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Long Lasting Backup With the BEST Inverter Battery!!

10 YEARS
REPLACEMENT
WARRANTY

ip20

User Manual

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CONTENT

1. Product overview

1.1 Introduction:

The model LiFePO4 battery pack is designed specifically for energy storage systems, with higher efficiency and higher reliability. With the intelligent battery management system, the intelligent battery detection system. This model of LiFePO4 battery pack is ideal for off-grid and hybrid utilization, providing a long-term built solution, and has the ability to deploy and use in a variety of scenarios, such as homes, farms, factories, data rooms, hotels, etc.

1.2 Features:

- LiFePO4 chemicals give batteries a safer performance, longer life and energy density
- The fully intelligent battery management system (BMS) protects the battery pack and the battery from over-discharge, over-charge, over-current, and high/low temperature
- The intelligent monitoring system, which can monitor and download the data to the computer in real time
- The battery comes with a balance function that greatly extends the service life of the battery
- The batter y has no memory effect, and can deeply charge and release the battery
- The self-discharge consumption is very small, more than 24 hours without the battery will automatically enter the low power mode
- Environmentally friendly, free of heavy metals and harmful substances, and meets the ROHS requirements
- The battery can be used in parallel for any scenario requiring a large power backup
- Battery do not require active maintenance, one-time purchase guarantees life (assuming you use the right battery and follow the guidelines)
- Cell meets IEC62619, CE standards, and ROHS requirements

1. Product overview

1.3 Specification and Performance:

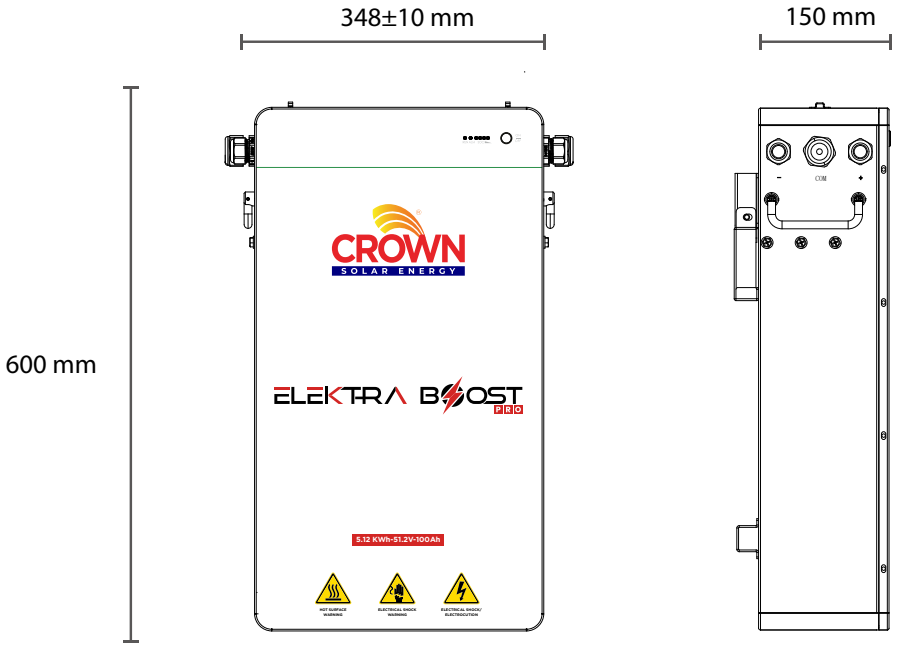
1.3.1 Parameters

Project	Conventional Parameters
Battery Type	LiFePO4
Model	CSE-ESS(P)-25.6V100Ah
Compound Mode	1P16S
Rated Capacity	100Ah
Nominal Voltage	51.2V
Energy	5.12KWh
Operation Voltage Range	40~58.4V
Maximum charging persistent current	100A
Maximum discharge persistent current	100A
Recommend Charge Current	50A
Operating Temperature Range	Charge: 0~55℃, Discharge: -20~55℃
Storage Temperature Range	-10~55℃
Dimension (W*D*H)	325*600*150mm
Weight	45±3KG
Live Capacity Of Products Shipped	40% -60% Electricity delivery
Packaging Material	Carton
Communication	RS485 / RS232 / CAN

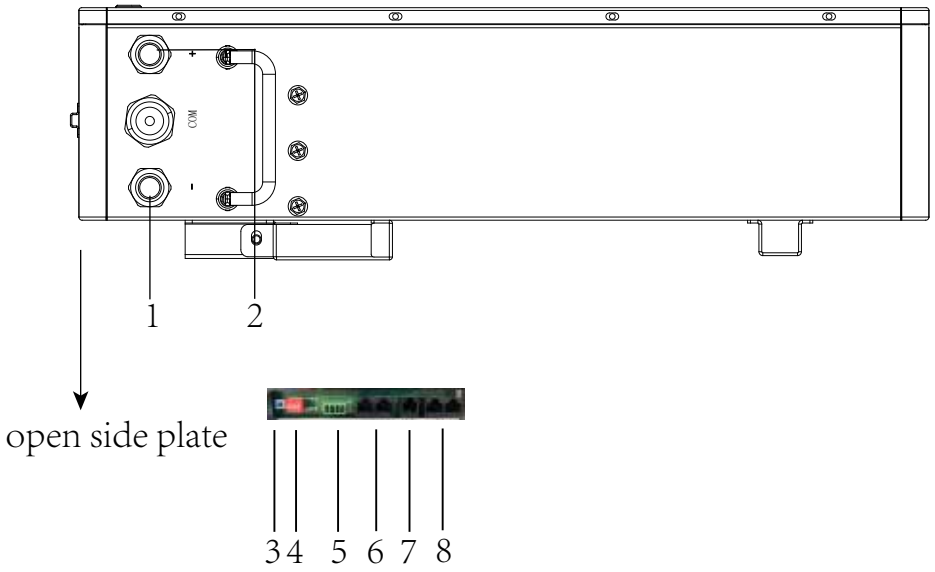
1.3.2 Interface Definition

A) Battery Appearance

B) Battery Size

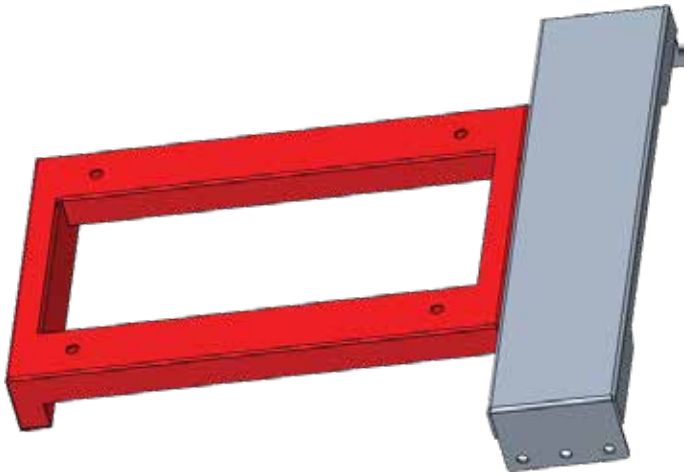


C) Panel Interface Refer To The Following Figure



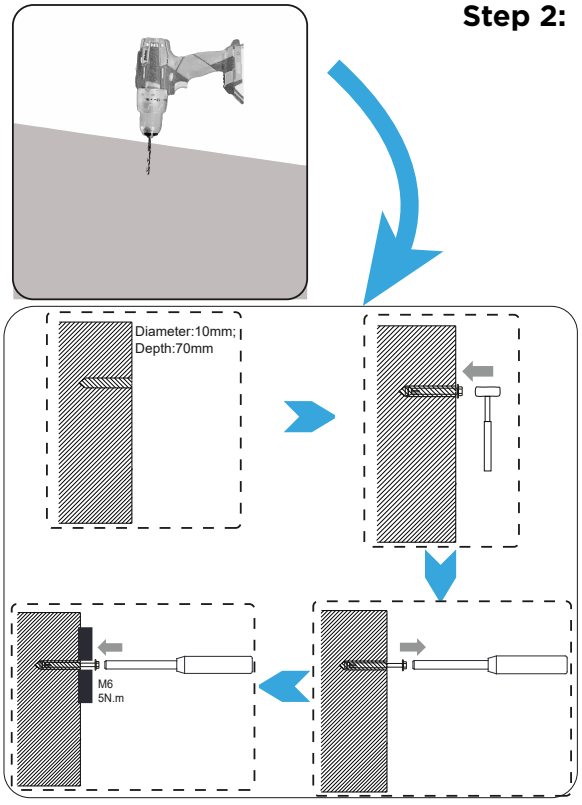
Number	Project	Description
1	Negative Terminal	A pair of terminals with the same function, one connected device is expanded in parallel with other batteries. For each individual module, each terminal can realize the charge and discharge function
2	Positive Terminal	A pair of terminals with the same function, one connected device is expanded in parallel with other batteries. For each individual module, each terminal can realize the charge and discharge function
3	Reset	Reset function of protection board
4	Dial Key	When multiple modules are connected in parallel, different address codes can be specified for each battery module, up to 15
5	Dry Contact Point	1/ 2 Open, close when fault protection; 3 / 4 open, low battery power alarm
6	RS485/CAN	RJ45 interface, the interface connected to the inverter
7	RS232	RJ11 interface, used for battery status monitoring
8	Parallel Operation RS485	RJ45 interface, used for parallel communication or battery status monitoring, manufacturer commissioning, and service

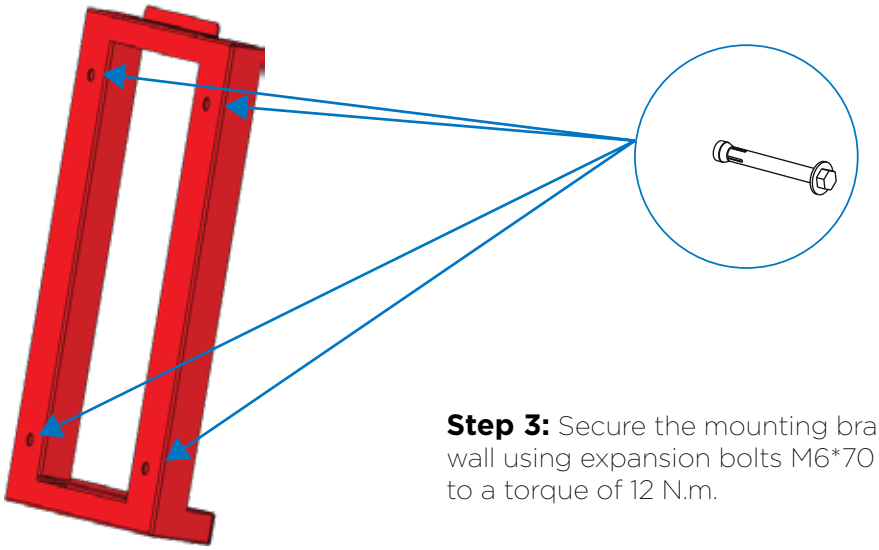
1.3.3 Wall-mounted installation instructions



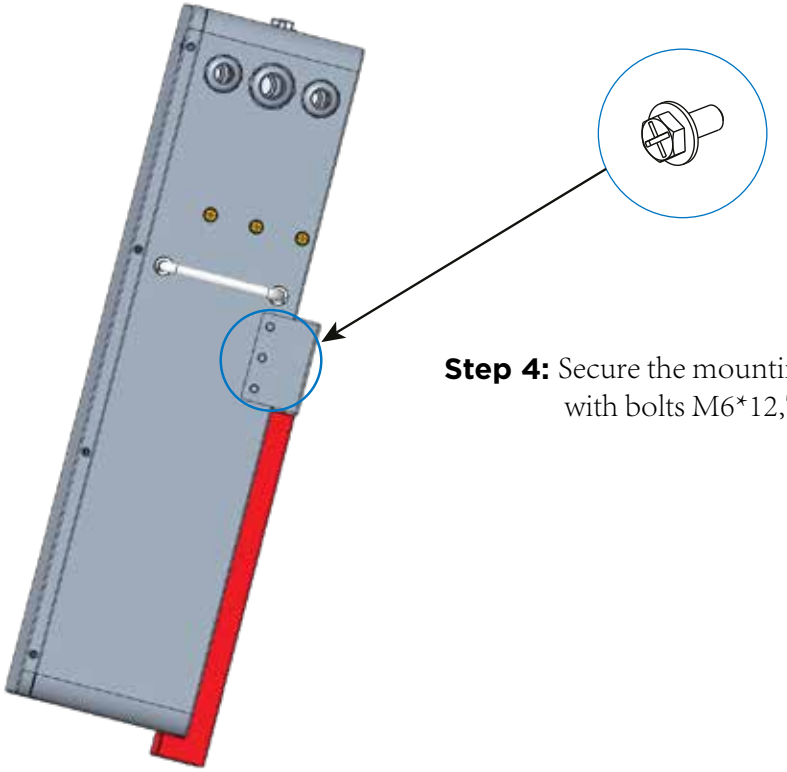
Step 1: Mounting Hole Dimensions

Step 2:



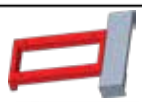


Step 3: Secure the mounting bracket to the wall using expansion bolts M6*70 ， Tighten to a torque of 12 N.m.



Step 4: Secure the mounting bracket to the supporting bracket with bolts M6*12,Tighten to a tarque 4N.m.

1.3.4 Packing list

No.	Project	Description
1		Main Unit*1
2		User Manual*1 Size:A4 210*297mm
3		Crown Battery Warranty Policy (English-Urdu) Size:A4 210*295mm
4		Elektra Boost Product Certificate Card Size: 80*130mm
5		Elektra Boost Warranty Card Size: 95*130mm
6		CSE-Posters Size:A5 148*210mm
7		Battery positive terminal cable*1 Size:25mm^2 Length: 1.6m
8		Battery negative terminal cable*1 Size:25mm^2 Length: 1.6m
9		Battery Communication Cable*1 Length：1.5m
10		Groud Wire*1 Length：1m
11		M6*70 Expansion Screw*5
12		M6*12 Screw*8
13		Supporting Bracket*2

2. Battery management system

2.1 Description of the LED indicator light

State	Normal /Report an emergency /protect	RUN	ALM	Battery Indicator LED				illustrate
				L4	L3	L2	L1	
		●	●	●	●	●	●	
Shutdown Status	Resting State	OFF	OFF	OFF	OFF	OFF	OFF	ALL OFF
Stand By	Normal	Flashing 1	OFF	According to the electricity instruction				position in readiness
	Report an emergency	Flashing 1	Flashing 3					Module Low Voltage
Charge	Normal	ON	OFF	According to the electricity instruction (Top indicator LED flashing 2)				Maximum battery LED flashing (flashing 2), ALM does not flash when overcharging alarm occurs
	Report an emergency	ON	Flashing 3					
	overcharge protection	ON	OFF	ON	ON	ON	ON	If there is no urban electricity, The indicator light is in standby mode
	Over current Protection	OFF	ON	OFF	OFF	OFF	OFF	Stop Charging
Discharge	Normal	Flashing 3	OFF	According to the electricity instruction				
	Report an emergency	Flashing 3	Flashing 3					
	Undervoltage Protection	OFF	OFF	OFF	OFF	OFF	OFF	Stop Discharge
	Over current Protection	OFF	ON	OFF	OFF	OFF	OFF	Stop Discharge
Lose Efficacy		OFF	ON	OFF	OFF	OFF	OFF	Stop Charging And Discharging

2.2 Status indication

Stand By		Charging				Discharge			
Capacity indicator light		L4●	L3●	L2●	●	L4●	L3●	L2●	L1●
Quantity of electricity	0%～25%	OFF	OFF	OFF	Flashing2	OFF	OFF	OFF	ON
	25%～50%	OFF	OFF	Flashing2	ON	OFF	OFF	ON	ON
	50%～75%	OFF	Flashing2	ON	ON	OFF	ON	ON	ON
	75%～100%	Flashing2	ON	ON	ON	ON	ON	ON	ON
Run The Indicator light, the●		ON				Flashing 3			

2.3 The LED Indicator Light Flashing Description

Flashing Mode	ON	OFF
Flashing1	0.25S	3.75S
Flashing2	0.5S	0.5S
Flashing3	0.5S	1.5S

3. Communication

3.1 Communication instructions

3.1.1 Parallel RS485

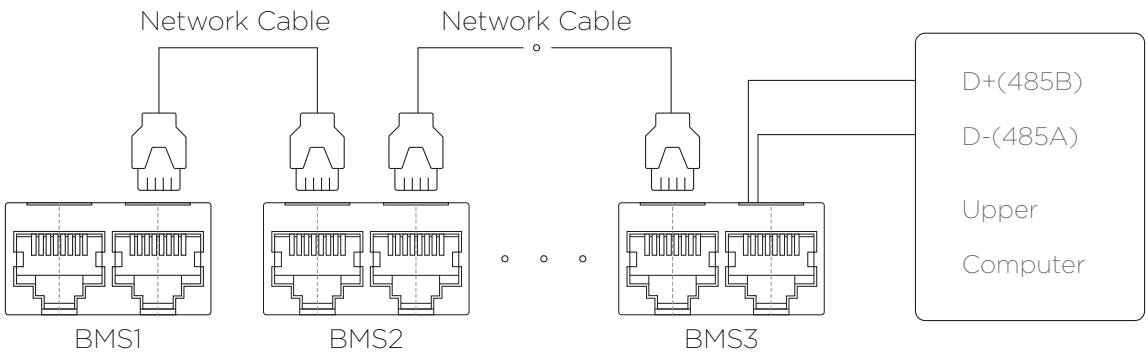
Equipped with dual RS485 interfaces, Can view battery information, The default baud rate is 9600bps. To communicate with monitoring equipment through RS485, Monitoring equipment as host, Polling data based on address, Address setting range is 2-15.

3.1.2 Independent CAN

Independent Can interface, This interface is used for communication with inverters, When this battery is the main unit, Can summarize slave data and communicate with inverters.

3.2 Parallel wiring method

3.2.1 Parallel communication connection method



3.2.2 Positive and negative wire connection method

Front View

1. Using the parallel mode shown in the above diagram, you can choose either a 25mm² or 35mm² cable. Select the inverter power and set the maximum operating current according to the table below.

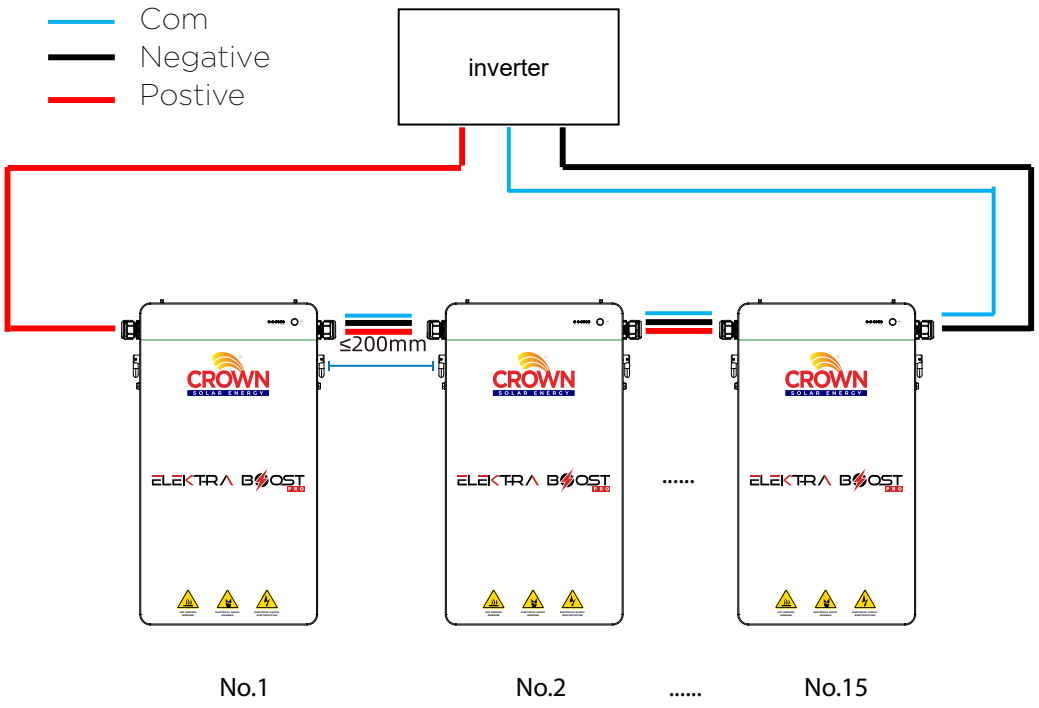
Wire gauge	Maximum current capacity of the cable	Maximum power
25mm²(standard accessories included with the shipment)	120A	5kw
35mm²	150A	6kw

Based on the actual inverter power selected and the chosen cable gauge, the maximum charge and discharge current limits should be set in the inverter's current limitation options, ensuring they are below the cable's maximum current capacity.

It is important to ensure that the system's operating current does not exceed the maximum current carrying capacity of the cable. Exceeding this limit may cause heating inside the battery and the cable, which could lead to fire hazards in severe cases.

★ Ensure before parallel connection circuit breaker in “OFF” state.
★ Suggested installation spacing: ≤200mm

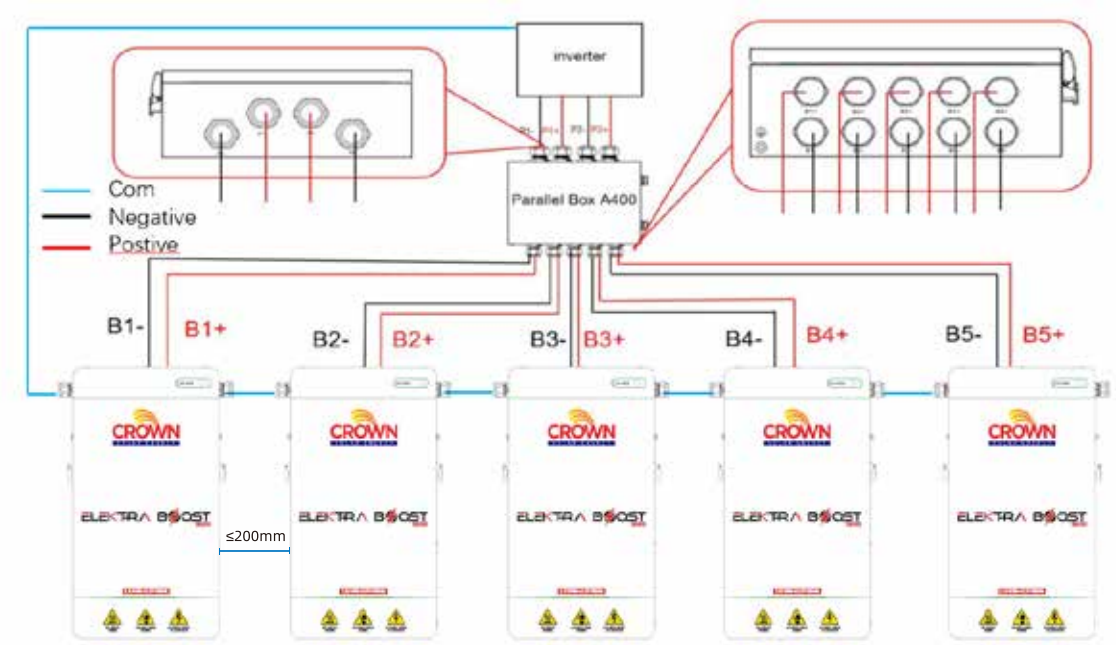
3.2.2 Positive and negative wire connection method



In the parallel mode 2 shown in the diagram above, it is important to note that the system's maximum current is 200A, and the inverter power should not exceed 10kW. Based on the actual inverter power selected, you should set the maximum charge and discharge current limits in the inverter's current limitation options to be below 200A.

It is crucial to ensure that the system's operating current does not exceed the maximum current carrying capacity of the cable. Exceeding 200A may trigger overcurrent protection in a battery or cause heating inside the battery and the cable, which could lead to fire hazards in severe cases.

3.2.2 Positive and negative wire connection method



3. In the parallel mode 3 shown in the diagram above (suitable for scenarios with inverter power > 10kW), for high power system battery parallel connections, the inverter current should be set to ≤ 100A * number of batteries. The maximum combined limit current for the system should be 400A.

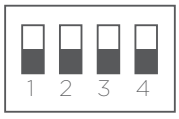
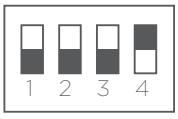
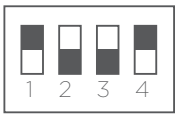
★ Ensure before parallel connection circuit breaker in “OFF” state.
★ Suggested installation spacing: ≤200mm

3.2.3: Power ON/OFF Sequence

Press the Switch button (SW) on equipmen

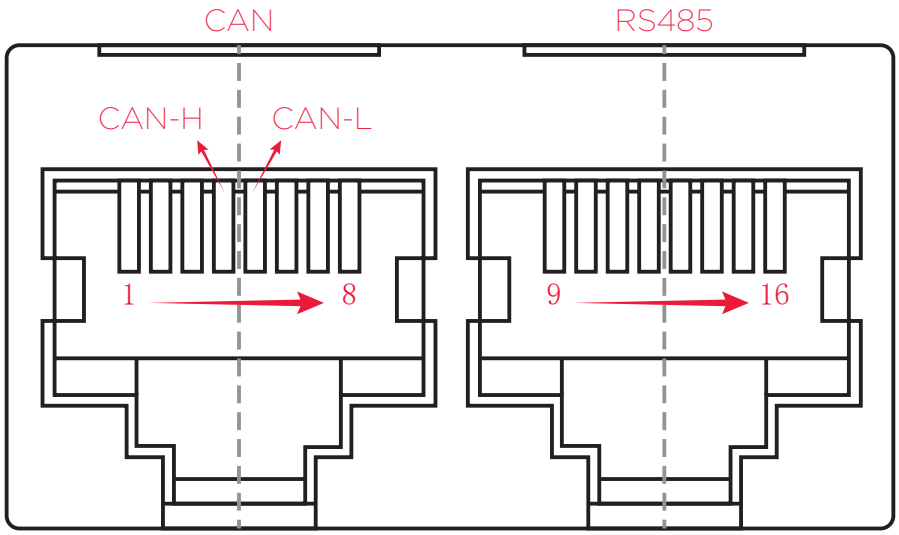
3.3 Dial switch settings

When batteries are used in parallel, Different batteries can be distinguished by setting the address through the dial switch on the BMS, Refer to the table below for the definition of BMS dial switch:
The default dialing address is' 1 'for the host, '2-15' is the slave machine;
Host Battery "RS232" communication interface and inverter connection;
Parallel operation of two or more battery packs, Dial switch reference address“1+2”, “1+2+3”, By analogy with this method...

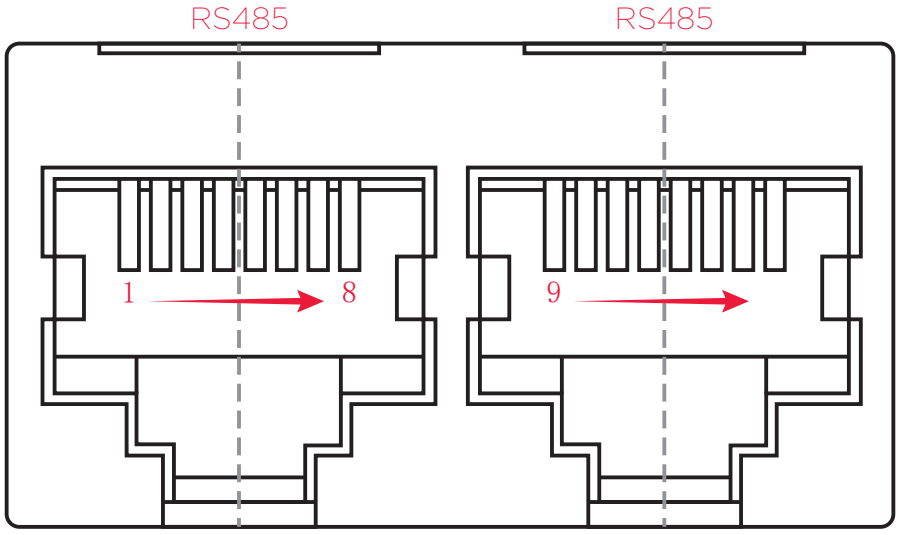
0		4		8		12	
1		5		9		13	
2		6		10		14	
3		7		11		15	

3.4 Interface definition

(1) Interface diagram



CAN and RS485 interfaces



Parallel communication port

RS485--Adopting 8P8C vertical RJ45 socket	
RJ45 pin	Definition Description
9, 16	RS485-B1
10, 15	RS485-A1
11, 14	GND
12, 13	NC

RS485 interface

RS485--Adopting 8P8C vertical RJ45 socket	
RJ45 pin	Definition Description
1, 8	RS485-B
2, 7	RS485-A
3, 6	GND
4, 5	NC
9, 16	RS485-B1
10, 15	RS485-A1
11, 14	GND
12, 13	NC

Parallel communication port

4. Battery Use Instructions

4.1 Charging

- ✦ Charging current: cannot exceed the maximum charging current specified in this specification.
- ✦ Charging voltage: shall not exceed the maximum charging voltage specified in this specification.
- ✦ Charging temperature: The battery must be charged within the ambient temperature range specified in this specification.
- ✦ The battery adopts constant current and constant pressure charging mode, and forbids reverse charging. If the positive electrode of the battery meets the negative electrode in the opposite, it will damage the battery.

4.2 Discharge

- ★ Discharge Current: the discharge current shall not exceed the maximum discharge current specified in this instruction. Excessive current discharge will reduce the battery capacity and cause the battery to heat up.
- ★ If the battery enters over discharge protection, it should be charged within 3 days. If it could not be charged in a timely manner, all connections on the battery must be disconnected.
- ★ Battery discharge must be within the temperature range specified in this specification Immediately charging after a short time of excessive discharge will not affect the use, but a long time of excessive discharge will lead to the loss of battery performance and battery function.
  If the battery is not used for a long time, it may be in a certain discharge state due to its self-power consumption characteristics. In order to prevent the occurrence of over discharge, the battery should maintain a certain amount of electricity.

5. Notes For Product Use

5.1 Warnings

- ★ Do Not Put The Battery Into The Water Or Wet It.
- ★ Forbids Charging And Using The Battery Outside Our Specified Temperature Range; Do Not Store, Charge, And Use The Product Near The Fire Sources Or Heat Sources.
- ★ When The Battery Pack Emits An Odor Or Leakage, It Should Immediately Stop Using Or Stop Charging, And Move To The Open And Ventilated Place, Stay Away From The Fire Source, And Contact Us In Time.
- ★ The Optimal Service Temperature Of Products Is 25 ± 5℃, If The Product Is Not In This Temperature Range During Use.
- ★ Load Use, Do Not Connect Positive And Negative Poles.
- ★ Do Not Short-circuit The Positive And Negative Electrodes Of The Battery Pack With A Metal Conductor.
- ★ Do Not Fire The Battery Pack Or Heat It.
- ★ It Is Strictly Prohibited To Dissect The Battery Pack, Puncture The Battery Pack With Nails Or Sharp Objects, Use Hammers Or Other External Forces, And Trample Or Fall The Battery Pack.
- ★ Strictly Prohibited Putting Battery Packs In A Microwave Or Pressure Vessel.

5.2 Charging and Discharge

- ★ The Battery Must Be Charged Using An Appropriate Charger.
- ★ Do Not Use A Modified Or Damaged Charger.
- ★ During Charging And Use, Please Stop Charging And Using It Immediately.

5.3 Storage

- ★ Store The Battery In A Cool, Dry, And Well-ventilated Place. If More Than Three Months Of Long Storage, It Is Recommended That You Should Charge The Battery Extra.

5.4 Processing

- ★ Different Countries Have Different Regulations, Please Handle According To The Local Regulations. If There Is Any Fault Or Abnormality During Use, Please Contact Us And Do Not Remove The Battery Pack Without Permission.

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