
- Make sure that that the positive electrode of the PV string is connected to the PV+ of the inverter, and the negative electrode of the PV string is connected to the PV- of the inverter.

### Procedure

1. Disconnect all circuit breakers.
2. Check the positive and negative polarity of the photovoltaic array. Make sure that the maximum operating voltage of EAHI-6000-SL-S inverter does not exceed 540V (the number of components must be determined based on the local minimum temperature, and the maximum open-circuit voltage of the components must not exceed the maximum allowable operating voltage of the inverter, 540V).
3. Identify the polarity of the PV input end of the inverter.

Polarity of PV input end of inverter:

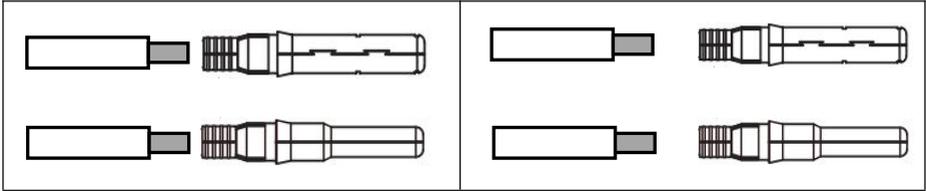


Input end polarity of external input cable

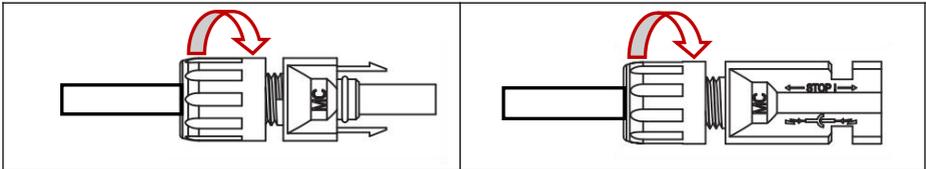
Positive (+) input terminal and terminal housing	Negative (-) input terminal and terminal housing

### Wiring of DC side

1. Strip off 8mm insulation layer of the DC cable to expose the copper conductor. Insert the copper conductor into the metal core of the connector and tighten it with the press pliers (as shown below).



2. Remove the terminal cover and route the cable through the terminal cover. Insert the die into the wiring slot until you hear the sound of connection in place. Tighten the terminal cover (as shown in the following figure).



3. Check the cable connection polarity of the photovoltaic array with a voltmeter with more than 1000V DC voltage measurement range to make sure that the operating voltage does not exceed the specification.
4. Disconnect the circuit breaker on the DC side, and separately connect the photovoltaic input cable to the inverter.

### 6.3 AC end connection

#### WARNING

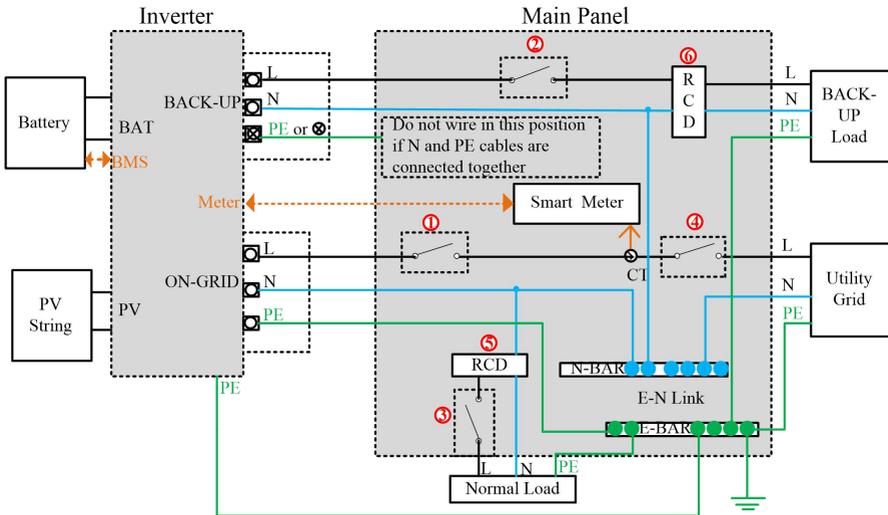
- Before connecting to the grid, an AC circuit breaker should be installed between the inverter and the grid and the BACK-UP.
- The AC cable matches the L, N, and PE ports on the AC terminal during wiring. If the cable is incorrectly connected, the inverter may be damaged.
- Make sure that the wire core is fully connected to the terminal hole without exposure.
- Make sure that the cables are securely connected; otherwise, the inverter may be damaged due to the over-temperature of the wiring terminals.
- The inverter is integrated with a residual current monitoring unit (RCMU). When the inverter detects greater leakage current than the allowed value, the inverter will quickly disconnect from the grid.
- N and PE wiring via ON-GRID and BACK-UP ports of the inverter are different based on the regulation requirements of different regions. Refer to the specific requirements of local regulations.
- The ON-GRID and BACK-UP AC ports of the inverter have built-in relays. When the inverter is in off-grid mode, the built-in ON-GRID relay is in the disconnected state; When

the inverter is in grid-tied mode, the built-in ON-GRID relay is in closed state.

- After the inverter is powered on, there is current at the BACK-UP AC port. If it is required to maintain the BACK-UP load, power off the inverter; otherwise, electric shocks may be caused.

### 6.3.1 N and PE cables are connected together in the Main Panel for wiring

For Australia, New Zealand and South Africa, the neutral cable of ON-GRID side and BACK-UP side must be connected together. Otherwise BACK-UP function will not work.



NO.	Description
①	≤63A/230V/400V AC breaker
②	32A/230V/400V AC breaker
③	Depends on loads
④	Depends on household loads and inverter capacity
⑤	30mA RCD (Comply with local regulation)
⑥	30mA RCD (Comply with local regulation)

Note 1: If the battery is integrated with a readily accessible internal DC breaker, no additional DC breaker is required.

Note 2: The recommended values in the table are for reference only. The actual values must comply with local standard and actual conditions.

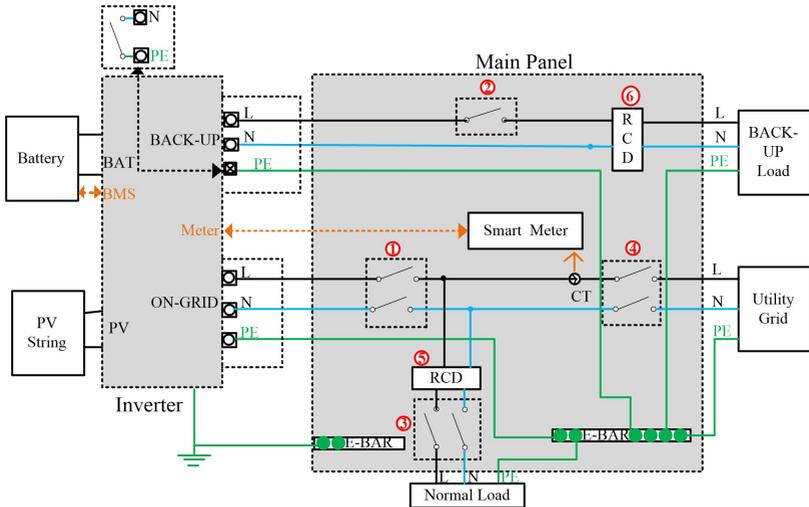
Note 3: The rated current of breaker ① is suggested to be lower than that of breaker ④.

Note 4: If the rated current of on-site power cables are lower than those recommended above, the breakers specification should be considered to match the power cables in first priority.

Note 5: The AC port takes power from the grid and is set according to the grid circuit breaker.

### 6.3.2 N and PE cables in the Main Panel shall be wired separately

For other countries, the following diagram is an example for grid systems without special requirement on wiring connection.



NO	Description
①	≤63A/230V/400V AC breaker
②	32A/230V/400V AC breaker
③	Depends on loads
④	Depends on household loads and inverter capacity
⑤	300mA RCD (Recommended)
⑥	30mA RCD (Recommended)

Note 1: If the battery is integrated with a readily accessible internal DC breaker, no additional DC breaker is required.

Note 2: The recommended values in the table are for reference only. The actual values must comply with local standard and actual conditions.

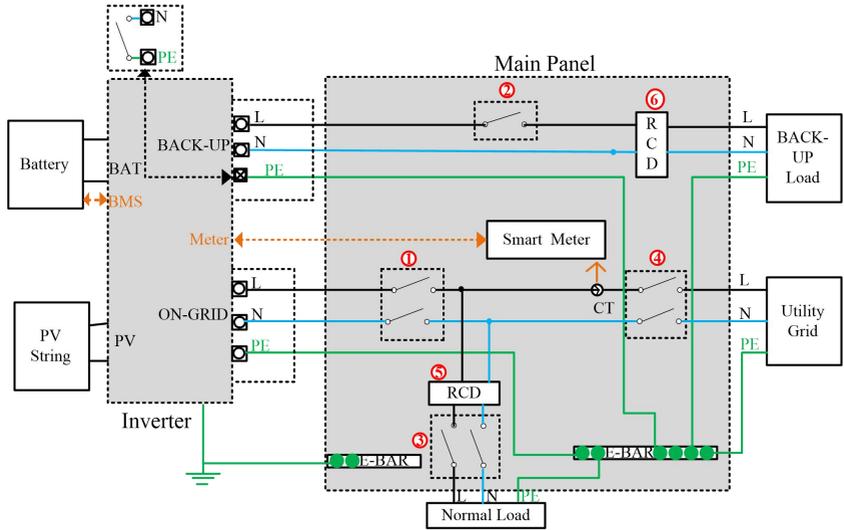
Note 3: The rated current of breaker ① is suggested to lower than that of breaker ④.

Note 4: If the rated current of on-site power cables are lower than those recommended above, the breakers specification should be considered to match the power cables in first priority.

Note 5: The AC port takes power from the grid and is set according to the grid circuit breaker.

### 6.3.3 For TT system

In the TT system, the following diagram is an example for grid systems without special requirement on wiring connection.



NO	Description
①	≤63A/230V/400V AC breaker
②	32A/230V/400V AC breaker
③	Depends on loads
④	Depends on household loads and inverter capacity
⑤	300mA RCD (Recommended)
⑥	30mA RCD (Recommended)

Note 1: If the battery is integrated with a readily accessible internal DC breaker, no additional DC breaker is required.

Note 2: The recommended values in the table are for reference only. The actual values must comply with local standard and actual conditions.

Note 3: The rated current of breaker ① is suggested to lower than that of breaker ④.

Note 4: If the rated current of on-site power cables are lower than those recommended above, the breakers specification should be considered to match the power cables in first priority.

Note 5: The AC port takes power from the grid and is set according to the grid circuit breaker.

### Residual Current Monitoring Device

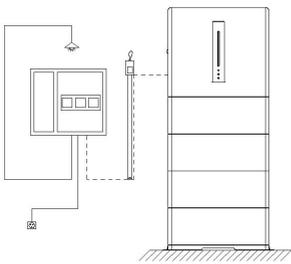
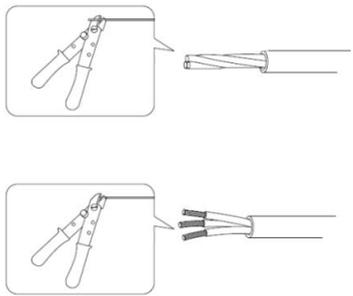
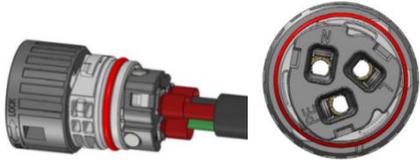
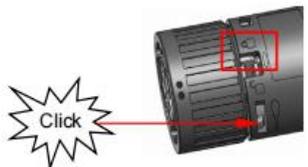
With an integrated universal current-sensitive residual current monitoring unit included, the

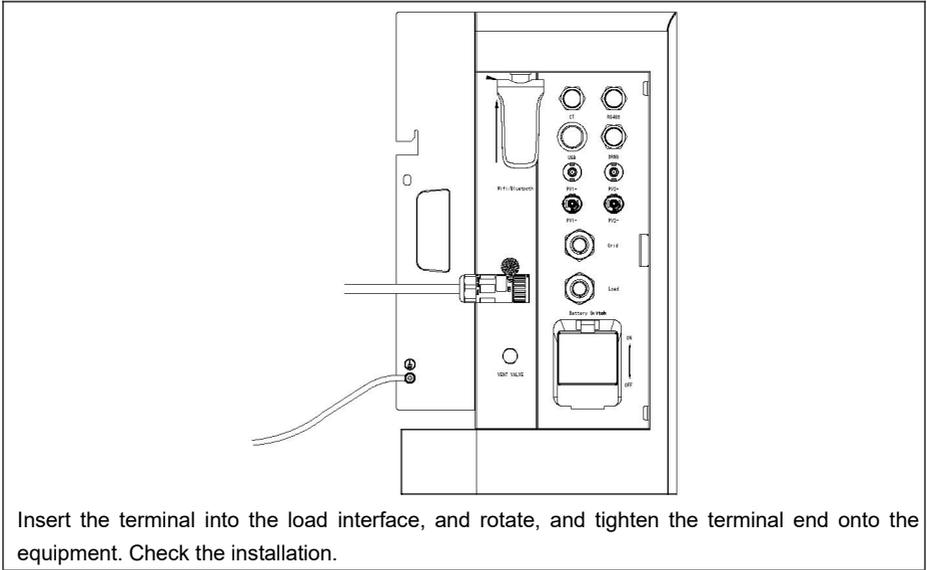
inverter will disconnect immediately from the mains power once a fault current with a value exceeding the limit is detected.

However if an external residual current device (RCD) (type A is recommended) is mandatory. The switch must be triggered at a residual current of 300 mA (recommended). RCD of other specifications can also be used according to local standard.

### 6.3.4 Connection of load end

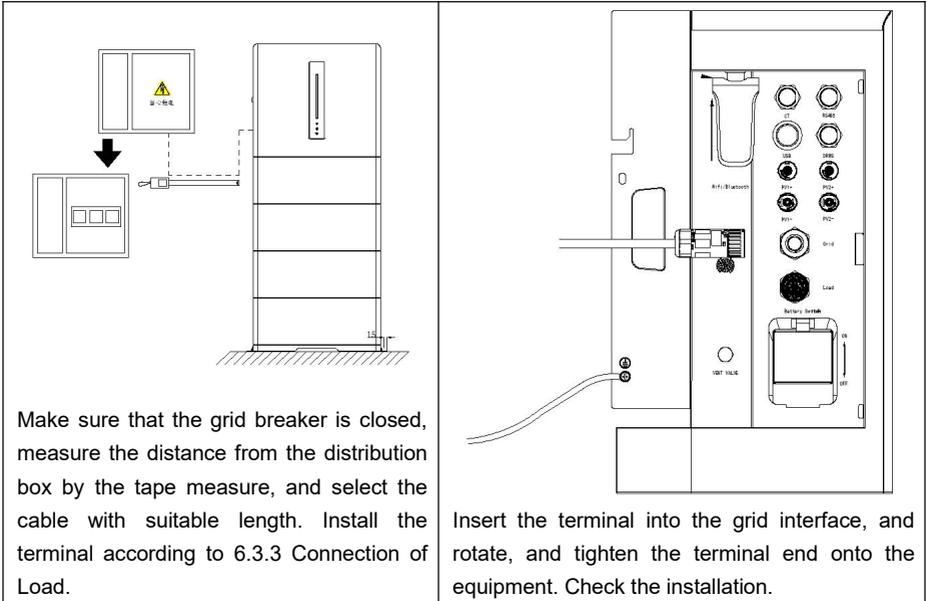
Tools: inner hex screwdrivers ( $\varnothing 2\text{mm}$ ), cable terminals (three-adapter), wire strippers, tape measures and cables (L, N, PE)

 <p>Measure the distance between the distribution box or the load wiring terminal and the equipment by the tape measure, and select the cable with suitable length.</p>	 <p>Remove 70mm cable sheath by the wire stripper, and the 15mm insulating layer of the cable core by the wire stripper.</p>
 <p>Install cables on the parts.</p>	 <p>Press the cables and tighten the screws by 0.8+/-0.1Nm torque</p>
 <p>Install the plastic core into the main body, and outward rotate the latch at 15° for locking.</p>	 <p>Place the cable sealing body and the conductor holder in the slot on the main body, and screw the cable locking nut into the main body by 2.5+/-0.5Nm torque</p>



### 6.3.5 Connection of grid end

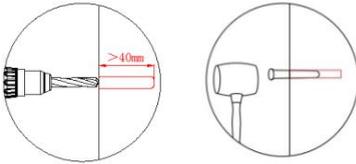
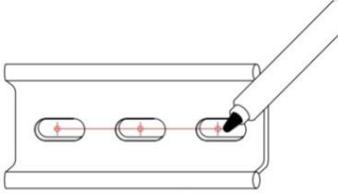
Tools: inner hexagon screwdrivers ( $\varnothing 2\text{mm}$ ), cable terminals (three-adapter), wire strippers, tape measures and cables (L, N, PE)



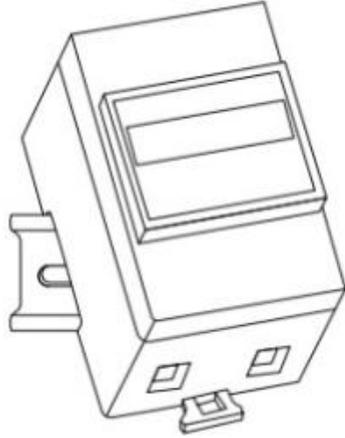
## 6.4 Connection of kilowatt-hour meter

### 6.4.1 Installation of kilowatt-hour meter

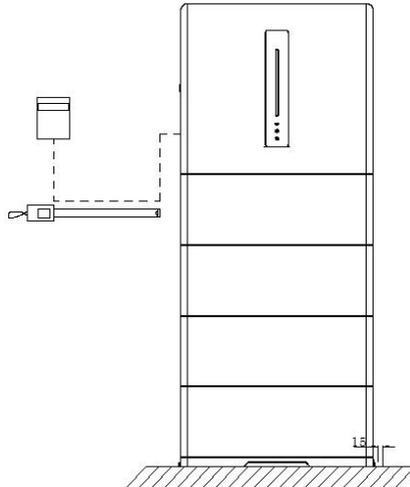
Tools: screwdrivers (small cross), fiber-optic cables, fiber-optic cable pliers, wire strippers, tape measures, kilowatt-hour meter rails, markers, hammers, electric drills, expansion screws



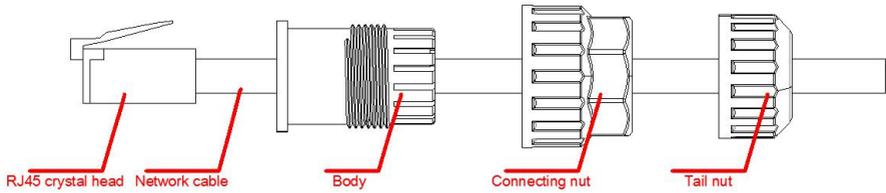
Determine the installation location of the kilowatt-hour meter, and mark the hole location according to the screw hole of the kilowatt-hour meter rail. Drill the holes with more than 40mm depth by the electric drill, and install the expansion screws.



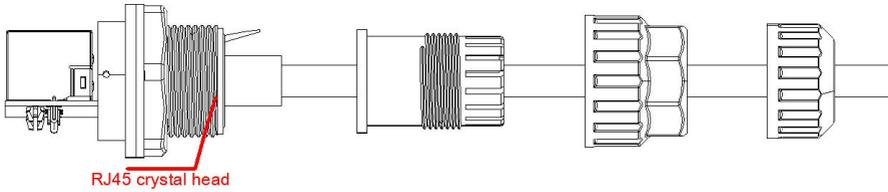
Open the buckle below the kilowatt-hour meter, and clip the kilowatt-hour meter rail onto the rail.



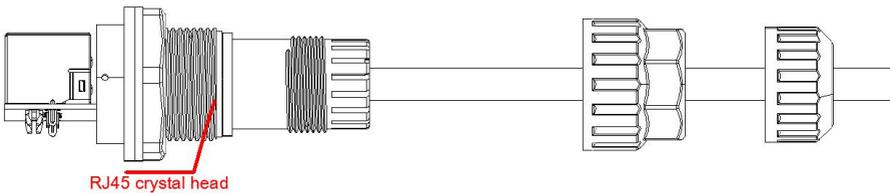
Measure the distance between the kilowatt-hour meter and the equipment by the tape measure, and select the fiber-optic cable with suitable length.



Thread the network cable into each part of the connector as shown in the diagram.



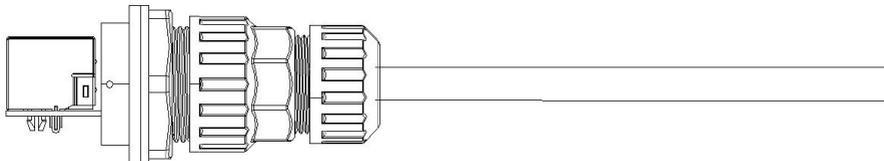
Insert the crystal head into the matching RJ45 connector, and after inserting it, you can hear a very clear "click bang" sound.



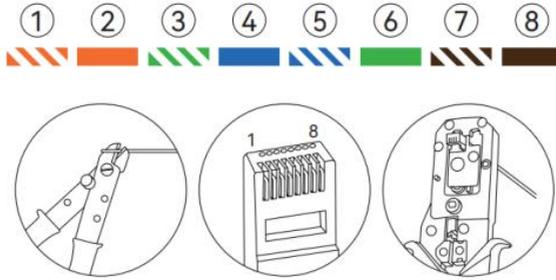
Gently press the crystal head buckle to insert the body into the crystal head and make contact with the RJ45 connector.



Twist the connection nut clockwise to the RJ45 connector with a recommended torque of 2N·m.



Twist the tail nut clockwise on the body, with a recommended torque of 2N·m, and observe the inlet port. It is obvious that the sealing ring has signs of indentation.



As shown in the picture, use a cable stripper to strip off the network cable, pass the network cable through the components as shown in the figure, fit and press the network cable into the RJ45 connector according to the cable color order of 1 to 8. For the other end of the network cable, strip off the insulation layer of line 5 (blue and white) and line 4 (blue) by 10 mm. Connect line 4 (blue and white) to the RS485B port of the meter, and line 5 (blue and white) to the RS485A port of the meter. Connect the L and N cable of the power grid circuit breaker side to the "INPUT"/" LN "port of the DDS3366D meter or to the port 1 (phase line input) and the port 3 (neutral line input) of the DDS3366D-1 meter. (After confirming all the operation above, it is available to switch on the power grid circuit breaker to power up the electricity meter and configure the meter refer to 6.5.2 Electricity Meter Configuration. After the meter is configured, disconnect the circuit breaker on the power grid side, continue other further operation.) Double check whether the L/N cable of the network cable is securely connected.

### 6.4.2 Electricity Meter Configuration

DDS3366D	DDS3366D-J
<p>Press "set" on the electricity meter to enter the setting interface.</p> <p>Ensure the parameters are set correctly. Enter the parameter setting interface, Press "▲" and "▼" to adjust parameters and "set" to save these parameters.</p> <p>After setting all parameters, press "set" to enter the setting interface.</p>	<p>Press "SET" button on the electric meter to enter the setting interface to adjust the parameter, press "▲" "▼" button on the electricity meter to adjust and switch; Press "SET" again to confirm.</p> <p>Switch to "ГЕЛУГН" and press "SET" to return to main interface.</p>
Password Interface	
<p>Press "SET" to enter the password input interface.</p> <p>Press "▲" to adjust the value and "▼" to change the digit. Set the PSD password to 3366.</p> <p>Press "SET" to enter the "HA" setting interface.</p>	<p>Press the "SET" button to enter the password setting interface.</p> <p>Press "A" to adjust the number size, and press "V" to switch.</p> <p>Number, set the PSD password to 3366.</p> <p>Press SET to enter the parameter setting interface.</p>

HIGHNO.6: HA210510 LOWNO.6: LA 300002		Modbus-RTU address setting: 002	
<p>Press "▲" to adjust the number size, press "▼" to switch the number, and set HA to 210510 .</p> <p>Press "SET" to save the Settings and the "LA" Settings screen is displayed.</p> <p>Press "▲" to adjust the number size, press "▼" to switch the number, set LA to 300002.</p> <p>Press "SET" to save the Settings and the Baud Rate setting interface is displayed.</p>		<p>Press "▲" "▼" in the parameter interface to switch to "n.Addr".</p> <p>Press "SET" to enter the Modbus-RTU address setting.</p> <p>Press "▲" to adjust the number size, press "▼" to switch the number, and set the communication address to "002".</p> <p>Press "SET" to return to the parameter setting interface.</p>	
Communication baud rate and check bit Settings: 9600 n			
<p>Press "▲" to adjust the numbers and letters. Press "▼" to switch positions, set the baud rate to 9600, and the check bit to n.</p> <p>Press "SET" to save the Settings and the "PT" setting interface is displayed.</p>		<p>Press "▲" "▼" in the parameter interface to switch to "BAUD"</p> <p>Press "SET" to enter the baud rate and parity bit Settings.</p> <p>Press "▲" "▼" to switch, set the baud rate and check bit to "9600 n".</p> <p>Press "SET" to return to the parameter setting interface.</p>	
Voltage ratio setting: 000001			
<p>Press "▲" to adjust the value and "▼" to change the digit. Set it to PT 000001.</p> <p>Press "SET" to enter the "CT" setting interface.</p>		<p>Press "▲" "▼" in the parameter interface to switch to "PE".</p> <p>Press "SET" to enter the voltage ratio setting.</p> <p>Press "▲" to adjust the number size, press "▼" to switch the number, and set the voltage ratio to "000001".</p> <p>Press "SET" to return to the parameter setting interface.</p>	
Current ratio setting: 000001			
<p>Press "▲" to adjust the value and "▼" to change the digit. Set it to CT 000001.</p> <p>Press "SET" to save the settings.</p>		<p>Press "▲" "▼" in the parameter interface to switch to "CE".</p> <p>Press "SET" to enter the current ratio setting.</p> <p>Press "▲" to adjust the number size, press "▼" to switch the number, and set the current ratio to "000001".</p> <p>Press "SET" to return to the parameter setting interface.</p>	

Press ▲ and ▼ on the parameter screen to switch to "rEtUrN" and press "SET" to return to the main interface.

**NOTE**

When the meter is disconnected from the power supply and stops working for more than one month, you need to confirm the meter parameters again.

During use, the current voltage, current frequency, and other grid information on the system grid side can be viewed through this meter. When viewing, press the "▲" and "▼" buttons on the meter to switch the display interface of the meter. The specific introduction of the display interface can be found in the electricity meter manual

**6.5 Communication end connection**

**6.5.1 WIFI/Bluetooth remote monitoring module**

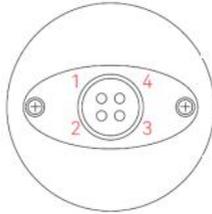


Fig. 6.5.1

Pin definition

1	2	3	4
Power supply VCC	Ground wire GND	Data communication A	Data communication B

Meanwhile, to use this port, only insert WIFI/Bluetooth module (optional) into this port and tighten the fixing nut (see the manual of WiFi for detailed operation)

**6.5.2 CT RS485 USB DRMS**

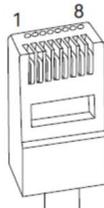


Fig. 6.5.2 Schematic diagram for LAN interface connection

**DRMS:** use of safety regulation (only for Australia users).

Pin	1	2	3	4	5	6	7	8
Definition	DRM1/5	DRM2/6	DRM3/7	DRM4/8	DRM_REF(R)	DRM_COM(C)	NC	NC

The inverter provides a terminal block for connecting to a demand response enabling device (DRED). The DRED asserts demand response modes (DRMS). The inverter detects and initiates a response to all supported demand response commands within 2s. The following table lists the DRMS supported by the inverter.

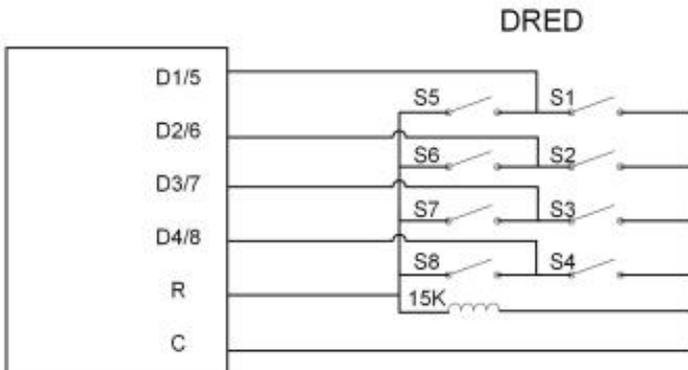
Mode	Explanation
DRM0	The inverter is in the state of "Turn off".
DRM1	The import power from the grid is 0.
DRM2	The import power from the grid is no more than 50 % of the rated power.
DRM3	The import power from the grid is no more than 75 % of the rated power.
DRM4	The import power from the grid is 100 % of the rated power, but subject to the constraints from other active DRMS.
DRM5	The feed-in power to the grid is 0.
DRM6	The feed-in power to the grid is no more than 50 % of the rated power.
DRM7	The feed-in power to the grid is no more than 75 % of the rated power.
DRM8	The feed-in power to the grid is 100 % of the rated power, but subject to the constraints from other active DRMS.

The DRED may assert more than one DRM at a time. The following shows the priority order in response to multiple DRMS.

Multiple Modes	Priority Order
DRM1...DRM4	DRM1 > DRM2 > DRM3 > DRM4
DRM5...DRM8	DRM5 > DRM6 > DRM7 > DRM8

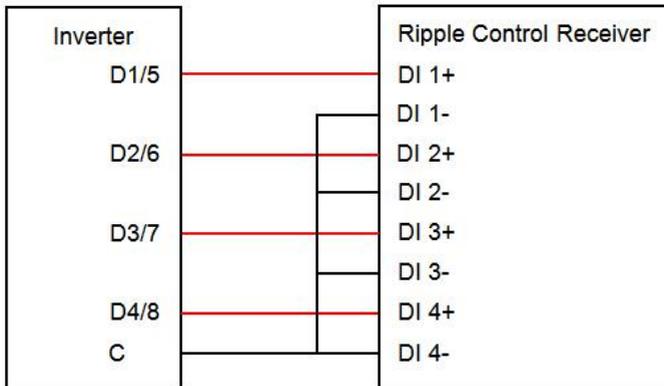
DRM Connection: DRM and Ripple Control support only one function at the same time.

In Australia and New Zealand, the inverter supports the demand response modes as specified in the standard AS/NZS 4777. The following figure shows the wiring between the inverter.



Mode	Asserted by Shorting Terminals on Inverter	Switch Operation on External DRED
DRM0	R & C	Close S1 and S5
DRM1	D1/5&C	Close S1
DRM2	D2/6&C	Close S2
DRM3	D3/7&C	Close S3
DRM4	D4/8&C	Close S4
DRM5	D1/5&R	Close S5
DRM6	D2/6&R	Close S6
DRM7	D3/7&R	Close S7
DRM8	D4/8&R	Close S8

Ripple Control: In Germany, the grid company uses the Ripple Control Receiver to convert the grid dispatching signal and send it as a dry contact signal. Wiring of the ripple control receiver dry contact cables is shown in the figure below.



Boot/Shutdown: Tap Boot/Shutdown to send the boot/shutdown instruction to the inverter. For Australia and New Zealand, when the DRM state is DRM0, the "Boot" option will be prohibited.  
Date Setting/Time Setting: The correct system time is very important. Wrong system time will directly affect the data logging and power generation value. The clock is in 24-hour format.  
Software Version: Version information of the current firmware.

**RS485:** Used to connect to the upper computer. (Baud rate is set to 9600 in the communication setting column on the screen.). Connect the RS485 cable A and cable B to pin 5 and pin 4 of the RJ45 registered jack respectively, and the registered jack to the RS485 port on the housing.

Pin	1	2	3	4	5	6	7	8
<b>Definition</b>	RS3_4 85-	RS3_4 85-	RS3_4 85-	RS3_4 85-	RS3_4 85+	RS3_4 85+	RS3_4 85+	RS3_4 85+

**CT:** communication port for external CT and kilo-watt-hour (connect CT white wire to pin 6 (or 7, 8) of the RJ45 registered jack, CT black wire to the pin 1 (or 2, 3)), (connect the communication + of the kilo-watt-hour meter to the pin 5 of the RJ45, communication - to the pin 4 of the RJ45).

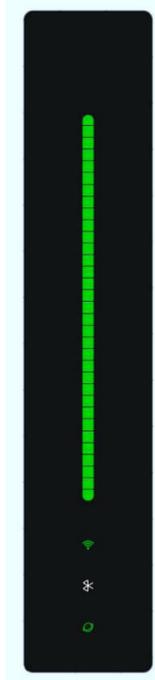
Pin	1	2	3	4	5	6	7	8
<b>Definition</b>	EXT-C T_N	EXT-C T_N	EXT-C T_N	CT_RS 485-	CT_RS4 85+	EXT-C T_P	EXT-C T_P	EXT-C T_P

**USB:** Used for USB flash disk upgrade software.

# Chapter 7 Light bar display

## 7.1 Display panel

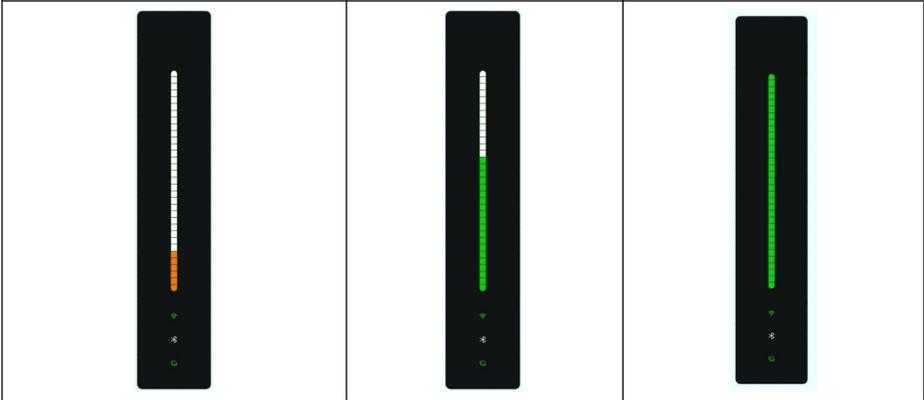
The display panel is a LED light bar.



## 7.2 Description of signal indicator light

Icon	Name	Function
	WIFI connection	WIFI module communication connection success: green long bright
	Bluetooth connection	Bluetooth connection success: green long bright
	Upper computer connection	Computer computer communication connection success: green long bright

### 7.3 LED status display definition

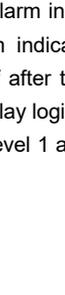


- LED explicit declaration:
  1. The battery power percentage is displayed through the 33 LED light bars;
  2. When the power quantity is less than 3% (including 0%), the LED lamp always keeps displaying one grid;
  3. When the power quantity is greater than 20%, the green light displays;
  4. When the power quantity is less than 20%, the orange light shows it;
- Charging status:  
from-down water lamp display;
- Discharge status:  
from the bottom to the top running water lamp display;
- Battery idle state:  
when the power quantity is greater than 20, the power quantity will be displayed in the way of breathing light;  
When the power is less than 20, the power is displayed every 2 seconds;

### 7.4 LED Fault display

The light bars is yellow and red, indicating that the device is alarm or faulty at this time. When the equipment fails, please contact the professional personnel to deal with it in time.

The light bar is all bright blue, indicating that the device is upgraded at this time. Please wait for the device to complete the upgrade; it has not recovered for a long time, please contact the professional for handling.

level	definition	buzzer	lighting	Schematic Diagram	Alert signal recovery condition
1	Urgent	Default buzzer is ringing	The LED lights are always on the red		Debugging
2	Important	Quiet	The LED lights flash in red		Debugging
3	less important	Quiet	The LED lights are always on the yellow		After 60S, it was extinguished
4	upgrade	Quiet	The LED lights are always on the blue		Off after the upgrade is complete

Priority: Upgrade> fault / alarm> power display. With an alarm indicator light, the power is not displayed. The power will be displayed when the alarm indicator is off. When upgrading, continuously display the upgrade status indicator, turn off after the upgrade is complete, and then display according to the current alarm and power display logic.

When multiple alarm lights occur, upgrade status> fault> level 1 alarm> level 2 alarm (see fault list for fault level)

## Chapter 8 System Maintenance

### NOTE

- Make sure that the inverter has been powered off before the maintenance.
- During operation on the inverter, use the personal protective device.

### 8.1 Daily maintenance of inverter

Content	Method	Frequency
System cleanliness	Check the heat sink and air inlet/outlet for foreign bodies and dust.	Once/half a year ~once/year
DC switch	Turn the DC switch on and off for 10 consecutive times to ensure that the functions of the DC switch are normal.	Once/ year
Electrical connection	Turn the DC switch on and off for 10 consecutive times to ensure that the functions of the DC switch are normal.	Once/half a year ~once/year
Air-tightness	Check whether the sealing of the cable inlet meets the requirements. If the gap is too large or is not sealed, plug it again.	Once/ year

### 8.2 Maintenance of inverter unused for long term

If the inverter has been not used for more than 7 days, turn off the AC input, PV input, and battery input switches.

If the inverter has not been used for more than 3 months, turn on the AC input switch (or PV switch) and the battery switch to start the system to recharge the battery once.

### 8.3 Powering off inverter

#### DANGER

- Before the maintenance of the inverter, power it off. The hot-line work on the inverter may cause inverter damage or electric shock.
- After the inverter is powered off, it takes a certain period of time for the internal components to discharge. Wait until the inverter is fully discharged according to the time requirements on the label.

Step 1: Disconnect the ON-GRID AC circuit breaker of the inverter.

Step 2: Disconnect the BACK-UP AC circuit breaker of the inverter.

Step 3: Disconnect the energy storage circuit breaker between the inverter and the battery.

Step 4: Turn off the DC switch of the inverter.

## 8.4 Battery maintenance

### WARNING

- Battery maintenance should be performed or supervised by personnel with knowledge of batteries and necessary precautions are taken.
- The battery may cause the danger of electric shock and high short-circuit current.
- The battery may explode if thrown into a fire.
- Do not open or destroy the battery. The electrolyte is harmful to skin and eyes and may be toxic.

### Battery safety

1. During installing or replacing the battery, remove metal objects such as watches and rings from your hands in order to avoid the burns resulting from short circuit.
2. Wear safety goggles and gloves.
3. Keep the work place away from open flame, hydrogen, smoke.
4. Check whether the polarity of two battery ends is grounded. If yes, remove the grounding.

Environmental factors affect the battery life. The stored energy of the battery decreases with the rise in ambient temperature. Frequent short discharge may shorten the battery's life. The battery maintenance is very important. Checks the battery every month:

- The battery should be kept clean and terminals and connectors should be cleaned promptly.
- Regularly check the cable for cleanness and fastness
- Do not use the batteries with different types and capacities. Please use same type of the batteries.

## Chapter 9 Troubleshooting

### 9.1 Fault grade list

Fault classification	Fault Name	Warning Level
Power grid failure	GRID Over VOLT 1	Level 2 alarm
	GRID Low VOLT 1	Level 2 alarm
	GRID Over FREQ 1	Level 2 alarm
	GRID Low FREQ 1	Level 2 alarm
	GRID Over VOLT 2	Level 2 alarm
	GRID Low VOLT 2	Level 2 alarm
	GRID Over FREQ 2	Level 2 alarm
	GRID Low FREQ 2	Level 2 alarm
	GRID Fast-Check Abnormal	Level 2 alarm
	Island Fault	Level 2 alarm
	PE VOLT Fault	Level 2 alarm
Output fault	OUT RMS Over VOLT	Level 1 alarm
	OUT RMS Low VOLT	Level 1 alarm
	OUT RMS Over CURR	Level 1 alarm
	OUT Over FREQ	Level 1 alarm
	OUT Low FREQ	Level 1 alarm
Inverse anomaly	INV RMS Over VOLT	Level 1 alarm
	INV RMS Low VOLT	Level 1 alarm
	INV FAST Over CURR	Level 1 alarm
	INV RMS Over CURR	Level 1 alarm
	INV Inductor CURR Limit	Level 2 alarm
	INV Inductor Over CURR STOP	Level 1 alarm
	INV CURR DC Component Over	Level 1 alarm
	INV CURR DC COMP Over 2	Level 1 alarm
	INV VOLT DC Component Over	Level 1 alarm
	INV Self-Test Fail	Level 1 alarm
	Phase Lock Fail	Level 2 alarm
	INV Short Fault	conk out
	INV Over TEMP	Level 1 alarm
	INV Over LOAD Alarm	Level 2 alarm
	INV 105%Over Load	Level 1 alarm
INV 125% Over Load	Level 1 alarm	
INV 150% Over Load	Level 1 alarm	
INV 200% Over Load	Level 1 alarm	

<b>Fault classification</b>	<b>Fault Name</b>	<b>Warning Level</b>
Dc bus anomaly	BUS FAST Over VOLT	Level 1 alarm
	BUS Hardware Over VOLT	Level 1 alarm
	BUS Over VOLT	Level 1 alarm
	BUS Low VOLT	Level 1 alarm
	BUS Fast Low VOLT	Level 1 alarm
	BUS Short Fault	conk out
System failure	GRID Relay Fault	Level 1 alarm
	INV Relay Fault	Level 1 alarm
	LOAD Relay Fault	Level 1 alarm
	Leak CURR Over 1	Level 1 alarm
	Leak CURR Over 2	Level 1 alarm
	Leak CURR Over 3	Level 1 alarm
	Leak CURR Over 4	Level 1 alarm
	MCU SCI Communication Fault	Level 1 alarm
	BYPASS Over LOAD Alarm	Level 1 alarm
	BYPASS 105% Over Load	Level 1 alarm
	BYPASS 125% Over Load	Level 1 alarm
	BYPASS 150% Over Load	Level 1 alarm
	BYPASS 200% Over Load	Level 1 alarm
	FAN Fault	Level 2 alarm
METER or CT Inverse	Level 2 alarm	
PV side fault	PV1 FAST Over CURR	Level 1 alarm
	PV2 FAST Over CURR	Level 1 alarm
	PV1 Over VOLT	Level 1 alarm
	PV2 Over VOLT	Level 1 alarm
	PV1 Over CURR	Level 1 alarm
	PV2 Over CURR	Level 1 alarm
	PV Over CURR STOP	Level 1 alarm
	PV1Inductor CURR Limit	Level 2 alarm
	PV2Inductor CURR Limit	Level 2 alarm
	INSU.TO GROUND IMPE.	Level 2 alarm
	NO PV	Level 2 alarm
DCDC side failure	Buck-Boost FAST Over CURR	Level 1 alarm
	Middle BUS FAST Over VOLT	Level 1 alarm
	Middle BUS Over VOLT	Level 1 alarm
	Middle BUS Low VOLT	Level 1 alarm
	BATT Over VOLT	Level 1 alarm
	Buck-Boost Over CURR	Level 1 alarm

Fault classification	Fault Name	Warning Level
	BATT DOD	Level 2 alarm
	CHG VOLT Low	Level 1 alarm
	LLC Over CURR STOP	Level 1 alarm
	Buck-Boost Over CURR STOP	Level 1 alarm
	Buck-Boost Inductor CURR Limit	Level 2 alarm
	Middle BUS Fast Low VOLT	Level 1 alarm
	BATT Disconnected	Level 2 alarm
	BATT EOD	Level 1 alarm
	BATT Over TEMP	Level 1 alarm
	Discharge Timeout	Level 1 alarm
	Soft Start Fail	Level 1 alarm
	BATT ON-GRID SOC LOW	Level 1 alarm
	BATT OFF-GRID SOC LOW	Level 2 alarm
	BATT SOC LOW Alarm	Level 2 alarm
	BATT Over LOAD Alarm	Level 2 alarm
	BATT COMM FAULT	Level 2 alarm
	BATT PACK FAULT	Level 2 alarm
BMS alarm, failure	BATT Over VOLT Protect	Level 2 alarm
	BATT Over CELL VOLT Protect	Level 2 alarm
	BATT Low VOLT Protect	Level 1 alarm
	BATT Low CELL VOLT Protect	Level 1 alarm
	BATT CHG Over CURR Protect	Level 2 alarm
	BATT DHG Over CURR Protect	Level 1 alarm
	BATT Ambient TEMP OVER TEMP Protect	Level 1 alarm
	BATT Ambient TEMP OVER TEMP Protect	Level 2 alarm
	BATT CHG Over TEMP Protect	Level 2 alarm
	BATT DHG Over TEMP Protect	Level 1 alarm
	BATT CHG Low TEMP Protect	Level 2 alarm
	BATT DHG Low TEMP Protect	Level 1 alarm
	BATT LOW Capacity Protect	Level 1 alarm
	BATT SHORT Circuit Protect	Level 1 alarm
	BATT MOS Over TEMP Protect	Level 1 alarm
	BATT Over VOLT Alarm	Level 2 alarm
	BATT Over CELL VOLT Alarm	Level 2 alarm
BATT Low VOLT Alarm	Level 1 alarm	
BATT Low CELL VOLT Alarm	Level 1 alarm	

Fault classification	Fault Name	Warning Level
	BATT CHG Over CURR Alarm	Level 2 alarm
	BATT DHG Over CURR Alarm	Level 1 alarm
	BATT Ambient TEMP OVER TEMP Alarm	Level 1 alarm
	BATT Ambient TEMP OVER TEMP Alarm	Level 2 alarm
	BATT CHG Over TEMP Alarm	Level 2 alarm
	BATT DHG Over TEMP Alarm	Level 1 alarm
	BATT CHG LOW TEMP Alarm	Level 2 alarm
	BATT DHG LOW TEMP Alarm	Level 1 alarm
	BATT LOW Capacity Alarm	Level 1 alarm
	BATT Cell Unbalance	Level 1 alarm
	BATT MOS Over TEMP Alarm	Level 1 alarm
	BATT VOLT Measurement ERR.	Level 1 alarm
	BATT TEMP Measurement ERR.	Level 1 alarm
Battery system lock	BATT Fault Lock CELL OVER VOLT	Level 1 alarm
	BATT Fault Lock CELL LOW VOLT	Level 1 alarm
	BATT Fault Lock CHG OVER CURR	Level 1 alarm
	BATT Fault Lock DHG OVER CURR	Level 1 alarm
	BATT Fault Lock CHG OVER TEMP	Level 1 alarm
	BATT Fault Lock DHG OVER TEMP	Level 1 alarm
	BATT Fault Lock CHG LOW TEMP	Level 1 alarm
	BATT Fault Lock DHG LOW TEMP	Level 1 alarm

## 9.2 Fault list

The user can troubleshoot faults and take corresponding measures according to the fault information of the inverter.

Fault information	Possible cause	Action
GRID Over VOLT 1	Grid failure	1. Check the grid voltage or frequency. If the grid voltage or frequency exceeds the allowable range of the inverter protection parameters, start the inverter again after the power grid becomes normal. 2. If the grid voltage or frequency is within the allowable range, please contact the distributor or after-sales service center.
GRID Over VOLT 2		
GRID Low VOLT 1		
GRID Low VOLT 2		
GRID Over FREQ 1		
GRID Over FREQ 2		
GRID Low FREQ 1		
GRID Low FREQ 2		
GRID Fast-Check Abnormal	Failure in inverter soft-starting due to sudden change of external condition	1. Wait until the inverter recovers. 2. Check the grid voltage or frequency. If the grid voltage or frequency exceeds the allowable range of the inverter protection parameters, start the inverter again after the power grid becomes normal. 3. If the grid voltage or frequency is within the allowable range, please contact the distributor or after-sales service center.
Island Fault	After grid AC failure, the inverter detects the islanding by active mode.	1. Check whether the AC circuit breaker of the grid trips and the connection wires are firmly connected. 2. Check whether the grid is available. 3. If all conditions are correct and the failure persists, please contact the distributor or after-sales service center.
PE VOLT Fault	1. PE terminal on AC terminal block and secondary protection ground terminal on inverter bottom are not reliably connected. 2. High voltage to earth of L and N wires of inverter	1. Check whether the inverter has a reliable ground cable. 2. If there is an access wire and the failure persists, please contact the distributor or after-sales service center.
OUT RMS Over VOLT	Protection resulting from abnormal	1. Check whether the external load and the grid exceed the range specified in the inverter
OUT RMS Low VOLT		

Fault information	Possible cause	Action
OUT RMS Over CURR	instance output of inverter after sudden change or short current on grid	specifications. After failure recovery, the inverter automatically recovers to normal operation. 2. If the alarm is repeated, please contact the distributor or after-sales service center.
OUT Over FREQ		
OUT Low FREQ		
INV FAST Over CURR	Protection resulting from abnormal instance output of inverter after sudden change or short current on grid	1. Check whether the external load and the grid exceed the range specified in the inverter specifications. After failure recovery, the inverter automatically recovers to normal operation. 2. If the alarm is repeated, please contact the distributor or after-sales service center.
INV RMS Over VOLT		
INV RMS Low VOLT		
INV Inductor CURR Limit	The output voltage of the inverter is out of the range of protection value.	1. Check whether the external load exceeds the range specified in the inverter specifications. After failure recovery, the inverter automatically returns to the normal operation status. 2. If the alarm is repeated, please contact the distributor or after-sales service center.
INV Inductor Over CURR		
INV VOLT DC Component Over	The DC current component of the grid current exceeds the allowable range.	1. Wait until the inverter recovers. 2. Check the grid voltage or frequency. If the grid voltage or frequency exceeds the allowable range of the inverter protection parameters, report the grid company. 3. If the grid voltage or frequency is within the allowable range, please contact the distributor or after-sales service center.
INV CURR DC Component Over		
INV Self-Test Fail	Inverter bridge damaged or too high grid harmonics and no grid-tied condition	1. Wait until the inverter recovers. 2. If the failure persists, please contact the distributor or after-sales service center.
Phase Lock Fail		
INV Over TEMP	The inverter temperature is higher than the allowable upper limit of the inverter	1. Check whether the temperature of the radiator displayed on the LCD screen is too high. If the temperature is too high, wait for a period of time to recover. 2. Check whether the inverter is at well-ventilated location. 3. Check whether the inverter is in the direct

Fault information	Possible cause	Action
		sunlight, if yes, please do appropriate shading. 4. If there are no such problems, and the failure persists, please contact the distributor or after-sales service center.
INV 105% Over Load	Output overload protection	1. Check the output load and reduce the load power.
INV 125% Over Load		2. If there are no such problems, and the failure persists, please contact the distributor or after-sales service center.
INV 150% Over Load		
INV 200% Over Load		
BUS FAST Over VOLT	The instantaneous voltage of the bus is higher than the allowable upper limit of the inverter.	1. After reduction of the bus voltage, wait until the inverter recovers.
BUS Over VOLT		2. If the failure is repeated, please contact the distributor or after-sales service center.
BUS Hardware Over VOLT	The hardware detects that the instantaneous voltage value of the bus is higher than the allowable upper limit of the inverter.	1. Check whether the PV input voltage exceeds the allowable range of inverter protection parameters. 2. After reduction of the bus voltage, restart the inverter. 3. If the failure is repeated, please contact the distributor or after-sales service center.
BUS Low VOLT	The average bus voltage is lower than the allowable lower limit of the inverter.	1. Wait until the inverter recovers.
BUS Fast Low VOLT		2. If the failure is repeated, please contact the distributor or after-sales service center.
BUS Short Fault	A sudden change in external conditions causes damage to internal components	Please contact the distributor or after-sales service center.
MCU SCI Communication Fault	No monitoring data was received.	1. Restart the inverter. 2. If the failure is repeated, please contact the distributor or after-sales service center.
GRID Relay Fault	The relay cannot be closed and disconnected properly.	1. Restart the inverter.
INV Relay Fault		2. If the failure is repeated, please contact the distributor or after-sales service center.
LOAD Relay Fault		

Fault information	Possible cause	Action
BYPASS 105% Over Load	Output overload protection during off-grid to grid-tied	1. Check the output load and reduce the load power. 2. If the failure is repeated, contact the distributor or after-sales service center.
BYPASS 125% Over Load		
BYPASS 150% Over Load	Output overload protection during off-grid to grid-tied	1. Check the output load and reduce the load power. 2. If the failure is repeated, contact the distributor or after-sales service center.
BYPASS 200% Over Load		
PV1 Over VOLT	The PV1 or PV2 voltage is higher than the bus voltage.	1. Check whether the PV input end is normal. 2. Check whether the PV input configuration exceeds the allowable range of inverter protection parameters. 3. If there are no such problems, and the failure persists, please contact the distributor or after-sales service center.
PV2 Over VOLT		
PV1 FAST Over CURR	The average instantaneous input current of PV1 or PV2 is higher than the set upper limit.	1. Check whether the PV input end is normal. 2. Check whether the PV input configuration exceeds the allowable range of inverter protection parameters. 3. If there are no such problems, and the failure persists, please contact the distributor or after-sales service center.
PV2 FAST Over CURR		
PV1 Over CURR PV2 Over CURR	The average input current of PV1 or PV2 is higher than the upper limit.	1. Check whether the PV input end is normal. 2. Check whether the PV input configuration exceeds the allowable range of inverter protection parameters. 3. If there are no such problems, and the failure persists after restarting the inverter, please contact the distributor or after-sales service center.
INSU.TO GROUND IMPE.	Short circuit of PV string to protective earth, long humid installation environment of PV string	1. Check whether the inverter is grounded reliably. 2. Check whether the positive and negative electrodes of the PV panel are short connected with the ground wire. 3. Wait until the inverter recovers. 4. If the failure persists, please contact the distributor or after-sales service center.

Fault information	Possible cause	Action
Buck-Boost FAST Over CURR	Sudden change of external conditions leads to internal circuit protection in the inverter	1. After failure recovery, the inverter automatically recovers to normal operation. 2. If the alarm is repeated, please contact the distributor or after-sales service center.
Middle BUS FAST Over VOLT		
Middle BUS Over VOLT		
Middle BUS Low VOLT	Sudden change of external conditions leads to internal circuit protection in the inverter	1. After failure recovery, the inverter automatically recovers to normal operation. 2. If the alarm is repeated, please contact the distributor or after-sales service center.
BATT Over VOLT	Abnormal battery voltage	1. Check whether the battery is correctly connected to the inverter, and whether the battery voltage is normal. 2. The battery input cable is too small. 3. Restart the inverter. If the failure persists, please contact the distributor or after-sales service center.
Buck-Boost Over CURR	Buck-Boost current exceeds the set value.	1. Check the output load and reduce the load power. 2. If the failure persists, please contact the distributor or after-sales service center.
BATT DOD	1. Abnormal battery voltage. 2. Battery fully discharged.	1. Check whether the battery is correctly connected to the inverter, and whether the battery voltage is normal. 2. The battery input cable is too small. 3. Restart the inverter. If the failure persists, please contact the distributor or after-sales service center.
CHG VOLT Low	Abnormal battery voltage	1. Check whether the battery is correctly connected to the inverter, and whether the battery voltage is normal. 2. Restart the inverter. If the failure persists, please contact the distributor or after-sales service center.
LLC Over CURR STOP	The current exceeds the set value	1. Check the output load and reduce the load power; 2. Check whether the battery terminal is

Fault information	Possible cause	Action
		properly connected. 3. If the failure persists, please contact the distributor or after-sales service center.
BATT Disconnected	<ol style="list-style-type: none"> <li>1. The battery is incorrectly connected.</li> <li>2. The battery fuse is blown.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check whether the battery cable is securely connected and the battery voltage is normal.</li> <li>2. If the failure persists, please contact the distributor or after-sales service center.</li> </ol>
BATT Over TEMP	<ol style="list-style-type: none"> <li>1. The battery installation position is not ventilated.</li> <li>2. The ambient temperature is too high.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check whether the operating environment exceeds the operating temperature range of the inverter. If yes, improve the operating environment.</li> <li>2. If there are no such problems, and the failure persists after restarting the inverter, please contact the distributor or after-sales service center.</li> </ol>
FAN Fault	Fan failure	<ol style="list-style-type: none"> <li>1. Check whether the fan operates properly. Power off and restart the inverter.</li> <li>2. If the failure persists, please contact the distributor or after-sales service center.</li> </ol>

## Chapter 10 Technical Data

### System Specification

System Components						
Model	EAHI-6 K05-SL	EAHI-6K 10-SL	EAHI-6K 15-SL	EAHI-6K 20-SL	EAHI-6K2 5-SL	EAHI-6K 30-SL
Number of battery modules	1	2	3	4	5	6
Battery capacity	5.12kWh	10.24kWh	15.36kWh	20.48kWh	25.6kWh	30.72kWh
Battery system model	5KWH					
Number of inverter	1					
Inverter mode	EAHI-6000-SL-S					
Rated power	6000W					
Demission (W*H*D)mm	600x778 x305	600x998 x305	600x121 8x305	600x143 8x305	600x1658 x305	600x1878 x305
Weight(kg)	93	143	193	243	293	343
Noise	<25dB					
Cooling type	Natural cooling					
Maximum altitude	4000m					
Operating temperature	-20°C ~ +58°C					
Operating humidity	0~100%RH (Non-condensing)					
Display	LED and app					
Installation method	Floor-mounted					

### Hybrid Inverter Specification

Inverter mode	EAHI-6000-SL-S
PV input parameter	
Maximum input power	8000W
Maximum input voltage	550Vdc
Rated input voltage	360Vdc
Starting voltage	100Vdc
Minimum operating voltage	150Vdc
MPPT operating voltage	100~540Vdc
PV maximum input current	16A / 16A
PV maximum short circuit current	24A / 24A
Quantity of independent MPPT	2
Input string of each MPPT	1+1

<b>Battery input parameter</b>	
Battery type	Lithium battery
Battery voltage range	42~58Vdc
Maximum charging current	100A
Maximum discharge current	120A
Charging curve	3 Stages / Equalization
Lithium battery charging strategy	BMS self-adaption
<b>AC input parameters (grid side)</b>	
Grid type	Single phase
Input voltage range	184~276Vac
Input frequency range	50±5Hz / 60±5Hz
Maximum input current	40A
<b>AC output parameters (grid side)</b>	
Rated output power	6000W
Maximum apparent output power	6000VA
Grid system mode	1/N/PE
Rated output voltage	220Vac / 230Vac
Rated output frequency	50Hz / 60Hz
Rated output current	27.3A / 26.1A
Maximum output current	27.3A
Power factor	>0.99 (0.8 lead ~ 0.8 lag)
Total current harmonics	≤3% (rated power)
<b>AC output parameters (Back-up side)</b>	
Rated output power	6000W
Maximum apparent output power	6000VA
Grid system mode	1/N/PE
Rated output voltage	230Vac (208/220/240Vac settable)
Rated output frequency	50Hz / 60Hz
Rated output current	27.3A / 26.1A
Voltage harmonic	≤3% (linear load)
Switching time	≤20ms
<b>Efficiency</b>	
Maximum efficiency	97.8%
MPPT efficiency	99.9%
<b>Protection</b>	
Comprehensive	Grid over-voltage protection, grid over-frequency protection, grid overload protection, over-temperature protection, anti-islanding protection, insulation resistance detection, residual current monitoring unit,

	output over-current protection, output short-circuit protection, surge protection
Output over-voltage protection	DC Type II/AC Type III
<b>Standard</b>	
Safety regulation	IEC/EN 62109-1/-2, AS62109
EMC	EN 61000-6-1/-2/-3/-4
Grid-tied	CEI 0-21, DIN VDE V 0124-100:2020, VDE-AR-N 4105:2018,AS4777.2, NRS097-2-1, EN 50549-1
<b>Other</b>	
Topology	High frequency isolation (to batteries)
IP protection grade	IP66
Operating temperature range	-25~60°C (derated at >45°C)
Cooling method	Natural cooling
Maximum altitude	4000m
Noise	≤25dB
Installation method	Floor stacking type
Demission (W*H*D)mm	600×530×305
Weight(kg)	36.4

## Lithium-ion Battery Module

<b>Battery mode</b>	5KWH
<b>General</b>	
Cell technology	LiFePO4
Energy capacity	5.12kWh
Usable capacity	6
Scalable capacity range	5.12kWh~30.72kWh
DOD	Max. 100 % DOD (settable)
Maximum charging power	3.84KW
Maximum discharging power	5.02KW
Max. charging current	75A
Max. discharge current	98A
Operating temperature	-20~+58°C
Humidity	0~100%RH (Non-condensing)
Communication interface	485 and CAN
Connection method	Floor-mounted
Enclosure type	IP66
Certification	IEC 62619, IEC 60730, UN 38.3, IEC 62040-1,ROHS2.0,VDE 2510-50

## Chapter 11 Appendixes

### Explanation of term

Name	Description
ANTI-TIED	The inverter is not allowed to supply the power to the grid
GRID-TIED	The inverter is allowed to supply the power to the grid, as opposed to ANTI-TIED
AC CHA.	The inverter is allowed to receive the power from the grid for charging the battery.
TIMER.SWITCH	The inverter may be set to operate in different operation modes in different time periods.
SOC	State of charge, also called remaining capacity, refers to the ratio of current available carrying capacity to the carrying capacity in full charging status, expressed in percentage, ranging from 1% to 100%.
BMS	Battery manager system
EOD	In the photo voltaic energy storage products of this series, the end of discharge (EOD) refers to the voltage or SOC used for prohibit battery discharging. When the battery voltage is less than this value, or SOC is less than the lower limit, the inverter will give a "battery under-voltage" alarm and prohibit battery discharging.
DOD	Depth of charge (DOD) refers to one method for the energy storage inverter to reflect the depth of battery discharge. Another method is SOC.
Equalized charging	Refers to the constant current charging stage, in which the charging voltage will gradually increase until it reaches the equalized charging voltage value.
Equalized charging voltage	Refers to the target voltage value achieved by constant current charging, which can be set within the specified range.
Floating charge	Refers to the constant voltage charging phase, in which the charging current gradually decreases to maintain the battery voltage at the set floating charging voltage value.
Floating charge voltage	Constant voltage charge voltage, which can be set within a specified range
Domestic load	Refers to the load that is connected between the "AC input" port of the inverter and the CT/kilo-watt-hour meter accessory, the power of which is not restricted by the inverter.
Backup load	Refers to the load connected to the "load output" port of the inverter. The power of the load is limited by the carrying capacity of the inverter when it operates in off-grid mode.
BACK-UP	Silk screen may be "load output" or "EPS"; here, they have the same meaning, and refer to the "off-grid load" port.

