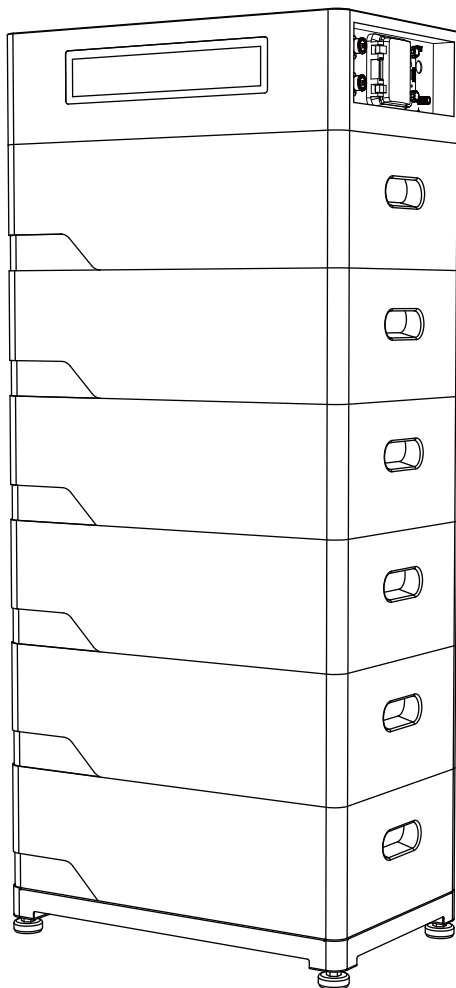




Home Energy Storage System APOLLO-HV Product User Manual

Version: R1.3

This product manual describes APOLLO-HV, a home energy storage system from Shandong Goldencell. The Home Energy Storage System (hereinafter referred to as the System) is a lithium iron phosphate battery domestic energy storage system. Read the manual for this product carefully before installation and follow it exactly during installation. If you have any question, please contact Shandong Goldencell Power Technology Co., Ltd. immediately.

Contents

1. Safety.....	2
1.1 Symbol Definition.....	2
1.2 Precautions before use.....	4
1.3 Precautions when using.....	4
2. System introduction.....	5
2.1 Product introduction.....	5
2.2 Specification.....	5
2.2.1 System Parameters.....	6
2.2.2 Battery module (APOLLO-3-HV).....	7
2.2.3 Control module.....	7
2.2.4 Display panel.....	7
2.2.5 Control module panel.....	8
2.2.6 Wireless Network.....	9
2.2.7 Definition of the RJ45 port pins.....	10
2.3 System block diagram.....	10
3. Installation.....	11
3.1 Tools.....	11
3.2 Safety equipment.....	11
3.3 System work environment checking.....	12
3.3.1 Cleaning.....	12
3.3.2 Ventilation	12
3.3.3 Fire protection.....	12
3.3.4 Grounding system.....	12
3.3.5 Safety distance.....	12
3.4 Installation.....	12
3.4.1 Battery Module Installation.....	12
3.4.2 Base installation.....	12
3.4.3 Choice of installation site.....	12
3.4.4 Packing list.....	13
3.4.5 Installation of the base and the lowest battery module.....	13
3.4.6 Installation of battery module and control module.....	14
3.5 Cable connection.....	14
3.5.1 Grounding.....	15
3.5.2 Cable connection.....	15
3.5.3 System startup.....	16
4. System Commissioning.....	17
5. Maintenance.....	17
5.1 Troubleshooting.....	17
5.2 Replacing major parts.....	19
5.2.1 Replacing battery module.....	19
5.2.2 Replacing control module.....	19
5.3 System maintenance.....	19
6. Storage.....	20
7. Transportation.....	20

1. Safety

1.1 Symbol Definition

Symbol	Symbol Definition
	Electrical shock, personal injury, or death may occur. Proper operation must be performed by a professional and qualified electrical technician.
	System damage or personal injury may occur Proper operation must be performed by a professional and qualified electrical technician.
	May cause System failure or reduce System life.
	High voltage danger.
	Recycling mark.



Danger

- Due to product version upgrade or other reasons, the contents of the document may be updated from time to time, without special agreement, the contents of the document cannot replace the product label or the safety precautions in the instruction manual. All descriptions in the document are for guidance only.
- Read this document carefully to understand the product and precautions before installing and using the System.
- All operations of the System must be carried out by professional, qualified electrical technicians, who need to be familiar with the relevant standards and safety regulations applicable to the project site.
- When operating the System, use insulating tools, and wear personal protective equipment to ensure personal safety. When touching electronic devices, wear electrostatic gloves, anti-static bracelets, anti-static clothing, etc., to protect the equipment from static damage.
- Damage or personal injury caused by failure to install, use, or configure the System in accordance with the documentation is not covered by the manufacturer's responsibility.



The System output terminals are high voltage and could cause personal injury, death or System fire, if contacted, shorted, or incorrectly installed.



Do not open or squeeze the System modules, or the product will not be covered under warranty.

Use well insulated tools when operating the equipment, wear appropriate personal protective equipment such as insulated gloves, safety shoes, safety goggles, etc. Follow local installation standards.



Battery discharge ambient temperature is $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$ (When the ambient temperature $>45^{\circ}\text{C}$, please pay attention to the ventilation and heat dissipation), Charging temperature is $0^{\circ}\text{C} \sim +45^{\circ}\text{C}$. Ambient humidity RH is $\leq 85\%$. Pay attention to waterproof when ambient humidity is $>85\%$, at the same time the battery surface condensation phenomenon should be avoided.

Out of the operating temperature range may cause the System high and low temperature alarms or protection, resulting in reduced cycle life.



Improper setup or maintenance can permanently damage the System; incorrect inverter parameter settings can cause System failure or damage.

- 1) Always read the user manual (in the attachment) carefully before installing or using the System. Failure to follow any instructions or warnings in this document may result in electrical shock, serious injury, or death, and may damage the System and render it inoperable.
- 2) If the System is stored for a long period of time, it requires charging every 1 months, and the SOC should be at least 90%;
- 3) The System needs to be charged within 12 hours of full discharge;
- 4) The cable core must not be exposed.
- 5) Do not immerse the battery in the water. Once it is in the water or water enters the battery, isolate it immediately and ask a professional to deal with it.

- 6) Do not charge at temperatures over 45°C; Do not discharge and leave the battery at temperatures over 60°C. Also keep away from fire, heater or corrosive materials. Otherwise, it can cause overheat, fire, or function failure, shortened life, or even danger happening.
- 7) Do not charge the battery at temperature below 0°C.
- 8) Do not reverse the positive and negative terminals. Do not short the positive and negative of the battery.
- 9) Do not combine the battery in series or in parallel.
- 10) Do not reverse polarity charging. Do not connect the battery electrodes to an electrical outlet.
- 11) Do not transport or store the battery together with metal objects such as hairpins, necklaces, etc.
- 12) Do not strike, trample, throw, fall and shock the battery.
- 13) Do not directly weld the battery and pierce the battery with a nail or other sharp objects.
- 14) Do not overload the battery.
- 15) Do not machine the circuit board, which may damage the internal circuit and cause function failure.
- 16) Do not deform the product under pressure, which may cause electronic components or part of the circuit damage, and make the product unstable.
- 17) Do not remove the case, in case of unnecessary damage.
- 18) Do not overcharge or over discharge the battery.
- 19) If the battery leaks and liquid splashes into the eyes or skin, do not rub, wash it with clean water, and immediately seek medical attention.
- 20) If the battery gives off strange odor, generates heat, becomes discolored or deformed, or any abnormality appears during use, storage, or charging, stop charging and using immediately, remove and isolate it from the device in the safe way.
- 21) The electrode of the discarded battery terminal should be covered with insulating paper to reduce the safety hazard when laying aside.
- 22) Reversing the Positive and negative charging terminal will burn the internal circuit board, so pay attention to it.
- 23) The product dimension does not include the outlet location, various connectors, handles, wheels, thermovent and other componen



1.2 Precautions before use

- 1) After opening the box, please check the product and packing list, if the product is damaged or missing parts, please contact the local dealer;
- 2) Before connecting the System to the inverter, make sure that the System switches are disconnected and that the inverter is not connected to any equipment such as photovoltaic panels, power grids and loads. Note that the rated voltage of the System should meet the inverter product specifications;
- 3) Connect the inverter using the power cord supplied with the box. If a different type of power cord is used, damage to the equipment will not be covered by the manufacturer;
- 4) Make sure that the power cord is properly connected, tight, not loose, and that improper wiring can result in poor contact or high resistance, and damage the System;
- 5) Do not connect the System directly to AC power;
- 6) Do not install the equipment within reach of children;
- 7) The System must be properly grounded;
- 8) The installation should be away from a strong magnetic field environment to avoid electromagnetic interference;

- 9) The installation should be away from water and heat sources;
- 10) The minimum resistance of the photovoltaic component to earth must be greater than R ($R = \text{maximum input voltage (V)} / 30\text{mA}$) or there is a risk of electric shock;
- 11) Photovoltaic components used with inverters must comply with IEC61730-A standards;
- 12) Ensure that the voltage and frequency of the grid access points are within inverter specifications;
- 13) On the AC side of the inverter, it is recommended to add protection devices such as circuit breakers or fuses, which should be at least 1.25 times the maximum current of the AC output of the inverter.



1.3 Precautions when using

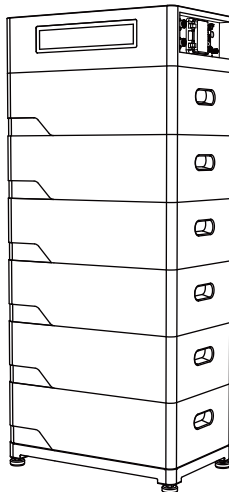
- 1) Labels, warning signs for the System must be clearly visible and must not be obscured, tampered or damaged;
- 2) To move or service System modules, the power must be switched off and the System completely shut down;
- 3) Do not connect the System module to a different model of System module;
- 4) Do not connect the System to a faulty or incompatible inverter;
- 5) Do not disassemble the System, unauthorized removal or modification may result in damage to the System, which is not covered by the warranty;
- 6) In the event of a fire, only use fire extinguishers for lithium batteries such as heptafluoropropane and perfluorohexidone.

2. System introduction

2.1 Product introduction

APOLLO-HV is a home energy storage system based on lithium iron phosphate battery, one of the new energy storage products developed by Goldencell Power. It provides users with standby power and other grid services, reduces grid stress, lowers infrastructure investment, saves energy costs, prevent home power outages and cut carbon emissions. APOLLO-HV is ideal for applications such as high power output, limited installation space and long cycle life.

2.2 Specification



2.2.1 System Parameters

Product category	APOLLO-HV			
Module quantity	2	3	4	5
Energy	6kWh	9kWh	12kWh	15kWh
Module No.	APOLLO-6-HV	APOLLO-9-HV	APOLLO-12-HV	APOLLO-15-HV
Rated charging power (current)	3kW (20A)	4.5kW (20A)	6kW (20A)	7.5kW (20A)
Rated discharging power (current)	6kW (40A)	9kW (40A)	12kW (40A)	15kW (40A)
Nominal voltage	153.6V	230.4V	307.2V	384V
Working voltage	120-172.8V	180-259.2V	240-345.6V	300-432V
Dimensions	Approx. 540*330*538mm	Approx. 540*330*711mm	Approx. 540*330*884mm	Approx. 540*330*1057mm
Weight	Approx. ±89kg	Approx. ±125kg	Approx. ±161kg	Approx. ±197kg

Module quantity	6	7
Energy	18kWh	21kWh
Module No.	APOLLO-18-HV	APOLLO-21-HV
Rated charging power (current)	9kW (20A)	10.5kW (20A)
Rated discharging power (current)	18kW (40A)	21kW (40A)
Nominal voltage	460.8V	537.6V
Working voltage	360-518.4V	420-604.8V
Dimensions	Approx. 540*330*1230mm	Approx. 540*330*1403mm
Weight	Approx. ±233kg	Approx. ±269kg

Operating Life	10 + years
Cycle-index	5000+ (80% DOD, 0.2C charge & discharge at + 25 °C)
Charge Temperature	0 ~ 45°C
Discharge Temperature	-20 ~ 60°C
Altitude	≤ 2000m
Humidity	RH≤85%
Transport Certificate	UN38.3
1) Battery Module Dimensions (L * W * H)	Approx. 540*330*150mm
2) Battery Base Dimensions (L * W * H)	Approx. 540*330*42mm
3) Battery Module Dimensions (L * W * H)	Approx. 540*330*182mm

The above data is experimental data obtained under standard test conditions, actual parameters may be different from experimental data due to actual use conditions and environment.

2.2.2 Battery module

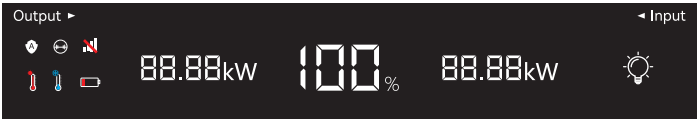


Module No.	APOLLO-3-HV
Battery Module Parameters	JG-24IFR76.8-40-Y(26650-3.2V-24S10P)
Battery Module Capacity	3kWh
Battery Module Voltage	76.8Vdc
Battery Module Capacity	40Ah
Cell Quantity	240Pcs
Battery Cell Voltage	3.2Vdc
Battery Cell Capacity	4Ah
Dimensions (L * W * H)	Approx. 540*330*182mm
Weight	Approx. 36kg

2.2.3 Control module

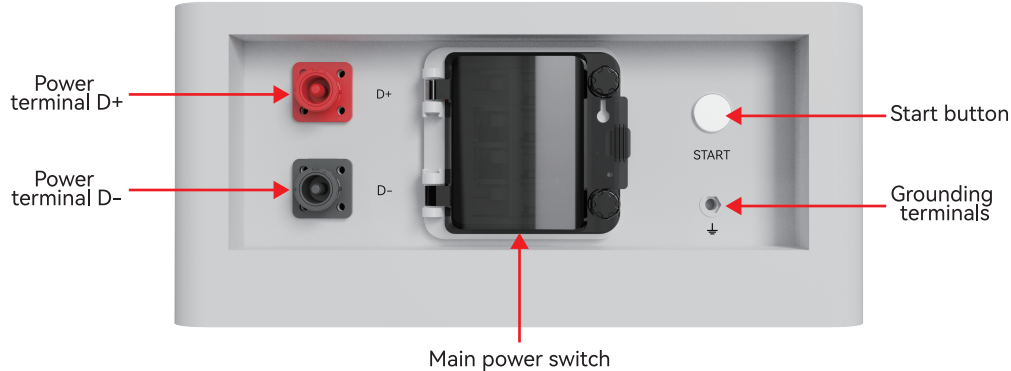


2.2.4 Display panel



1. The upper left Output stays on when the System is being discharged, and the Output and lower Power display goes off when the System stops discharging.
2. The upper left Output stays on when the System is being charged, and the Output and lower Power display goes off when the System stops charging.

			
Overcurrent protection	Short circuit protection	Communication failed	High temperature protection
			
Low temperature protection	Undervoltage protection	Power display	Screen waking up



2.2.5 Control module panel



Main power switch
Main circuit breaker

NOTE: When the circuit breaker is opened due to overcurrent or short circuit, it must wait more than 10 minutes before switching it back on, otherwise damage to the circuit breaker may occur.

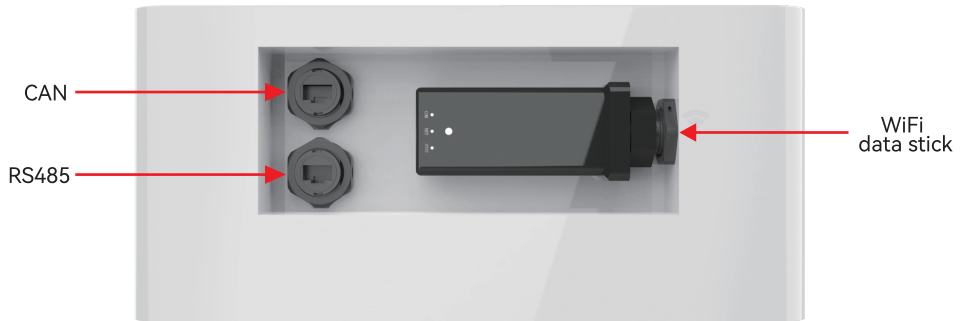


Starting up
Switch on the main circuit breaker, then press the start button for more than 10 seconds to switch on the System.



Power terminal (D+, D-)
The System power cable is connected to the inverter.





2.2.6 Wireless Network

- 802.11 b/g/n 1X1 compliant
- WiFi 20MHz bandwidth
- Transmit Power (Max 15dBm)
- Modulation method (DSSS, OFDM)
- Supports 1T1R mode with data rates up to 150 Mbps
- Security mechanism (WEP/WPA-PSK/WPA2-PSK/WPA3-SAE)
- Encryption (WEP64/WEP128/TKIP/AES)
- Supports AP and STA dual-role parallelism
- Supports Wi-Fi/BLE to UART data communication
- Supports CF-Config network configuration
- Support SOFT-AP and Sniffer network configuration
- Supports wireless and remote firmware upgrades

The NET light constant on the data stick indicates a successful network connection; the COM light is solid indicating successful communication with the System.



An android device can be used to check the battery status of the System by scanning the QR code to download data stick app (PowerHub can be downloaded for IOS devices by searching for PowerHub in the App Store) , and the dealer will assist the customer with registration at installation.

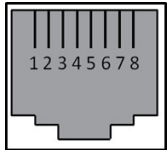
Communication Terminal (RS485/CAN)

The RS485 communication terminal (RJ45 interface) uses the MODBUS 485 protocol for communication between the System and the inverter.

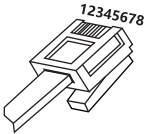
The CAN communication terminal (RJ45 interface) uses the CAN2.0 protocol for communication between the System and the inverter.

2.2.4 Definition of the RJ45 port pins

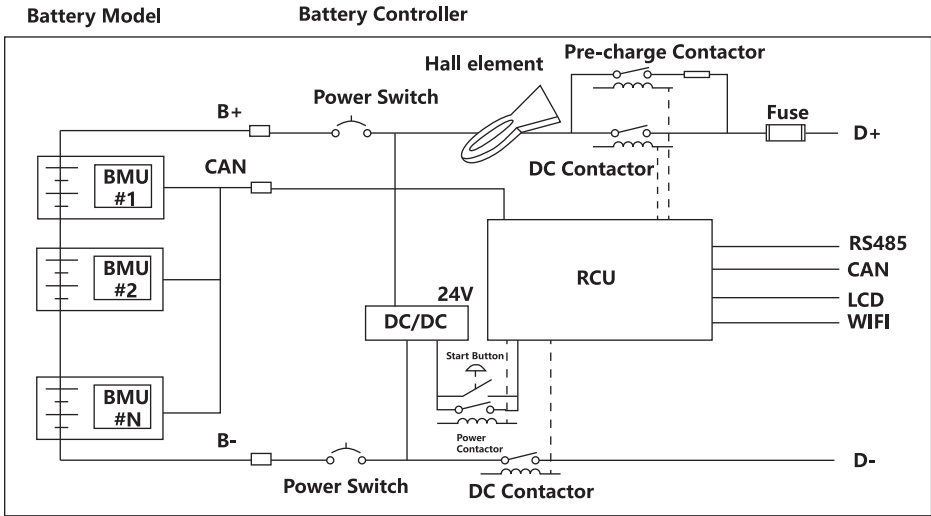
No.	CAN	RS485
1	---	---
2	---	---
3	---	---
4	CANH	---
5	CANL	---
6	---	---
7	---	RS485A
8	---	RS485B



RJ45 Port



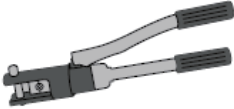
2.3 System diagram



3. Installation

3.1 Tools

The following tools are required to install the System:

 Wire cutter (Cutting power cords)	 Hydraulic plier (Crimping power cords, ground terminals)	 Cable ties (Fixing Harness)
 Screwdriver (System module mounting)	 Electric screwdriver (System module mounting)	 Multimeter (System voltage testing)
 Adjustable wrench (Grounding terminals mounting)	 Sleeve (System module mounting)	

CAUTION:

Use well insulated tools to prevent accidental electric shock or short circuit.

3.2 Safety equipment

The following safety equipment is recommended when handling the System



Insulated gloves



Safety goggles



Safety shoes

3.3 System working environment checking



3.3.1 Cleaning

Before installation and System powering up, dust and iron debris must be removed to keep the environment clean.

High voltage is available on the battery module output terminals, do not touch the terminals when cleaning.



3.3.2 Ventilation

The installation environment needs to meet the requirements of System ventilation and cooling, and the System must not be installed in areas such as high salinity, high humidity, or high temperature. Out of the operating temperature range may cause the System high and low temperature alarms or protection, resulting in reduced cycle life.



3.3.3 Fire protection

Fire extinguishers must be provided for safety.

Regularly check the fire protection System to keep it in normal condition. For use and maintenance requirements, follow local fire guidance.



3.3.4 Grounding system

Ensure that the grounding point is stable and reliable before installing the system. If the system is installed in a separate equipment compartment (such as a container), it must be ensured that the compartment ground is stable and reliable.

The ground wire requires a cross-section of $\geq 4\text{mm}^2$ and should be yellow and green.

3.3.5 Safety distance

More than 200 mm from surrounding objects.



3.4 Installation

APOLLO-HV is a high voltage DC system, and thus the proper operation must be performed by a professional and qualified electrical technician.



3.4.1 Battery Module Installation

A single battery module is around 36 kg. More than 2 people are needed to carry the module if proper tools are not available.

3.4.2 Base installation

The base is lightweight and can be handled by one person.

3.4.3 Choice of installation sites

A. System operating temperature range: $-20^{\circ}\text{C}\sim 60^{\circ}\text{C}$; the best temperature range: $15^{\circ}\text{C}\sim 25^{\circ}\text{C}$. Installation environment needs to avoid sun, rain, snow, etc., a sheltered location is recommended for installation, and It is recommended to build a shelter. In cold areas a heating System is required. B. The mounting carrier shall be flat, shall not be flammable, and shall come with fire resistance. The System shall not shake after installation.

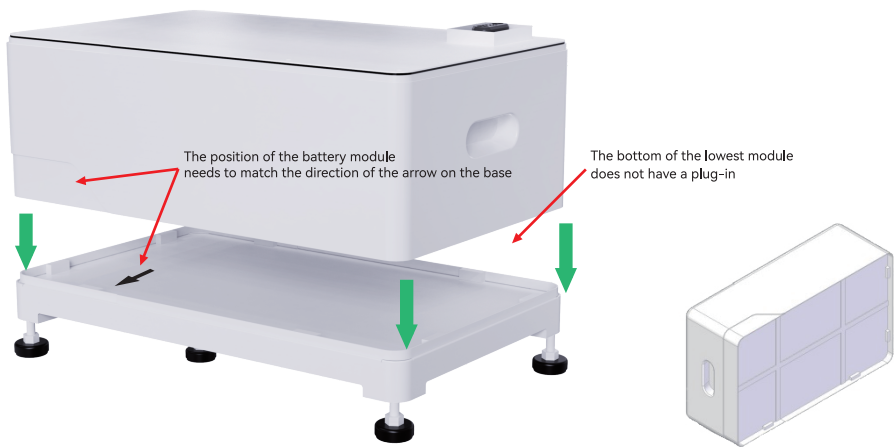
C. The mounting carrier must be robust and reliable to carry the weight of the system (see 2.2.1 for weight of different module quantities).

3.4.4 Packing list

Item	Description	Set
Battery control module		
1	Control module	1
2	Base	1
3	3.5m external communication line (RJ45)	1
4	3.5m D+ power cord	1
5	3.5m D- power cord	1
6	3.5m ground wire (4mm ²)	1
7	Product Instruction Manual	1
8	WiFi data stick	1
Battery module		
	APOLLO-3-HV battery module	2≤N≤ 7

3.4.5 Installation of the base and the lowest battery module

When mounting the base, make sure that the base is closely against the mounting carrier and also remains level (if necessary use a level, together with adjustable feet). The lowest battery module fits around the base, indicating a successful installation. **Be careful to identify the lowest battery module (referring to the label on outer case), and if incorrectly installed, the System will not work.**



3.4.6 Installation of battery module and control module

Hold the handle in the middle of the module and insert it along the four sides of the lowest battery module to complete the installation. (The exact number of modules is based on the actual quantity purchased and **the System requires at least two battery modules and one control module to operate**)

NOTE: Do not place your hands on the red mark when installing. When the number of modules exceeds 6, the System needs to be reinforced to prevent it from tilting.



3.5 Cable connection



The System is a high voltage system and must be secured to reliable ground.

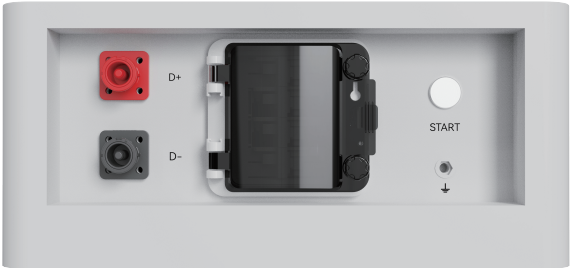
Do not reverse the socket and plug of all power cords as this may cause damage to the System or personal injury.

Do not short circuit the positive and negative terminals of the System.



Incorrect communication cable connection can cause the inverter to fail.

3.5.1 Grounding

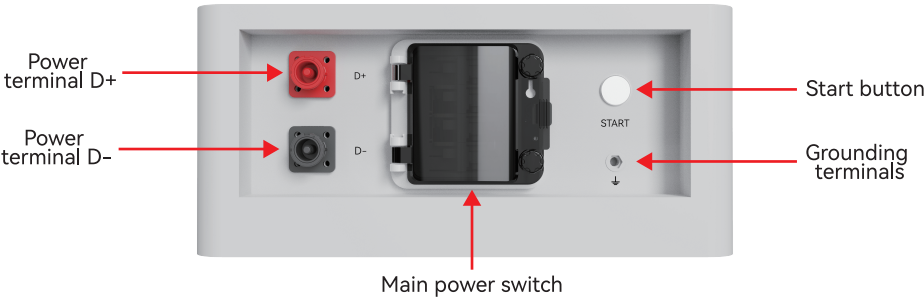
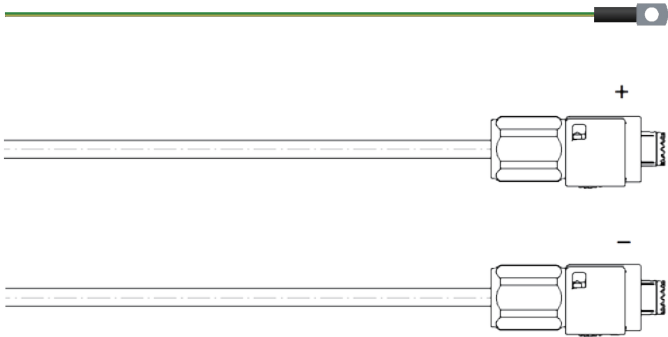


The ground wire requires a cross-section of $\geq 4\text{mm}^2$ and should be yellow and green.

3.5.2 Cables



The power cord has a waterproof connector.
To disconnect, verify that the System is completely powered off.
The communication cable has an RJ45 connector.



3.5.3 System startup



Check all power and communication cables again. **Before connecting the inverter, the operating voltage value of the System must be checked to ensure that it is within the input range of the inverter**, and check that all power switches are disconnected.

System powering up procedure:

- 1) Check that all cables are connected correctly and that the ground wire is connected;
- 2) Turn on the main power switch of the System control module;
- 3) Press the start button for at least 10 seconds until the display lights up, and the System is ready to operate when the inverter is turned on and communication is established.



When the circuit breaker is opened due to overcurrent or short circuit, it must wait more than 10 minutes before switching it back on, otherwise damage to the circuit breaker may occur.



If a fault occurs during the self-test, it must be corrected before starting the next step.



On the first powering up, the System needs to be fully charged to calibrate the SOC. It is recommended that the System should be fully charged after installation or after prolonged shelving.



System powering down procedure:

- 1) To power down the inverter used in the System, see the user manual for the appropriate inverter model;
- 2) Disconnect the control module main power switch and verify that there is no output from the D+ and D- terminals. The System must be powered down when it fails or before it is put into service.

4. System Commissioning

The System commissioning must be carried out in conjunction with a configured inverter and load.

Commissioning steps	Content
Preparation for commissioning	Turn on the System. The load is not allowed to be switched on until the entire System is started! NOTE: Except for this System, other devices have their own system startup procedures and all user manuals must be strictly followed.
Synergy with the inverter	1) Check the communication lines to make sure that the wiring sequence between the System and the inverter is correct. All undefined pins are recommended to be left empty. 2) Check inverter baud rate. Battery CAN defaults to 500kbps and MODBUS 485 defaults to 9600bps. If required, you can contact your dealer to make changes. 3) If necessary, check that the parameters of the inverter or control module are correct. And check that the System information displayed on the inverter is correct.

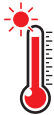
CAUTION:
Current matching inverter models:

Matching List			
Inverter brand	Inverter model	Voltage	Power
INVT	BD 8-12kW-RH3 (Three Phases)	125V-600V	8-12kW
Afore	AF3-12K-THP (Three Phases)	80-600V	3-12kW
Afore	AF3-9.6K-DH(Split Phases)	80-495V	3-9.6kW
Solis	S6-EH3P(3-10)K-H-EU (Three Phases)	120-600V	3-10kW
Solis	S6-EH1P(3.8-11.4)K-H-US (Split Phases)	120-500V	3.8-11.4kW
PS: System Power=Min (Inverter Power, APOLLO-HV Power)			

5. Maintenance



5.1 Troubleshooting:
APOLLO-HV is a high voltage DC system, and thus the proper operation must be performed by a professional and qualified electrical technician.
Before checking for a fault, you must check that all cables are well connected and that the System can be powered on properly.

NO.	Problem	Possible causes	Solutions
1	No output from the System, non-started display	Pressing the start button not long enough.	Press and hold the button for at least 10 seconds.
		Broken start button.	Replace the start button
		Low System voltage.	Make sure there are at least 2 modules.
2		Overcurrent protection of the System.	Check the inverter current parameter setting.
3		Short circuit protection of the System.	Check the inverter battery input for a short circuit, and check that the inverter is faulty.
4		Internal communication failure of the System.	Re-start the display; power up the System again.
5		High temperature protection of the System.	Check for heat sources around the System and direct sunlight; check that the inverter charge and discharge current settings are correct.
6		Low temperature protection of the System.	Check for low ambient System temperatures.
7		Undervoltage protection of the System.	Charge the battery in time.
8	Failed communication with the inverter.	Non-compatible inverter brands	Check the list of compatible brands.
		Poor communication port contact.	Reseat the communication plug.
9	Others	System fault. Commissioning tools are required for further commissioning.	No points of failure are found or checking cannot be carried out. Contact your distributor or Goldenmate.



In the event of a System failure, shut down the System before waiting for service to avoid excessive discharge due to self-consumption.
If the System is disconnected from the inverter due to an alarm, turn off the main power switch of the System immediately and contact the distributor for handling.



5.2 Replacing major parts

APOLLO-HV is a high voltage DC system, and thus the proper operation must be performed by a professional and qualified electrical technician.

Before replacing a component, the System must be powered off, ensuring that there is no output from the D+ and D- terminals.

5.2.1 Replacing battery module

- 1) Fully charge the existing modules (SOC 100%). Also, make sure that the new battery module has 100% charge;
- 2) Shut off the entire System, ensuring that there is no output from the D+ and D- terminals;
- 3) Remove the D+ and D- power cords, communication and ground wires;
- 4) Move the control module and then the battery module;
- 5) Place a new battery module. Stack the battery module and control module;
- 6) Install the ground, communication and D+, D-power wires;
- 7) Turn on the System.



When installing the battery module, place your hand on the handle.



A single battery module is 36 kg. More than 2 people are needed to carry the module if proper tools are not available.

5.2.1 Replacing control module

- 1) Shut off the entire System. It must be confirmed that there is no power to the D+ and D- terminals;
- 2) Remove the D+ and D- power cords, communication and ground wires;
- 3) Remove the control module;
- 4) Place a new control module;
- 5) Install the ground, communication and D+, D-power wires;
- 6) Turn on the System.



Capacity expansion

A new battery module can be added to the existing system at any time. Before adding a new module, ensure that the existing system and the new battery module are fully charged. Ensure that the System voltage after the new module having been added is within the input range of the inverter. In a serial system, even if the new battery module has a larger SOH, the System is judged by the battery module with the lowest SOH.



5.3 System maintenance

Proper operation must be performed by a professional and qualified electrical technician.

5.3.1 Voltage inspection:

[Periodic Maintenance] Check the System voltage by using the monitoring system.

Check for abnormal System voltage.

5.3.2 SOC Inspection:

[Periodic Maintenance] Check the System voltage by using the monitoring system.

Check for abnormal System voltage.

5.3.3 Cables inspection:

[Periodic Maintenance] Visually inspect all cables to the System.

Check for broken, worn, loose cables.

5.3.4 Balance:

[Periodic Maintenance] A prolonged period of time without a full charge can result in an uneven battery module charge. Solution: Full charge every 2 months.

5.3.5 View History:

[Periodic Maintenance] Analyze the history to check for alarms and protections, and analyze their causes.

5.3.6 Scrapping

CAUTION:

A damaged battery may leak electrolyte or create a flammable gas.

Dispose of the damaged batteries in accordance with local disposal regulations.

6. Storage

Battery module storage requirements (N/A in the System)

- For long-term storage, the battery modules should be stored at a temperature of 0~40°C (optimal 15~25°C), dry, clean, Well-ventilated environment, with relative humidity $\leq 85\%$, and no corrosive gases. Avoid condensation caused by temperature changes during storage, otherwise it will lead to the rust of batteries or metal parts.
- The battery modules should be charged to more than 90% SOC before storage.
- Perform maintenance on the battery modules (discharge and charge) every 6 months.
- Don't use organic solvents to clean the battery case.
- CAUTION: System life may be reduced if the battery modules are not stored for a prolonged period of time as described above.

7. Transportation

The remaining capacity of the battery modules after shipping depends on the transportation environment and time.

1. The battery modules meet the UN38.3 certification standard.
2. Special rules for the transport of goods by road must be observed, as well as the existing dangerous goods laws.