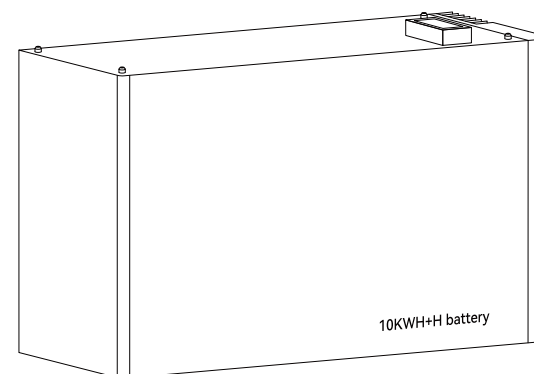




# ESYSUNHOME 10KWH+H

User Guide & Installation Manual  
( V1-250103)



**ESYsunhome CO.,LTD**

Website: [www.esysunhome.com](http://www.esysunhome.com)

Phone: +86 (0)755 8522 9087

Address: 301, building 6, No.5-2, inner ring road, Shanxia community, Pinghu street,  
Longgang District, Shenzhen, 518118 Guangdong P.R. China

**Made in China**

**CE RoHS**

ESYsunhome CO.,LTD

With over two decades of experience, ESY SUNHOME has swiftly gained prominence as a leading player in the energy storage industry, specializing in lithium battery technology and Battery Management Systems (BMS). Trusted by global giants such as Huawei, Dell, and Toshiba, ESY SUNHOME is renowned for its innovative solutions. Supported by advanced AI functionalities, protection systems and a highly skilled R&D team, the company’s development of the HM series All-in-One residential energy storage systems marks a significant milestone in its pursuit of excellence.

With offices strategically located in Sydney, Australia, and Munich, Germany, ESY SUNHOME is well-positioned for global expansion, aiming to establish a significant international footprint. The company’s unwavering commitment to making clean energy accessible drives its mission to empower communities worldwide in embracing sustainable solutions for a brighter future.

Mission:

To provide safe and high-quality new energy products (batteries and power supplies) for every family.

Vision:

Make clean energy available to every family.

Core Values:

- Unity and hard work;
- Pragmatic and far-reaching;
- Innovative research and development;
- Scientific and intelligent manufacturing;
- Creating value for customers;
- Creating opportunities;
- Contributing to society.

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# 1 Precautions

## 1.1 General statement

- This manual mainly describes product information, installation, operation, and maintenance guidelines. The manual cannot include complete information about the system (i.e. inverter)  
The device only includes batteries. Users can obtain additional information about other devices on [www.esysunhome.com](http://www.esysunhome.com) or contact local distributors to obtain the latest product information from the manufacturer.
- Please retain this manual properly, and strictly follow all safety instructions and operational instructions contained herein.
- ESY SUNHOME bears no responsibility for any consequences arising from failure to comply with the general safety requirements or safety standards for design, production, and use.
- It is crucial to use this product under specified design conditions. Any damage to components, personal injury, or property loss resulting from improper use will not be covered under warranty.
- During installation, use, and maintenance, adherence to all local laws and regulations is mandatory. The safety instructions provided in this manual are supplementary to local laws and regulations.
- The content in this manual will undergo periodic review and updates as needed. ESY SUNHOME reserves the right to make improvements or changes to the products and procedures described in this manual at any time without prior notice.
- The product diagram in this manual are used for illustrative purpose only. The product models depicted in the illustrations may differ from the actual product.
- The circuit diagrams in this manual are used for illustrative purpose only. Actual installation may be adjusted according to the local requirements and application scenarios.
- Some products, accessories, functions, and services mentioned in this manual are optional items and may not be within your use scope.
- For further details, please consult authorized personnel or organizations of ESY SUNHOME.
- ESY SUNHOME reserves all rights to the final interpretation in this document.



## 1.2 Safe Transportation and Storage

- During transportation of the batteries, it is essential to utilize the original packaging to ensure the safety of the equipment throughout the shipping process.
- Upon receiving the shipments, please thoroughly inspect the external packaging of the batteries before opening the box for a comprehensive inspection.
- If any damage to the batteries occurs during transportation, please notify the shipping company immediately. The shipping company is responsible for any equipment damage incurred during transit. If necessary, seek assistance from the installation personnel or manufacturer.

- When handling inverters weighing 35 kg or more, please use appropriate equipment or collaborate with multiple individuals for safe handling.
- When storing the equipment, please use the original packaging and store it in a cool, dry, and well-ventilated area to prevent damage from moisture.

## 1.3 Important Safety Information

- Before installing, operating, and maintaining the equipment, please read this manual carefully.
- Make sure that the product is adequately grounded before operation. The grounding resistance should be less than 0.1Ω.
- Install all terminals of the energy storage system in accordance with the instructions provided in this manual. Follow the corresponding signs and symbols on the equipment during operation.
- During installation, please use the accessories provided in the product packaging.
- During maintenance, the maintenance personnel are prohibited from operating any equipment until all equipment has been shut down and completely discharged.
- The ports of the distribution box will be electrified during operation. Do not remove the protective covers of the parallel and communication ports of the distribution box when they are not in use.
- To ensure that the electrical parameters match requirements, relevant measuring equipment is required during system connection and testing. Ensure that the specifications of the equipment match to prevent arcing or impact.
- During instruction, maintenance and repair, warning signs shall be set up in the operational area of the system to prevent accidents caused by unauthorized personnel.
- Before installation, maintenance, or repair, use professional equipment to measure the voltage of the battery and distribution box terminals to prevent injury to operators from energized ports.

Danger!	
	<p>Risk of explosion</p> <ul style="list-style-type: none"><li>• Do not subject the battery to any strong force.</li><li>• Do not mechanically damage the battery (pierce, deform, strip down, etc.)</li><li>• Do not heat the battery or dispose of the battery in a fire.</li><li>• Do not install the battery in potentially explosive environments.</li></ul>
Danger!	
	<p>Risk of fire</p> <ul style="list-style-type: none"><li>• Do not expose the battery to temperatures in excess of 60°C.</li><li>• Do not place the battery near a heat source, such as direct sunlight, a fireplace, a thermally uninsulated wall exposed to sunlight, hot water, or a heater.</li><li>• Keep sources of ignition such as sparks, flames, and smoking materials away from the battery.</li></ul>

Danger!	
	<p>Risk of electric shock</p> <ul style="list-style-type: none"> <li>• Do not disassemble the battery.</li> <li>• Do not handle a wet battery or use wet tools.</li> <li>• Do not soak the battery in water or expose it to moisture or liquids.</li> <li>• Keep the battery away from children and animals.</li> <li>• Wear suitable clothing, guards and gloves to prevent you from direct contact with the DC voltage.</li> <li>• Use insulated tools during working with battery.</li> </ul>
Danger!	
	<p>Unauthorized removal, improper use, or incorrect installation or operation may result in serious personal injury or equipment damage. Therefore, transportation, installation, startup, dismantling, and maintenance must be carried out by qualified or trained personnel.</p>
Danger!	
	<p>Before undertaking any repair, electrical installation, or accessing any live parts, ensure that the inverter, distribution box, and battery are turned off, and that the port voltage is at a safe level.</p>
Warning!	
	<p>Installation must fully comply with national and local laws and regulations.</p>
Warning!	
	<p>Without permission, it is not allowed to replace the internal circuit of the battery distribution box.</p>
Warning!	
	<p>Before connecting to the grid, the product must be securely grounded. Please follow the instructions in this manual. Improper operation may cause serious damage.</p>
Warning!	
	<p>Please ensure that a lightning protection device is installed in the combiner box.</p>
Warning!	
	<p>After installation, repair, and maintenance, please lock the side door of the distribution box. Non professionals are not allowed to open the door.</p>

## 1.4 Installer Requirements

- The operators should be professionally qualified or trained.
- The operators should be familiar with the entire storage system, including its components and operating principles.
- The operators should be familiar with the product instruction.
- The grid-connected electricity selling of the energy storage system must be approved by the local power authority, or compliant with the relevant provisions of national and local laws and regulations. It must be conducted by qualified personnel.

## 1.5 Installation safety precautions








- The installation and use environment of lithium batteries must comply with relevant international, national, and local standards, as well as local laws and regulations.
- Ensure that the battery is not accessible to children and is kept away from areas of daily work or living, including but not limited to: offices, bedrooms, living rooms, music rooms, kitchens, studies, game rooms, home theaters, sunrooms, bathrooms, laundry rooms, and attics.
- When installing the battery in a garage, keep it away from the driveway.
- For basement installations, maintain good ventilation. Do not place flammable or explosive materials around the battery. It is recommended to install the battery on a wall to avoid contact with water.
- Install the battery in a dry and well-ventilated environment and secure it on a solid and flat surface.
- Install the battery in a concealed location or install a canopy above it to protect it from direct sunlight or rain.
- Install the battery in a clean environment without strong infrared radiation, organic solvents, and corrosive gases.
- For areas prone to natural disasters such as floods, earthquakes, and typhoons/hurricanes, appropriate installation precautions should be taken.
- Keep the battery away from ignition sources. Do not place any flammable or explosive materials around the battery.
- Keep the battery away from water sources such as faucets, drains, sprinklers, etc., to prevent water ingress.
- Do not install the battery in easily accessible locations, as the enclosure and heat sink temperature can be high when the battery is in operation.
- To prevent overheating, ensure that the vents and cooling system are not blocked when the battery is in operation.
- Do not expose the battery to flammable or explosive gases or smoke. Do not perform any operations on the battery in such environments.
- Do not install the battery on a moving object such as a boat, train, or car.








- Do not install the battery in outdoor areas affected by salt, as it may corrode. This area refers to a distance of up to 500 meters from the coast or areas susceptible to sea breeze influence. Areas susceptible to sea breeze influence may vary due to weather conditions such as typhoons and monsoons, or terrain features such as dams and hills.
- In the case of backup power, do not use the battery in the following situations:
  - Vital medical equipment for human life.
  - Control equipment for trains, elevators, etc.
  - Computer systems with social and public importance.
  - Locations near medical equipment.
  - Other devices similar to those described above.

## 1.6 Safety Symbols Description

The symbols that may be found in this product are defined as follows.

<b>MODEL:ESYSUNHOME 10KWH+H battery</b>	ESY SUNHOME: Brand Name 10KWH+H: Model, Indicates that the energy of the high-voltage battery is 10KWH+.
	Pay attention to safety.
	Attention: High surface temperature.
	No open flames Do not expose to flame, incinerate, puncture, or impact.
	Caution: Risk of electric shock.
	Prior to attempting any repair, electrical installation, or accessing any live parts, make sure that the inverter is switched off and wait for 5 minutes until internal capacitors are discharged to a safe voltage.
	Professional recycling and reuse are required.
	Please recycle this lithium ion battery. Do not discard.

	Please read this manual before using the product.
	Compliant with CE safety certification standards.
	TÜV mark of conformity
	This is a protective grounding terminal, which should be grounded securely to protect the safety of operators.
	This product is in compliance with RCM certification standards.

## 2 Product Introduction

### 2.1 Battery Parameters

MODEL	ESYSUNHOME 10KWH+H	ESYSUNHOME 10KWH+H-20	ESYSUNHOME 10KWH+H-30
Number of Batteries	1	2	3
Battery Capacity (kWh)	10.49	20.99	31.48
Usable Capacity (kWh)	10.28	20.57	30.85
Rate DC Power (kW)	3.30	6.60	9.90
Rated Capacity (Ah)	205	410	820
Size (LxWxH mm)	660x614x270	660x1020x270	660x1426x270
Installation width (mm)	660	660	660
Weight (kg)	119	214	309
Max.Continuous Charging Power (W)	3300	6600	9900
Max.Continuous Charging Current (A)	8.59	17.18	25.77
Max.Continuous Discharging Power (W)	3300	6600	9900
Max.Continuous Discharging Current (A)	8.64	17.28	25.92
Configuration	16S	(16S)2P	(16S)3P

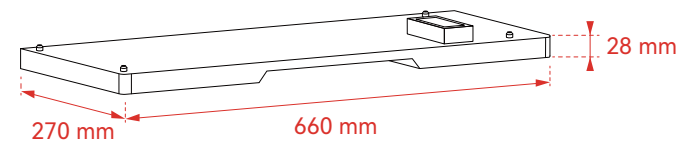
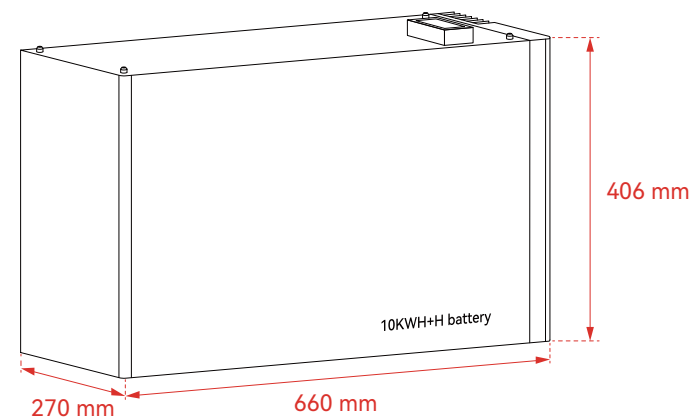
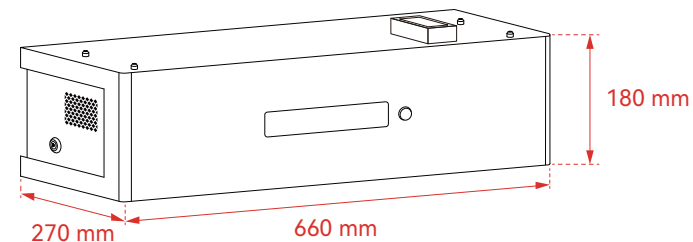
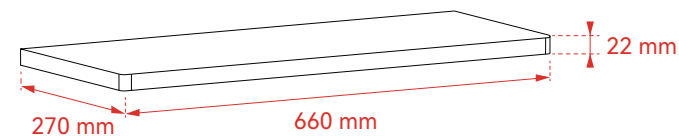
MODEL	ESYSUNHOME 10KWH+H-40	ESYSUNHOME 10KWH+H-50	ESYSUNHOME 10KWH+H-60
Number of Batteries	4	5	6
Battery Capacity (kWh)	41.98	52.48	62.97
Usable Capacity (kWh)	41.14	51.43	61.71
Rate DC Power (kW)	13.20	16.50	19.80
Rated Capacity (Ah)	820	1025	1230
Size (LxWxH mm)	(660x1448x270)+ (660x614x270)	(660x1448x270)+ (660x1020x270)	(660x1448x270) x2
Installation width (mm)	1820	1820	1820
Weight (kg)	429.2	524.2	619.2
Max.Continuous Charging Power (W)	13200	16500	19800
Max.Continuous Charging Current (A)	34.36	42.95	51.54
Max.Continuous Discharging Power (W)	13200	16500	19800
Max.Continuous Discharging Current (A)	34.56	43.20	51.84
Configuration	(16S)4P	(16S)5P	(16S)6P

MODEL	ESYSUNHOME 10KWH+H-70	ESYSUNHOME 10KWH+H-80	ESYSUNHOME 10KWH+H-90
Number of Batteries	7	8	9
Battery Capacity (kWh)	73.47	83.96	94.46
Usable Capacity (kWh)	72	82.28	92.57
Rate DC Power (kW)	19.80	19.80	19.80
Rated Capacity (Ah)	1435	1640	1845
Size (LxWxH mm)	(660x1448x270)x2 +(660x614x270)	(660x1448x270)x2 +(660x1020x270)	(660x1448x270) x3
Installation width (mm)	2980	2980	2980
Weight (kg)	739.4	834.4	929.4
Max.Continuous Charging Power (W)	19800	19800	19800
Max.Continuous Charging Current (A)	60.13	68.72	77.31
Max.Continuous Discharging Power (W)	19800	19800	19800
Max.Continuous Discharging Current (A)	60.48	69.12	77.76
Configuration	(16S)7P	(16S)8P	(16S)9P

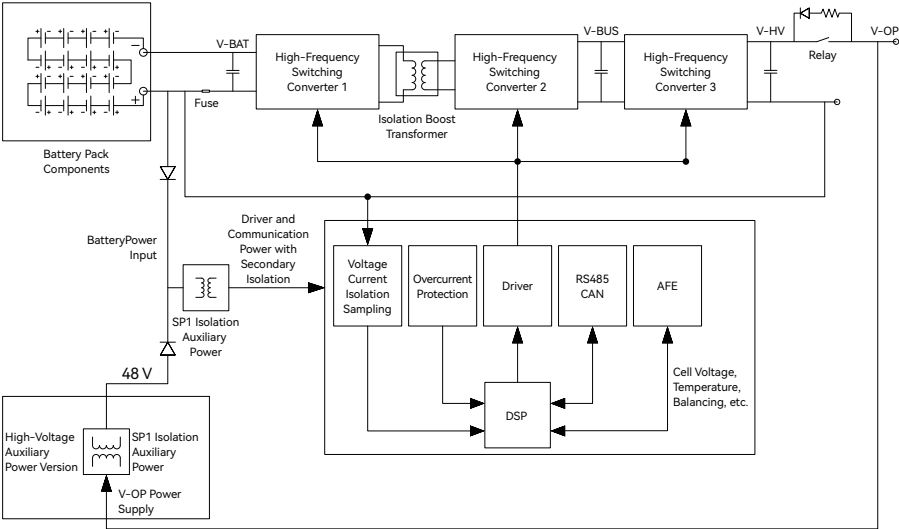
PARAMETERS	
Nominal Voltage	450 Vd.c
Max.Continuous Charging Power	3300 W
Max.Continuous Charging Current	7.33 A
Max.Continuous Discharging Power	3300 W
Max.Continuous Discharging Current	7.33 A
Battery Type	Li-ion
Voltage Range	380 V~560 V
Charging Voltage Declared by Manufacturer	480 V~560 V
Upper limit Charging Voltage	560 V
Discharging Cut off Voltage	380 V
Depth of Discharge	98%
Standard Temperature Range for Charging	-20 °C ~ 55 °C
Standad Temperature Range for Discharging	-10 °C ~ 50 °C
Storage temperature	-25 °C ~ 60 °C
Communication method	RS485/CAN
Charging conversion efficiency	96.1%
Discharging conversion efficiency	95.7%
Battery cycle life	Cycle 6000 times at a 0.2C rate in a 25 °C environment, which is 70% of the initial capacity
Dimensions (LxWxH)	(660 mm±2 mm)x(270 mm±2 mm)x(636 mm±2 mm)
Net weight	96.5 kg~97.5 kg
Install method	Floor mounting
Standards	IEC62619
EMC Standards	IEC61000-1 IEC 61000-3
Protection	over/under-voltage; overload; short circuit; over-temperature;
Ingress Protection Rating	IP66
Protection Class	I
Environmental certification	ROHS2.0
Transportation Safety Certification	UN38.3
Warranty	120 months
Country of Manufacture	China

Distribution box model	10KWH+H Distribution box
General parameter	
Supply voltage range	23 Vd.c~58 Vd.c
Rated operating range	450 Vd.c.
Operating voltage range	380 Vd.c.~550 Vd.c.
Ingress protection rating	IP66
Ambient temperature range	-20 ~ 55 °C
Port parameter	
Max. input power (Battery port)	9.9 kW
Max. input current (Battery port)	26 Ad.c.
Max. output power (Battery port)	9.9 kW
Max. output current (Battery port)	26 Ad.c.
Rated input/output power (Inverter port)	20 kW
Max. Input/input current (Inverter port)	50 Ad.c.
Max. input power (Parallel port)	15 kW
Max. input current (Parallel port)	39.5 Ad.c.
Max. output power (Parallel port)	19.8 kW
Max. output current (Parallel port)	52.1 Ad.c.

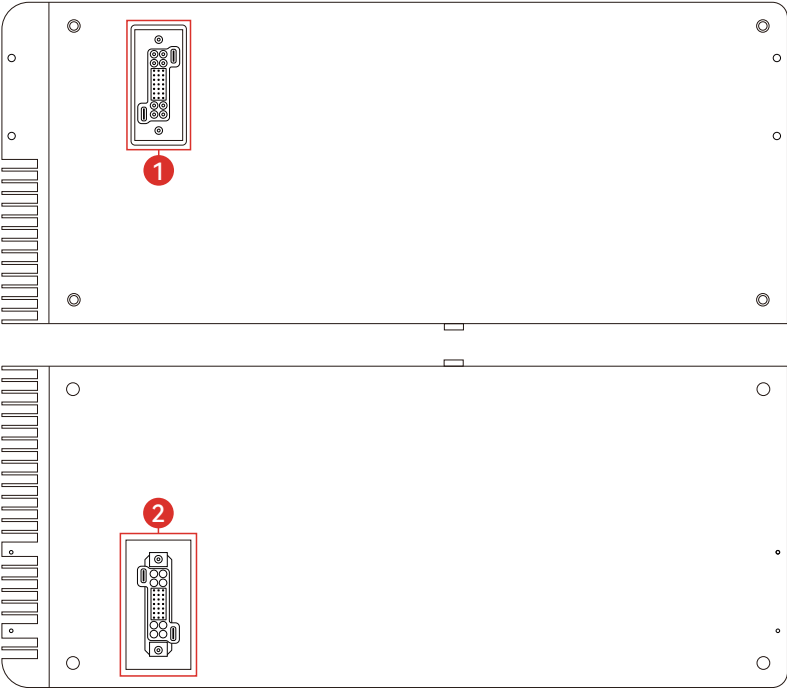
## 2.2 Dimensions of battery system



2.3 Schematic diagram of circuit structure

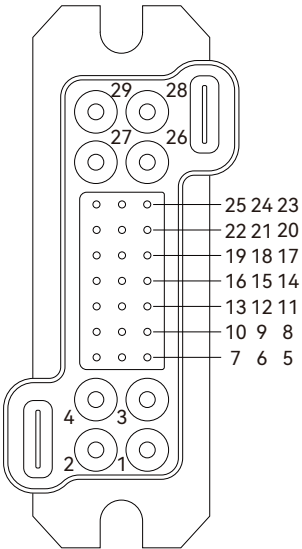


2.4 Battery Port Descriptions



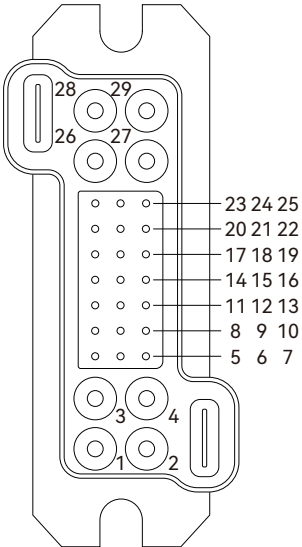
Purpose of each port on the battery

S/N	Name	Purpose
1	GP29Z(10KWH+H battery)	Connector
2	GP29T(10KWH+H Distribution box/10KWH+H battery)	Connector



Schematic of the GP29Z Connector  
(10KWH+H Battery)

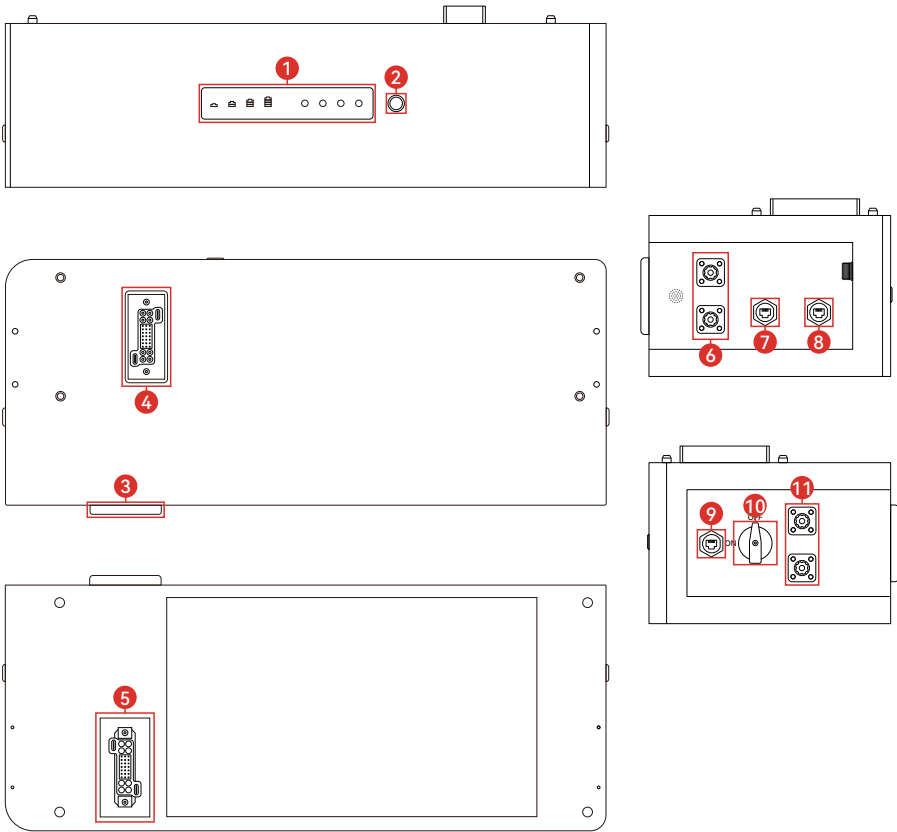
1	PACK-	26	NC
2	PACK-	27	NC
3	NC	28	PACK+
4	GND	29	PACK+
5	485A	16	CAN-L
6	485B	17	Activation-
7	CAN-H	18	Activation+
8	485A	19	NC
9	485B	20	Activation-
10	CAN-H	21	Activation+
11	CAN1-H	22	SW+
12	CAN1-H	23	SW-
13	CAN-L	24	SW-
14	CAN1-L	25	SW+
15	CAN1-L		



Schematic of the GP29T Connector  
(10KWH+H Distributor Box/10KWH+H Battery)

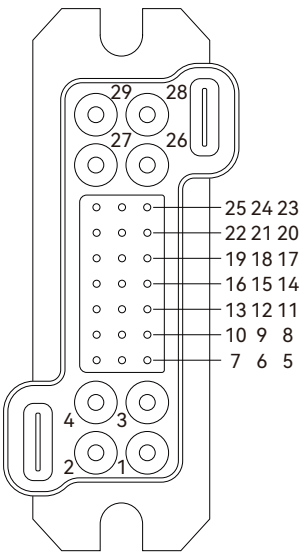
1	PACK-	26	NC
2	PACK-	27	NC
3	NC	28	PACK+
4	GND	29	PACK+
5	485A	16	CAN-L
6	485B	17	Activation-
7	CAN-H	18	Activation+
8	485A	19	NC
9	485B	20	Activation-
10	CAN-H	21	Activation+
11	CAN1-H	22	SW+
12	CAN1-H	23	SW-
13	CAN-L	24	SW-
14	CAN1-L	25	SW+
15	CAN1-L		

2.5 Distribution Box Port Descriptions



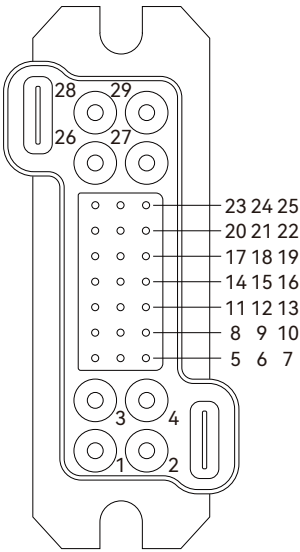
Description of Distribution Box Wiring Ports

S/N	Description	Mark
1	Indicator light	SOC/ALM/RUN/CHG/DCHG
2	Power Button	/
3	Fuse Interface	FUSE+ / FUSE+ / FUSE- / FUSE-
4	Inverter Connection Port (GP29Z)	/
5	Battery Connection Port (GP29T)	/
6	Positive/Negative Terminal Interface for Battery Tower in Parallel (Left)	DC2+/DC2-
7	Battery Tower Communication Interface (Left)	PARALLEL2
8	Upper Computer Communication Interface	COM
9	Battery Tower Communication Interface (Right)	PARALLEL1
10	Battery Isolation Switch	BAT SWITCH (ON/OFF)
11	Positive/Negative Terminal Interface for Battery Tower in Parallel (Right)	DC2+ / DC2-



Schematic of the GP29Z Connector  
(10KWH+H Battery)

1	PACK-	26	NC
2	PACK-	27	NC
3	NC	28	PACK+
4	GND	29	PACK+
5	485A	16	CAN-L
6	485B	17	Activation-
7	CAN-H	18	Activation+
8	485A	19	NC
9	485B	20	Activation-
10	CAN-H	21	Activation+
11	CAN1-H	22	SW+
12	CAN1-H	23	SW-
13	CAN-L	24	SW-
14	CAN1-L	25	SW+
15	CAN1-L		



Schematic of the GP29T Connector  
(10KWH+H Distributor Box/10KWH+H Battery)

1	PACK-	26	NC
2	PACK-	27	NC
3	NC	28	PACK+
4	GND	29	PACK+
5	485A	16	CAN-L
6	485B	17	Activation-
7	CAN-H	18	Activation+
8	485A	19	NC
9	485B	20	Activation-
10	CAN-H	21	Activation+
11	CAN1-H	22	SW+
12	CAN1-H	23	SW-
13	CAN-L	24	SW-
14	CAN1-L	25	SW+
15	CAN1-L		

## 2.6 System Model Introduction

### Warning!

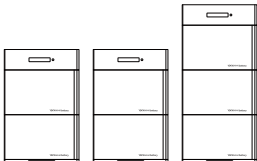
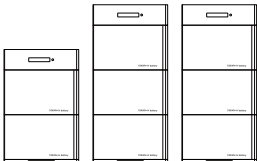
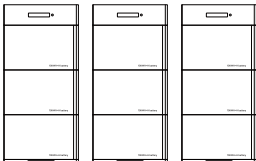


When using 10KWH+H batteries stacking system, please use the designated model of distribution box, inverter, and accessories.

Battery Capacity	Quantity of items required when installing batteries of different capacities :				
	Inverter	10KWH+H Battery	10KWH+H Distribution Box	10KWH+H Cover	10KWH+H Battery Base
10 kWh	1	1	1	0	1
20 kWh	1	2	1	0	1
30 kWh	1	3	1	0	1
40 kWh	1	4	2	1	2
50 kWh	1	5	2	1	2
60 kWh	1	6	2	1	2
70 kWh	1	7	3	2	3
80 kWh	1	8	3	2	3
90kWh	1	9	3	2	3

Appearance of different system models:

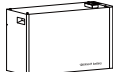
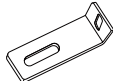
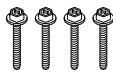

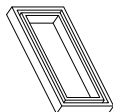
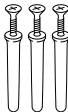
ESYSUNHOME 10KWH+H 	ESYSUNHOME 10KWH+H-20 	ESYSUNHOME 10KWH+H-30 
ESYSUNHOME 10KWH+H-40 	ESYSUNHOME 10KWH+H-50 	ESYSUNHOME 10KWH+H-60 

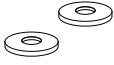
ESYSUNHOME 10KWH+H-70 	ESYSUNHOME 10KWH+H-80 	ESYSUNHOME 10KWH+H-90 
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## 3 Preparation Before Installation




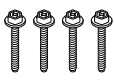
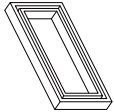


### 3.1 Packing List

#### 3.1.1 Packing List of Battery




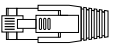
Item	Specifications	Quantity	Diagram
Battery	10KWH+H Battery	1	
Angle Iron	L79.5×65×25 mm	2	
Handlebar Screws	M4*35 mm	4	
Angle Iron Screws	M4*8 mm	2	
Waterproof Gasket	Silicone, black, matte, 104.5x50.3x10.6 mm	1	
Expansion Tubes Screws	M6*40 mm, Used for Angle Iron	2	

Expansion Screw Gaskets	Inner diameter $\phi 5 \text{ mm}^2$ ; Outer diameter $\phi 12 \text{ mm}^2$ , SUS304 gasket	2	
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### 3.1.2 Packing List of Distribution Box & Base

Items	Specifications	Quantity	Diagram
Distribution Box	10KWH+H Distribution Box	1	
LAN Port Connector	RJ45, assembly-type; Line diameter $\phi 3.0 \text{ mm}^2 \sim \phi 6.0 \text{ mm}^2$	3	
Key	Triangular lock hole	2	
Handlebar Screws	M4*35 mm	4	
Waterproof Gasket	Silicone, black, matte, 104.5x50.3x10.6 mm	2	
Base	10KWH+H Battery Base	1	
Base Mounting Screws	M4*10 mm	4	

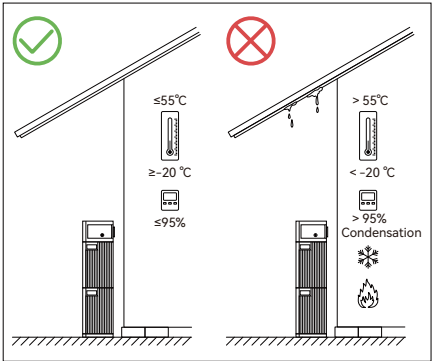
### 3.1.3 Packing List of Cover

Item	Specifications	Quantity	Diagram
Cover	10KWH+H Distribution Box Cover	1	
Positive Connection Cable for Battery Parallel	3 AWG, orange, length: 1600 mm	2	
Negative Connection Cable for Battery Parallel	3 AWG, black, length: 1600 mm	2	
Communication Matching Resistor	120 $\Omega$ between pin 5 and pin 8	2	

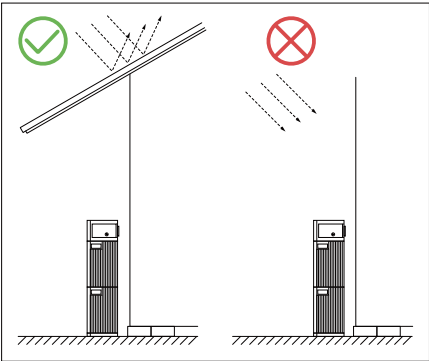
### 3.1.4 Base Foot Packing List

This accessory is used to adjust the height and balance of the base. It can be used when installing on the ground to accommodate uneven surfaces.

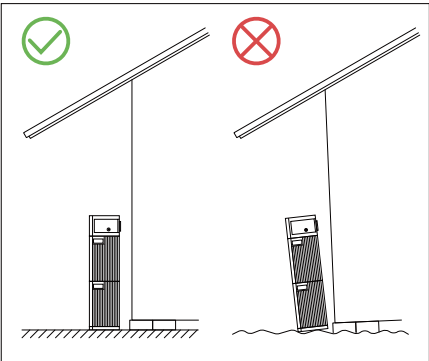
3.2 Selection of The Installation Environment



The ambient temperature should be  $-20^{\circ}\text{C}$  to  $55^{\circ}\text{C}$  and the relative humidity should be 0% to 95% (no condensation).



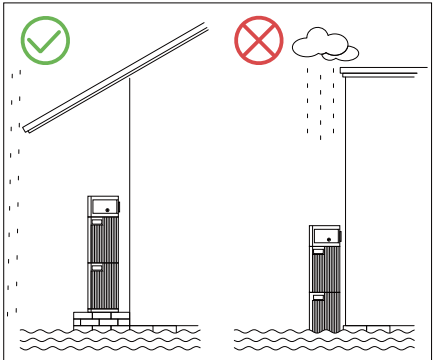
It can be installed outdoors, but must not be directly exposed to sunlight.



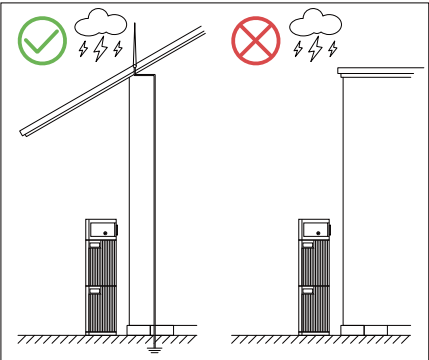
For stability, the product should be installed on solid and level ground.

3.3 Selection of Installation Location

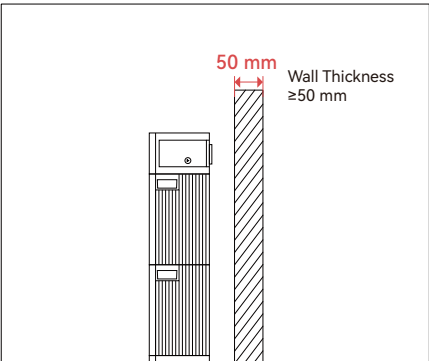
Applicable scenario: When the batteries is used in an energy storage system.



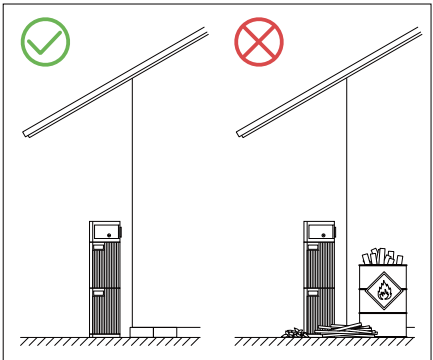
Do not install it in damp or submerged areas.



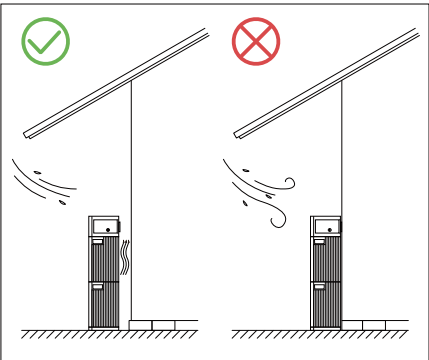
Do not install it in areas prone to lightning strikes.



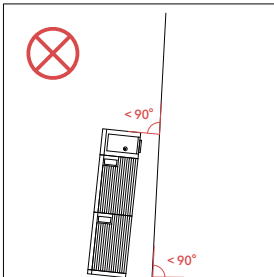
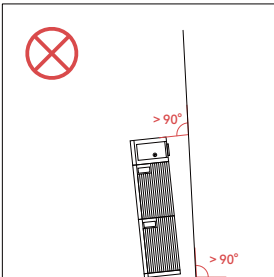
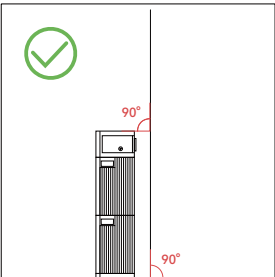
The wall thickness should not be less than 50 mm.



Do not install it near combustibles.



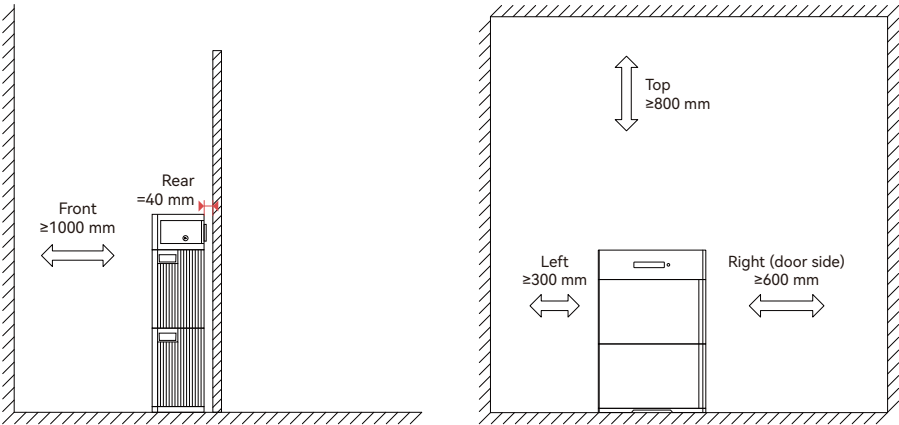
To ensure proper heat dissipation, please install it in a well-ventilated place.



The wall thickness should not be less than 50 mm.



The clearances around the batteries must not be less than the following:



Top	Front	Right (door side)	Left	Rear
800 mm	1000 mm	600 mm	300 mm	40 mm

### 3.4 Preparation of Installation Tools

Power Drill ΦM6	Marker	Measuring Tape	Hammer
Open-end Wrench S=7mm	Phillips Screwdriver PH1	Allen Screwdriver M2	Level
Crimping Pliers for RJ45	Crimping Pliers for PV Terminals	Ferrule Crimping Pliers	Crimping Pliers
Stripping Pliers	Diagonal Pliers	Cable Cutting Pliers (wire cutter)	Utility Knife
Safety Gloves	Dust Mask	Goggles	Safety Boots

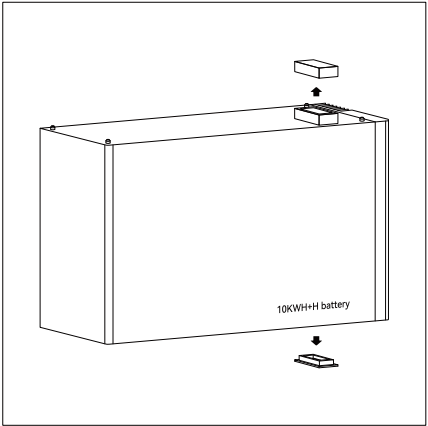
# 4 Installation

## 4.1 Floor-Mounted Installation

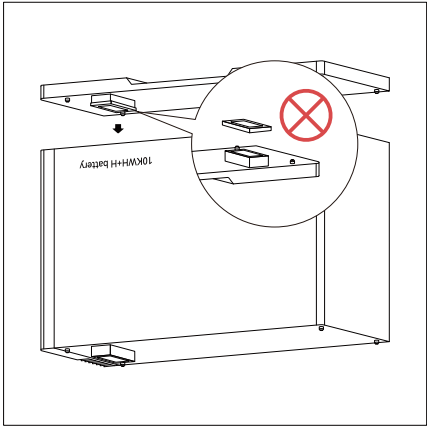
### 4.1.1 Base Installation

Tools and accessories required for this step:

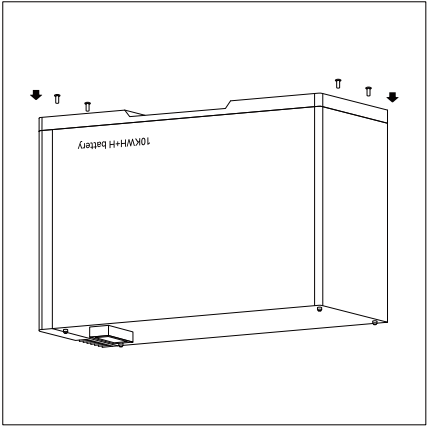
Packing List of Battery	Battery
Packing List of Distribution Box	10KWH+H Battery Base, Waterproof Gasket (for Connector), Base Mounting Screws
Tools	Phillips Screwdriver PH1, Measuring Tape, Level



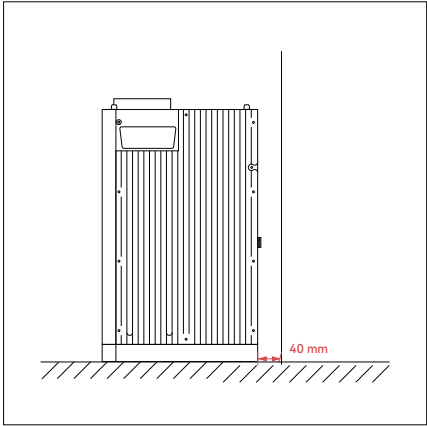
Step 1: Remove the dust cover from the connector port, flip the battery over with the bottom facing up.



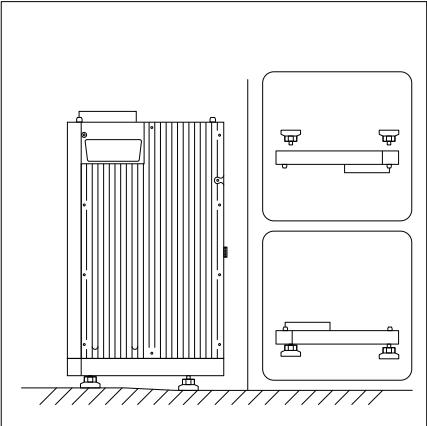
Step 2: Align the waterproof port of the base with the battery (Do not remove the waterproof gasket for connector on the base).



Step 3: Use the base mounting screws to tighten the base, ensuring alignment between the battery and the base.



Step 4: Place the battery, with the base installed, on a suitable surface. Ensure that the back of the battery is 40 mm away from the wall.

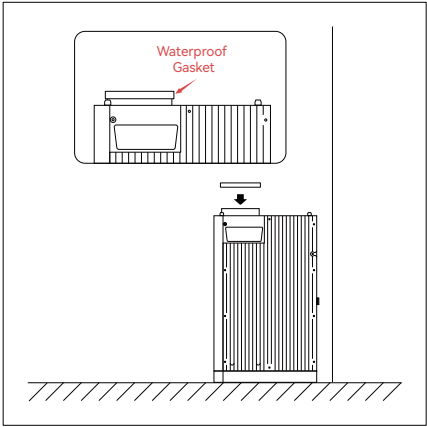


**Note**  
For uneven ground, please consider utilizing base foot accessories.

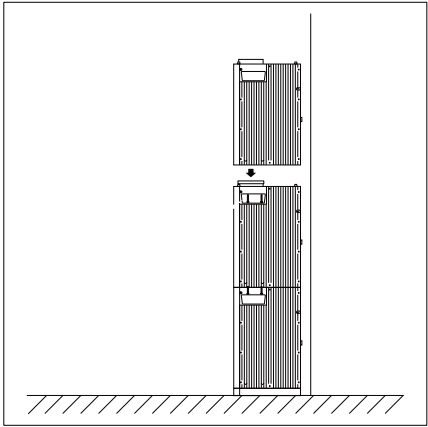
### 4.1.2 Batteries Installation

Tools and accessories required for this step:

Packing List of Battery	Batteries, Waterproof Gasket (for Connector), Handlebar Screws
Tools	Open-end Wrench S=7 mm



Step 1: Place the waterproof gasket onto the connector on the top of the battery.




Step 2: Stack the batteries in sequence, tighten the handlebar screws on both sides of the batteries.

**Warning!**

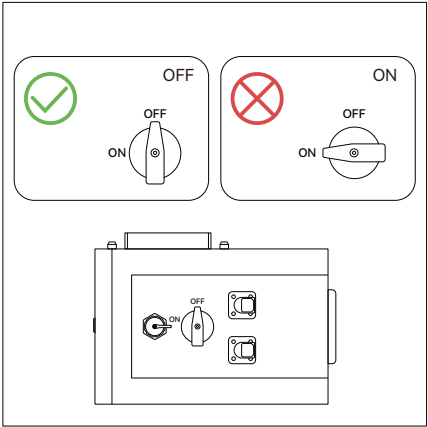
Ensure that each battery tower contains NO more than 3 batteries.

4.1.3 Distribution Box Installation



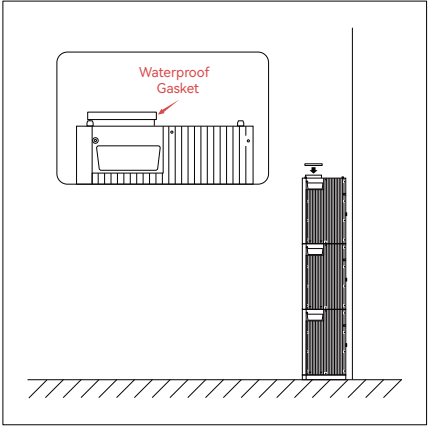
**Warning!**

Before completing the system installation, please check that the distribution box switch is in the "OFF" position.

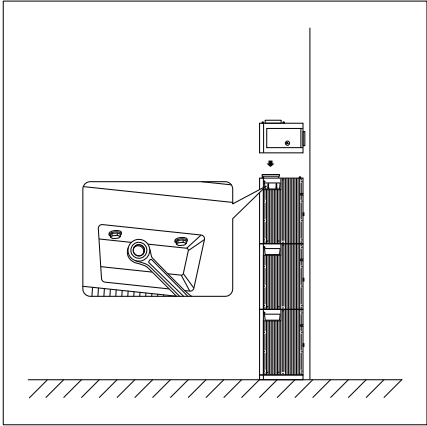


Tools and accessories required for this step:

Packing List of Battery	Handlebar Screws, Waterproof Gasket (for Connector)
Packing List of Distribution Box	10KWH+H Distribution Box
Tools	Open-end Wrench S=7 mm



Step 1: Place the waterproof gasket onto the connector at the top of the battery.

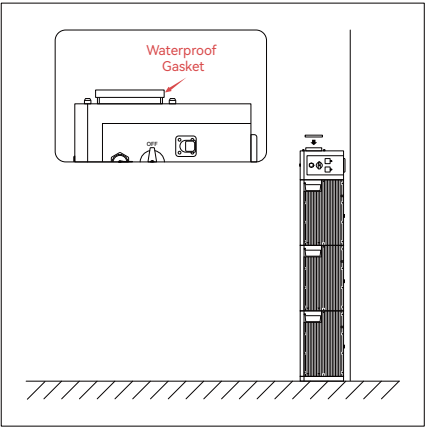


Step 2: Stack the distribution box on the battery, tighten the handlebar screws on both sides of the battery.

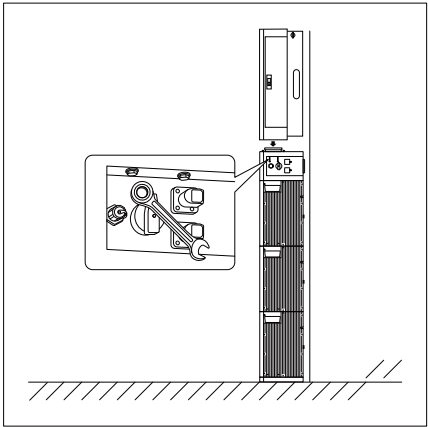
4.1.4 Inverter Installation

Tools and accessories required for this step:

Packing List of Distribution Box	Handlebar Screws, Waterproof Gasket (for Connector)
Packing List of Inverter	ESYSUNHOME HM10-H/ESYSUNHOME HM15/ESYSUNHOME HM20 Inverter
Tools	Open-end Wrench S=7 mm



Step 1: Place the waterproof gasket onto the connector at the top of the distribution box.

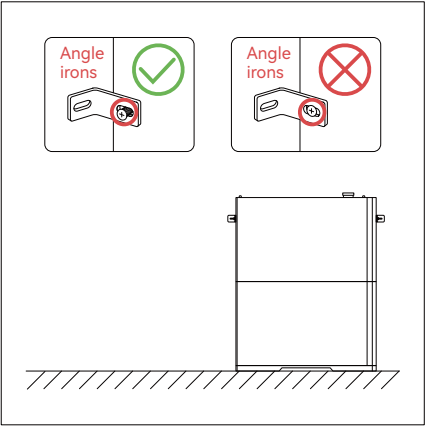


Step 2: Stack the inverter on the distribution box, tighten the handlebar screws on both sides of the distribution box.

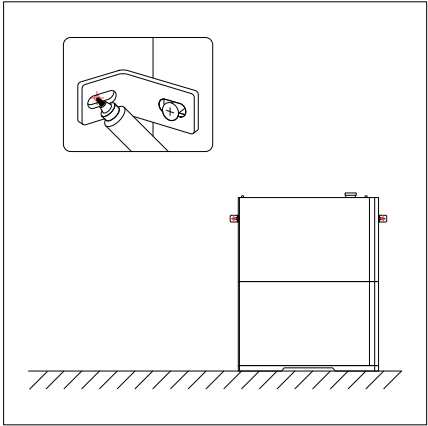
4.1.5 Angle Iron Installation

Tools and accessories required for this step:

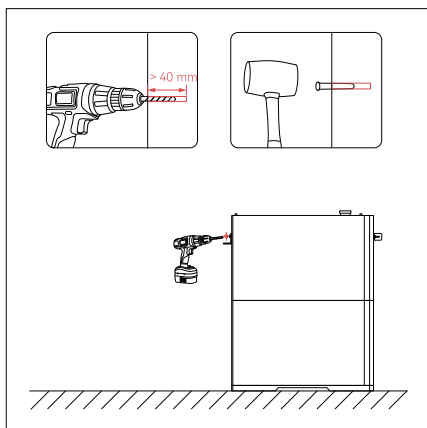
Packing List of Battery	Angle Iron, Angle Iron Screws, Expansion Tubes with Screws, Expansion Screw Gaskets
Packing list of inverter	Angle Iron, Angle Iron Screws, Expansion Tubes with Screws, Expansion Screw Gaskets
Tools	Power Drill $\phi M6$ , Hammer, Phillips Screwdriver PH1, Marker



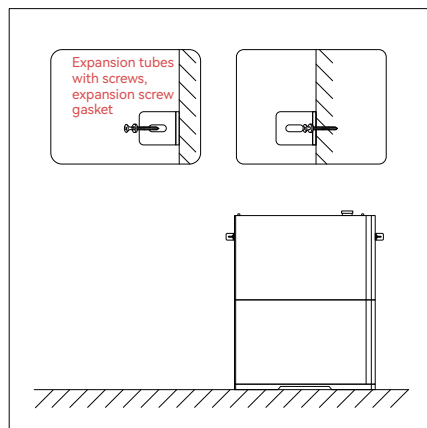
Step 1: Place the angle iron screws through the angle irons and secure the angle irons to both sides of the topmost battery, but do not tighten the screws.



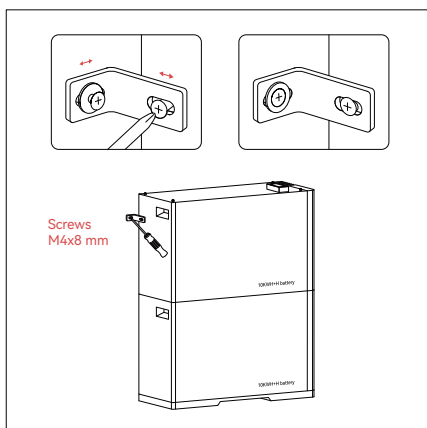
Step 2: Mark the position of the angle irons holes on the wall with a marker.



Step 3: Drill the holes at the marked positions with the power drill, and hammer the expansion tubes into the holes.



Step 4: Thread the expansion tube screws through the gaskets and angle iron holes, and secure them on the wall.



Step 5: Tighten the screws after adjusting the angle irons accordingly. The minimum torque value for M4 screws is 1.0 N·m. The minimum torque value for M6 screws is 3.5 N·m.

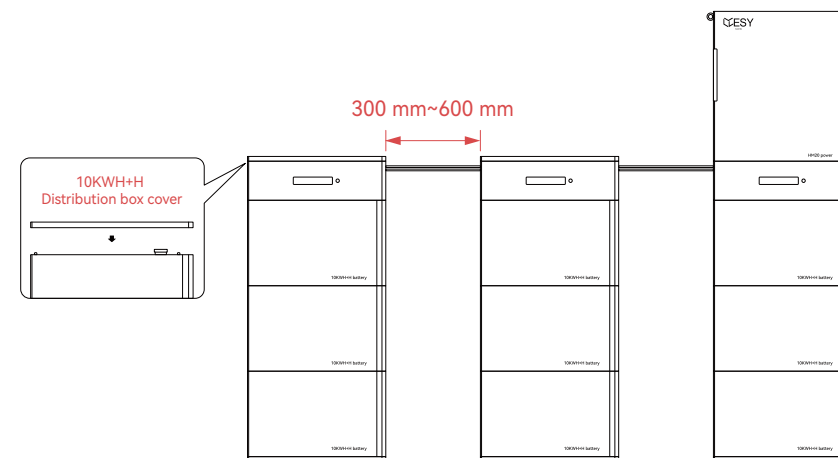


Step 6: Follow the same steps to install the inverter angle iron in the upper left corner of the inverter.

#### 4.1.6 Battery Tower Installation

	<b>Warning!</b> Only applicable for installation scenarios involving more than 3 batteries.
	<b>Warning!</b> The spacing of the adjacent battery towers ranges from 300 mm to 600 mm.

	<b>Warning!</b> For the battery towers without stacked inverter, the distribution box covers shall be installed.
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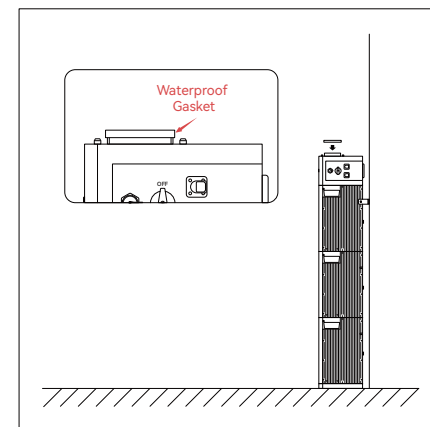


Tools and accessories required for this step:

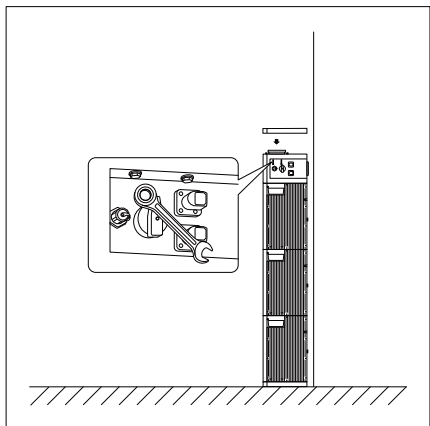
Packing List of Cover	10KWH+H Distribution box Cover, Positive Connection Cable for Battery Parallel, Negative Connection Cable for Battery Parallel
Packing List of Distribution Box	Handlebar Screws, Waterproof Gasket (for Connector)
Tools	Hammer, Measuring Tape



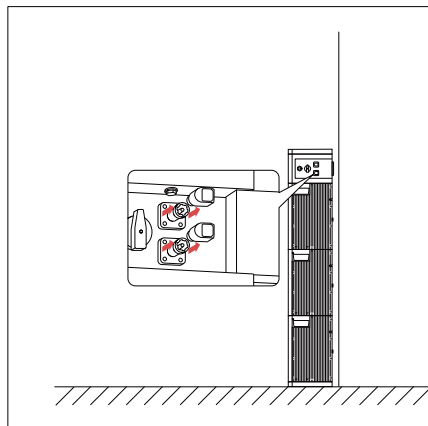
Step 1: Follow the battery installation steps, and install the battery towers.



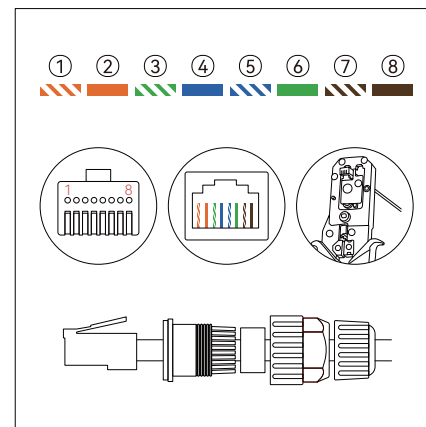
Step 2: Install the waterproof gasket on the top connector of the distribution box.



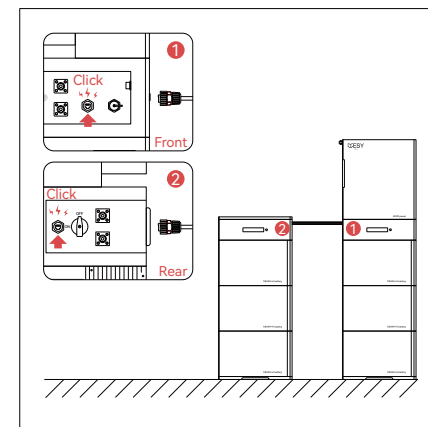
Step 3: Securely place the cover on the distribution box, and tighten the handlebar screws on both sides of the distribution box.



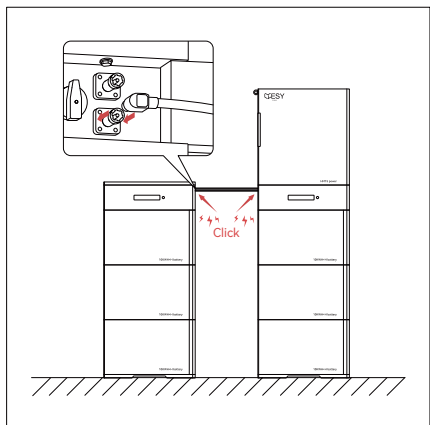
Step 4: Remove the waterproof covers from the "parallel +" and "parallel -" ports of the distribution box.



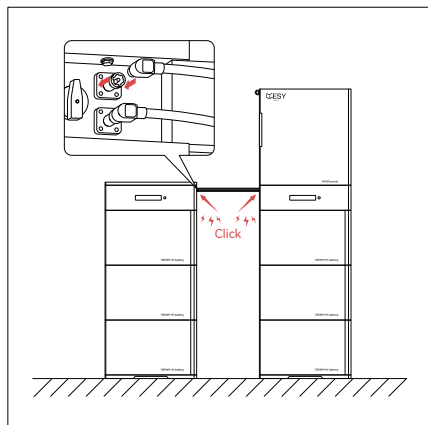
Step 7: Install the communication cable for parallel connection of the distribution box as shown in the diagram.



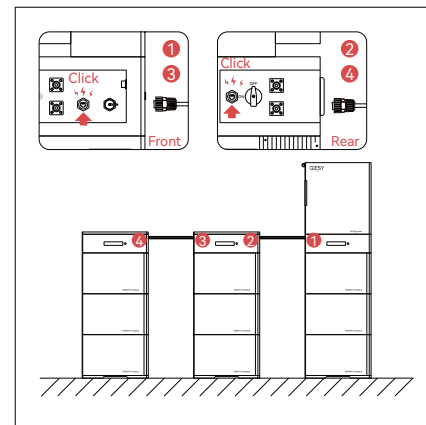
Step 8: Connect the parallel communication cables to the communication port on the distribution box.



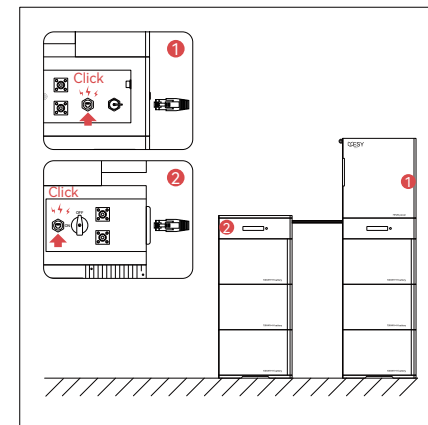
Step 5: Connect the positive terminals of adjacent distribution boxes in parallel using the positive connection cable from the distribution box of the battery tower.



Step 6: Connect the negative terminals of the adjacent distribution boxes using the negative cable from the distribution box in the battery tower.



Step 9: In the scenario with three battery towers, connect the parallel communication cables among the three distribution boxes as shown in the diagram.



Step 10: Inspect the wiring and install the communication matching resistors into the parallel communication interfaces on both sides of the distribution box.



### Warning!

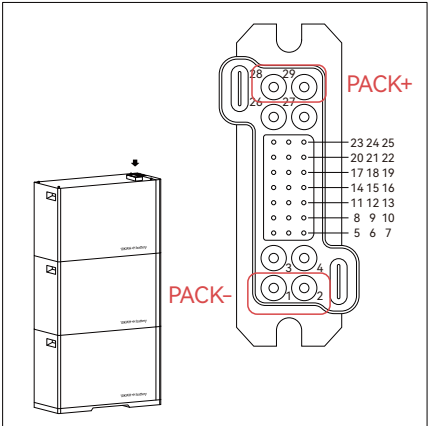
Please retain the waterproof covers for the parallel ports of the distribution boxes.



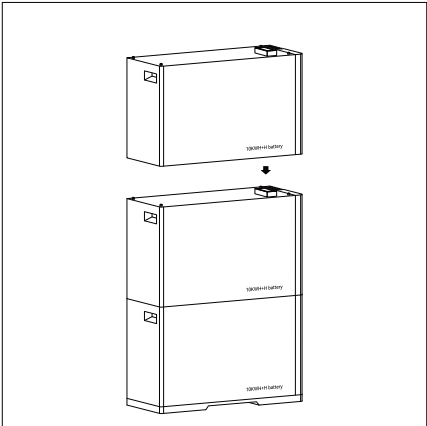
### Warning!

Please cover unused parallel ports with the waterproof covers.

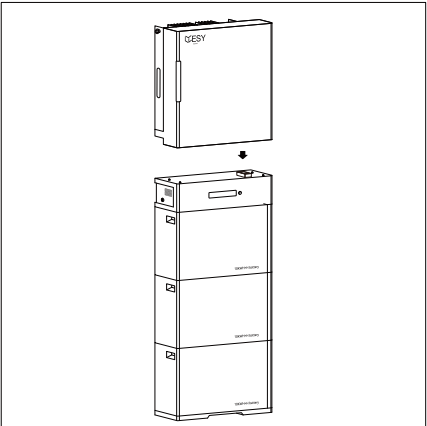
4.2 Separate connection of battery and inverter



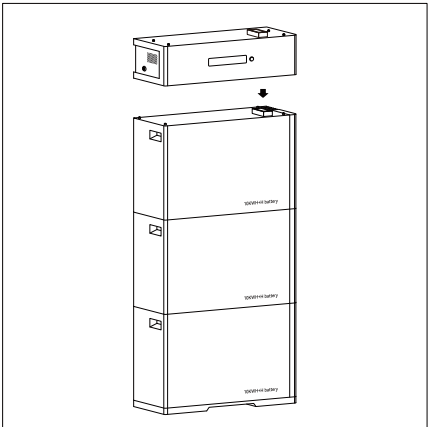
The battery has two PACK+ ports and two PACK – ports. The top and bottom of the battery have dedicated GP29 connectors for direct connection.



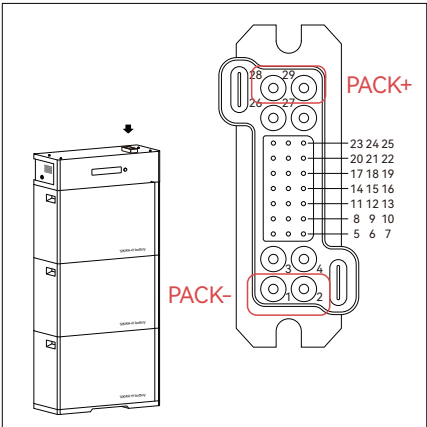
To connect multiple batteries together, simply align them from bottom to top, ensuring the correct direction and position. There is no need for external connecting wires.



When connecting the inverter and battery, the inverter should be aligned and placed above the battery distribution box. Ensure that the direction and position are correct.



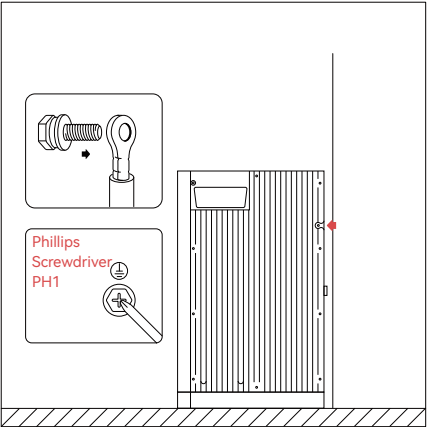
When connecting the distribution box to the battery, align and place the distribution box above the battery to ensure correct orientation and position.



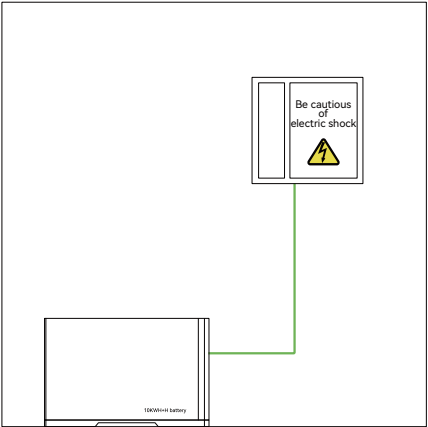
When connecting the distribution box to the battery, align and place the distribution box above the battery to ensure correct orientation and position.

5 Wiring

5.1 Battery chassis ground



Attach the ring-shaped crimp cable lug to the right-side heat sink of the battery using the ground wire screw.

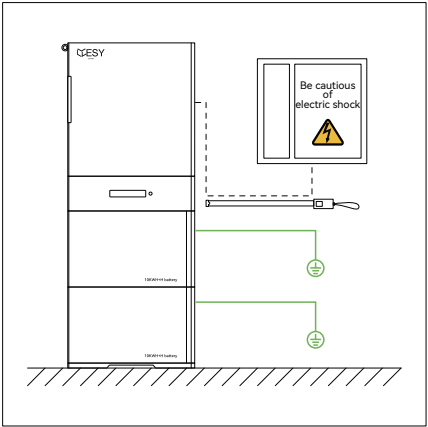


The ground wire only needs to be connected to the aluminum casing of the battery, which is safe and simple.

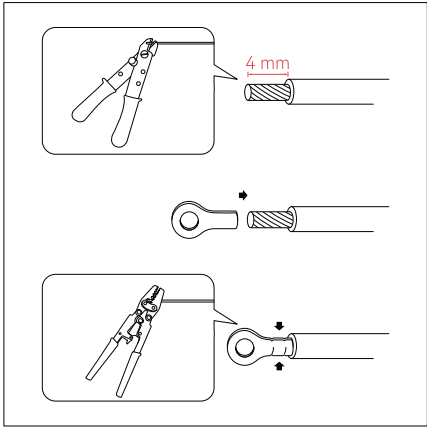
5.2 Grounding Connection

Tools and accessories required for this step:

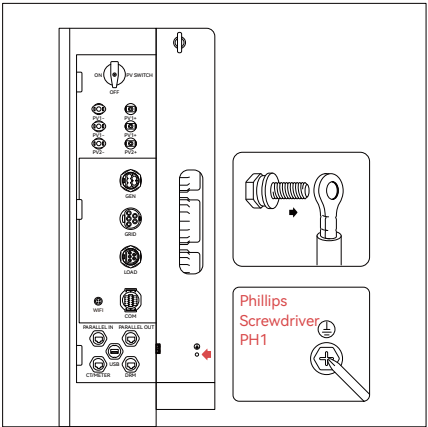
Packing list of inverter	Ring-Shaped Crimp Cable Lug, Ground Screw
Tools	Crimping Pliers, Diagonal Pliers, Stripping Pliers, Phillips Screwdriver PH1, Measuring Tape
Cable	Ground Cable $\phi 6\text{ mm}^2$



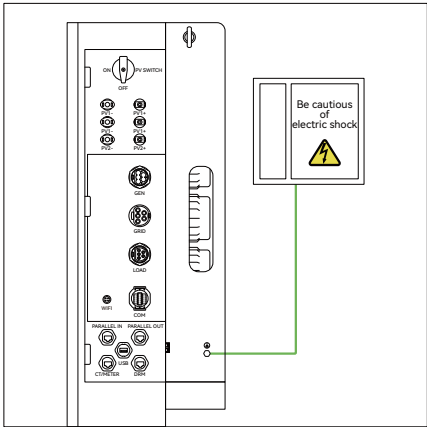
Step 1: Measure the distance between the ground wire connection aperture located on the side of the inverter and the combiner box using a measuring tape.



Step 2: Use stripping pliers to remove 4 mm of insulation from the grounding wire. Install the grounding wire terminal and crimp it tightly using crimping pliers.



Step 3: Attach the ring-shaped crimp cable lug to the right-side heat sink of the inverter using the ground wire screw.



Step 4: Properly ground the other end of the wire with a grounding impedance of 0.1 Ω or less to ensure safety in installation and operation.

5.3 No AC Connection on the Battery

The battery does not have an AC (alternating current) interface; it is equipped with a DC (direct current) interface.

There are two terminals labelled PACK+ and two labelled PACK-.

At the top and bottom of the battery, there are dedicated GP29 connectors for direct connection. Please refer to the battery port diagram for details.

The connection between the battery system and the inverter is in DC form. The AC interface of the inverter connects to the grid and backup power.

5.4 Battery Isolation Device Description

The battery's positive output terminal (P+) is controlled by the discharge control terminal (SW).

When there is no external connection, P+ does not output any power.

Power output is only enabled when an external connection is established, the control box or inverter is installed, and the battery switch is turned on.

Both battery terminals (P+ and P-) are isolated and covered with silicone caps. These caps must be removed during installation.

There is no voltage output during installation or removal.

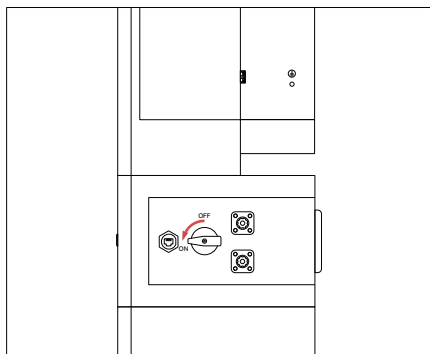
The battery system must be installed together with the ESYSUNHOME inverters, which includes relays and an isolation switch.

6 Battery power On and Off

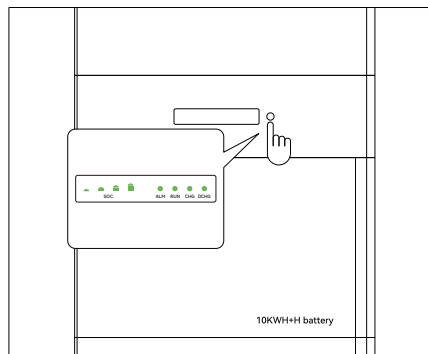
6.1 Power On

	<b>Warning!</b> Please double-check that the installation to ensure it is correct and reliable before powering on.
	<b>Warning!</b> Please shield unused ports with waterproof caps.
	<b>Warning!</b> After installation, please use the lock key to lock the door. Please take good care of the lock key.
	<b>Warning!</b> Please keep the unused connectors and accessories properly.

When powering on, please adhere to the following steps:

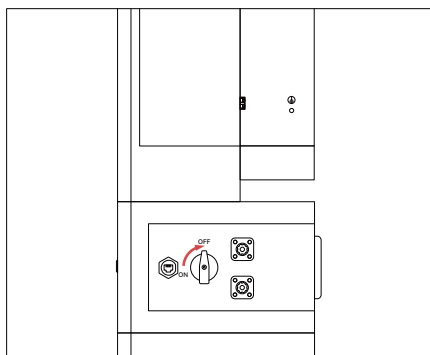


Step 1: Turn on the DC switch of the distribution box.

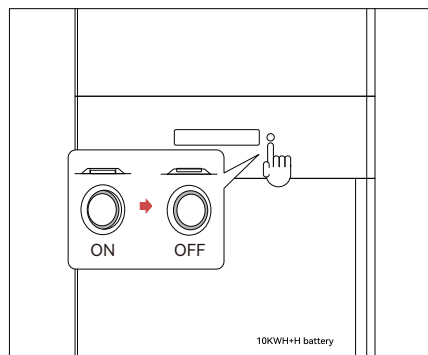


Step 2: Press and hold the power button on the distribution box for at least 5 seconds, and wait for the distribution box light to illuminate.

## 6.2 Power Off



Step 5: Turn off the DC Switch on the distribution box.



Step 6: Double-click the button on the distribution box to shut down the battery.



### Warning!

After shutdown, please wait for at least 5 minutes before performing any other maintenance operations on the all-in-one equipment.

## 6.3 Precautions

If the inverter is not powered on for more than 7 days, please disconnect the circuit breakers for the battery, photovoltaic system, grid, and load.

When shutting down the system with multiple battery towers, double-click the buttons on all distribution boxes to deactivate the batteries, and switch off the DC switches on all distribution boxes as well.

After the system has been shut down for more than 7 days, when using it again, the inverter needs to be set to charging mode to charge all batteries to SOC=100%.

After the initial installation of the system, all batteries need to be charged to SOC=100%.

## 6.4 DC Connection Instructions

The battery has two PACK+ ports and two PACK- ports. Dedicated GP29 connectors are located at the top and bottom for direct battery connection.

When connecting the ESYSUNHOME inverters to the battery system, carefully align and place the inverter on top of the battery system. Ensure correct orientation and positioning.



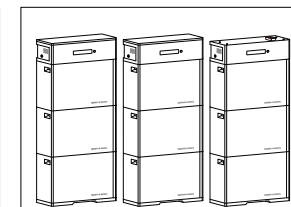
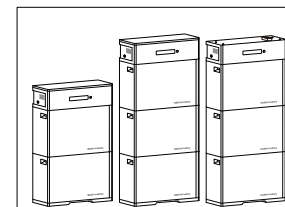
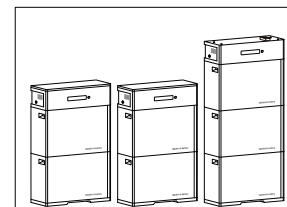
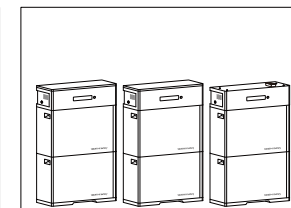
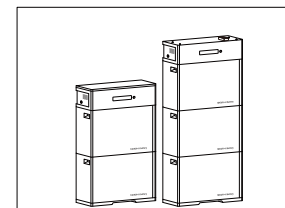
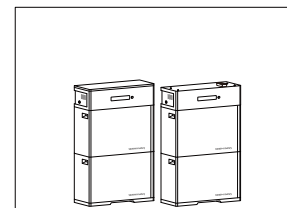
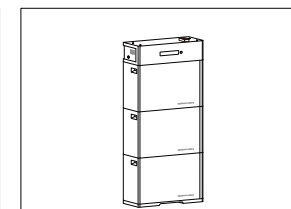
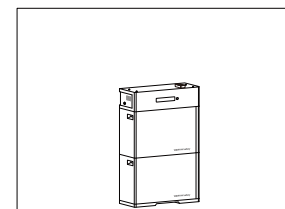
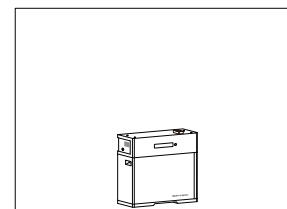
### Warning!

To prevent accidental discharge during transportation or installation, which may pose a safety risk to personnel or property, the battery pack is equipped with a discharge control terminal, located on the battery system connector.



### Warning!

The battery can only discharge externally when it is connected via stacked installation to the ESYSUNHOME inverters, and the battery switch on the inverter is activated. Otherwise, the battery's external discharge function remains disabled.



## 6.5 Communication Between Battery and Inverter

After connecting the ESYSUNHOME inverters to the ESYSUNHOME battery system, please turn on the battery switch.

On the inverter side, it is permitted to connect to the grid, PV system, and household loads.

Once the power is on, the inverter will act as the master unit and initiate communication with the battery.



6.6 How to Set Up Battery Monitoring



Battery monitoring is configured through a dedicated **mobile app**.  
When you want to view battery-related information, **connect your smartphone to the app**.

Through the app, you can access details such as:

- Number of connected battery modules
- Battery voltage
- Battery current
- Battery power
- Remaining battery capacity
- Battery operating status

6.7 BMS-STM8S-TI

BMS-STM8S-TI is a PC host software designed for ESYSUNHOME ESS Battery Models:  
ESYSUNHOME 10KWH+H  
ESYSUNHOME 10KWH+H-20  
ESYSUNHOME 10KWH+H-30  
ESYSUNHOME 10KWH+H-40  
ESYSUNHOME 10KWH+H-50  
ESYSUNHOME 10KWH+H-60  
ESYSUNHOME 10KWH+H-70  
ESYSUNHOME 10KWH+H-80  
ESYSUNHOME 10KWH+H-90

**Battery Monitoring Features**

The app includes the following functions:

- Viewing battery parameters
- Modifying battery settings
- Fault alarms
- Real-time battery status monitoring

**User Permissions**

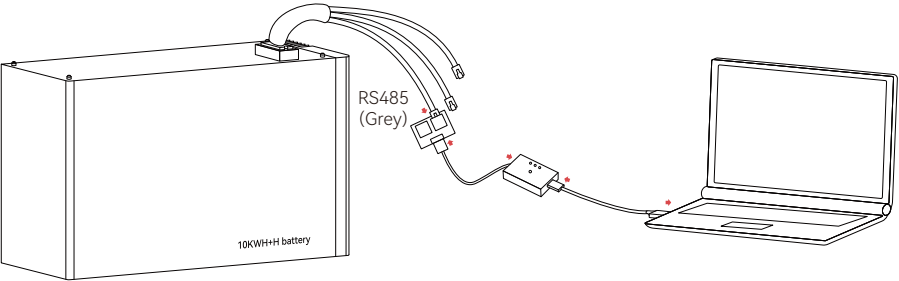
- Read-only: For users or inspectors. These settings can be viewed but not modified.
- Read and edit: For the battery manufacturer or authorized maintenance personnel. These settings can be edited by authorized personnel only.

6.7.1 BMS-STM8S-TI Software Connection

To connect the battery to the PC software, use the **GP29 cable** between the battery and the computer. Connect the USB adapter to the computer.

Use the **BMS-STM8S-TI software** provided with the battery for operation.

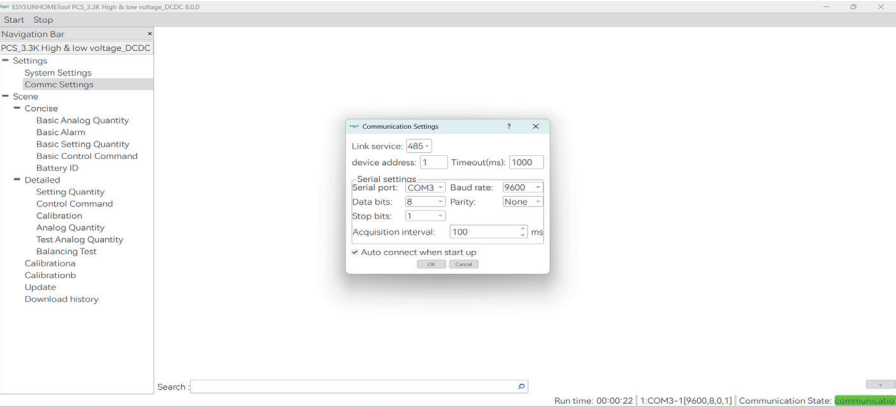
Communication is carried out via **RS485 protocol**.



6.7.2 BMS-STM8S-TI Functional Operations

Communication Settings:

Configure the communication method, battery address, and the serial port used by the communication tool.



Battery Monitoring:

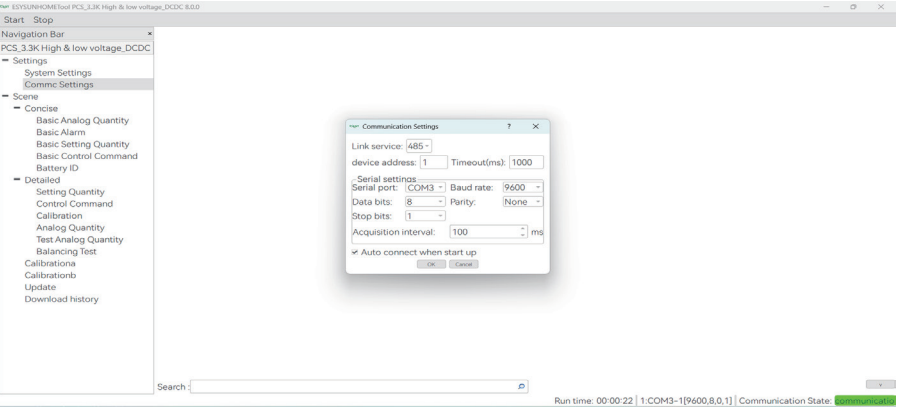
View real-time data related to battery **voltage**, **current**, and **temperature**, as well as the software version and battery status.

Name	Echo	Unit	Name	Echo	Unit
1 Software Version	5015	times	Battery Rated Capacity	206	AH
2 Cell Cycle Count	4		Charge/Discharge Status	Discharging	
3 SOC (State of Charge)	71.5	%	SOH (State of Health)	100.0	%
4 Battery Total Voltage	52.6	V	Battery-Side Bus Voltage	52.6	V
5 Battery Current	-0.4	A	DC Input Voltage	449.9	V
6 DC Bus Voltage	452.0	V	Output Current	-0.02	A
7 Flycapacitor Voltage	0.0	V	LLC High-Voltage Side Voltage	379.2	V
8 LLC High-Voltage Side Current	0.06	A	LLC Inductor Current	0.26	A
9 Ambient Temperature	36.0	°C	Radiator Temperature	32.0	°C
10 LLC High-Voltage Side Radiator Temperature	32.0	°C	LLC Low-Voltage Side Radiator Temperature	32.0	°C
11 Maximum Temperature	31.0	°C	Internal Module Number with Maximum Temperature	1	
12 Minimum Temperature	31.0	°C	Internal Module Number with Minimum Temperature	1	
13 Highest Cell Voltage	3289	mV	Internal Module Number of Highest Cell Voltage	13	
14 Lowest Cell Voltage	3287	mV	Internal Module Number of Lowest Cell Voltage	11	
15 Module 1 Cell 1 Voltage	3287	mV	Module 1 Cell 2 Voltage	3287	mV
16 Module 1 Cell 3 Voltage	3287	mV	Module 1 Cell 4 Voltage	3287	mV
17 Module 1 Cell 5 Voltage	3287	mV	Module 1 Cell 6 Voltage	3287	mV
18 Module 1 Cell 7 Voltage	3287	mV	Module 1 Cell 8 Voltage	3287	mV
19 Module 1 Cell 9 Voltage	3288	mV	Module 1 Cell 10 Voltage	3287	mV
20 Module 1 Cell 11 Voltage	3287	mV	Module 1 Cell 12 Voltage	3287	mV
21 Module 1 Cell 13 Voltage	3289	mV	Module 1 Cell 14 Voltage	3289	mV
22 Module 1 Cell 15 Voltage	3288	mV	Module 1 Cell 16 Voltage	3289	mV
23 Module 1 Temperature 1	31.0	°C	Module 1 Temperature 2	31.0	°C
24 Module 1 Temperature 3	31.0	°C	Module 1 Temperature 4	31.0	°C
25 Module 1 Temperature 5	0.0	°C	Module 1 Temperature 6	0.0	°C
26 Module 1 Temperature 7	0.0	°C	Module 1 Temperature 8	0.0	°C
27 Module 1 Temperature 9	0.0	°C	Module 1 Temperature 10	0.0	°C
28 Module 1 Temperature 11	0.0	°C	Module 1 Temperature 12	0.0	°C
29 Module 1 Temperature 13	0.0	°C	Module 1 Temperature 14	0.0	°C
30 Module 1 Temperature 15	0.0	°C	Module 1 Temperature 16	0.0	°C
31 Fault	0		Alarm	0	
32 Forced Charge/Discharge Status	Non-Forced		Maximum Allowed Charging Current	8.32	A
33 Maximum Allowed Discharging Current	7.64	A	Battery Operating Status	Charge/Discharge Allowed	
34 Fan Status	Stop		Heating Status	Heating Not Enabled	
35 Power Distribution Cabinet In-Place Status	4095				

6.7.2 BMS-STM8S-TI Functional Operations

Communication Settings:

Configure the communication method, battery address, and the serial port used by the communication tool.



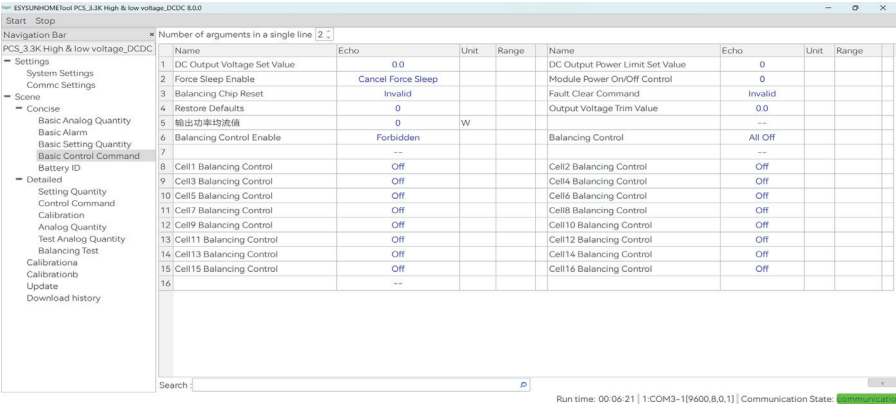
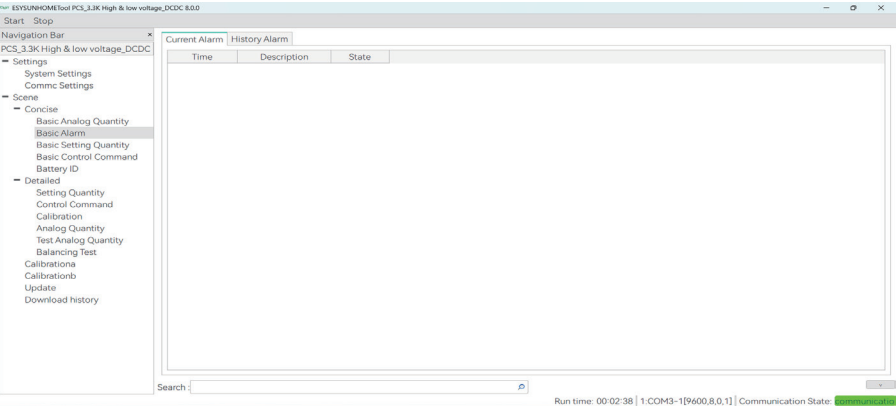
Battery Monitoring:

View real-time data related to battery **voltage**, **current**, and **temperature**, as well as the software version and battery status.

Name	Echo	Unit	Name	Echo	Unit
1 Software Version	5015	times	Battery Rated Capacity	206	AH
2 Cell Cycle Count	4		Charge/Discharge Status	Discharging	
3 SOC (State of Charge)	71.5	%	SOH (State of Health)	100.0	%
4 Battery Total Voltage	52.6	V	Battery-Side Bus Voltage	52.6	V
5 Battery Current	-0.4	A	DC Input Voltage	449.9	V
6 DC Bus Voltage	452.0	V	Output Current	-0.02	A
7 Flycapacitor Voltage	0.0	V	LLC High-Voltage Side Voltage	379.2	V
8 LLC High-Voltage Side Current	0.06	A	LLC Inductor Current	0.26	A
9 Ambient Temperature	36.0	°C	Radiator Temperature	32.0	°C
10 LLC High-Voltage Side Radiator Temperature	32.0	°C	LLC Low-Voltage Side Radiator Temperature	32.0	°C
11 Maximum Temperature	31.0	°C	Internal Module Number with Maximum Temperature	1	
12 Minimum Temperature	31.0	°C	Internal Module Number with Minimum Temperature	1	
13 Highest Cell Voltage	3289	mV	Internal Module Number of Highest Cell Voltage	13	
14 Lowest Cell Voltage	3287	mV	Internal Module Number of Lowest Cell Voltage	11	
15 Module 1 Cell 1 Voltage	3287	mV	Module 1 Cell 2 Voltage	3287	mV
16 Module 1 Cell 3 Voltage	3287	mV	Module 1 Cell 4 Voltage	3287	mV
17 Module 1 Cell 5 Voltage	3287	mV	Module 1 Cell 6 Voltage	3287	mV
18 Module 1 Cell 7 Voltage	3287	mV	Module 1 Cell 8 Voltage	3287	mV
19 Module 1 Cell 9 Voltage	3288	mV	Module 1 Cell 10 Voltage	3287	mV
20 Module 1 Cell 11 Voltage	3287	mV	Module 1 Cell 12 Voltage	3287	mV
21 Module 1 Cell 13 Voltage	3289	mV	Module 1 Cell 14 Voltage	3289	mV
22 Module 1 Cell 15 Voltage	3288	mV	Module 1 Cell 16 Voltage	3289	mV
23 Module 1 Temperature 1	31.0	°C	Module 1 Temperature 2	31.0	°C
24 Module 1 Temperature 3	31.0	°C	Module 1 Temperature 4	31.0	°C
25 Module 1 Temperature 5	0.0	°C	Module 1 Temperature 6	0.0	°C
26 Module 1 Temperature 7	0.0	°C	Module 1 Temperature 8	0.0	°C
27 Module 1 Temperature 9	0.0	°C	Module 1 Temperature 10	0.0	°C
28 Module 1 Temperature 11	0.0	°C	Module 1 Temperature 12	0.0	°C
29 Module 1 Temperature 13	0.0	°C	Module 1 Temperature 14	0.0	°C
30 Module 1 Temperature 15	0.0	°C	Module 1 Temperature 16	0.0	°C
31 Fault	0		Alarm	0	
32 Forced Charge/Discharge Status	Non-Forced		Maximum Allowed Charging Current	8.32	A
33 Maximum Allowed Discharging Current	7.64	A	Battery Operating Status	Charge/Discharge Allowed	
34 Fan Status	Stop		Heating Status	Heating Not Enabled	
35 Power Distribution Cabinet In-Place Status	4095				

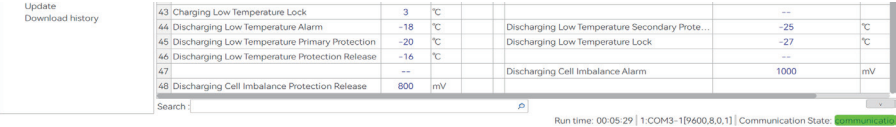
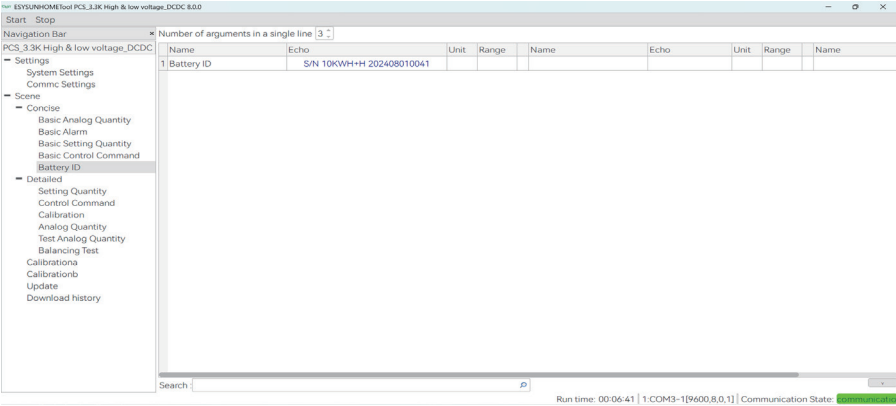
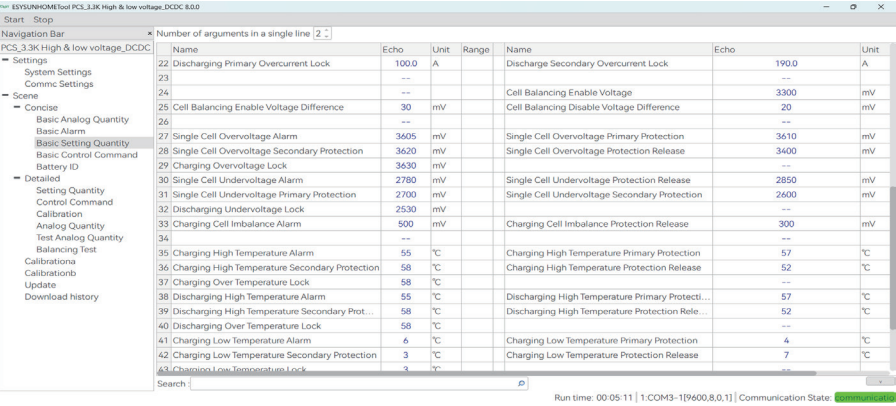
Basic Alarms:  
Check whether the battery has any fault alarms and view the corresponding fault names.  
Alarms are categorized into **current alarms** and **historical alarms**.

Basic Control Commands:  
Control the **power on/off** of the battery output module, perform **initial value calibration**, and **clear faults**.



Basic Settings:  
Configure the basic parameters of the battery.

Battery ID:  
Read and edit the battery ID.



Detailed Settings:

Configure detailed battery parameters, including alarm settings, protection parameters, heating functions, and cooling functions.

EV5UNHOMETool PCS\_3.3K High & low voltage\_DCDC 8.0.0

Start Stop

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PCS\_3.3K High & low voltage\_DCDC

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Basic Setting Quantity

Basic Control Command

Battery ID

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Control Command

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Analog Quantity

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Calibration

Calibration

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Download history

Name	Echo	Unit	Range	Name	Echo	Unit	Range
1 Rectifier Module Feature Word 1	0			1 Rectifier Module Feature Word 2	0		
2 Software and Hardware Version Number 1	3			2 Software and Hardware Version Number 2	0		
3 Software Version	5015			3 Module Identification Code 0	2023		
4 Module Identification Code 1	101			4 Module Identification Code 2	0		
5 Module Identification Code 3	0			5 Reserved 9	0		
6 Default Output Voltage	380.0	V		6 DC Output Voltage Overvoltage Protection Point	700.0	V	
7 Default Current Limit Point	12.2	A		7 AC Current Limit Value Setting	10.0	A	
8 WALK-IN Time	0	s		8 Sequence Startup Interval Time	0	s	
9 Total Operating Time Low 16 Bits	0	h		9 Total Operating Time High 16 Bits	0	h	
10 Set Module Action After AC Phase Loss	0	h		10 Phase Loss Operation Enable Control	0	h	
11 Reserved 20	0			11 Reserved 21	0		
12 Reserved 22	0			12 Reserved 23	0		
13 Reserved 24	0			13 Reserved 25	0		
14 Reserved 26	0			14 Reserved 27	0		
15 Reserved 28	0			15 Reserved 29	0		
16 Bus Voltage Set Value Setting	450.0	V	380~1000	16 External Bus Low Voltage Alarm Point	45.8	V	
17 Primary Power Down (LLVD)	43.2	V		17 Secondary Power Down (BLVD)	41.6	V	
18 Reserved 34	0			18 Reserved 35	0		
19 Reserved 36	0			19 Reserved 37	0		
20 Reserved 38	0			20 Reserved 39	0		
21 Reserved 68	0			21 Reserved 69	0		
22 Abn Mode	2000	m		22 Cold Mode	1		

Search

Run time: 00:07:29 | 1.COM3-119600.8.0.1 | Communication State:

EV5UNHOMETool PCS\_3.3K High & low voltage\_DCDC 8.0.0

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Download history

Name	Echo	Unit	Range	Name	Echo	Unit	Range
23 Changing Mode Heating Start Temperature	7	°C		23 Heating Off Temperature	19	°C	
24 Fan Start Temperature	50			24 Non-Charging Mode Heating Start Temperature	7	°C	
25 Reserved 76	0			25 Reserved 77	0		
26 Reserved 78	0			26 Reserved 79	0		
27 Reserved 80	0			27 Reserved 81	0		
28 Reserved 82	0			28 Reserved 83	0		
29 Reserved 84	0			29 Reserved 85	0		
30 Reserved 86	0			30 Reserved 87	0		
31 Reserved 88	0			31 Reserved 89	0		
32 Reserved 90	0			32 Reserved 91	0		
33 Flycapacitor Voltage Loop Proportional ...	0.000			33 Flycapacitor Voltage Loop Integral Coefficient	0.0000		
34 Battery Average SOC Loop Proportional ...	0.0250			34 Discharge Average SOC Control	0		
35 Charging Overvoltage Lock	3630	mV		35 Discharging Undervoltage Lock	2530	mV	
36 Charging Overcurrent Lock	100.0	A		36 Discharging Primary Overcurrent Lock	100.0	A	
37 Charge Enable	Enabled			37 Discharge Enable	Enabled		
38 Battery Type	0			38 Battery Rated Capacity	206	AH	
39 Single Cell Equalizing Charge Voltage	3.60	V		39 Single Cell Floating Charge Voltage	3.60	V	
40 Equalizing Charge to Floating Charge Cu...	0.01	C10		40 Maximum Equalizing Charge Time	24	h	
41 Floating Charge to Equalizing Charge Cu...	0.05	C10		41 Floating Charge to Equalizing Charge Cycle	9.0	day	
42 Charge Current Limit Coefficient	0.35	C10		42 Battery EOD Voltage	44.8	V	
43 Discharge Current Limit Coefficient	0.35	C10		43 Capacity Test Discharge Current Limit Coefficient	0.10	C10	
44 Lithium Plating Prevention Charge Enable	Enabled			44 Operation Mode	id Schedule Manu		

Search

Run time: 00:07:56 | 1.COM3-119600.8.0.1 | Communication State:

EV5UNHOMETool PCS\_3.3K High & low voltage\_DCDC 8.0.0

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Name	Echo	Unit	Range	Name	Echo	Unit	Range
44 Lithium Plating Prevention Charging Enable	Enabled			44 Operating Mode	id Scheduling Manu		
45 SOC Proportional Coefficient	8			45 Output Minimum Voltage	44.00	V	
46 Discharge Secondary Overcurrent Lock	190.0	A		46 Changing Over Temperature Lock	58	°C	
47 Machine Model	1000			47 Default Value Version Number	1006		
48 Discharging Over Temperature Lock	58	°C		48 Changing Low Temperature Lock	3	°C	
49 Discharging Low Temperature Lock	-27	°C		49 Number of Battery Cabinets	1		
50 Number of Modules in Battery Cabinet	1			50 Number of Cells in Module	16	Num	1~16
51 Number of Temperature Sensors in Module	4			51 Single Cluster Rated Capacity	10	AH	
52 Number of Modules per Cluster	1			52 Number of Cells Managed by Module per Cluster	15		
53 Number of Temperature Sensors Manage...	4			53 BMS Communication ID	1	A	
54 Rated Charging Voltage	57.6	V		54 Rated Charging Current	15.0	A	
55 Rated Discharging Current	100.0	A		55 Rated Discharging Voltage	40.0	V	
56 Battery Pack Overvoltage Alarm	3605	mV		56 Battery Pack Overvoltage Primary Protection	3610	mV	
57 Battery Pack Overvoltage Secondary Prot...	3620	mV		57 Battery Pack Overvoltage Protection Release	3400	mV	
58 Battery Pack Undervoltage Alarm	2780	mV		58 Battery Pack Undervoltage Primary Protection	2700	mV	
59 Battery Pack Undervoltage Secondary Pr...	2600	mV		59 Battery Pack Undervoltage Protection Release	2850	mV	
60 Charging Overcurrent Alarm	80.0	A		60 Charging Overcurrent Primary Protection	98.0	A	
61 Charging Overcurrent Secondary Protection	150.0	A		61 Charging Overcurrent Protection Release	70.0	A	
62 Discharging Overcurrent Alarm	90.0	A		62 Discharging Overcurrent Primary Protection	98.0	A	
63 Discharging Overcurrent Secondary Prote...	150.0	A		63 Discharging Overcurrent Protection Release	80.0	A	
64 Cell Balancing Enable Voltage	3300	mV		64 Cell Balancing Enable Voltage Difference	30	mV	
65 Cell Balancing Disable Voltage	20	mV		65 Module Balancing Enable Voltage	0	mV	

Search

Run time: 00:08:21 | 1.COM3-119600.8.0.1 | Communication State:

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Download history

Name	Echo	Unit	Range	Name	Echo	Unit	Range
66 Module Balancing Enable Voltage Difference	0	mV		66 Module Balancing Disable Voltage Difference	0	mV	
67 Single Cell Overvoltage Alarm	3605	mV		67 Single Cell Overvoltage Primary Protection	3610	mV	
68 Single Cell Overvoltage Secondary Protection	3620	mV		68 Single Cell Overvoltage Protection Release	3400	mV	
69 Single Cell Undervoltage Alarm	2780	mV		69 Single Cell Undervoltage Primary Protection	2700	mV	
70 Single Cell Undervoltage Secondary Protection	2600	mV		70 Single Cell Undervoltage Protection Release	2850	mV	
71 Charging Cell Imbalance Alarm	500	mV		71 Charging Cell Imbalance Primary Protection	1000	mV	
72 Charging Cell Imbalance Secondary Protection	1500	mV		72 Charging Cell Imbalance Protection Release	300	mV	
73 Charging High Temperature Alarm	55	°C		73 Charging High Temperature Primary Protection	57	°C	
74 Charging High Temperature Secondary Protection	58	°C		74 Charging High Temperature Protection Release	52	°C	
75 Discharging High Temperature Alarm	55	°C		75 Discharging High Temperature Primary Protection	57	°C	
76 Discharging High Temperature Secondary Protection	58	°C		76 Discharging High Temperature Protection Release	52	°C	
77 Charging Low Temperature Alarm	6	°C		77 Charging Low Temperature Primary Protection	4	°C	
78 Charging Low Temperature Secondary Protection	3	°C		78 Charging Low Temperature Protection Release	7	°C	
79 Discharging Low Temperature Alarm	-18	°C		79 Discharging Low Temperature Primary Protection	-20	°C	
80 Discharging Low Temperature Secondary Protection	-25	°C		80 Discharging Low Temperature Protection Release	-16	°C	
81 Temperature Imbalance Alarm	20	°C		81 Temperature Imbalance Primary Protection	25	°C	
82 Temperature Imbalance Secondary Protection	30	°C		82 Temperature Imbalance Protection Release	15	°C	
83 SOC Low Alarm	0	°C		83 SOC Low Primary Protection	0	°C	
84 SOC Low Protection Release	0	°C		84 Insulation Resistance Low Alarm	0	°C	
85 Insulation Resistance Low Primary Protection	0	°C		85 Insulation Resistance Low Secondary Protection	0	°C	
86 Insulation Resistance Low Protection Release	0	°C		86 Fan Start Temperature	0	°C	
87 Fan Stop Temperature	0	°C		87 Fan Start Current	0	A	

Search

Run time: 00:08:42 | 1.COM3-119600.8.0.1 | Communication State:

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Name	Echo	Unit	Range	Name	Echo	Unit	Range
87 Fan Stop Temperature	0	°C		87 Fan Start Current	0	A	
88 Parallelizable Voltage Difference	0	V		88 Discharging Cell Imbalance Alarm	1000	mV	
89 Discharging Cell Imbalance Primary Protection	1300	mV		89 Discharging Cell Imbalance Secondary Protection	1600	mV	
90 Discharging Cell Imbalance Protection Release	800	mV		90 Battery ID0_1	12115		
91 Battery ID0_3	8270			91 Battery ID0_4	12337		
92 Battery ID0_7	22347			92 Battery ID0_9	11080		
93 Battery ID10_11	8264			93 Battery ID12_13	12338		
94 Battery ID14_15	13362			94 Battery ID16_17	14384		
95 Battery ID18_19	12592			95 Battery ID20_21	12336		
96 Battery ID22_23	12596			96 Battery ID24_25	0		
97 Battery ID26_27	0			97 Battery ID28_29	0		
98 Battery ID30_31	0			98 Battery ID32_33	0		
99 Battery ID34_35	0			99 Battery ID36_37	0		
100 Battery ID38_39	0			100 Battery ID40_41	0		
101 Battery ID42_43	0			101 Battery ID44_45	0		
102 Battery ID46_47	0			102 Battery ID48_49	0		
103 Battery ID50_51	0			103 Waveform Sampling Period	1		
104 Post-Trigger Data Proportion	40			104 Condition Trigger Threshold	0		
105 Condition Trigger Type	1			105 Condition Trigger Source Selection	0		
106 Waveform Recording Channel 0 Data Source	0			106 Waveform Recording Channel 1 Data Source	22		
107 Waveform Recording Channel 2 Data Source	25			107 Waveform Recording Channel 3 Data Source	26		

Search

Run time: 00:11:24 | 1.COM3-119600.8.0.1 | Communication State:

Detailed Control Commands:

Control module power on/off, execute fault clearing commands, and perform battery-related maintenance.

EV5UNHOMETool PCS\_3.3K High & low voltage\_DCDC 8.0.0

Start Stop

Navigation Bar

PCS\_3.3K High & low voltage\_DCDC

Settings

System Settings

Comm Settings

Scene

Concise

Basic Analog Quantity

Basic Alarm

Basic Setting Quantity

Basic Control Command

Battery ID

Detailed

Setting Quantity

Control Command

Calibration

Analog Quantity

Test Analog Quantity

Balancing Test

Calibration

Calibration

Update

Download history

Name	Echo	Unit	Range	Name	Echo	Unit	Range
1 DC Output Voltage Set Value	0.0			1 DC Output Power Limit Set Value	0		
2 Force Sleep Enable	Cancel Force Sleep			2 Balancing Control Enable	Forbidden		
3 Balancing Control	All Off			3 Module Power On/Off Control	0		
4 Fan Test Command	0			4 Battery Average SOC Command	0		
5 Module Address Allocation Control	0			5 Indicator Light Control	0		
6 Alarm Mask 1	0			6 Alarm Mask 2	0		
7 Alarm Mask 3	0			7 Balancing Chip Reset	Invalid		
8 Fault Clear Command	Invalid			8 Restore Defaults	0		
9 System Control Command 1	0			9 System Control Command 2	0		
10 Output Voltage Trim Value	0.0			10 Date and Time Calibration 1	0		
11 Date and Time Calibration 2	0			11 Date and Time Calibration 3	0		
12	---			12	---		
13 Balancing Control Enable	Forbidden			13 Balancing Control	All Off		
14	---			14 Cell2 Balancing Control	Off		
15 Cell2 Balancing Control	Off			15 Cell3 Balancing Control	Off		
16 Cell4 Balancing Control	Off			16 Cell5 Balancing Control	Off		
17 Cell6 Balancing Control	Off			17 Cell7 Balancing Control	Off		
18 Cell8 Balancing Control	Off			18 Cell9 Balancing Control	Off		
19 Cell10 Balancing Control	Off			19 Cell11 Balancing Control	Off		
20 Cell12 Balancing Control	Off			20 Cell13 Balancing Control	Off		
21 Cell14 Balancing Control	Off			21 Cell15 Balancing Control	Off		
22 Cell16 Balancing Control	Off			22 Waveform Recording Manual Trigger Enable	0		
23 Waveform Recording Condition Tri...	0			23 Parallel 485 Address	0		
24 Power Distribution Cabinet In-Plac...	0			24 Tooling Test Command	Ignore		
25 Battery Average SOC Value	0						

Search

Run time: 00:11:24 | 1.COM3-119600.8.0.1 | Communication State:



Calibration:

Calibrate battery-related parameters such as voltage, current, and temperature.

Start	Stop
Navigation Bar	Number of arguments in a single line 2
PCS_3.3K High & low voltage_DCDC	
Settings	
System Settings	
Comm Settings	
Scene	
Concise	
Basic Analog Quantity	
Basic Alarm	
Basic Setting Quantity	
Basic Control Command	
Battery ID	
Detailed	
Setting Quantity	
Control Command	
Calibration	
Analog Quantity	
Test Analog Quantity	
Balancing Test	
Calibrationa	
Calibrationb	
Update	
Download history	

Name	Echo	Unit	Range	Name	Echo
1 Battery Input Voltage Calibration Coefficient a	1.028	0.9...		Battery Input Voltage Calibration Coefficient b	0.0
2 Battery-Side Bus Voltage Calibration Coefficient a	1.030	0.9...		Battery-Side Bus Voltage Calibration Coefficient b	0.0
3 DC Input Voltage Calibration Coefficient a	1.001	0.9...		DC Input Voltage Calibration Coefficient b	-5.3
4 DC-Side Bus Voltage Calibration Coefficient a	1.005	0.9...		DC-Side Bus Voltage Calibration Coefficient b	-4.9
5 LLC High-Voltage Side Voltage Calibration Coefficient a	1.000	0.9...		LLC High-Voltage Side Voltage Calibration Coefficient b	-5.1
6 Flycapactor Calibration Coefficient a	0.000	0.9...		Flycapactor Calibration Coefficient b	0.0
7 Battery Current Calibration Coefficient a	1.027	0.9...		Battery Current Calibration Coefficient b	3.2
8 LLC Inductor Current Calibration Coefficient a	1.000	0.9...		LLC Inductor Current Calibration Coefficient b	0.0
9 LLC High-Voltage Side Current Calibration Coefficient a	1.000	0.9...		LLC High-Voltage Side Current Calibration Coefficient b	0.0
10 Ambient Temperature Calibration Coefficient a	1.000	0.9...		Ambient Temperature Calibration Coefficient b	0.0
11 Radiator Temperature Calibration Coefficient a	1.000	0.9...		Radiator Temperature Calibration Coefficient b	0.0
12 LLC High-Voltage Side Radiator Temperature Calibration Coefficient a	1.000	0.9...		LLC High-Voltage Side Radiator Temperature Calibration Coefficient b	0.0
13 LLC Low-Voltage Side Radiator Temperature Calibration Coefficient a	1.000	0.9...		LLC Low-Voltage Side Radiator Temperature Calibration Coefficient b	0.0
14 DC Output Current Calibration Coefficient a	1.019	0.9...		DC Output Current Calibration Coefficient b	0.0
15	---	---			---
16	---	---			---
17	---	---			---
18 Battery Voltage Loop Proportional Coefficient	2.000			Battery Voltage Loop Integral Coefficient	0.0001
19 Battery Current Loop Proportional Coefficient	0.080			Battery Current Loop Integral Coefficient	0.0006
20 Bus Voltage Loop Proportional Coefficient	0.300			Bus Voltage Loop Integral Coefficient	0.0150
21 Inductor Current Loop Proportional Coefficient	0.010			Inductor Current Loop Integral Coefficient	0.0010

Analog Values:

View the battery’s analog parameters, including voltage, current, temperature, state of charge, and charge/discharge status.

Start	Stop
Navigation Bar	单行参数显示个数 2
PCS_3.3K High & low voltage_DCDC	
Settings	
System Settings	
Comm Settings	
Scene	
Concise	
Basic Analog Quantity	
Basic Alarm	
Basic Setting Quantity	
Basic Control Command	
Battery ID	
Detailed	
Setting Quantity	
Control Command	
Calibration	
Analog Quantity	
Test Analog Quantity	
Balancing Test	
Calibrationa	
Calibrationb	
Update	
Download history	

Name	Echo	Unit	Name	Echo	Unit
1 Battery Total Voltage	52.6	V	Charge/Discharge Status		
2 BMS Self-Test Status	0		BMU Operating Status 1	Standby	
3 BMU Operating Status 2	0		Circuit Breaker/Contactor Switching Status	0	
4 Battery Current	0.0	A	SOC (State of Charge)	71.5	%
5 SOH (State of Health)	100.0	%	Maximum Temperature	31.0	°C
6 Module Number with Maximum Temperature	0		Internal Module Number with Maximum Temperature	1	
7 Minimum Temperature	31.0	°C	Module Number with Minimum Temperature	0	
8 Internal Module Number with Minimum Temperature	1		Highest Cell Voltage	3289	mV
9 Module Number with Highest Cell Voltage	0		Module Number with Lowest Cell Voltage	14	
10 Lowest Cell Voltage	3286	mV	Internal Module Number of Lowest Cell Voltage	0	
11 Internal Module Number of Lowest Cell Voltage	3		Alarm Event	0	
12 Primary Protection Event	0		Detailed BMS Self-Test Status	0	
13 Forced Charge/Discharge Status	Non-Forced		System Lock Event	0	
14 BMU1-16 Voltage Status	0		BMU17-32 Voltage Status	0	
15 BMU1-16 Temperature Status	0		BMU17-32 Temperature Status	0	
16 Secondary Protection Event	0		Negative Half-Cell Current	0.0	A
17	---	---		---	---
18	---	---		---	---
19	---	---		---	---
20	---	---	Module 1 Cell 1 Voltage	3287	mV
21 Module 1 Cell 2 Voltage	3286	mV	Module 1 Cell 3 Voltage	3286	mV
22 Module 1 Cell 4 Voltage	3286	mV	Module 1 Cell 5 Voltage	3287	mV

Run time: 00:15:09 | 1.COM3-[19600,8.0,1] | Communication State:

Start	Stop
Navigation Bar	单行参数显示个数 2
PCS_3.3K High & low voltage_DCDC	
Settings	
System Settings	
Comm Settings	
Scene	
Concise	
Basic Analog Quantity	
Basic Alarm	
Basic Setting Quantity	
Basic Control Command	
Battery ID	
Detailed	
Setting Quantity	
Control Command	
Calibration	
Analog Quantity	
Test Analog Quantity	
Balancing Test	
Calibrationa	
Calibrationb	
Update	
Download history	

Name	Echo	Unit	Name	Echo	Unit
23 Module 1 Cell 4 Voltage	3287	mV	Module 1 Cell 7 Voltage	3287	mV
24 Module 1 Cell 8 Voltage	3287	mV	Module 1 Cell 9 Voltage	3287	mV
25 Module 1 Cell 10 Voltage	3287	mV	Module 1 Cell 11 Voltage	3287	mV
26 Module 1 Cell 12 Voltage	3286	mV	Module 1 Cell 13 Voltage	3289	mV
27 Module 1 Cell 14 Voltage	3288	mV	Module 1 Cell 15 Voltage	3288	mV
28 Module 1 Cell 16 Voltage	3288	mV	Module 1 Cell 17 Voltage	0	mV
29 Module 1 Cell 18 Voltage	0	mV	Module 1 Cell 19 Voltage	0	mV
30 Module 1 Cell 20 Voltage	0	mV	Module 1 Cell 21 Voltage	0	mV
31 Module 1 Cell 22 Voltage	0	mV	Module 1 Cell 23 Voltage	0	mV
32 Module 1 Cell 24 Voltage	0	mV	Module 1 Temperature 1	31.0	°C
33 Module 1 Temperature 2	31.0	°C	Module 1 Temperature 3	31.0	°C
34 Module 1 Temperature 4	31.0	°C	Module 1 Temperature 5	0.0	°C
35 Module 1 Temperature 6	0.0	°C	Module 1 Temperature 7	0.0	°C
36 Module 1 Temperature 8	0.0	°C		---	---
37	---	---		---	---
38	---	---		---	---
39	---	---		---	---
40 Input Power Low	0	W	Input Power High	0	W
41 Input Frequency	0.0	Hz	Input Current	-0.1	A
42 DC Output Power Low	0.0	W	DC Output Power High	0.0	W
43 Real-Time Efficiency	1	%	DC Bus Voltage	0.3	V
44 Output Actual Current Limit Point	343.5	A	Output Actual Power Limit Point	329.8	W

Run time: 00:15:39 | 1.COM3-[19600,8.0,1] | Communication State:

Start	Stop
Navigation Bar	单行参数显示个数 2
PCS_3.3K High & low voltage_DCDC	
Settings	
System Settings	
Comm Settings	
Scene	
Concise	
Basic Analog Quantity	
Basic Alarm	
Basic Setting Quantity	
Basic Control Command	
Battery ID	
Detailed	
Setting Quantity	
Control Command	
Calibration	
Analog Quantity	
Test Analog Quantity	
Balancing Test	
Calibrationa	
Calibrationb	
Update	
Download history	

Name	Echo	Unit	Name	Echo	Unit
45 LLC High-Voltage Side Voltage	0.3	V	Phase A Voltage	0.0	V
46 Phase B Voltage	0.0	V	Phase C Voltage	0.0	V
47 Inlet Ambient Temperature	0.0	°C	Output Current	0.00	A
48 Flycapactor Voltage	0.0	V	Total Operating Time Low	0	h
49 Total Operating Time High	0	h	Current Status 1	193	
50 Current Status 2	0		Battery SOC	71	%
51 Battery SOH (State of Health)	100	%	Battery Remaining Time	2898.6	min
52 Input Total Power Low	0	W	Input Total Power High	0	W
53 Current Alarm/Status 1	0		Current Alarm/Status 2	0	
54 Current Alarm/Status 3	0		Reserved 29	0	
55 Battery Input Voltage	52.6	V	Battery-Side Bus Voltage	52.6	V
56 DC Input Voltage	0.1	V	DC Bus Voltage	0.3	V
57 LLC Inductor Current	0.00	A	LLC High-Voltage Side Current	0.00	A
58 Battery Current	-0.1	A	LLC High-Voltage Side Radiator Temperature	33.0	°C
59 LLC Low-Voltage Side Radiator Temperature	32.0	°C	Radiator Temperature	33.0	°C
60 Slot Address Bit 1	150		Slot Address Bit 2	2	
61 Slot Address Bit 3	0		R43_Maximum Interrupt Run Time	22.2	us
62 R44_1ms Task Average Time	200	us	R45_5ms Task Average Time	100	us
63 R46_20ms Task Average Time	300	us	R47_100ms Task Average Time	500	us
64 R48_ADBMS Voltage VD	0	mV	R49_ADBMS Voltage VA	0	mV
65 R50_ADBMS Voltage REF	100	mV	R51_Balancing Control	0	
66 R52_Balancing Control	0		R53_Program Guidance Flag	0	

Run time: 00:16:01 | 1.COM3-[19600,8.0,1] | Communication State:

Start	Stop
Navigation Bar	单行参数显示个数 2
PCS_3.3K High & low voltage_DCDC	
Settings	
System Settings	
Comm Settings	
Scene	
Concise	
Basic Analog Quantity	
Basic Alarm	
Basic Setting Quantity	
Basic Control Command	
Battery ID	
Detailed	
Setting Quantity	
Control Command	
Calibration	
Analog Quantity	
Test Analog Quantity	
Balancing Test	
Calibrationa	
Calibrationb	
Update	
Download history	

Name	Echo	Unit	Name	Echo	Unit
67 R54_Program Guidance Flag	0		R55_unCellVollTemp_MinCurrC10	40	
68 R56_unCellInforb1b1ChargeDisable	0		R57_unCellInforb1b1DischargeDisable	0	
69 R58_IBatVollRt_Q	310		R59_IBatCurrRt_Q	310	
70 Detailed Alarm Group 1	0		Detailed Alarm Group 2	0	
71 Detailed Alarm Group 3	0		Detailed Alarm Group 4	0	
72 Detailed Alarm Group 5	0		Detailed Alarm Group 6	0	
73 Detailed Alarm Group 7	0		Detailed Alarm Group 8	0	
74 DC Output Voltage Set Value	450.0	V	Reserved 69	1	
75 Ambient Temperature	39.0	°C	Maximum Allowed Charging Current	8.33	A
76 Maximum Allowed Discharging Current	10.00	A	Battery Operating Status	arge/Discharge Allow	
77 Reserved 74	0		Reserved 75	0	
78 Reserved 76	0		Reserved 77	0	
79 Reserved 78	0		Reserved 79	0	
80 Reserved 80	0		Software Version Number	5015	
81 Fan Status	Stop		Reserved 83	0	
82 R84_unSoCFlag_AllUnSoCFlag1	2		Power Distribution Cabinet In-Place Status	4095	
83 R86_unSoCFlag_AllUnSoCFlag3	6		Heating Status	Heating Not Enabled	
84 Reserved 88	0		Reserved 89	0	
85 Reserved 90	0		Reserved 91	1	
86 Reserved 92	3290		Reserved 93	3284	
87 Reserved 94	13		Reserved 95	16	
88	---	---		---	---

Run time: 00:16:22 | 1.COM3-[19600,8.0,1] | Communication State:

Test Analog Values:

Test the battery’s analog parameters, including voltage, current, temperature, state of charge, charge/discharge status, and various response times.

Start	Stop
Navigation Bar	单行参数显示个数 2
PCS_3.3K High & low voltage_DCDC	
Settings	
System Settings	
Comm Settings	
Scene	
Concise	
Basic Analog Quantity	
Basic Alarm	
Basic Setting Quantity	
Basic Control Command	
Battery ID	
Detailed	
Setting Quantity	
Control Command	
Calibration	
Analog Quantity	
Test Analog Quantity	
Balancing Test	
Calibrationa	
Calibrationb	
Update	
Download history	

Name	Echo	Unit	Name	Echo	Unit
1 R43_Maximum Interrupt Run Time	22.2	us	R44_1ms Task Average Time	200	us
2 R46_5ms Task Average Time	75	us	R46_20ms Task Average Time	300	us
3 R47_100ms Task Average Time	525	us		---	---
4 R48_ADBMS Voltage VD	0	mV	R49_ADBMS Voltage VA	0	mV
5 R50_ADBMS Voltage REF	100	mV	R51_Balancing Control	0	
6 R52_Balancing Control	0		R53_Program Guidance Flag	0	
7 R54_Program Guidance Flag	0		R55_unCellVollTemp_MinCurrC10	40	
8 R56_unCellInforb1b1ChargeDisable	0		R57_unCellInforb1b1DischargeDisable	0	
9 R58_IBatVollRt_Q	310		R59_IBatCurrRt_Q	310	
10	---	---		---	---
11	---	---	Balancing Control Enable	Forbidden	
12 Balancing Control	All Off				
13 Maximum Temperature	31.0	°C	Minimum Temperature	31.0	°C
14	---	---	Highest Single Cell Voltage	3289	mV
15 Lowest Single Cell Voltage	3286	mV		---	---
16 Module 1 Cell 1 Voltage	3286	mV	Module 1 Cell 2 Voltage	3286	mV
17 Cell1 Balancing Control	Off		Cell2 Balancing Control	Off	
18 Cell2 Balancing Status	Off		Cell3 Balancing Status	Off	
19 Module 1 Cell 3 Voltage	3286	mV	Cell3 Balancing Control	Off	
20 Cell3 Balancing Control	Off		Module 1 Cell 4 Voltage	3286	mV
21 Cell4 Balancing Status	Off		Cell4 Balancing Control	Off	
22 Module 1 Cell 5 Voltage	3286	mV	Cell5 Balancing Status	Off	

Run time: 00:17:32 | 1.COM3-[19600,8.0,1] | Communication State:

EVSUNHOME Tool PCS_3.3K High & low voltage, DCDC 8.0.0						
Start Stop						
Navigation Bar						
PCS_3.3K High & low voltage, DCDC						
Settings						
System Settings						
Comm Settings						
Scene						
Concise						
Basic Analog Quantity						
Basic Alarm						
Basic Setting Quantity						
Basic Control Command						
Battery ID						
Detailed						
Setting Quantity						
Control Command						
Calibration						
Analog Quantity						
Test Analog Quantity						
Balancing Test						
Calibration						
Update						
Download history						
41						
42 b1FlashSOCHadData						
43 b1FlashSOCHadData						
44 b1FlashSOCHadData						
45 b1DynamicBufferReadError						
Search						
Run time: 00:18:06   1.COM3-[19600,8,0,1]   Communication State:						

EVSUNHOME Tool PCS_3.3K High & low voltage, DCDC 8.0.0						
Start Stop						
Navigation Bar						
PCS_3.3K High & low voltage, DCDC						
Settings						
System Settings						
Comm Settings						
Scene						
Concise						
Basic Analog Quantity						
Basic Alarm						
Basic Setting Quantity						
Basic Control Command						
Battery ID						
Detailed						
Setting Quantity						
Control Command						
Calibration						
Analog Quantity						
Test Analog Quantity						
Balancing Test						
Calibration						
Update						
Download history						
46 b1BmsAppBufferError						
47 b1BmsAppIntrError						
48 b1BmsAppIntrError						
49 b1BmsAppIntrError						
50 b1BmsAppIntrError						
51 b1BmsAppIntrError						
52 b1BmsAppIntrError						
53 b1BmsAppIntrError						
54 b1BmsAppIntrError						
55 b1BmsAppIntrError						
56 b1BmsAppIntrError						
57 b1BmsAppIntrError						
58 Cell 1 Temperature						
59 Cell 3 Temperature						
60 Cell 5 Temperature						
61 Cell 7 Temperature						
62 Cell 9 Temperature						
63 Cell 11 Temperature						
64 Cell 13 Temperature						
65 Cell 15 Temperature						
66 stSoxUnitData [1]Qmax						
Search						
Run time: 00:18:27   1.COM3-[19600,8,0,1]   Communication State:						

EVSUNHOME Tool PCS_3.3K High & low voltage, DCDC 8.0.0						
Start Stop						
Navigation Bar						
PCS_3.3K High & low voltage, DCDC						
Settings						
System Settings						
Comm Settings						
Scene						
Concise						
Basic Analog Quantity						
Basic Alarm						
Basic Setting Quantity						
Basic Control Command						
Battery ID						
Detailed						
Setting Quantity						
Control Command						
Calibration						
Analog Quantity						
Test Analog Quantity						
Balancing Test						
Calibration						
Update						
Download history						
67 stSoxUnitData [1]FCC						
68 stSoxUnitData [1]RemCap						
69 stSoxPublicData.TotalChgAh						
70 stSoxPublicData.TotalDsgWh						
71 stSoxPublicData.TotalDsgWh						
72 Sox_Calc_Qmax_from_SoHCycle++						
73 gi32PckCur_Battery Current						
74 Maximum Temperature						
75 Highest Single Cell Voltage						
76 stSoxPublicData.FlagFirmInit						
77 stSoxPublicData.FlagFirmInit						
78 stSoxPublicData.FlagFirmInit						
79 stSoxPublicData.FlagFirmInit						
80 stSoxPublicData.FlagFirmInit						
81 stSoxPublicData.FlagFirmInit						
82 stSoxPublicData.FlagFirmInit						
83 stSoxPublicData.FlagFirmInit						
84 stSoxPublicData.FlagFirmInit						
85 stSoxPublicData.FlagFirmInit						
86 stSoxPublicData.FlagFirmInit						
87 stSoxPublicData.FlagFirmInit						
88 stSoxPublicData.FlagFirmInit						
Search						
Run time: 00:18:54   1.COM3-[19600,8,0,1]   Communication State:						

## Balance Test:

View the status of the battery balancing function, whether it is enabled or disabled.

EVSUNHOME Tool PCS_3.3K High & low voltage, DCDC 8.0.0												
Start Stop												
Navigation Bar												
PCS_3.3K High & low voltage, DCDC												
Settings												
System Settings												
Comm Settings												
Scene												
Concise												
Basic Analog Quantity												
Basic Alarm												
Basic Setting Quantity												
Basic Control Command												
Battery ID												
Detailed												
Setting Quantity												
Control Command												
Calibration												
Analog Quantity												
Test Analog Quantity												
Balancing Test												
Calibration												
Update												
Download history												
1 Balancing Control Enable												
2 Maximum Temperature												
3 Highest Single Cell Voltage												
4 Module 1 Cell 1 Voltage												
5 Module 1 Cell 2 Voltage												
6 Module 1 Cell 3 Voltage												
7 Module 1 Cell 4 Voltage												
8 Module 1 Cell 5 Voltage												
9 Module 1 Cell 6 Voltage												
10 Module 1 Cell 7 Voltage												
11 Module 1 Cell 8 Voltage												
12 Module 1 Cell 9 Voltage												
13 Module 1 Cell 10 Voltage												
14 Cell 10 Balancing Control												
15 Cell 11 Balancing Status												
16 Cell 12 Balancing Status												
17 Cell 13 Balancing Status												
18 Cell 14 Balancing Status												
19 Cell 15 Balancing Status												
20 Cell 16 Balancing Status												
Search												
Run time: 00:20:52   1.COM3-[19600,8,0,1]   Communication State:												

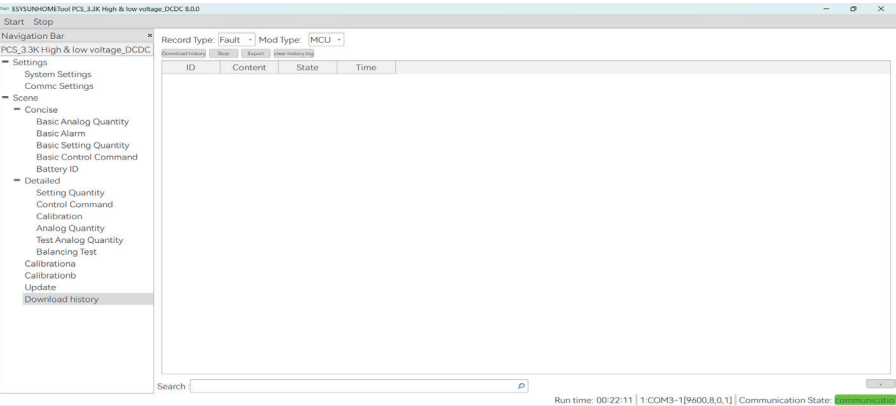
## Firmware Upgrade:

Update the battery software and perform important configurations.

EVSUNHOME Tool PCS_3.3K High & low voltage, DCDC 8.0.0												
Start Stop												
Navigation Bar												
PCS_3.3K High & low voltage, DCDC												
Settings												
System Settings												
Comm Settings												
Scene												
Concise												
Basic Analog Quantity												
Basic Alarm												
Basic Setting Quantity												
Basic Control Command												
Battery ID												
Detailed												
Setting Quantity												
Control Command												
Calibration												
Analog Quantity												
Test Analog Quantity												
Balancing Test												
Calibration												
Update												
Download history												
Comm type: MODBUS												
SerialPort: COM3												
BaudRate: 19600												
Timeout: 5000ms												
Update Progress: 0%												
Mod type: MCU												
Update version:												
DevID: 0												
Overtime retry time: 5												
Search												
Run time: 00:21:54   1.COM3-[19600,8,0,1]   Communication State:												

Download History Records:

Download the battery’s operation logs, fault records, and status logs.



6.8 Maintenance Instructions

(Electrical Connection Maintenance and ESD Cleaning)

The surroundings of the battery enclosure should be kept clean, and any debris, dust, or accumulated water on the surface of the enclosure should be cleaned.


The floor of the battery installation area should be kept dry, and any accumulated water should be cleaned to prevent water damage.

The battery installation area should have proper ventilation, and any objects obstructing airflow should be moved.

High-temperature or heat-emitting objects should not be placed around the battery to avoid affecting its normal operation.


There is a ground wire inside the battery connecting to the enclosure, which is also connected to the inverter. Regularly check if the external grounding of the inverter is secure.

Attention



The battery should be kept clean, and the terminal and connectors should be cleaned regularly.  
Different types and capacities of batteries should not be mixed. It is recommended to use batteries of the same model.  
When installing or replacing the battery, remove any metal objects such as watches and rings from your hands to avoid the risk of short circuit and burns.

Warning



Battery maintenance should be performed or supervised by personnel with knowledge of batteries and with necessary precautions.  
Batteries can present a risk of electric shock and high short-circuit current.  
Do not throw batteries into fire. They may explode.  
Do not open or damage batteries. The released electrolyte can be harmful to the skin and eyes, and may be toxic.

The battery should be kept clean, and the terminal and connectors should be cleaned regularly.

Different types and capacities of batteries should not be mixed. It is recommended to use batteries of the same model.

When installing or replacing the battery, remove any metal objects such as watches and rings from your hands to avoid the risk of short circuit and burns.

Battery maintenance should be performed or supervised by personnel with knowledge of batteries and with necessary precautions.

Batteries can present a risk of electric shock and high short-circuit current.

Do not throw batteries into fire. They may explode.

Do not open or damage batteries. The released electrolyte can be harmful to the skin and eyes, and may be toxic.

The battery module must not be opened. Any internal maintenance must be sent back to ESYSUMHOME.

This product has an IP66 protection rating, and there are no maintainable parts, components, or cables on the exterior of the device.



It is recommended that maintenance be performed every six months to inspect connectors and grounding cables, and that this service be carried out only by our authorized after-sales service engineers.

7 Distribution Box LED Display











Purpose of LED on the distribution Box		
S/N	Mark	Purpose
1	SOC	SOC Indicator light
2	ALM	Alarm Status Indicator
3	RUN	Run (Operation) Status Indicator
4	CHG	Charging Status Indicator
5	DCHG	Discharging Status Indicator

7.1 Status LED Display Descriptions

LED Display Descriptions							
Status 1	Status 2	RUN	ALM	SOC Indicator Light			
				1 Bar	2 Bars	3 Bars	4 Bars
Power off	Sleeping	OFF	OFF	OFF	OFF	OFF	OFF
Standby	Normal	Flash	OFF	The display is determined by the Average SOC indicator light status, which represents the average battery level for each battery tower.			
	Warning	Flash	Flash				
	Fault	OFF	Flash				
Charging	Normal	ON	OFF	The display is determined by the Average SOC indicator light status, which represents the average battery level for each battery tower.			
	Warning	ON	Flash				
	Fault	OFF	ON				
Discharging	Normal	ON	OFF	The display is determined by the Average SOC indicator light status, which represents the average battery level for each battery tower.			
	Warning	ON	Flash				
	Fault	OFF	ON				
Maintenance	Updating	Flash	Flash	Flash			

7.2 SOC LED Display Descriptions

Average SOC Status Descriptions								
Status	Charging				Discharging			
SOC LED								
0%~25%	Flash	OFF	OFF	OFF	Flash	OFF	OFF	OFF
25%~50%	ON	Flash	OFF	OFF	ON	Flash	OFF	OFF
50%~75%	ON	ON	Flash	OFF	ON	ON	Flash	OFF
75%~100%	ON	ON	ON	Flash	ON	ON	ON	Flash
100%	ON	ON	ON	ON	ON	ON	ON	ON

8 After-sales Service

Service email: support@esysunhome.com  
Or, Please contact the local installer.