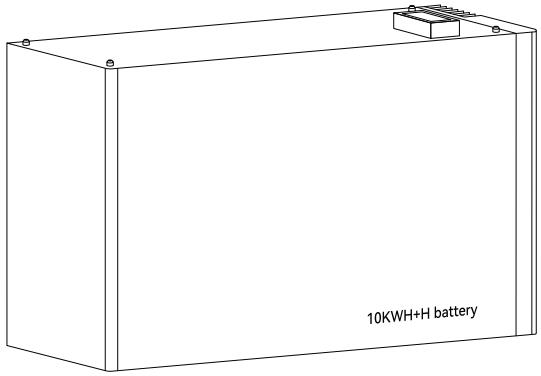
ESYSUNHOME 10KWH+H

User Guide & Installation Manual

(V1-250103)



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Made in China

CE RoHS

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 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.s
- 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!	
	Risk of explosion • Do not subject the battery to any strong force. • Do not mechanically damage the battery (pierce, deform, strip down, etc.) • Do not heat the battery or dispose of the battery in a fire. • Do not install the battery in potentially explosive environments.
Danger!	
	Risk of fire • Do not expose the battery to temperatures in excess of 60°C. • 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. • Keep sources of ignition such as sparks, flames, and smoking materials away from the battery.

Danger!	
	Risk of electric shock • Do not disassemble the battery. • Do not handle a wet battery or use wet tools. • Do not soak the battery in water or expose it to moisture or liquids. • Keep the battery away from children and animals. • Wear suitable clothing, guards and gloves to prevent you from direct contact with the DC voltage. • Use insulated tools during working with battery.
Danger!	
	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.
Danger!	
	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.
Warning!	
	Installation must fully comply with national and local laws and regulations.
Warning!	
	Without permission, it is not allowed to replace the internal circuit of the battery distribution box.
Warning!	
	Before connecting to the grid, the product must be securely grounded. Please follow the instructions in this manual. Improper operation may cause serious damage.
Warning!	
	Please ensure that a lightning protection device is installed in the combiner box.
Warning!	
	After installation, repair, and maintenance, please lock the side door of the distribution box. Non professionals are not allowed to open the door.

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.

MODEL:ESYSUNHOME 10KWH+H battery	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
MaxContinuous Discharging Current (A)	8.64	17.28	25.92
Configuration	16S	(16S)2P	(16S)3P

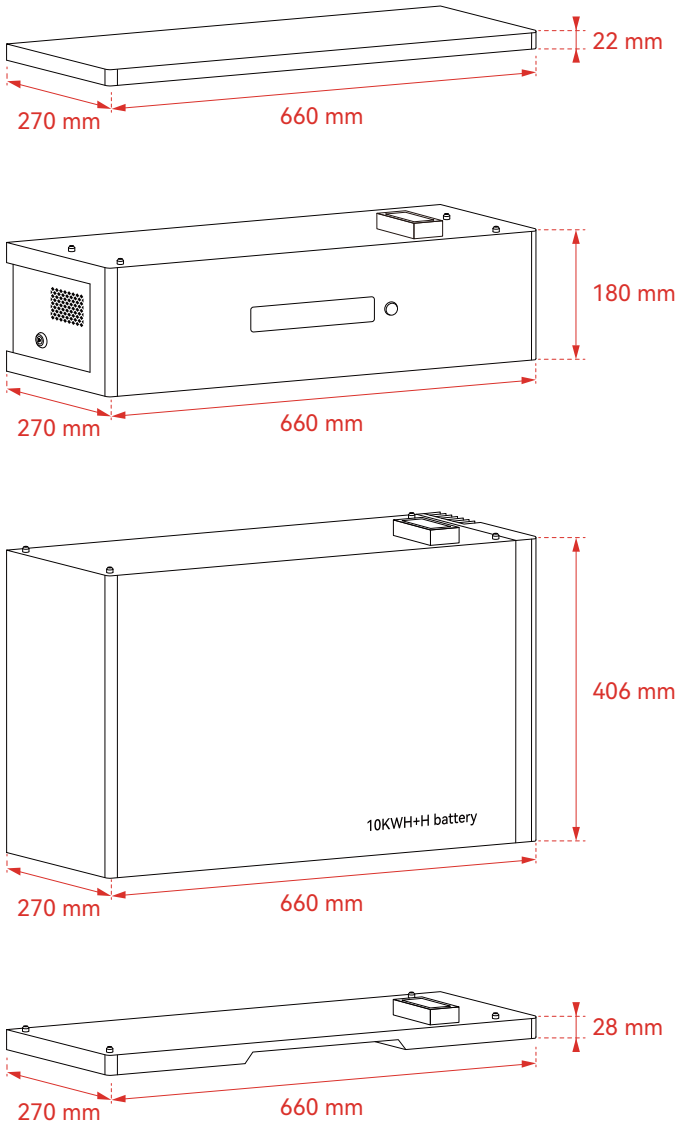
MODEL	ESYSUNHOME 10KWH+H-40	ESYSUNHOME 10KWH+H-50	ESYSUNHOME 10KWH+H-60
Number of Batteries	4	5	6
Battery Capacity (kWh)	41.98	52.48	62.97
Usable Capacity (kWh)	41.14	51.43	61.71
Rate DC Power (kW)	13.20	16.50	19.80
Rated Capacity (Ah)	820	1025	1230
Size (LxWxH mm)	(660x1448x270)+ (660x614x270)	(660x1448x270)+ (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
MaxContinuous 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
MaxContinuous Discharging Current (A)	60.48	69.12	77.76
Configuration	(16S)7P	(16S)8P	(16S)9P

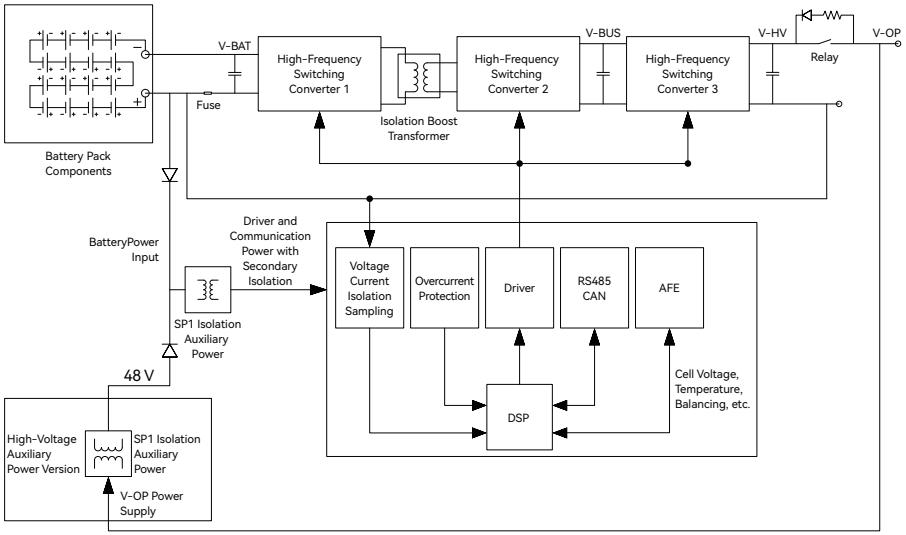
PARAMETERS	
Nominal Voltage	450 Vd.c
Max.Continuous Charging Power	3300 W
Max.Continuous Charging Current	7.33 A
Max.Continuous Discharging Power	3300 W
MaxContinuous Discharging Current	7.33 A
Battery Type	Li-ion
Voltage Range	380 V~560 V
Charging Voltage Declared by Manufacturer	480 V~560 V
Upper limit Charging Voltage	560 V
Discharging Cut off Voltage	380 V
Depth of Discharge	98%
Standard Temperature Range for Charging	-20 ℃ ~ 55 ℃
Standad Temperature Range for Discharging	-10 ℃ ~ 50 ℃
Storage temperature	-25 ℃ ~ 60 ℃
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 ℃ 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 ℃
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.

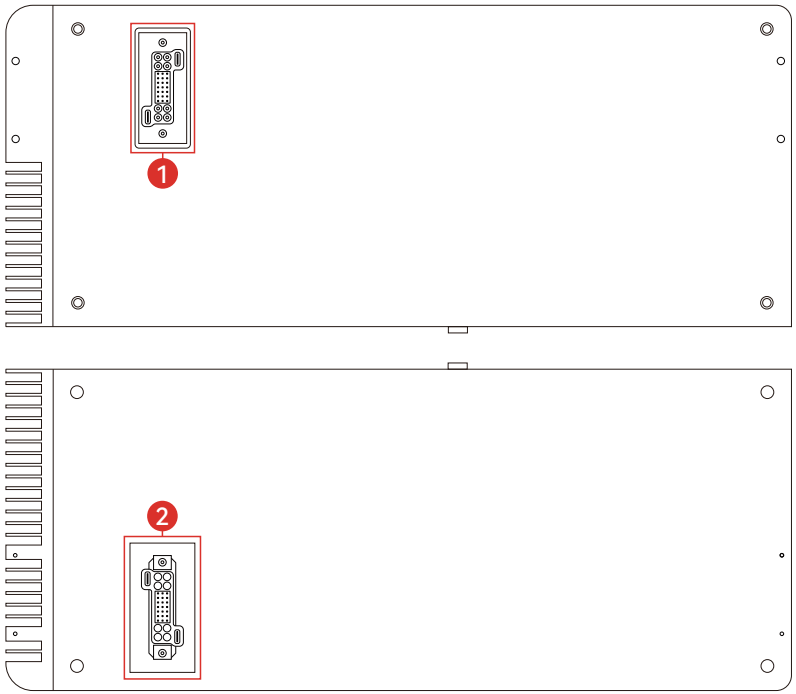
2.2 Dimensions of battery system



2.3 Schematic diagram of circuit structure

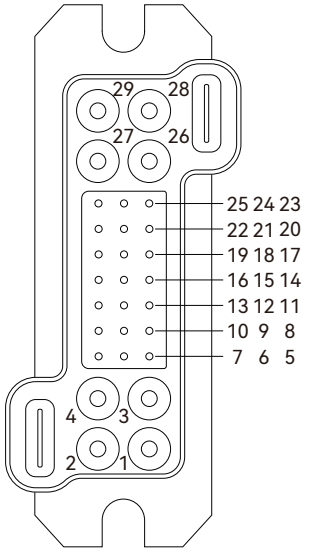


2.4 Battery Port Descriptions



Purpose of each port on the battery

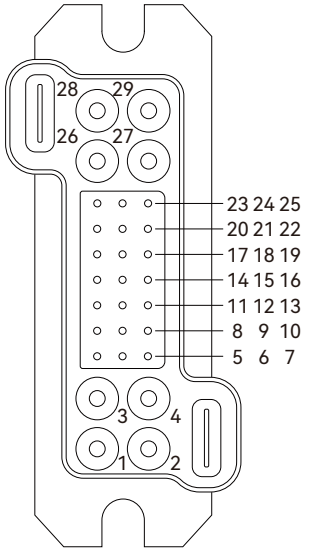
S/N	Name	Purpose
1	GP29Z(10KWH+H battery)	Connector
2	GP29T(10KWH+H Distribution box/10KWH+H battery)	Connector



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		

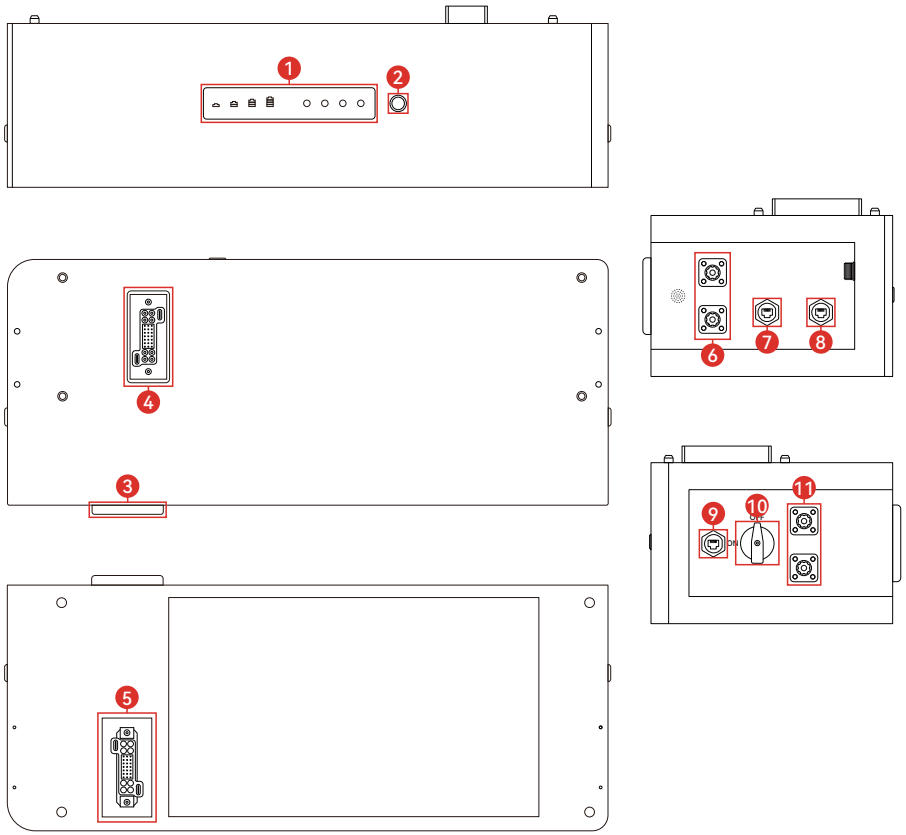


Schematic of the GP29T Connector

(10KWH+H Distributor Box/10KWH+H Battery)

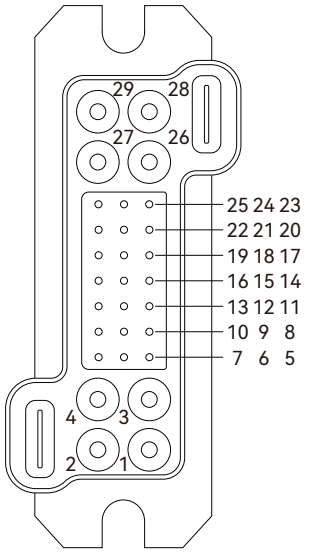
1	PACK-	26	NC
2	PACK-	27	NC
3	NC	28	PACK+
4	GND	29	PACK+
5	485A	16	CAN-L
6	485B	17	Activation-
7	CAN-H	18	Activation+
8	485A	19	NC
9	485B	20	Activation-
10	CAN-H	21	Activation+
11	CAN1-H	22	SW+
12	CAN1-H	23	SW-
13	CAN-L	24	SW-
14	CAN1-L	25	SW+
15	CAN1-L		

2.5 Distribution Box Port Descriptions



Description of Distribution Box Wiring Ports

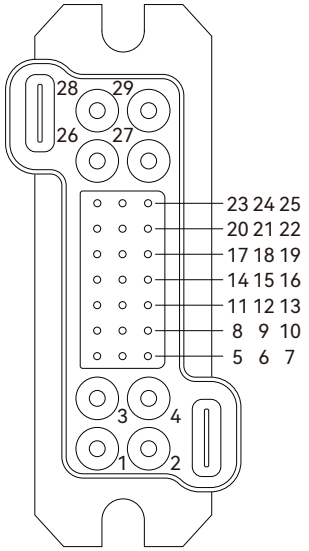
S/N	Description	Mark
1	Indicator light	SOC/ALM/RUN/CHG/DCHG
2	Power Button	/
3	Fuse Interface	FUSE+ / FUSE+ / FUSE- / FUSE-
4	Inverter Connection Port (GP29Z)	/
5	Battery Connection Port (GP29T)	/
6	Positive/Negative Terminal Interface for Battery Tower in Parallel (Left)	DC2+/DC2-
7	Battery Tower Communication 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!

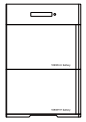
When using 10KWH+H batteries stacking system, please use the designated model of distribution box, inverter, and accessories.

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

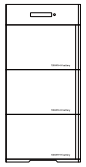
Appearance of different system models:

ESYSUNHOME 10KWH+H

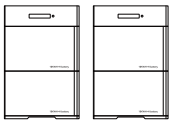
ESYSUNHOME 10KWH+H-20



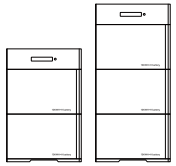
ESYSUNHOME 10KWH+H-30



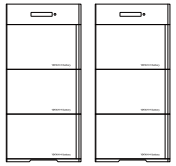
ESYSUNHOME 10KWH+H-40



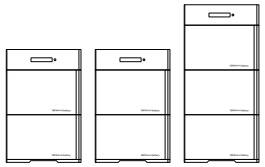
ESYSUNHOME 10KWH+H-50



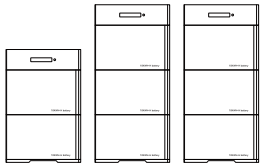
ESYSUNHOME 10KWH+H-60



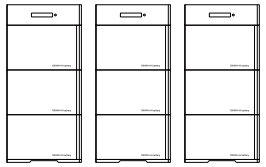
ESYSUNHOME 10KWH+H-70



ESYSUNHOME 10KWH+H-80



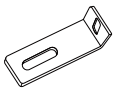
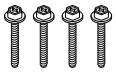
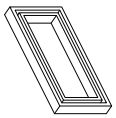
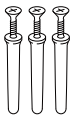
ESYSUNHOME 10KWH+H-90

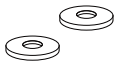


3 Preparation Before Installation

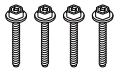
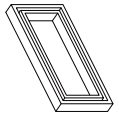
3.1 Packing List

3.1.1 Packing List of Battery

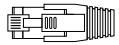
Item	Specifications	Quantity	Diagram
Battery	10KWH+H Battery	1	
Angle Iron	L79.5×65×25 mm	2	
Handlebar Screws	M4*35 mm	4	
Angle Iron Screws	M4*8 mm	2	
Waterproof Gasket	Silicone, black, matte, 104.5x50.3x10.6 mm	1	
Expansion Tubes Screws	M6*40 mm, Used for Angle Iron	2	

Expansion Screw Gaskets	Inner diameter ϕ5 mm²; Outer diameter ϕ12 mm², SUS304 gasket	2	

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 ϕ3.0 mm²~ϕ6.0 mm²	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	

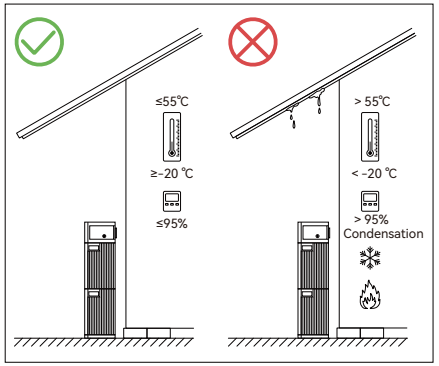
3.1.3 Packing List of Cover

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 Ω between pin 5 and pin 8	2	

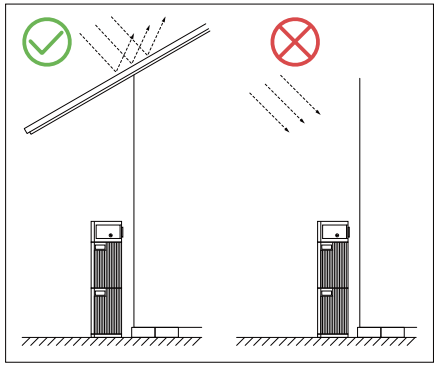
3.1.4 Base Foot Packing List

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.

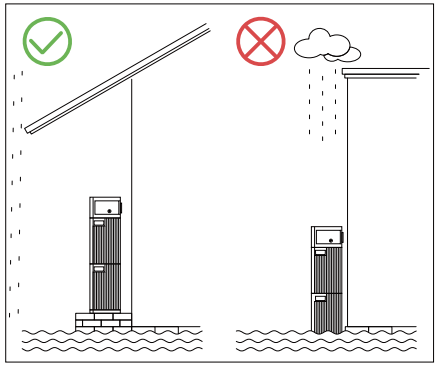
3.2 Selection of The Installation Environment



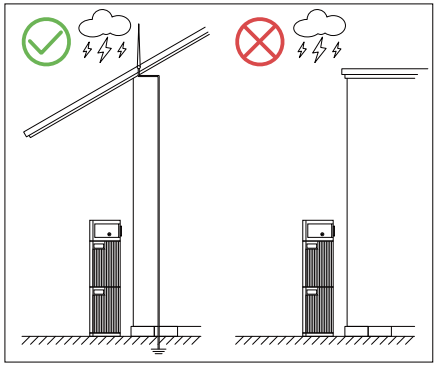
The ambient temperature should be -20 ℃ to 55 ℃ and the relative humidity should be 0% to 95% (no condensation).



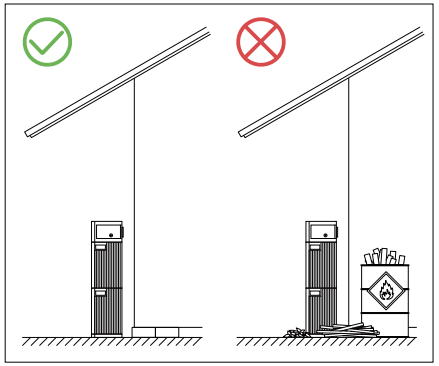
It can be installed outdoors, but must not be directly exposed to sunlight.



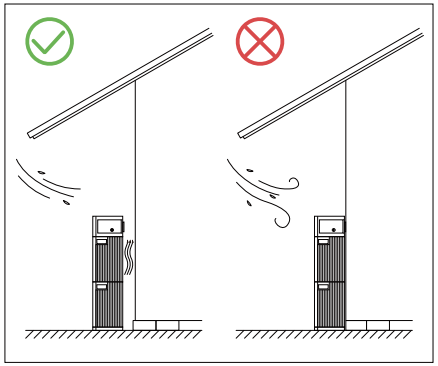
Do not install it in damp or submerged areas.



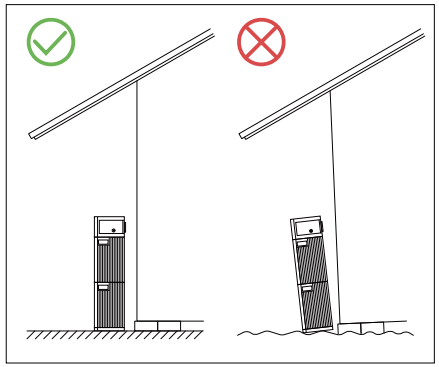
Do not install it in areas prone to lightning strikes.



Do not install it near combustibles.



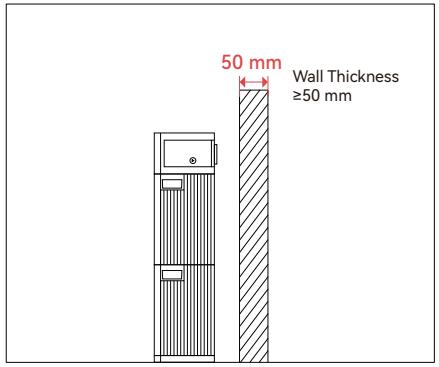
To ensure proper heat dissipation, please install it in a well-ventilated place.



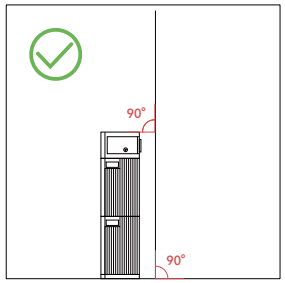
For stability, the product should be installed on solid and level ground.

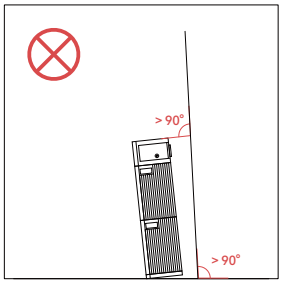
3.3 Selection of Installation Location

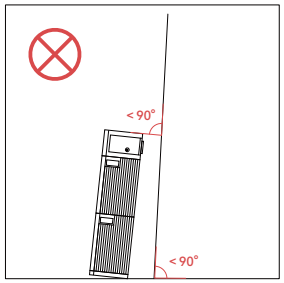
Applicable scenario: When the batteries is used in an energy storage system.



The wall thickness should not be less than 50 mm.

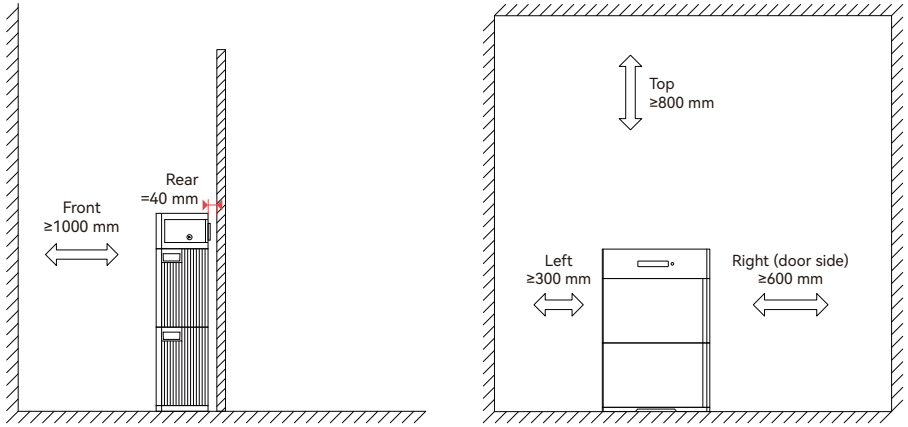






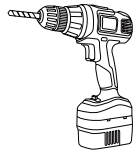
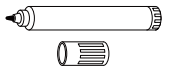
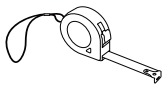
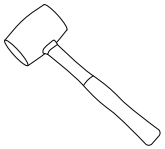
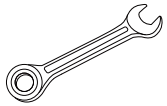
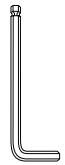
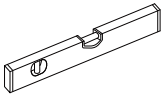
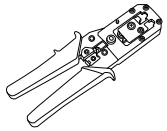
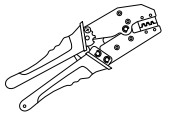
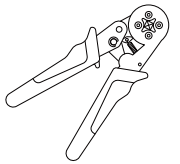
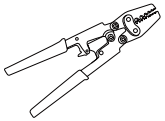
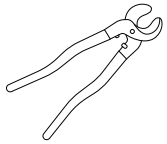
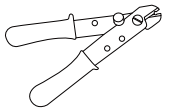
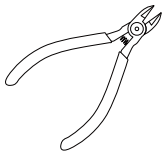
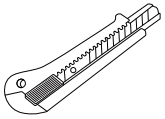
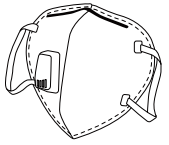
The wall thickness should not be less than 50 mm.

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

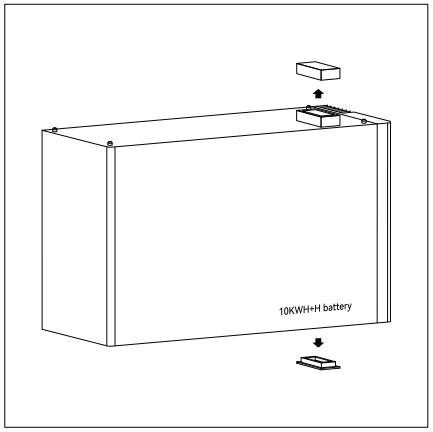
4 Installation

4.1 Floor-Mounted Installation

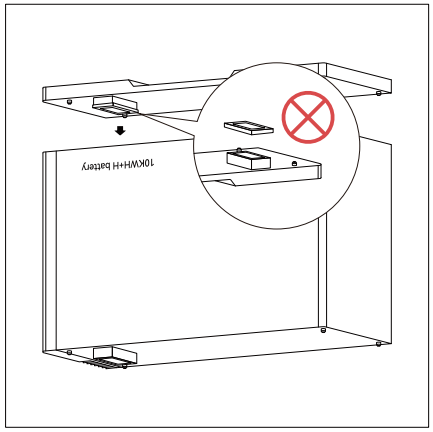
4.1.1 Base Installation

Tools and accessories required for this step:

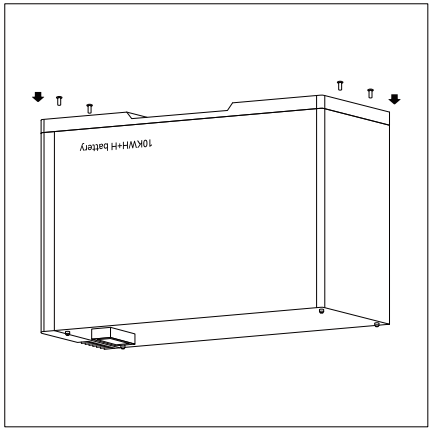
Packing List of Battery	Battery
Packing List of Distribution Box	10KWH+H Battery Base, Waterproof Gasket (for Connector), Base Mounting Screws
Tools	Phillips Screwdriver PH1, Measuring Tape, Level



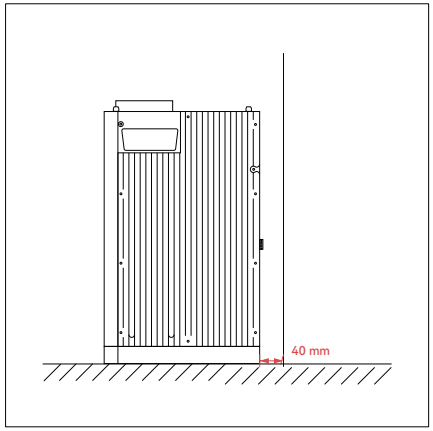
Step 1: Remove the dust cover from the connector port, flip the battery over with the bottom facing up.



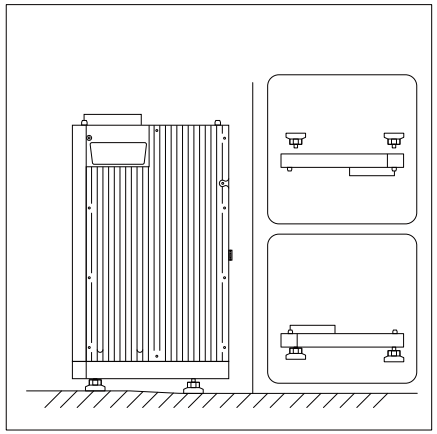
Step 2: Align the waterproof port of the base with the battery (Do not remove the waterproof gasket for connector on the base).



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.



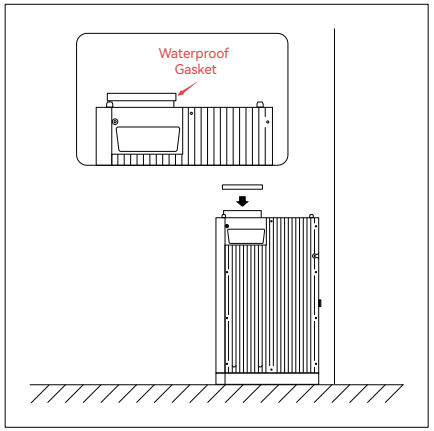
Note

For uneven ground, please consider utilizing base foot accessories.

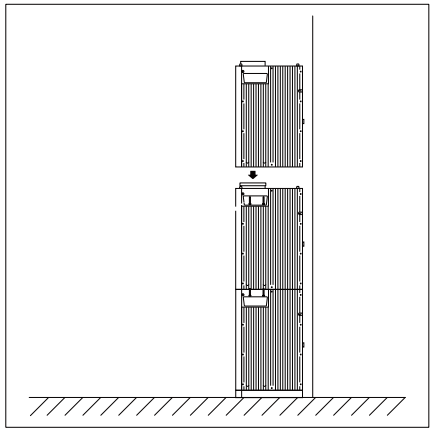
4.1.2 Batteries Installation

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.

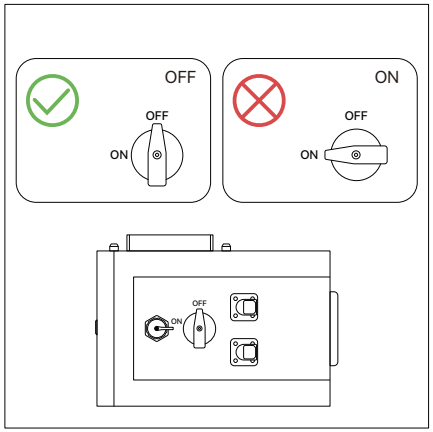
Warning!

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

4.1.3 Distribution Box Installation

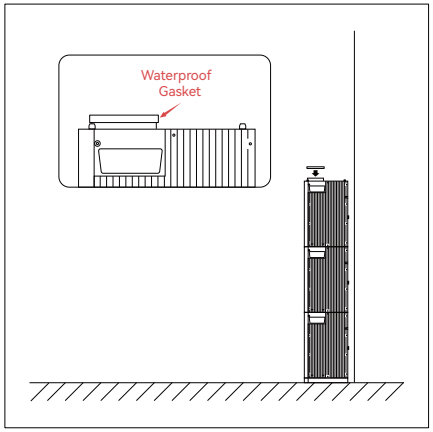
Warning!

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

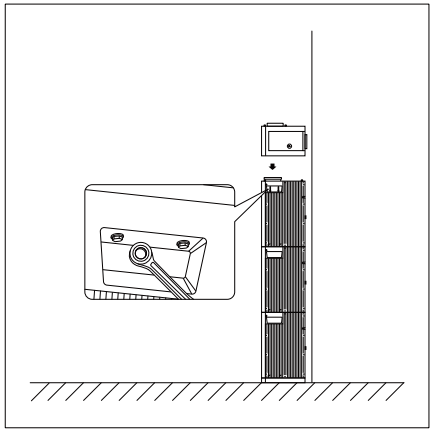


Tools and accessories required for this step:

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.

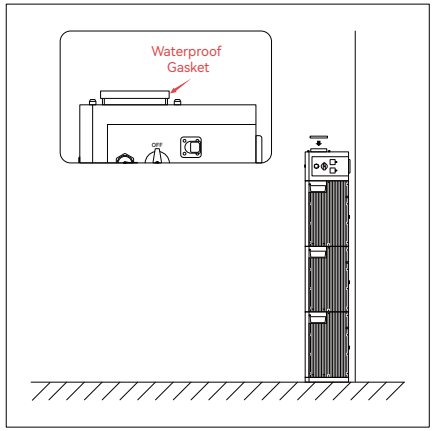


Step 2: Stack the distribution box on the battery, tighten the handlebar screws on both sides of the battery.

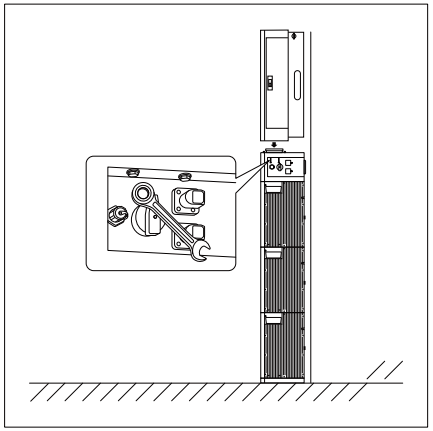
4.1.4 Inverter Installation

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.

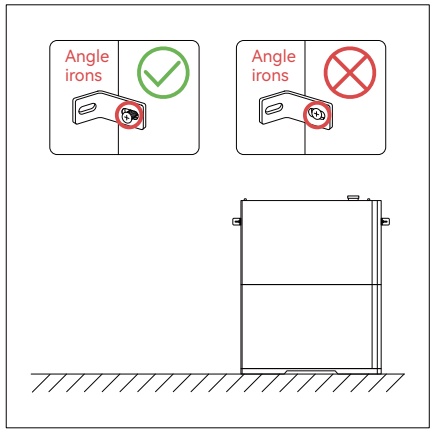


Step 2: Stack the inverter on the distribution box, tighten the handlebar screws on both sides of the distribution box.

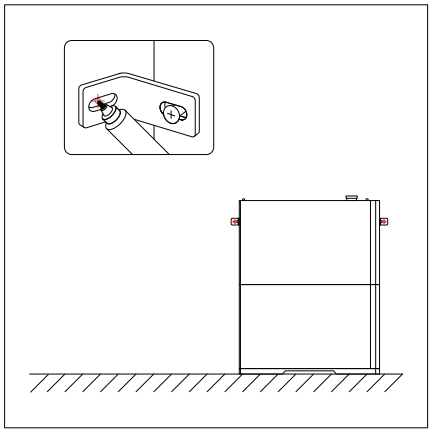
4.1.5 Angle Iron Installation

Tools and accessories required for this step:

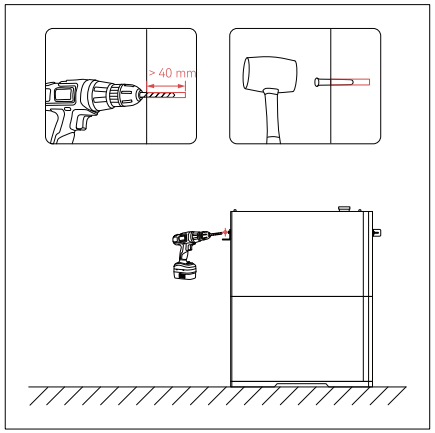
Packing List of Battery	Angle Iron, Angle Iron Screws, Expansion Tubes with Screws, Expansion Screw Gaskets
Packing list of inverter	Angle Iron, Angle Iron Screws, Expansion Tubes with Screws, Expansion Screw Gaskets
Tools	Power Drill ϕM6, Hammer, Phillips Screwdriver PH1, Marker



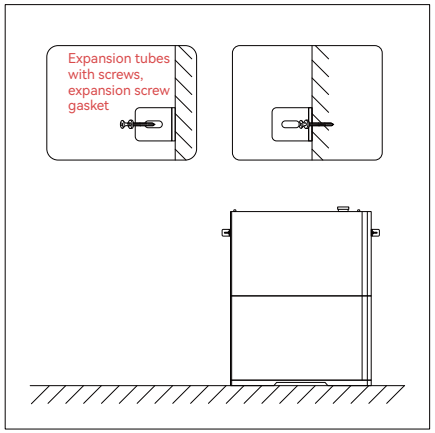
Step 1: Place the angle iron screws through the angle irons and secure the angle irons to both sides of the topmost battery, but do not tighten the screws.



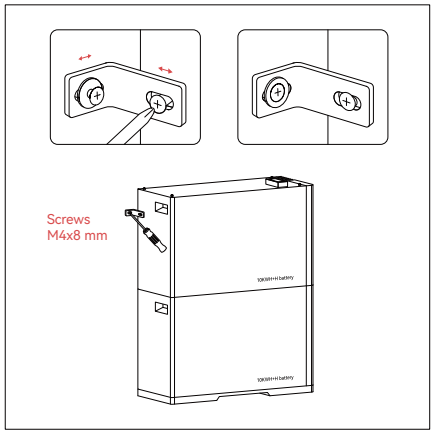
Step 2: Mark the position of the angle irons holes on the wall with a marker.



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

Warning!

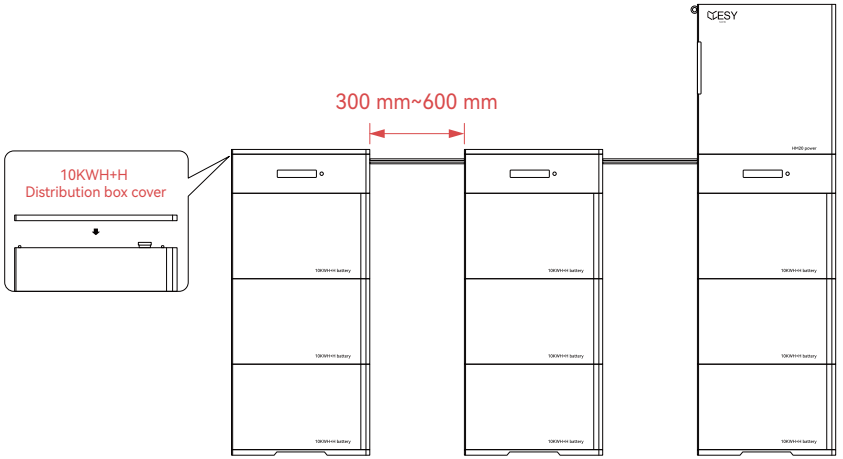
Only applicable for installation scenarios involving more than 3 batteries.

Warning!

The spacing of the adjacent battery towers ranges from 300 mm to 600 mm.

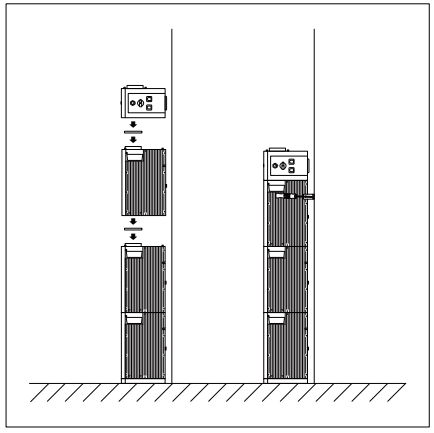
Warning!

For the battery towers without stacked inverter, the distribution box covers shall be installed.

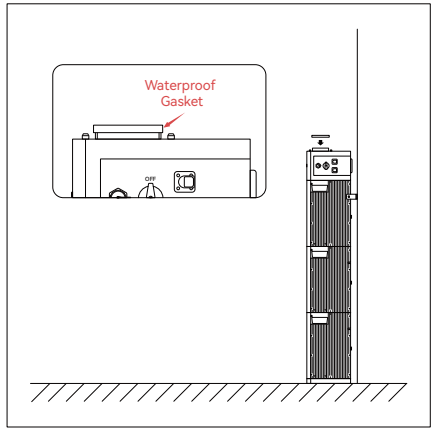


Tools and accessories required for this step:

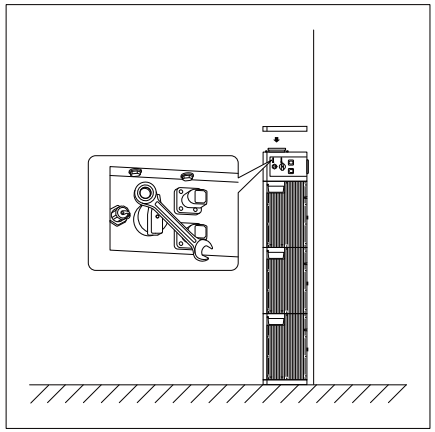
Packing List of Cover	10KWH+H Distribution box Cover, Positive Connection Cable for Battery Parallel, NegativeConnection Cable for Battery Parallel
Packing List of Distribution Box	Handlebar Screws, Waterproof Gasket (for Connector)
Tools	Hammer, Measuring Tape



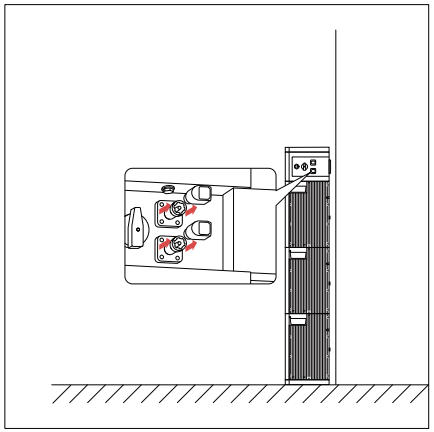
Step 1: Follow the battery installation steps, and install the battery towers.



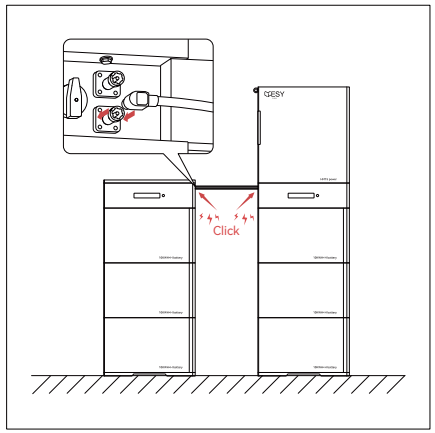
Step 2: Install the waterproof gasket on the top connector of the distribution box.



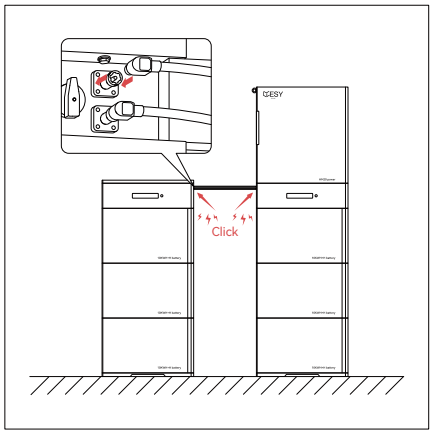
Step 3: Securely place the cover on the distribution box, and tighten the handlebar screws on both sides of the distribution box.



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

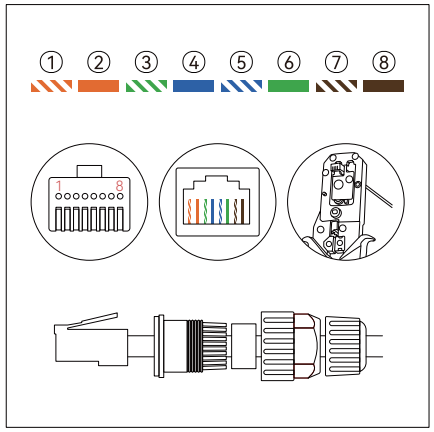


Step 5: Connect the positive terminals of adjacent distribution boxes in parallel using the positive connection cable from the distribution box of the battery tower.

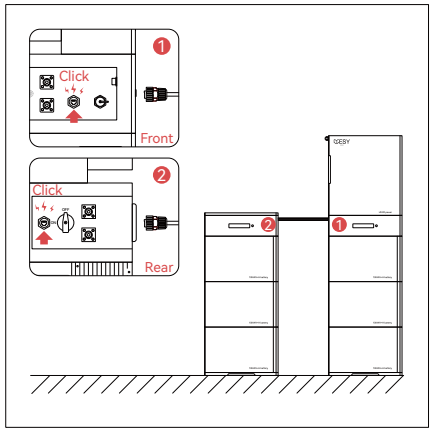


Step 6: Connect the negative terminals of the adjacent distribution boxes using the negative cable from the distribution box in the battery tower.

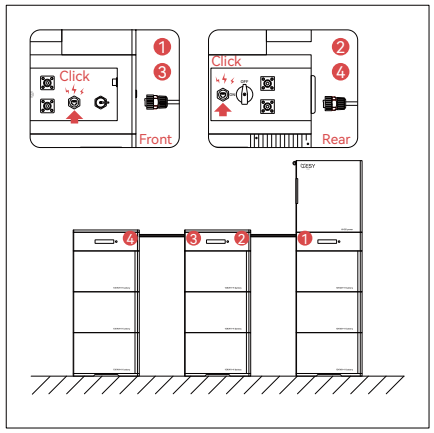
	Warning!
	Please retain the waterproof covers for the parallel ports of the distribution boxes.
	Warning!
	Please cover unused parallel ports with the waterproof covers.



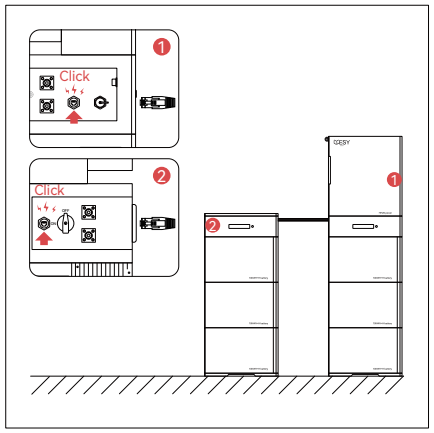
Step 7: Install the communication cable for parallel connection of the distribution box as shown in the diagram.



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

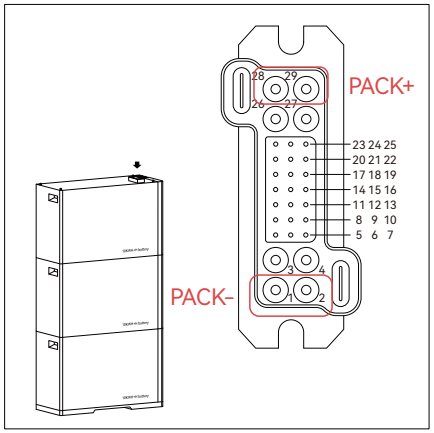


Step 9: In the scenario with three battery towers, connect the parallel communication cables among the three distribution boxes as shown in the diagram.

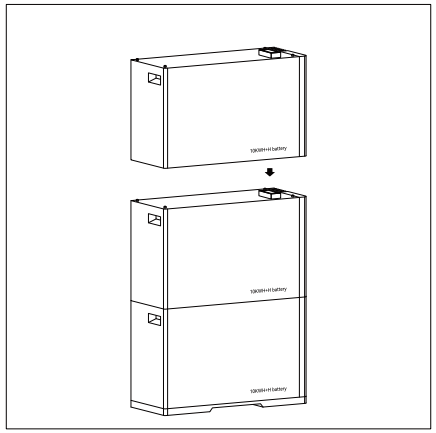


Step 10: Inspect the wiring and install the communication matching resistors into the parallel communication interfaces on both sides of the distribution box.

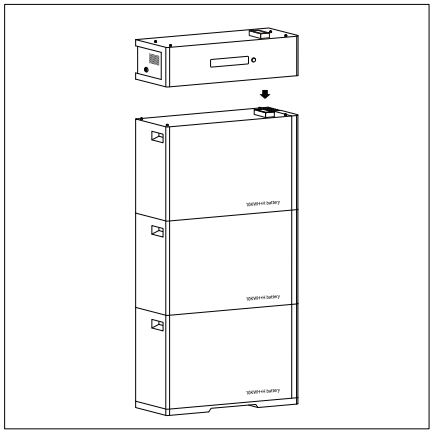
4.2 Separate connection of battery and inverter



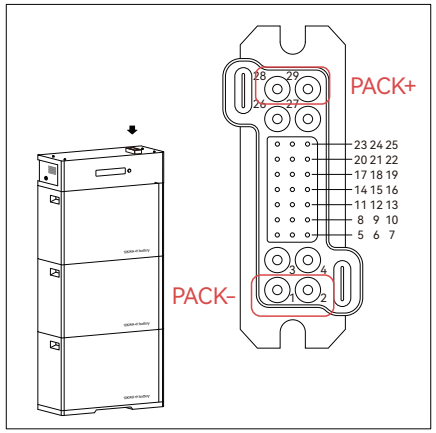
The battery has two PACK+ ports and two PACK - ports. The top and bottom of the battery have dedicated GP29 connectors for direct connection.



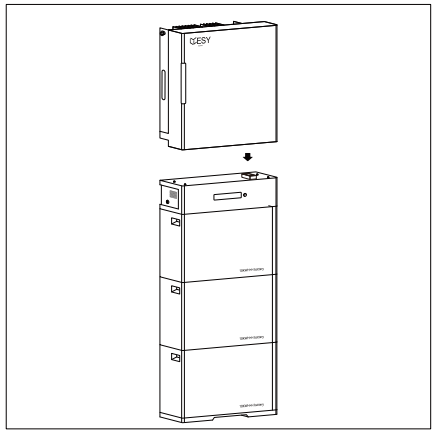
To connect multiple batteries together, simply align them from bottom to top, ensuring the correct direction and position. There is no need for external connecting wires.



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



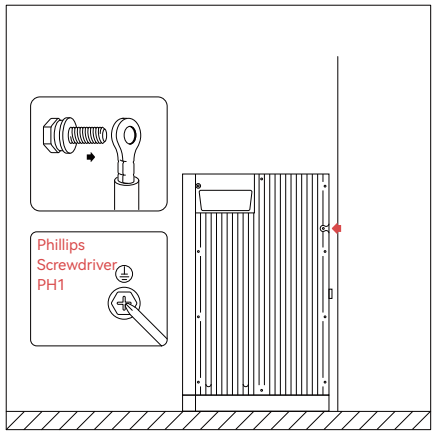
When connecting the distribution box to the battery, align and place the distribution box above the battery to ensure correct orientation and position.



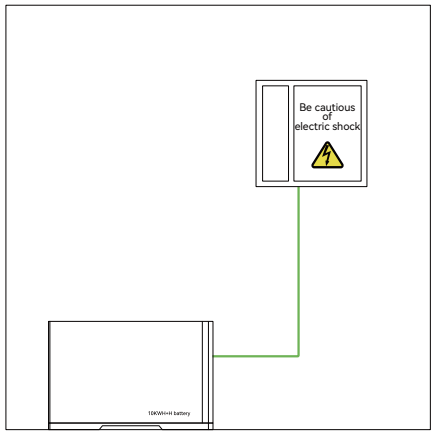
When connecting the inverter and battery, the inverter should be aligned and placed above the battery distribution box. Ensure that the direction and position are correct.

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.

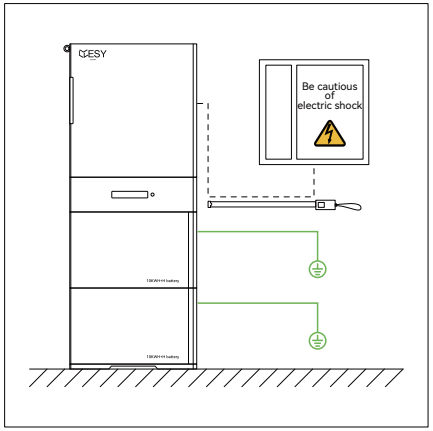


The ground wire only needs to be connected to the aluminum casing of the battery, which is safe and simple.

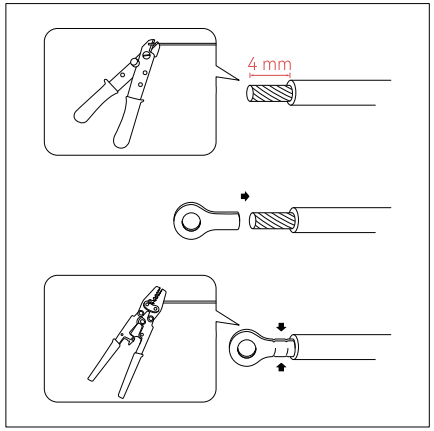
5.2 Grounding Connection

Tools and accessories required for this step:

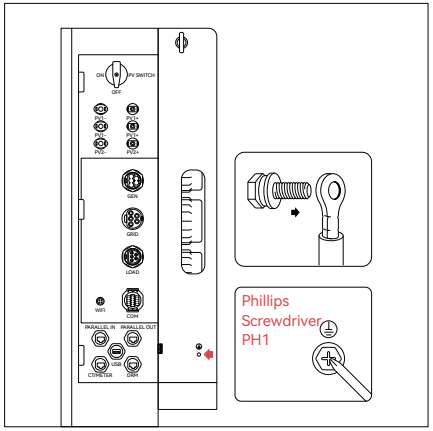
Packing list of inverter	Ring-Shaped Crimp Cable Lug, Ground Screw
Tools	Crimping Pliers, Diagonal Pliers, Stripping Pliers, Phillips Screwdriver PH1, Measuring Tape
Cable	Ground Cable ϕ6 mm²



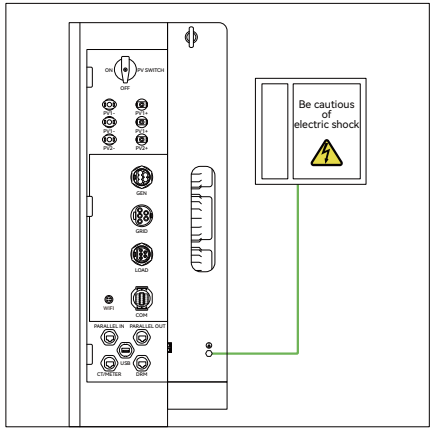
Step 1: Measure the distance between the ground wire connection aperture located on the side of the inverter and the combiner box using a measuring tape.



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.

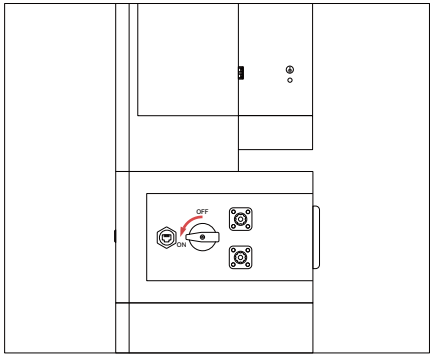
The battery system must be installed together with the ESYSUNHOME inverters, which includes relays and an isolation switch.

6 Battery power On and Off

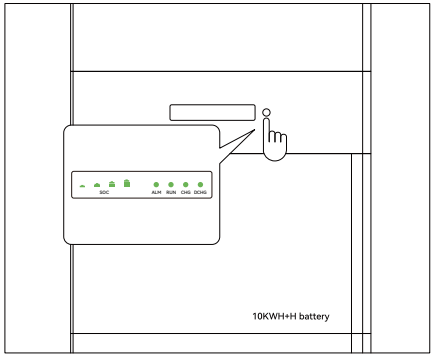
6.1 Power On

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

When powering on, please adhere to the following steps:

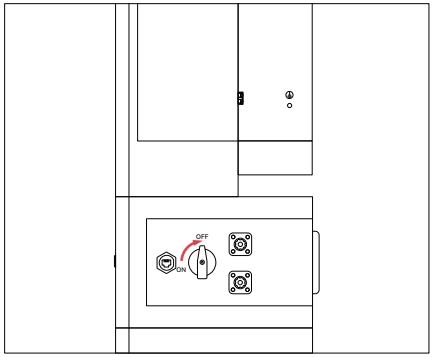


Step 1: Turn on the DC switch of the distribution box.

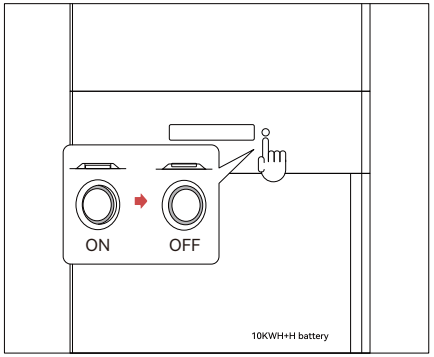


Step 2: Press and hold the power button on the distribution box for at least 5 seconds, and wait for the distribution box light to illuminate.

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.

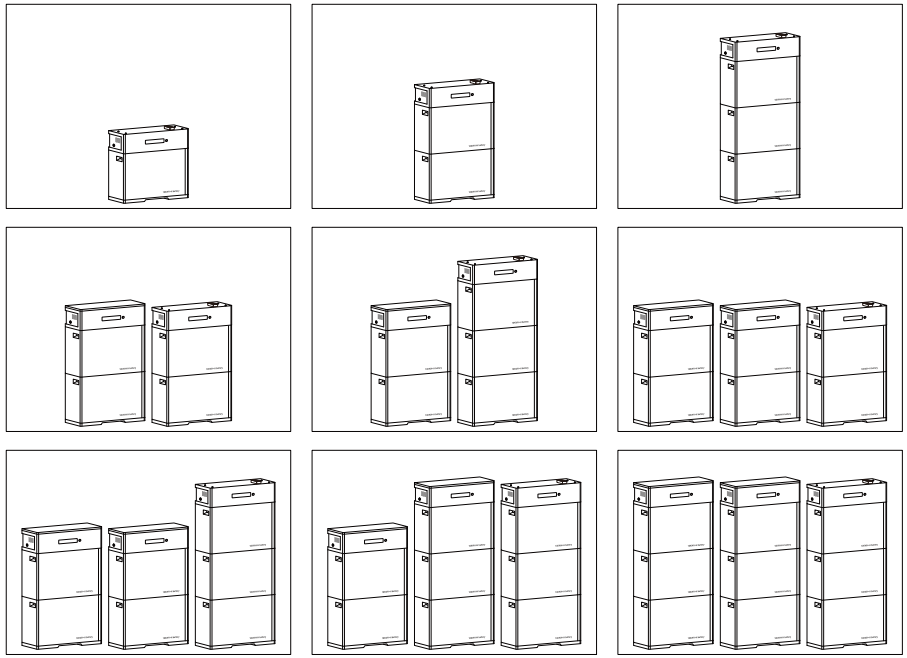
When connecting the ESYSUNHOME inverters to the battery system, carefully align and place the inverter on top of the battery system. Ensure correct orientation and positioning.

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

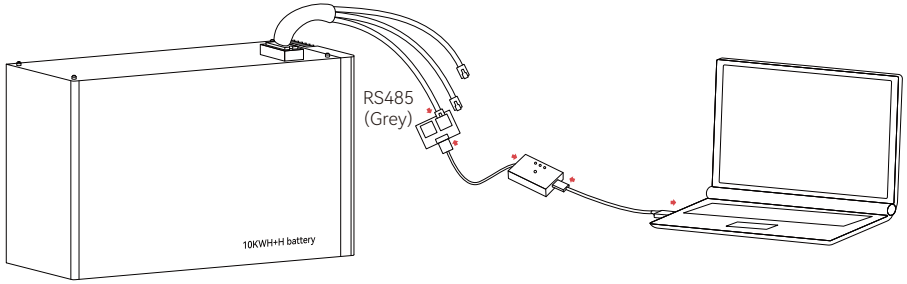
· Read-only: For users or inspectors. These settings can be viewed but not modified.
· Read and edit: For the battery manufacturer or authorized maintenance personnel. These settings can be edited by authorized personnel only.

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.

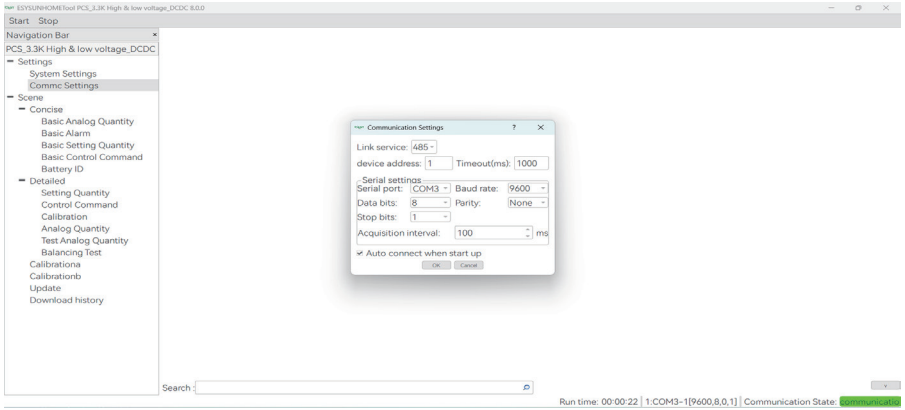
Use the **BMS-STM8S-TI software** provided with the battery for operation.

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

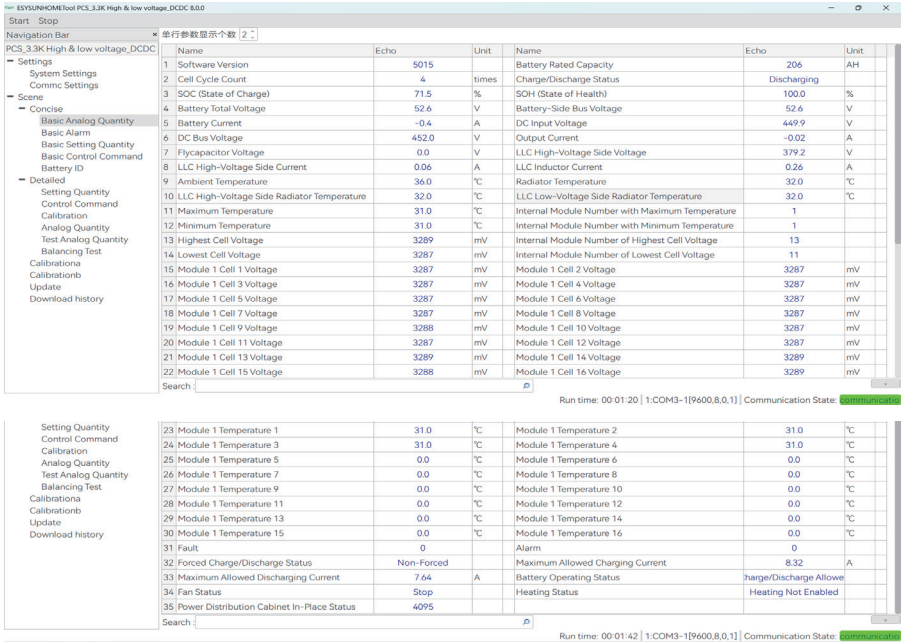


6.7.2 BMS-STM8S-TI Functional Operations

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



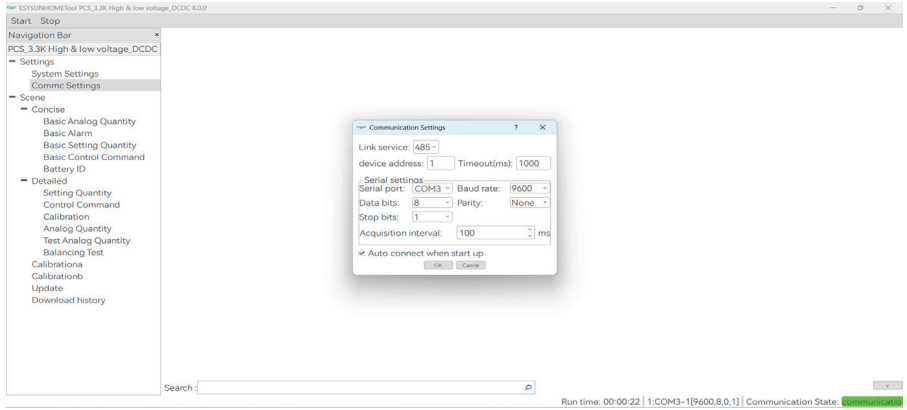
Battery Monitoring:
View real-time data related to battery **voltage, current,** and **temperature,** as well as the software version and battery status.



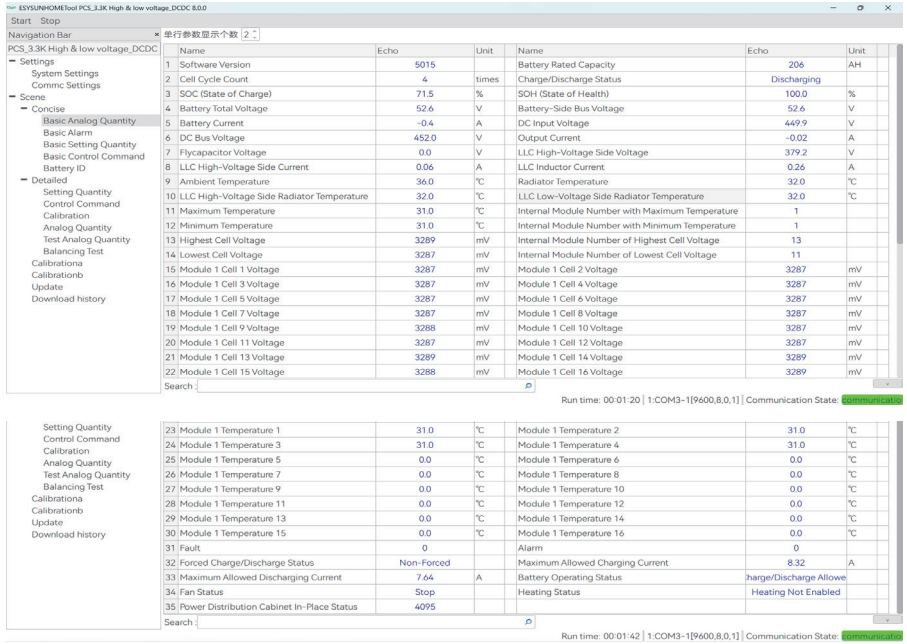
	Name	Echo	Unit	Name	Echo	Unit
1	Software Version	5015		Battery Rated Capacity	206	AH
2	Cell Cycle Count	4	times	Charge/Discharge Status	Discharging	
3	SOC (State of Charge)	71.5	%	SOH (State of Health)	100.0	%
4	Battery Total Voltage	52.6	V	Battery-Side Bus Voltage	52.6	V
5	Battery Current	-0.4	A	DC 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	℃	Radiator Temperature	32.0	℃
10	LLC High-Voltage Side Radiator Temperature	32.0	℃	LLC Low-Voltage Side Radiator Temperature	32.0	℃
11	Maximum Temperature	31.0	℃	Internal Module Number with Maximum Temperature	1	
12	Minimum Temperature	31.0	℃	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	℃	Module 1 Temperature 2	31.0	℃
24	Module 1 Temperature 3	31.0	℃	Module 1 Temperature 4	31.0	℃
25	Module 1 Temperature 5	0.0	℃	Module 1 Temperature 6	0.0	℃
26	Module 1 Temperature 7	0.0	℃	Module 1 Temperature 8	0.0	℃
27	Module 1 Temperature 9	0.0	℃	Module 1 Temperature 10	0.0	℃
28	Module 1 Temperature 11	0.0	℃	Module 1 Temperature 12	0.0	℃
29	Module 1 Temperature 13	0.0	℃	Module 1 Temperature 14	0.0	℃
30	Module 1 Temperature 15	0.0	℃	Module 1 Temperature 16	0.0	℃
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	harge/Discharge Allowe	
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.

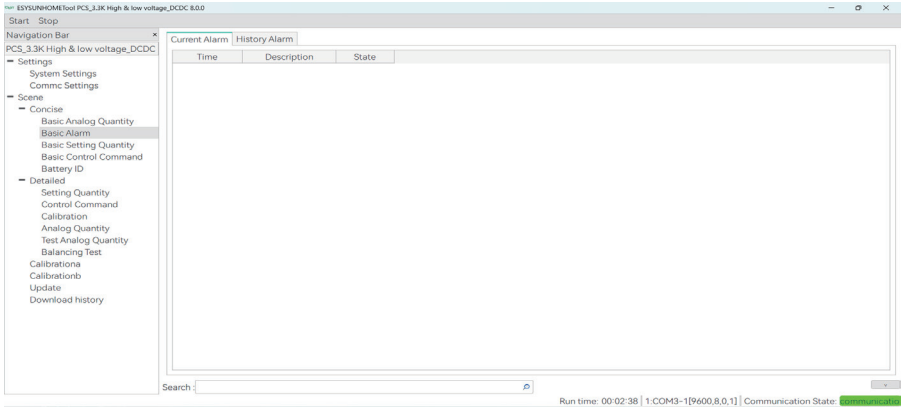


Battery Monitoring:
View real-time data related to battery **voltage, current,** and **temperature,** as well as the software version and battery status.

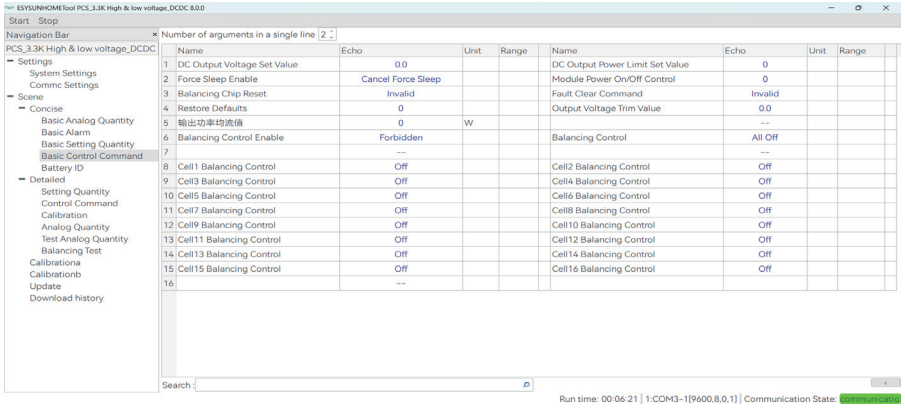


	Name	Echo	Unit	Name	Echo	Unit
1	Software Version	5015		Battery Rated Capacity	206	AH
2	Cell Cycle Count	4	times	Charge/Discharge Status	Discharging	
3	SOC (State of Charge)	71.5	%	SOH (State of Health)	100.0	%
4	Battery Total Voltage	52.6	V	Battery-Side Bus Voltage	52.6	V
5	Battery Current	-0.4	A	DC 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	℃	Radiator Temperature	32.0	℃
10	LLC High-Voltage Side Radiator Temperature	32.0	℃	LLC Low-Voltage Side Radiator Temperature	32.0	℃
11	Maximum Temperature	31.0	℃	Internal Module Number with Maximum Temperature	1	
12	Minimum Temperature	31.0	℃	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	℃	Module 1 Temperature 2	31.0	℃
24	Module 1 Temperature 3	31.0	℃	Module 1 Temperature 4	31.0	℃
25	Module 1 Temperature 5	0.0	℃	Module 1 Temperature 6	0.0	℃
26	Module 1 Temperature 7	0.0	℃	Module 1 Temperature 8	0.0	℃
27	Module 1 Temperature 9	0.0	℃	Module 1 Temperature 10	0.0	℃
28	Module 1 Temperature 11	0.0	℃	Module 1 Temperature 12	0.0	℃
29	Module 1 Temperature 13	0.0	℃	Module 1 Temperature 14	0.0	℃
30	Module 1 Temperature 15	0.0	℃	Module 1 Temperature 16	0.0	℃
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	harge/Discharge Allowe	
34	Fan Status	Stop		Heating Status	Heating Not Enabled	
35	Power Distribution Cabinet In-Place Status	4095				

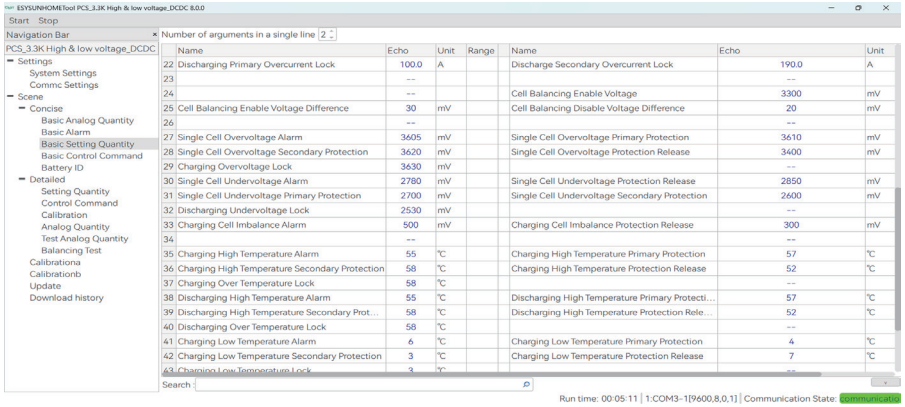
Basic Alarms:
Check whether the battery has any fault alarms and view the corresponding fault names. Alarms are categorized into **current alarms** and **historical alarms.**

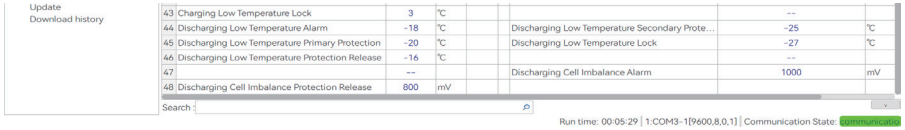


Basic Control Commands:
Control the **power on/off** of the battery output module, perform **initial value calibration,** and **clear faults.**

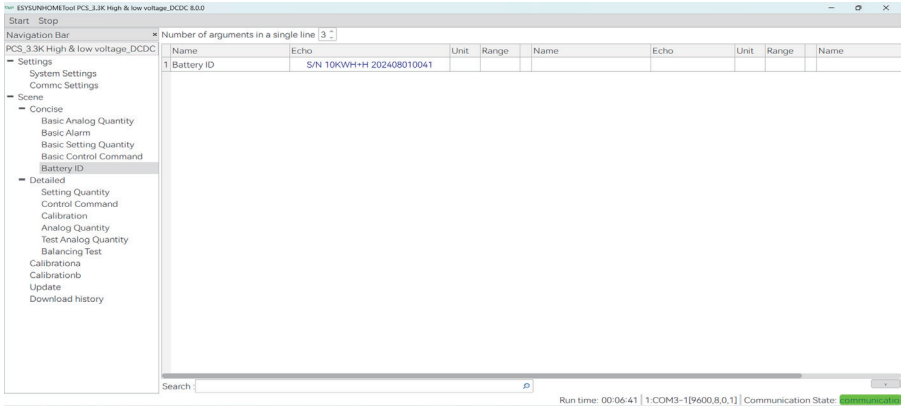


Basic Settings:
Configure the basic parameters of the battery.



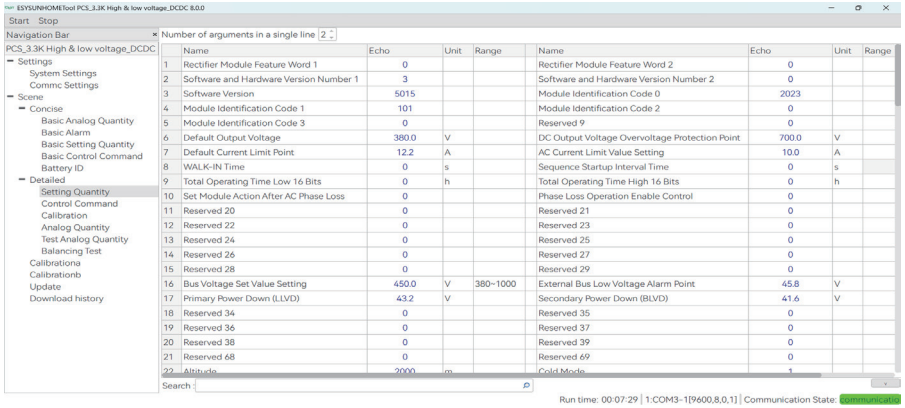


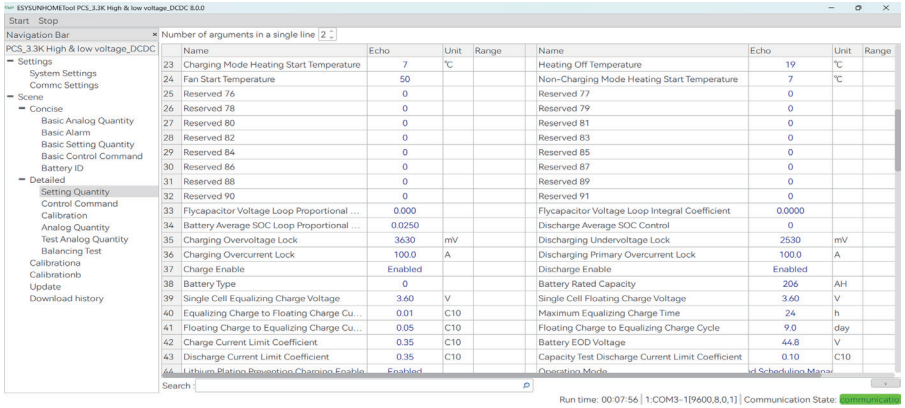
Battery ID:
Read and edit the battery ID.

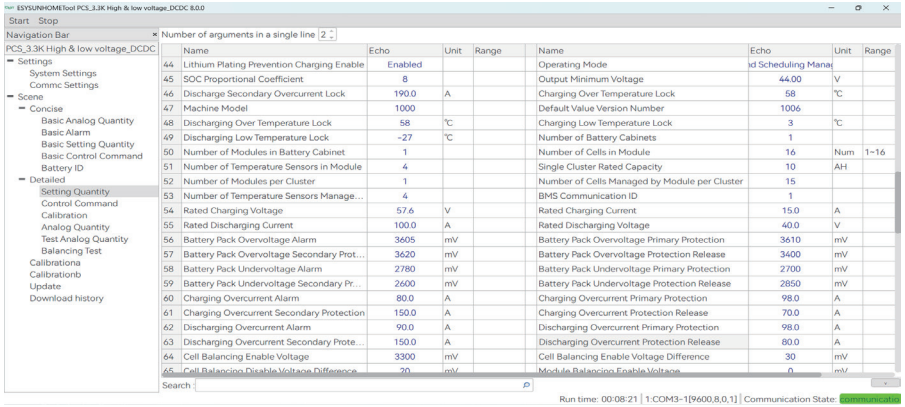


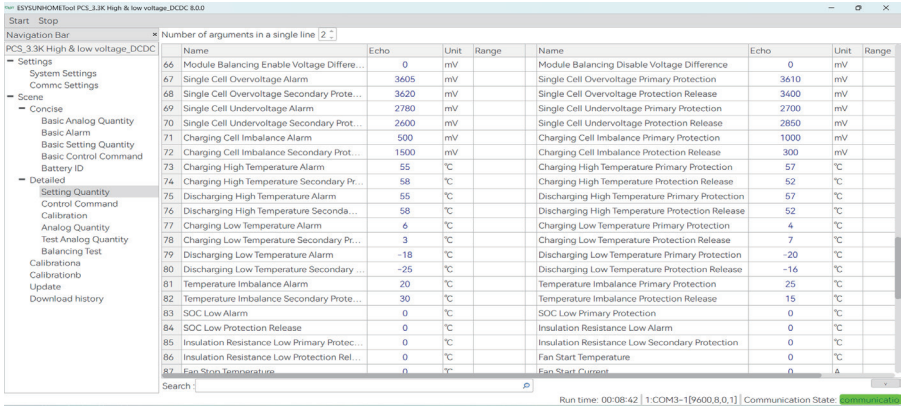
Detailed Settings:

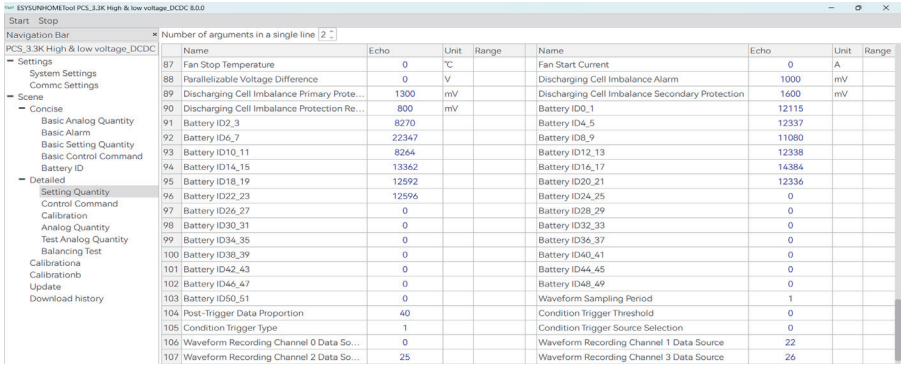
Configure detailed battery parameters, including alarm settings, protection parameters, heating functions, and cooling functions.





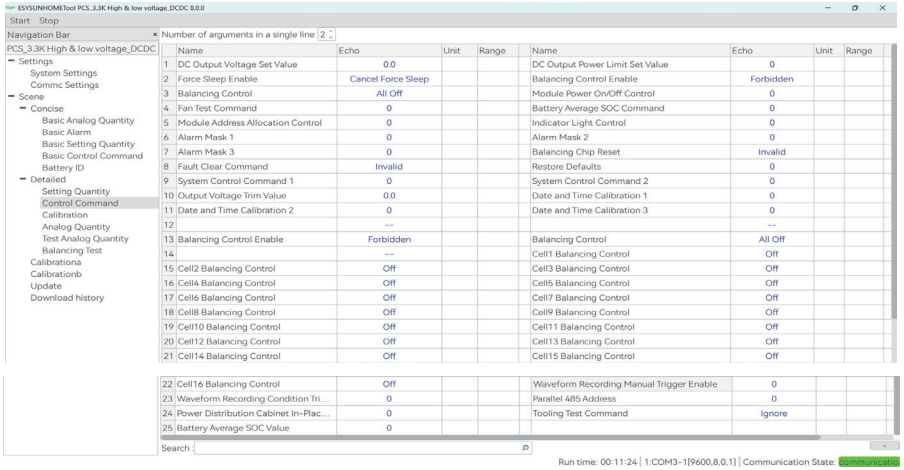






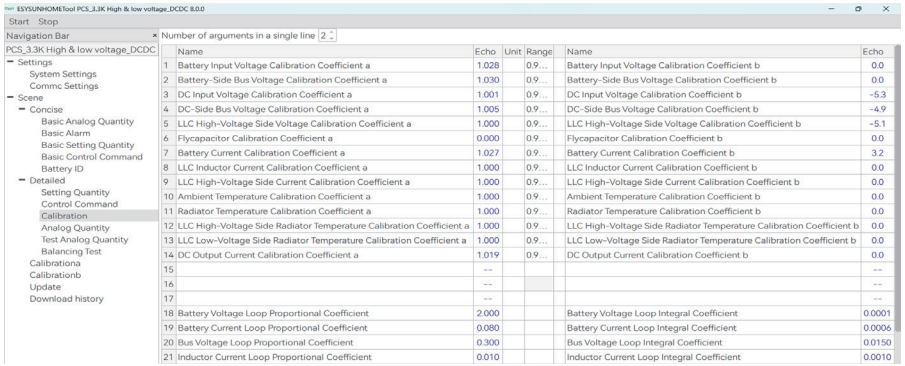
Detailed Control Commands:

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



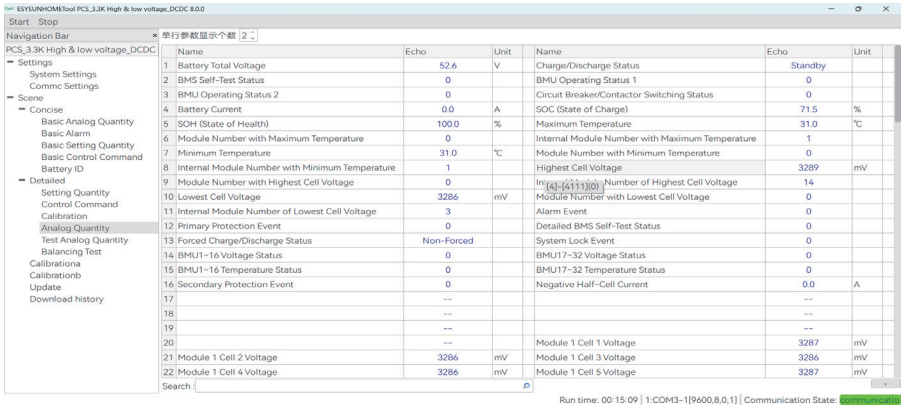
Calibration:

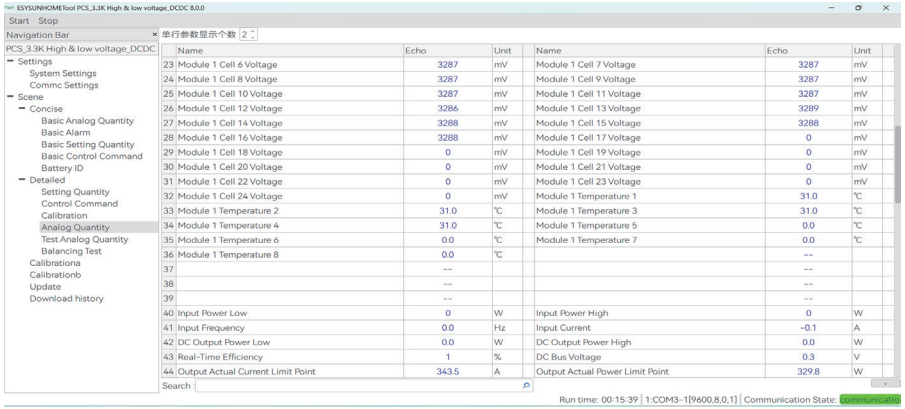
Calibrate battery-related parameters such as voltage, current, and temperature.

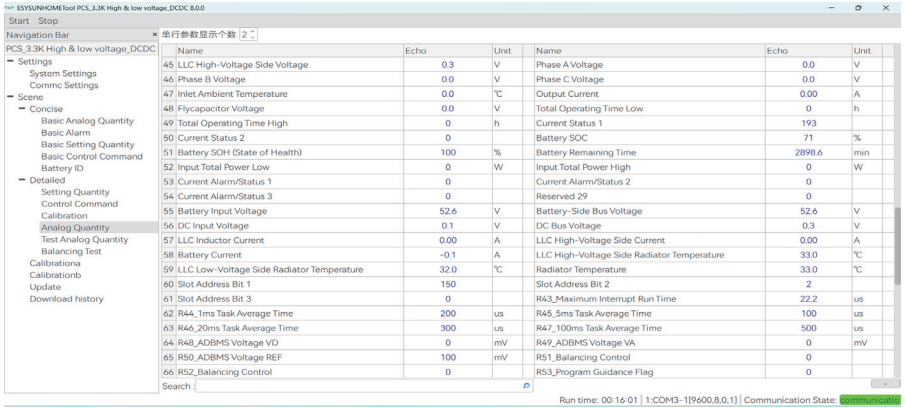


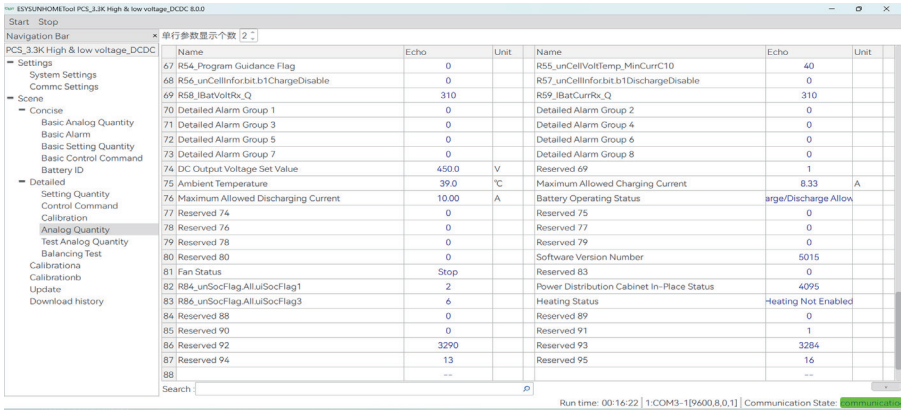
Analog Values:

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



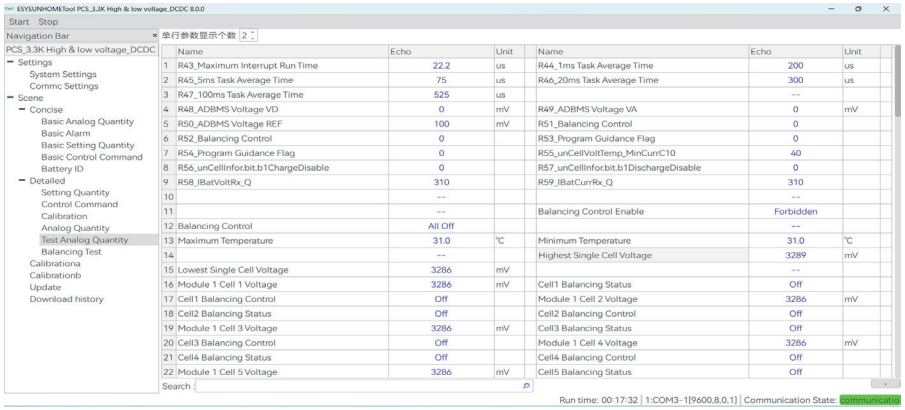


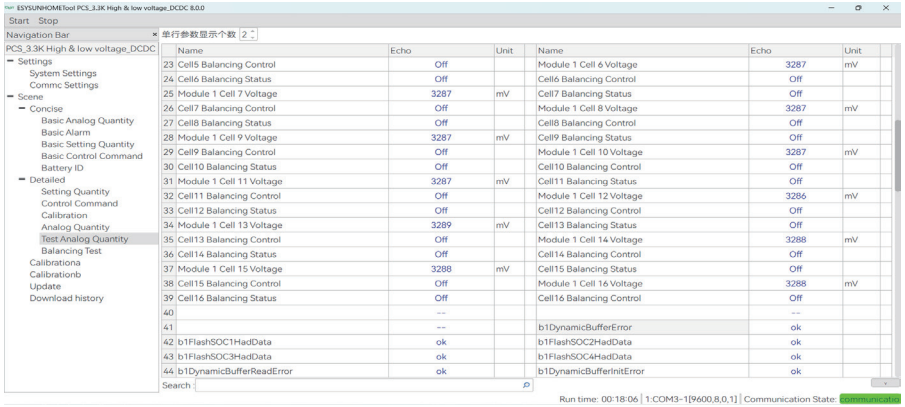


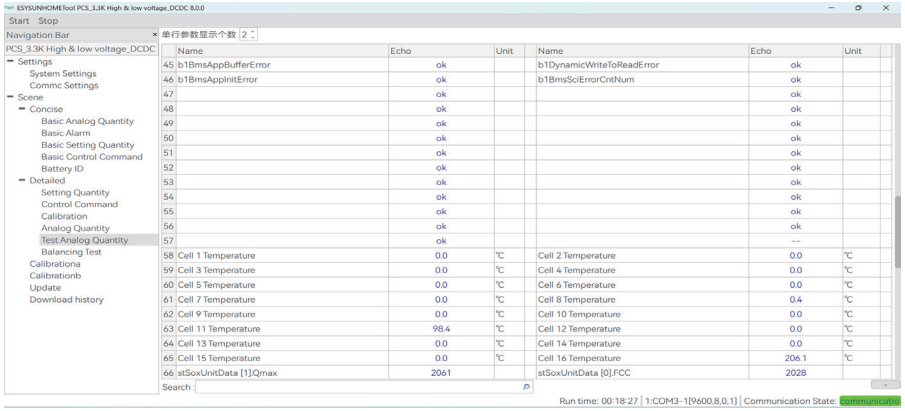


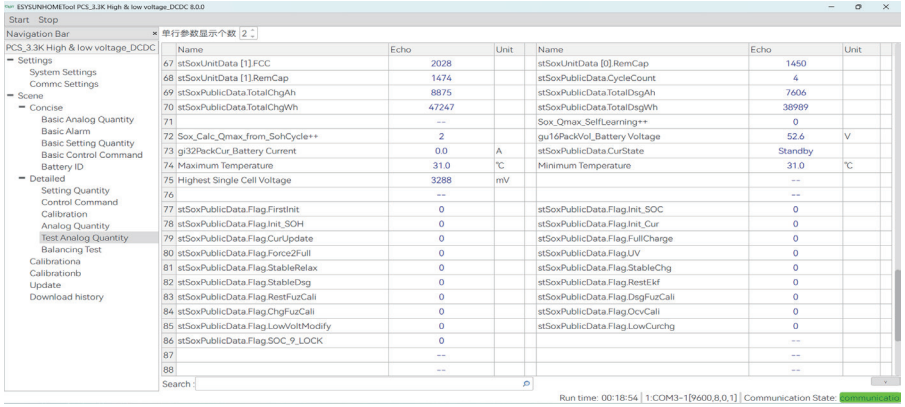
Test Analog Values:

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



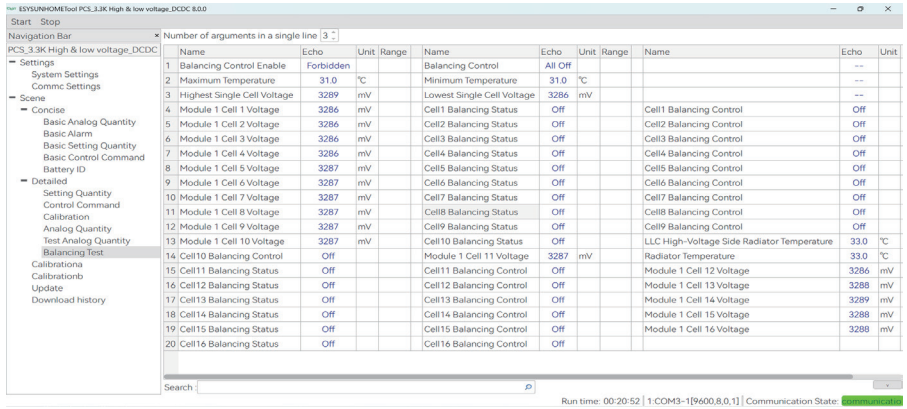






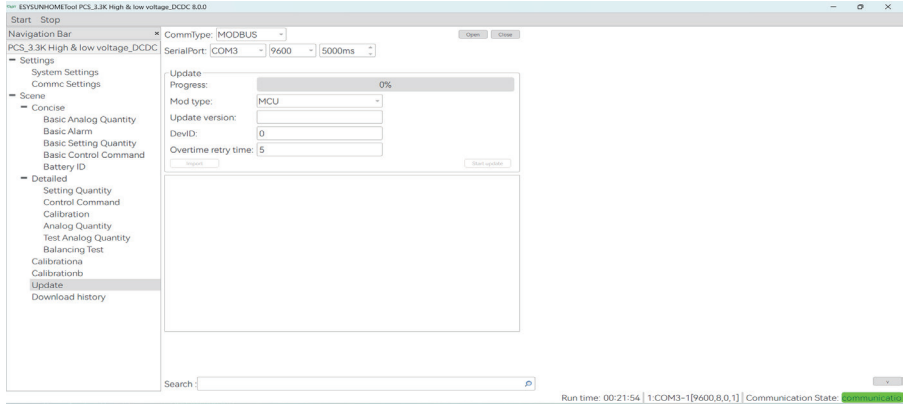
Balance Test:

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

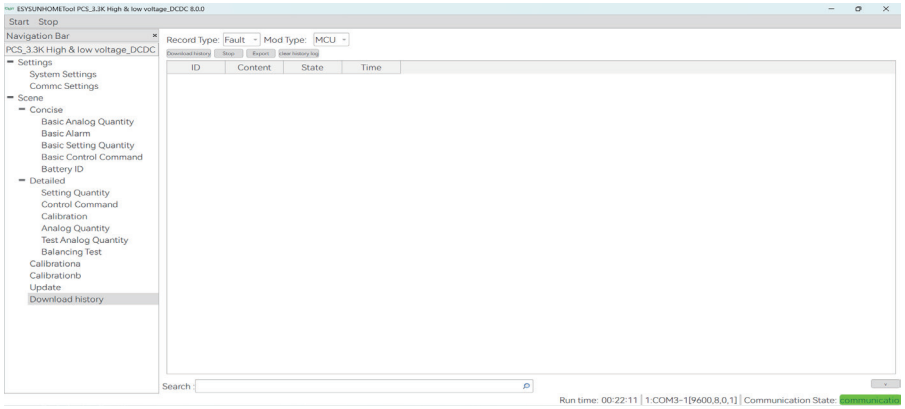


Firmware Upgrade:

Update the battery software and perform important configurations.



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.