

# Powerwall 5kwh 10kwh 15kwh



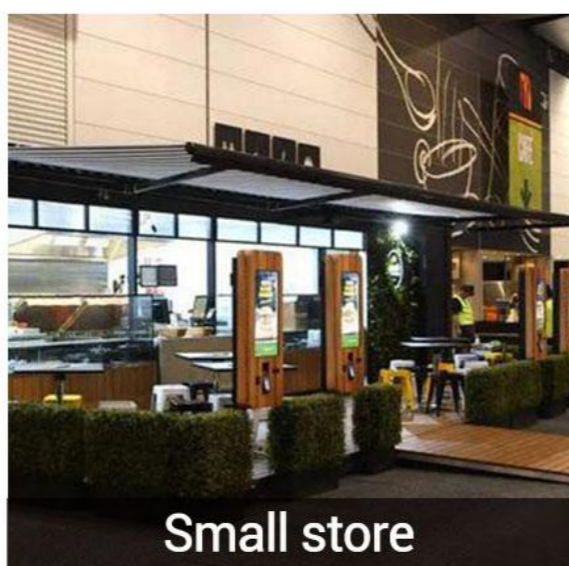
## Product advantages:

- Support a variety of communications, can communicate with a variety of inverters;
- Products cover 5-10KWH capacity segment;
- The product supports parallel connection and expansion;
- Simple appearance design, easy installation;

## Application scenarios:



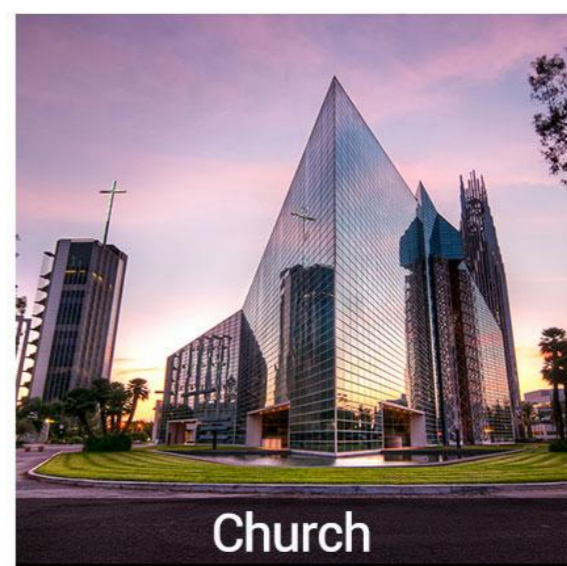
Family



Small store



Office



Church

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# 1.Safety Precautions

- It is very important and necessary to read the user manual carefully before installing or using the battery. Failure to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, death, or may damage the battery and the whole system.
- If the battery is stored for a prolonged time, it is requirement that they are charged every three to six months, and the soC should be no less than 40-60%.
- The battery needs to be recharged within 12 hours, after fully discharging. Do not expose cable outside.
- All battery terminals must be disconnected before maintenance. Do not use cleaning solvents to clean the battery.
- Do not expose the battery to flammable or harsh chemicals or vapors.
- Do not paint any part of the battery, include any internal or external components.
- Do not connect battery with PV solar wiring directly.
- Any foreign object is prohibited to be inserted into any part of the battery.
- Any warranty claims are excluded for direct or indirect damage due to items above.

## 1.1.Before Connecting

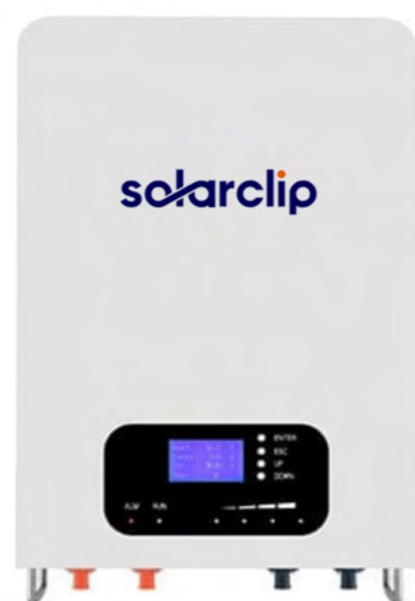
- After unpacking, please check the battery and packing list first, if the battery is damaged or spare parts are missing, Please contact the dealer.
- Before installation, be sure to cut off the grid power and make sure the battery is in the turned-off mode;
- Wiring must be correct, do not mix-connect the positive and negative cables, and ensure no short circuit with the external device;
- It is prohibited to connect the battery with AC power directly;
- The embedded BMS in the battery is designed for 48VDC, please DO NOT connect battery in series;
- It is prohibited to connect the battery with different type of battery;
- Please ensure the electrical parameters of battery system are compatible to inverter;
- Keep the battery away from fire or water.

## 1.2.During operation

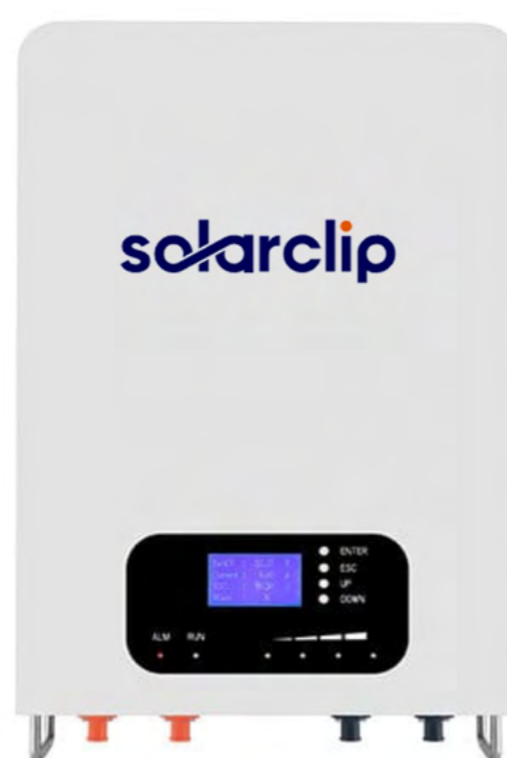
- If the battery system needs to be moved or repaired, the power must be cut off first and the battery is completely shutdown;
  - It is prohibited to connect the battery with different type of battery;
  - In case of fire, only dry powder fire extinguisher can be used, liquid fire extinguishers are prohibited;
  - Please do not open, repair or disassemble the battery. We do not undertake any consequences or related responsibility due to violation of safety operation or violating of design, production and equipment safety standards.
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## Product Specifications

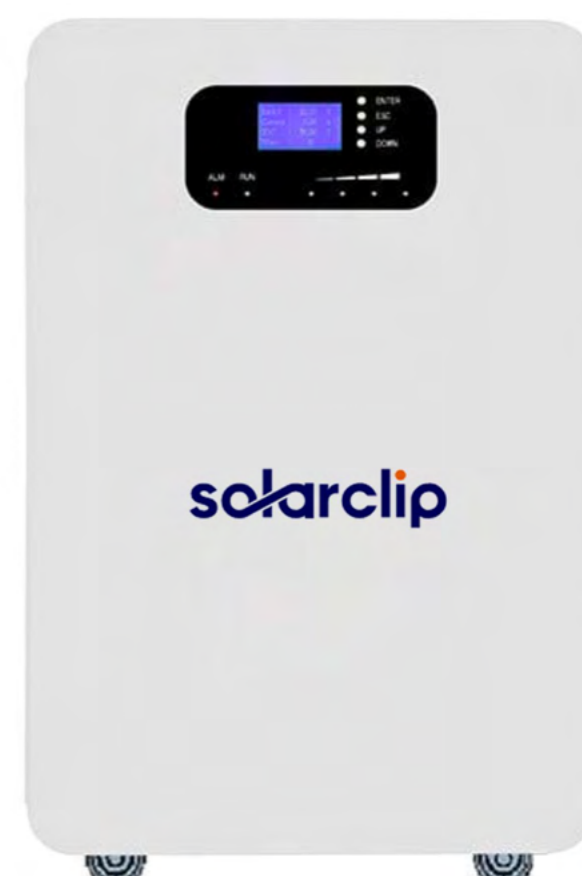
**solarclip**



**HHS-PW512100**



**HHS-PW48200**



**HHS-PW512300**

Model	HHS-PW512100		HHS-PW48200	HHS-PW512300
Nominal Voltage	51.2V		51.2V	48V / 51.2V
Capacity	100Ah		200Ah	300Ah
Energy	5.12KWh		10.24KWh	14.4KWh / 15.36KWh
Internal Resistance	$\leq 40\text{m}\Omega$			
Cycle Life	$\geq 6000\text{cycles}@80\%\text{DOD}, 25^{\circ}\text{C}, 0.5\text{C}$			
Design Life	$\geq 10$ years			
Charge Cut-off Voltage	58.4V		58.4V	54.75V / 58.4V
Max. Continuous Work Current	100A		200A	100A / 200A
Discharge Cut-off Voltage	40V		40V	37.5V / 40V
Charge Temperature	$0^{\circ}\text{C} \sim 55^{\circ}\text{C}$			
Discharge Temperature	$-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$			
Storage Temperature	$-40^{\circ}\text{C} \sim 55^{\circ}\text{C}$ @ 60% $\pm$ 25% relative humidity			
Dimensions	500*360*193 mm		570*468*245 mm	720*480*228.5 mm
Weight	45.5Kg		89.5Kg	106Kg / 113Kg
Protocol (optional)	RS485(B)-PC RS485(A)-Inverter, Canbus-Inverter			
Certification	CE, UN38.3, MSDS, DGM Report			

## 3.Introduction to the battery

### 3.1.Key Features

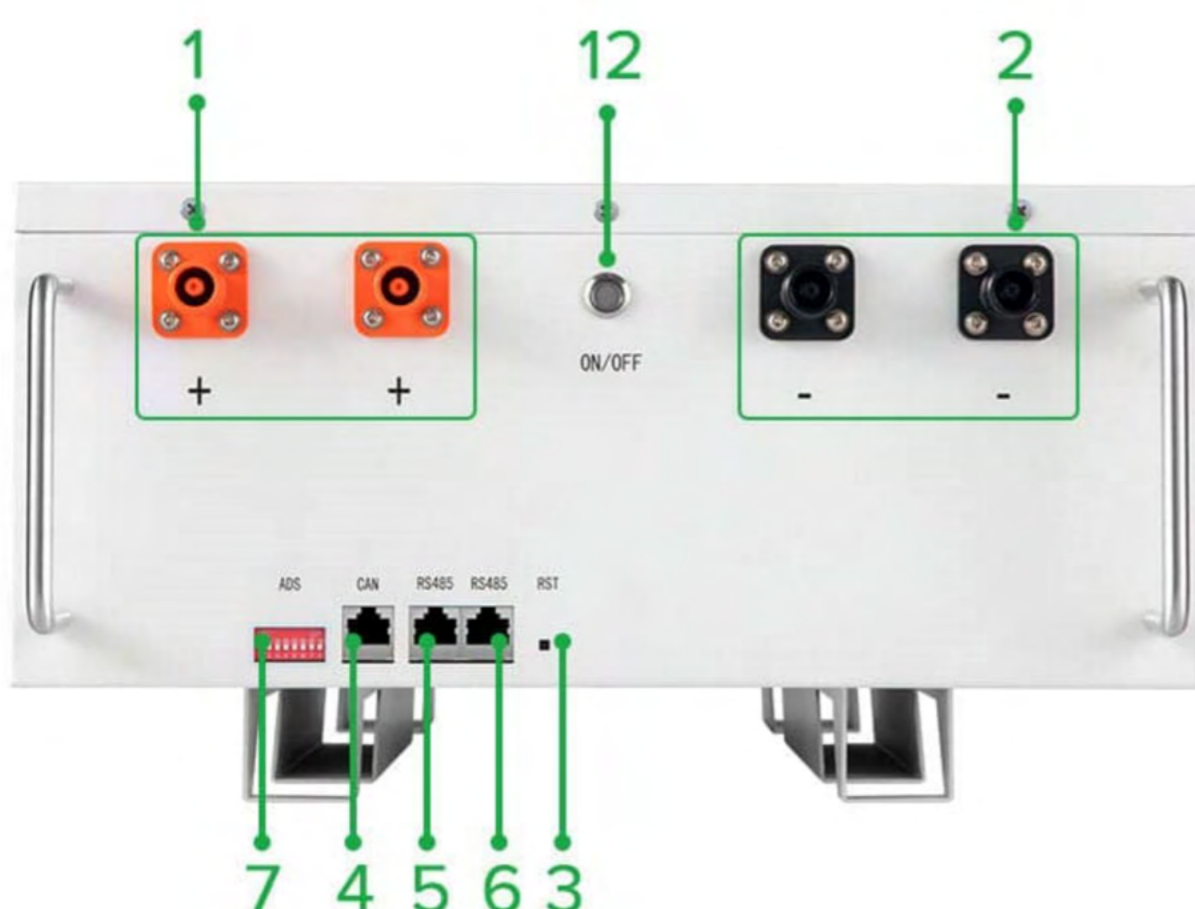
- LiFePo4 composition - provides exceptional safety and longevity
- High safety and reliability
- >6,000 cycles / 10 years service life
- Consistent performance over wide temperature rangeWall-mounted, convenient installation
- Integrated state-of-the-art BMS to manage and monitor battery information including voltage, current and temperature as well as balance cell charging/discharging rates
- 5 years warranty

### 3.2.Interface Introduction

- This section details the interface functions of front and back panel.
- Front interface:



● Mounting Frame



●No.	●Description	●Silk-screen	●Remark
●1	●Positive Pole	●P+ P+	●Output terminal
●2	●Negative Pole	●P- P-	●Output terminal
●3	●Reset button	●RES	●For BMS Reset
●4	●CANbus Port	●CAN	●CANbus and inverter connection port
●5	●RS485A Port	●RS485	●RS485 and inverter connection port
●6	●RS485B port	●RS485	●RS485 parallel communication interface
●7	●Dial switch	●ADS	●Set the address
●8	●LED	●SOC	●Capacity indicator
●9	●LED	●ALM	●Alarm indicator
●10	●LED	●RUN	●Operation indicator
●11	●LCD & Key	●	●
●12	●Power switch	●	●

### 3.3.SoC Indicator & Status Indicator Guides

● Chart 1: Battery Status

		Normal/ Warninal/ Protection		RUN	ALM	Capacity (SOC) LED				Description
Status				●	●	●	●	●	●	
Shut Down	Shut down			OFF	OFF	OFF	OFF	OFF	OFF	All OFF
Standby	Normal			Flash	OFF	Based on capacity				Standby
	Warning			Flash	Flash					
Charge	Normal			ON	OFF	Based on capacity				ALM light does not
	Warning			ON	Flash					
	Over Charge Protection			Flash	OFF	ON	ON	ON	ON	Switch to standby when there's no charging

	Temperature, Current, Failure protection	Flash	ON	OFF	OFF	OFF	OFF	Stop charging
Discharge	Normal	Flash	OFF	Based on capacity				
	Warning	Flash	Flash					
	Over discharge protection	OFF	OFF	OFF	OFF	OFF	OFF	Stop discharging
	Temperature, Over current, Short circuit, Reverse connection, Failure protection	OFF	ON	OFF	OFF	OFF	OFF	Stop discharging
Fault	/	OFF	ON	OFF	OFF	OFF	OFF	Stop charging or discharging

## ● Chart 2: Battery Capacity

Status		Charging				Discharging			
Capacity LED Indicator		● L4	● L3	● L2	● L1	● L4	● L3	● L2	● L1
Capacity	0~25%	OFF	OFF	OFF	Flash	OFF	OFF	OFF	ON
	25~50%	OFF	OFF	Flash	ON	OFF	OFF	ON	ON
	50~75%	OFF	Flash	ON	ON	OFF	ON	ON	ON
	75~100%	Flash	ON	ON	ON	ON	ON	ON	ON
RUN Status ●		ON				Flash			

### 3.3. Connectors

Charge / Discharge connectors: to connect the positive pole (+) and negative pole (-) from the battery to the inverter via DC isolator.

CAN/RS485: Active communication portal between battery and inverter.

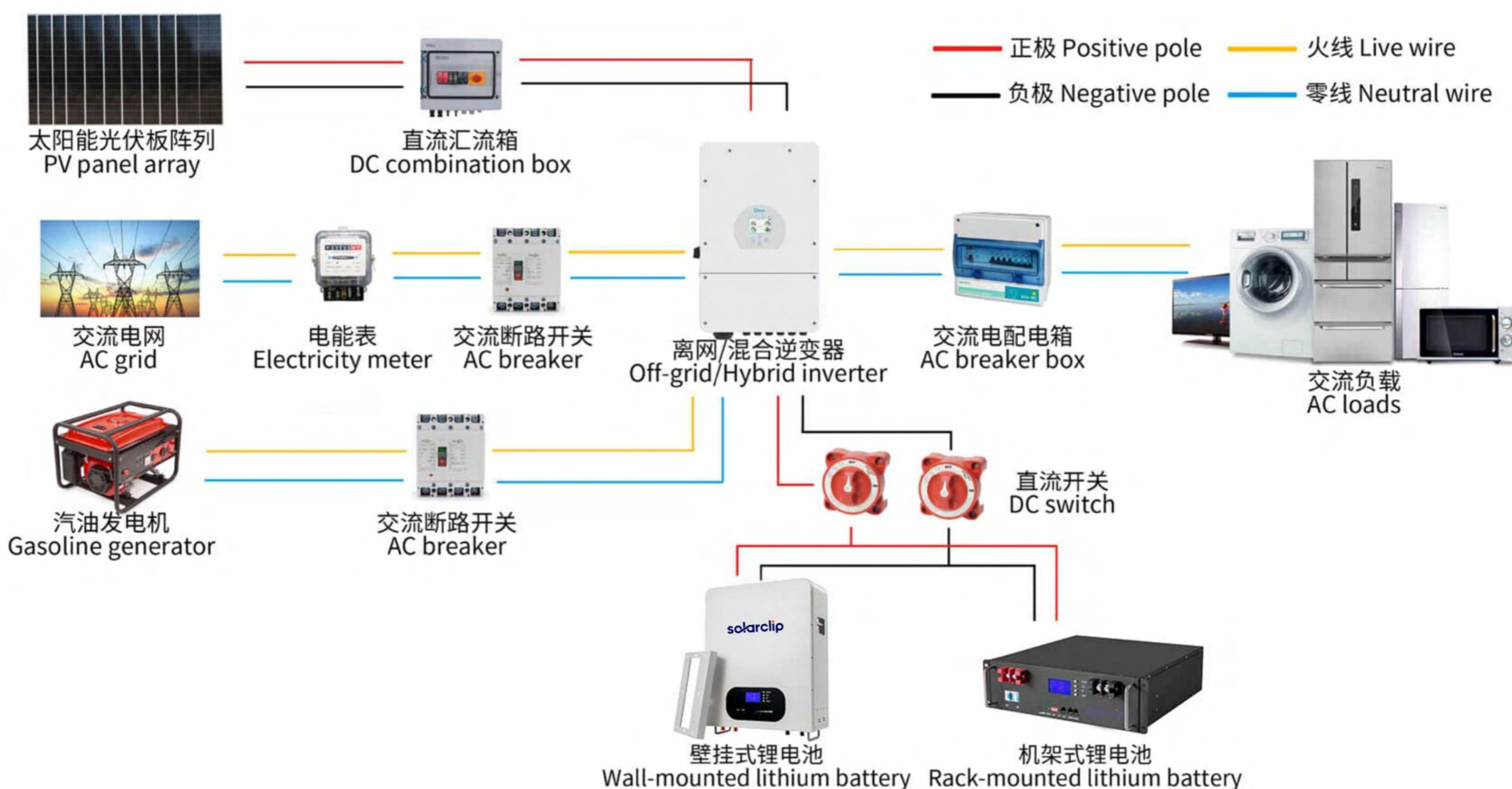
Address: Reserved Address portal for multiple parallel connections.

### 3.4. Wake Up button

- Battery On: When battery is shut down, press this POWER button. It is opened when the LED lights flicker from RUN light to the lowest capacity indicator.
- Battery off: When battery is opened, press this POWER button. It will be shut down when the LED lights flicker from lowest capacity indicator to RUN light.

## 4.Safe handling guide

### 4.1.System Diagram



### 4.2.Tools

The following tools are required to install the battery pack:

- Wire cutter
- Crimping Modular Plier
- Screw Driver

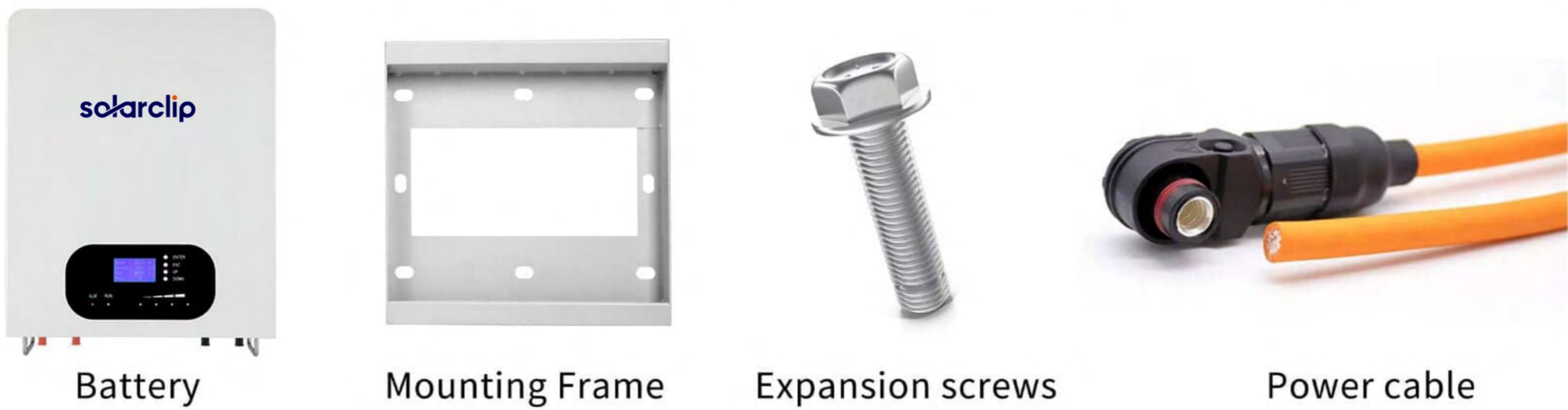
### NOTE

- Use properly insulated tools to prevent accidental electric shock or short circuits.
- If insulated tools are not available, cover the entire exposed metal surfaces of the available tools, except their tips, with electrical tape.

# 5.Installation

## 5.1.Inventory of items

Thoroughly inspect the packaging upon receipt of goods. If there is any item missing or if there is any damage to the external packaging or to the unit itself upon unpacking, please contact us immediately.



No.	Item	Quantity	Specification
1	Battery Pack	1	
2	Mounting frame	1	
3	Expansion screws	8	M10*100mm
4	Power Cable( 1.2 M)	2	4AWG 200A/1000V
5	RS485 com cable(1M)	1	RJ45

## 5.2.Installation Location

Make sure that the installation location meets the following conditions:

- The installation site must be suitable for the size and weight of the battery.
- Must be installed on a firm surface to sustain the weight of battery.
- The area is water proof.
- There are no flammable or explosive materials in proximity.
- The ambient temperature is within the range from 0°C to 45°C.
- The temperature and humidity is maintained at a constant level.
- There is minimal dust and dirt in the area.

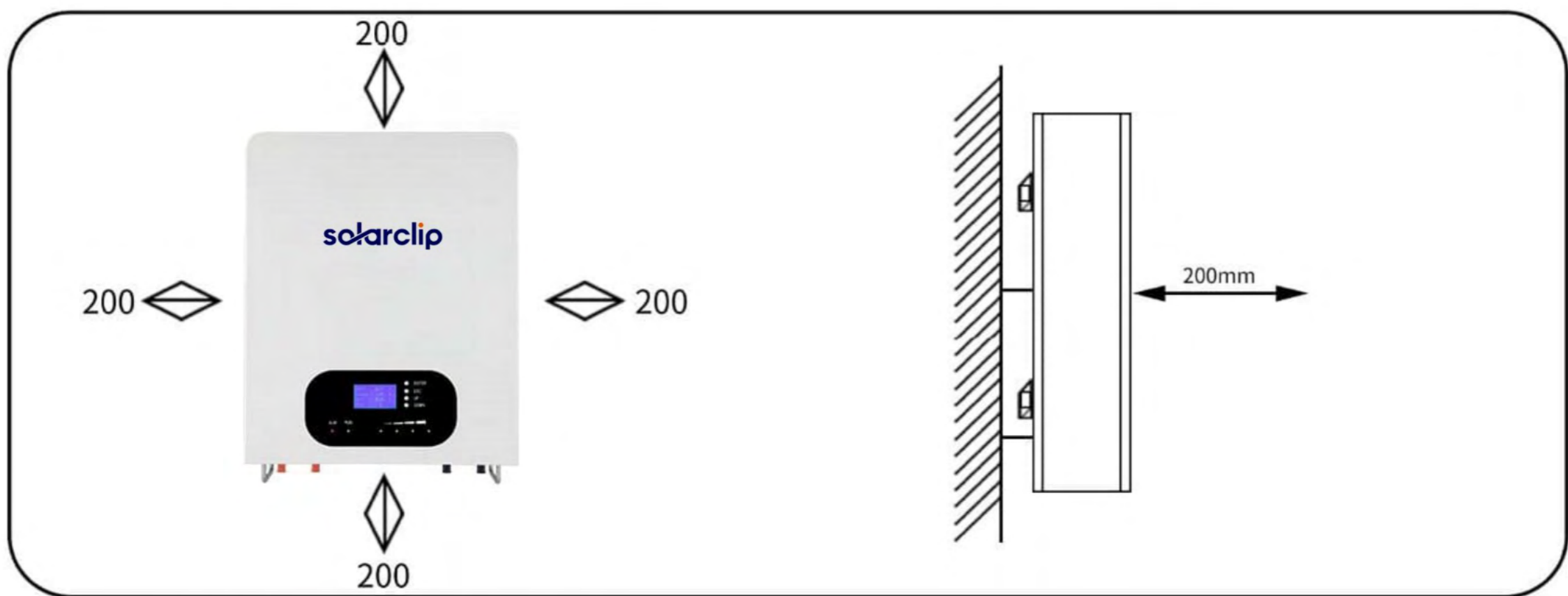
 **CAUTION**

If the ambient temperature is outside the operating range, the battery pack stops operating to protect itself. The optimal temperature range for the battery pack to operate is 0°C to 45°C.Frequent exposure to harsh temperatures may deteriorate the performance and life of the battery pack.

### 5.2.1.Minimum clearances

Observe the minimum clearances to walls, other batteries or objects as shown in the diagram and picture below in order to guarantee sufficient heat dissipation

Direction	Minimum clearance (mm)
Above	200
Below	200
sides	200
Front	200



## 5.3.Installing the Battery Pack

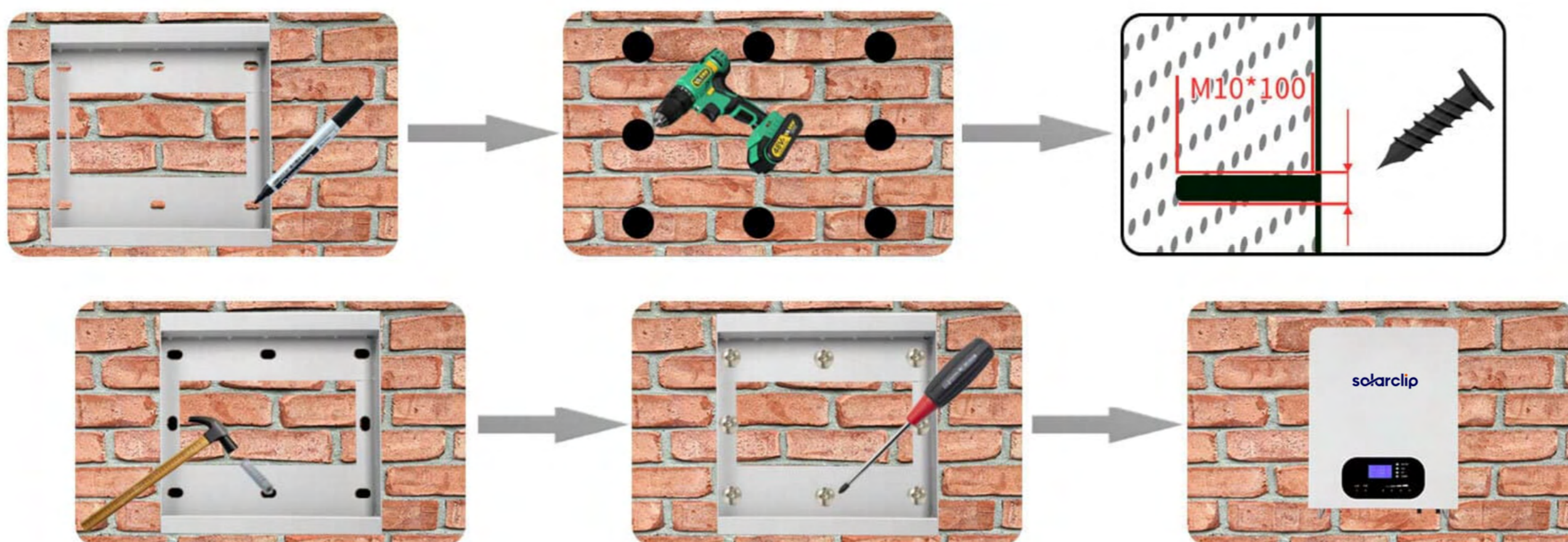
### 5.3.1.Mounting to a wall

#### CAUTION

In order to avoid electrical shock or other injury, inspect existing electronic or plumbing installations before drilling holes.

The battery is heavy, please handle with care to avoid damage to the product or injury to the installer.

- 1.Choose suitable firm wall with thickness greater than 200mm.
- 2.Use the mounting frame as a template, mark the hole position.
- 3.Drill 6 holes according to the hole position, it is  $\varnothing 10$  with depth 100mm.
- 4.Hammer the M10 screws to the above holes, and screw the nut. Note: Do not position screws flush to the wall - leave 10 to 20 mm exposed.
- 5.Fix the mounting frame with 8pcs of expansion screws.
- 6.Raise the battery a little higher than the mounting frame whilst maintaining the balance of the battery. Hang the battery on the frame through the match hooks.



## WARNING

Falling equipment can cause serious or even fatal injury: never mount the inverter on the bracket unless you are sure that the mounting frame is firmly mounted on the wall after thorough checking.

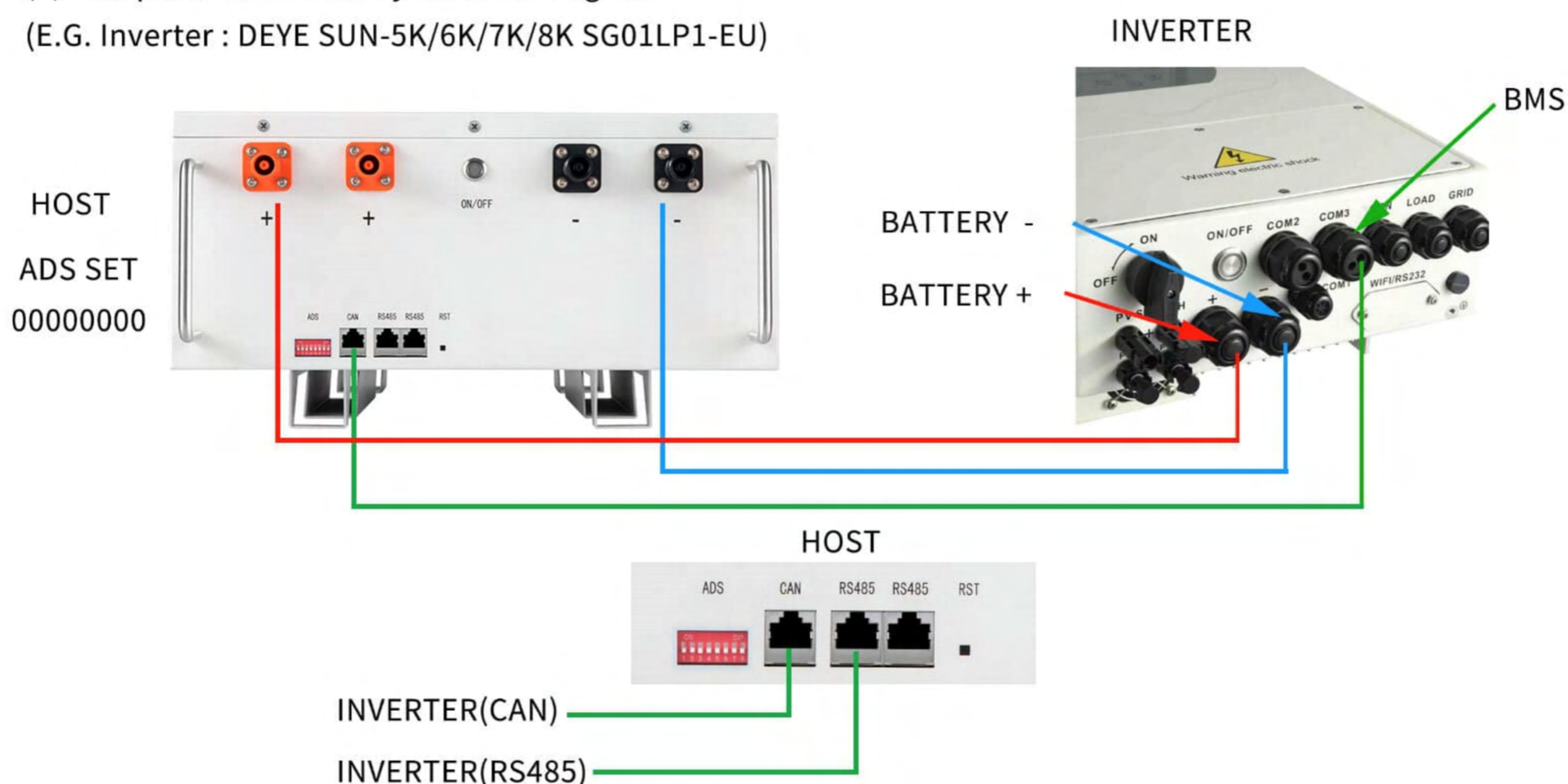
## 5.4.Parallel use of battery

### 5.4.1.Parallel use of battery (All off-grid and hybrid inverters )

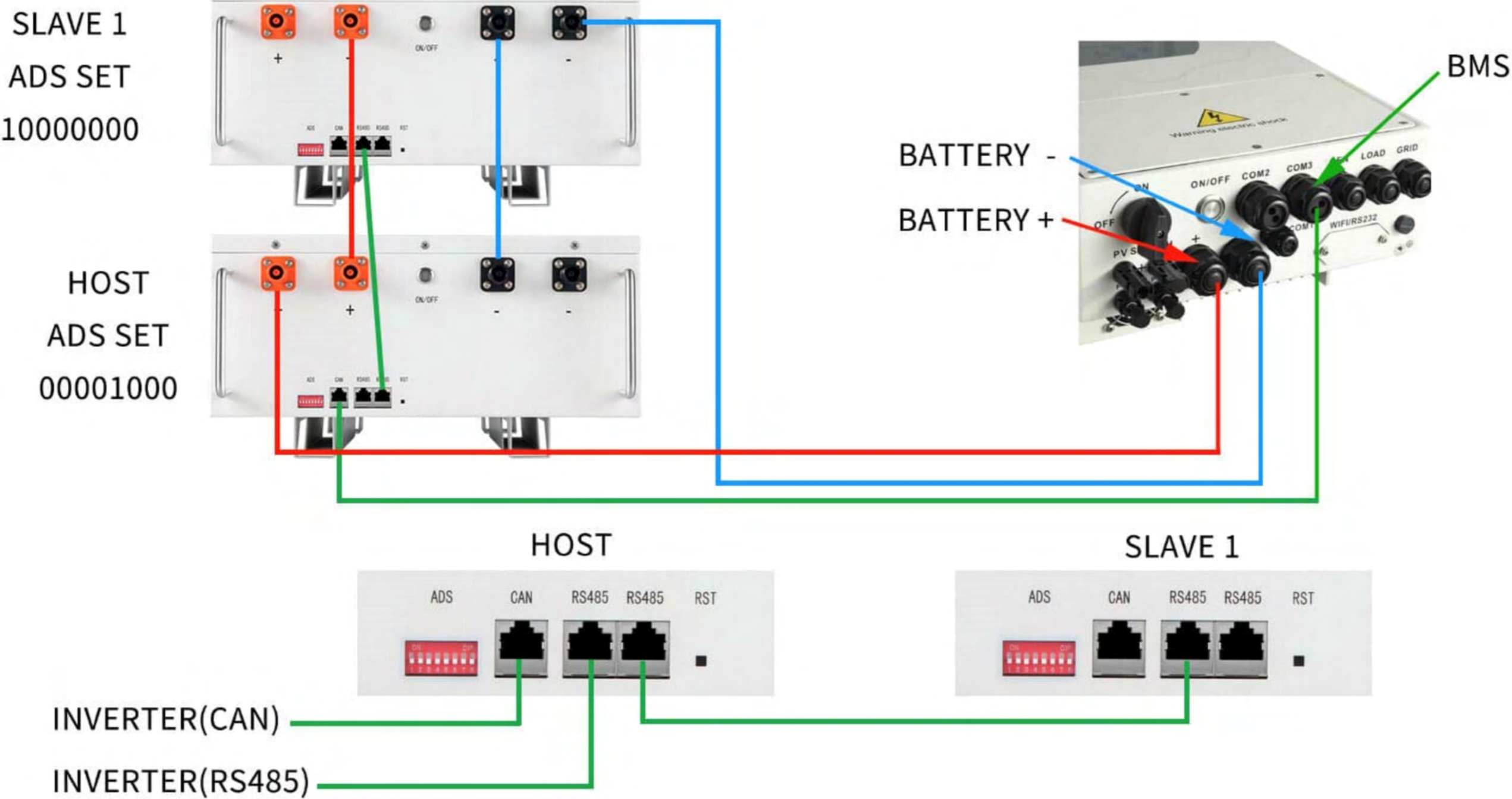
Power wall battery is a smart battery to match all off grid solar inverter ( 48VDC) types. When the battery needs to be used in parallel, the maximum connection is 16 units, but we recommend 2-4 units according to application. The lithium battery have matched for Growatt SPF series off grid solar inverter. When connecting with other off grid 48VDC solar inverters, it does not need to add CAN/RS485 communication cables with inverters, if inverter brand factory does not have CAN/RS485 port, just plug and play use.

(1) One pcs lithium battery connect diagram

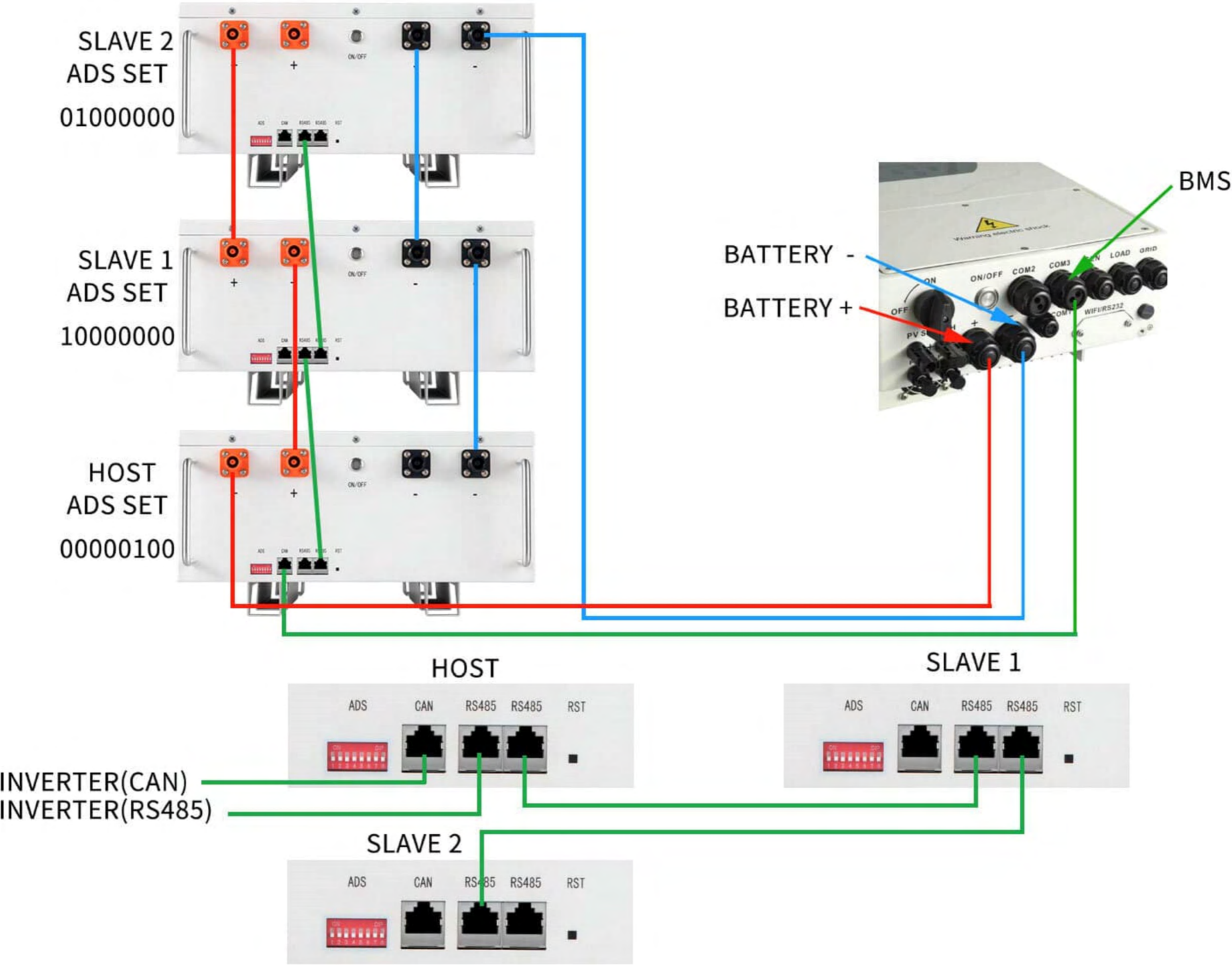
(E.G. Inverter : DEYE SUN-5K/6K/7K/8K SG01LP1-EU)



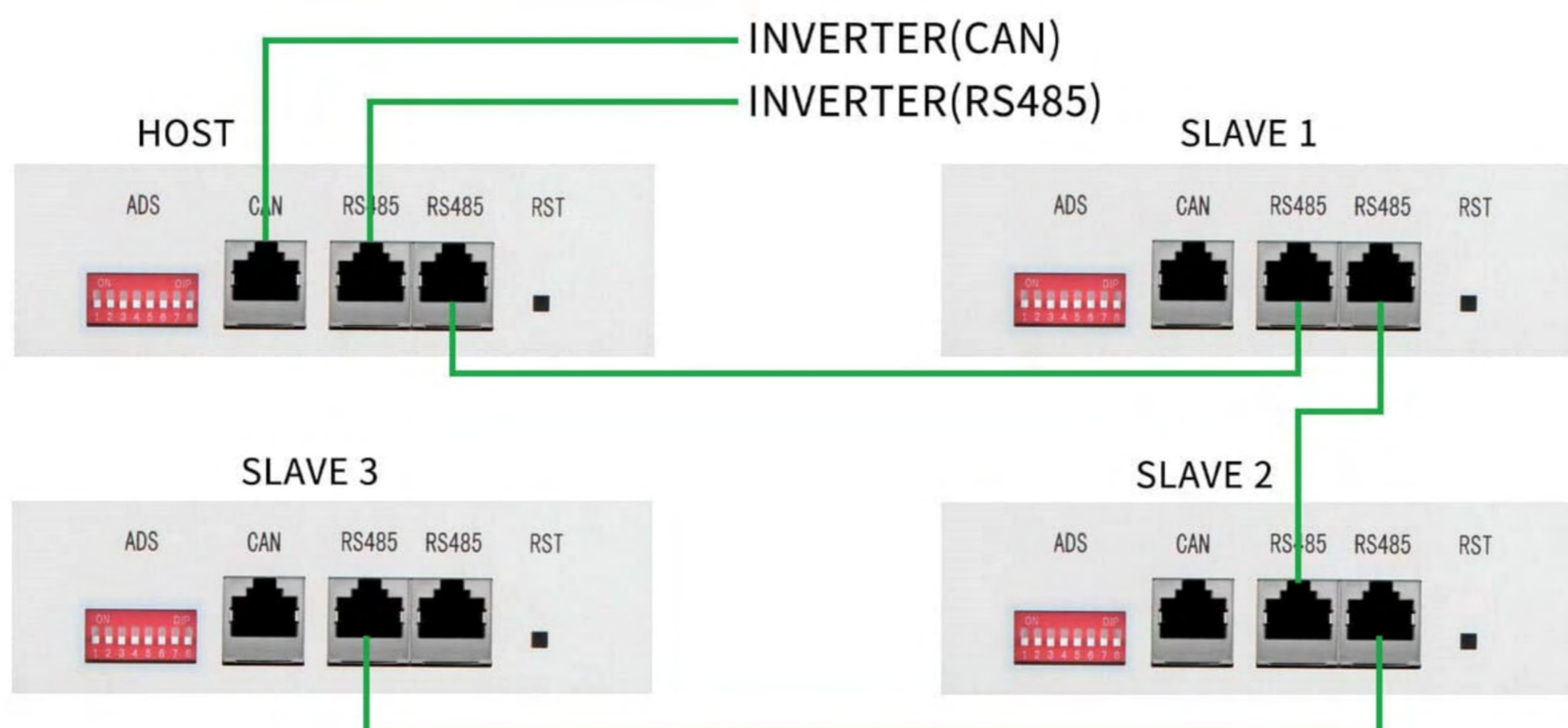
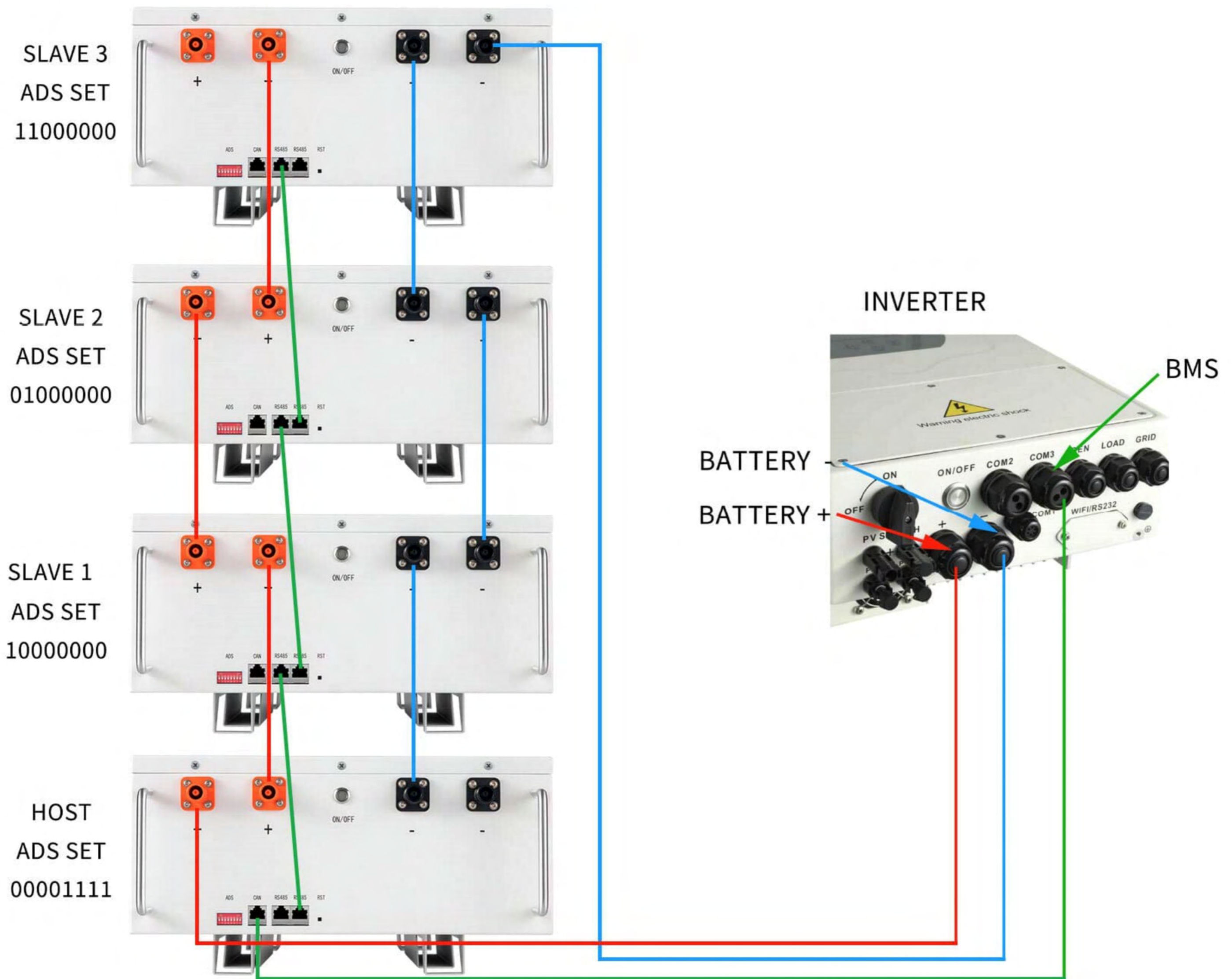
(2) Two pcs lithium batteries parallel connect diagram  
(E.G. Inverter : DEYE SUN-5K/6K/7K/8K SG01LP1-EU)



(3) Three pcs lithium batteries parallel connect diagram  
(E.G. Inverter : DEYE SUN-5K/6K/7K/8K SG01LP1-EU)



(4) Four pcs lithium batteries parallel connect diagram  
(E.G. Inverter : DEYE SUN-5K/6K/7K/8K SG01LP1-EU)



## 5.4.2 Parallel use of battery on CAN/RS485 (hybrid inverters)

When the battery needs to be used in parallel, the maximum connection is 16 units ( CAN ) with hybrid solar inverter, but we recommend to use 2-4 units according to application. The application needs power and communication connections as below, choose suitable parallel power cables and related connectors. related connectors.

### CAN/RS485 Matched Hybrid Inverter brands

Brand	Model No	com Port	Cable Supply	Application	Installation
DEYE	SUN-3.6/5K-SG03LP1-EU SUN-5/6K-SG01LP1-US SUN-7.6/8K-SG01LP1-US/EU	CAN	RJ45	On/off-Grid	Wall-mounted
Growatt	SPF series , SPH 3000~6000	RS485	RJ45	On/off-Grid	Wall-mounted
SOFAR	HYD 3000-ES/HYD 3600-ES/HYD 4000-ESHYD 5000-ESHYD 6000-Es	CAN	RJ45	On/off-Grid	Wall-mounted
GOODWE	GW3648D-ESIGW5048D-ES/BPrSBPIEM	CAN	RJ45	On/off-Grid	Wall-mounted
LuXPOWER	LxP3.6K4.6K/5K Hybrid LxP 3600 ACS series	CAN	RJ45	On/off-Grid	Wall-mounted
Victron		CNA	RJ45	On/off-Grid	Wall-mounted
<b>Voltronic Power</b>	<b>Axpert KS 4K; xpert Ks 5K; Axpert VM 5000-48; Axpert VM 6000-48; Axpert King 5K; Axpert MAx 7200-48-230; Axpert MAX 7200-48-120; Axpert MKS 4K; Axpert MKS 5K; xpert MKS II 5K; Axpert MKS 3K-48-Plus; Axpert Plus Duo 5K; Axpert Plus Tri 5K; Alfa P5000-48; Alfa M5000-48; Axpert SE 5000-48; InfiniSolar V-3K-48; InfiniSolar V-4K-48; InfiniSolar V-5K-48;</b>	RS485	RJ45	On/off-Grid	Wall-mounted
MPPT SOLAR					
RENAC	N1 HL Series	CAN	RJ45	On/off-Grid	Wall-mounted
Sermatec	SMT-3.6K-TL-LV, SMT-5K-TL-LV, SMT-3.6K-TL-LV-AC, SMT-5K-TL-LV-AC,	CAN	RJ45	On/off-Grid	Wall-mounted
SAJ		CAN	RJ45	On/off-Grid	Wall-mounted
INVT		CAN	RJ45	On/off-Grid	Wall-mounted
SOLIS		CAN	RJ45	On/off-Grid	Wall-mounted
To be continued.....					

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## 6.Product Warranty

- 6.1. If you have purchased this product from factory, you should be aware that this warranty is provided in addition to other rights and remedies held by a consumer at law.
- 6.2. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
- 6.3. For the above mentioned products, you receive the factory warranty valid for 5 years from the date of delivery from factory. The factory warranty covers any costs for repair or spare parts during the agreed period beginning on the date of delivery of the device, subject to the following conditions.

### 6.4. Factory Warranty Scope

The factory warranty does not cover damages caused by following reasons:

- Breaking the product seal ( opening the casing)
- Transport damage
- Incorrect installation or commissioning
- Failure to observe the user manual, quick installation instructions
- Incorrect usage or inappropriate operation
- Insufficient ventilation of the device
- Failure to observe the applicable safety regulations
- Force majeure

Neither does it cover cosmetic defects which do not influence the energy production.

### 6.5. Warranty conditions

If the battery becomes defective during the agreed factory warranty period and, unless this should be impossible or disproportionate, one of the following options will be selected at the discretion of factory :

- Battery repair or
- Battery repair at on-site, or
- Exchange for a replacement device of equivalent value with regard to model and age.

In the latter case, the remainder of the warranty entitlement will be transferred to the replacement device and your entitlement will be documented at factory.

Excessiveness in the meaning above exists in particular if the cost the measures for factor will be unreasonable.

- In view of the value that the device would have without the defect
  - Taking in account of the significance of the defect, and
  - After consideration of alternative work around possibilities at factory customers could revert to without significant inconvenience.
-

Please fill the required information in and send this page to factory when  
you need to apply warranty service support

# Warranty Card

Customer Name: \_\_\_\_\_ Tel: \_\_\_\_\_

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

Brand: \_\_\_\_\_ Model: \_\_\_\_\_

Serial No.: \_\_\_\_\_ Date of Purchase: \_\_\_\_\_

Bought From: \_\_\_\_\_

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

## Warranty Instruction

- Please keep this warranty card as proof of maintenance.
- The warranty period is 5 year from the date of purchase.
- During the warranty period, under the condition of normal use and maintenance, if damage caused by the product's own quality, the company will provide free repair and replacement parts after verification.
- The company reserves the right to maintain and interpret all contents.

## Free maintain won't be given under the following circumstance

- The damage caused by the manipulation that hasn't follow the requests of the manual.
- The product has been repaired, modified by technicians other than our company's, and any internal parts of the product have been replaced by users.
- The product number has been altered Or product is inconsistent with the warranty card.
- Damage caused by careless use, penetration of water Or Other substances into the product.
- Damage caused by accident Or natural disaster.