

SEPLOS MASON 280L (3.0Y) BATTERY PACK SPECIFICATION



CONTANT

1.	Introduction	2
2.	Functions	2
3.	· ·	
	3.1 Appearance and interface	4
	3.2 Electrical schematic diagram	
	3.3 Active balanced board	
	3.4 Parameters	. 10
	3.5 Protection parameters	. 11
4.	Communication	. 19
	4.1 CAN communication	19
	4.2 RS485	20
	4.3 Parallel	21
5.	Working mode	21
	5.1 Charging mode	. 21
	5.2 Discharging mode	21
	5.3 Standby mode	. 21
	5.4 Power off mode	22
6.	LED indicator	22
	6.1 LED lights	
	6.2 Capacity indicators	. 23
	6.3 Lights blinking explanation A	
	6.4 Running status indicators	23
	6.5 Installation and commissioning	24
	6.6 Installation instructions	25
7.	Safety precautions	25
	7.1 Harness connection	26
8.	Package	27
9.	Safety precaution	28

1. Introduction

This battery pack System, is applicable both for residential and commercial energy storage system, which is assembled with 3.2V 280Ah lithium iron phosphate cell in 16 S1P configuration, and accompany with SEPLOS Smart BMS consist 51.2V280Ah lithium battery system. Each pack support 16 packs in parallel to easily expand capacity. Do not mix parallel the battery packs of different brands or models.

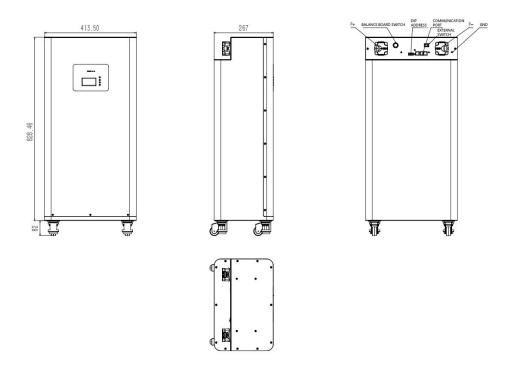
2. Functions

- Battery voltage calculation: 16 battery voltage sampling test, deviation ± 20mV
- Battery and ambient temperature detection: 4 battery temperature sensors, 1 ambient temperature sensor, 1 MOS temperature sensor, deviation \pm 2 $^{\circ}$ C.
- Battery capacity and cycle times: complete a complete charging, discharging cycle to set the actual capacity. Monitor the remaining capacity of the battery with the capacity estimation accuracy within 5% deviation. In addition, the charging and discharging cycle time and the complete charging and discharging cycle time can be configured.
- Smart cell balance: charging and static balance strategies can be flexibly set to effectively extend the service life.

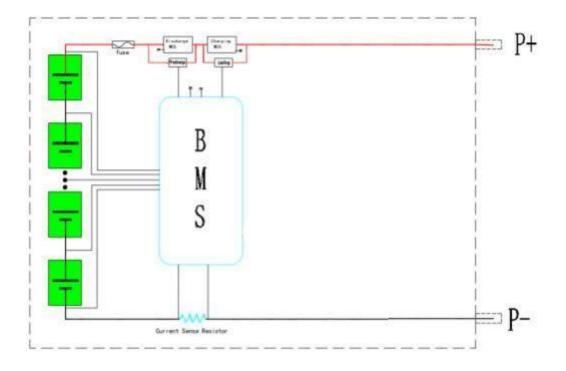
- Communication interface: PC or intelligent front-end can monitor battery data, control operation and set parameters through telemetry, remote signaling, remote adjustment, remote control and other commands. The communication protocol meets the requirements of YD/T 1363.3 and realizes cascade communication
- Historical data recording, saving and reading: when the battery is abnormal, record and save real-time battery status and alarm information. At present, up to 500 historical fault data can be stored.
- Battery management system parameter setting: battery management system parameters, including cell battery over voltage/under voltage, battery total voltage over voltage/under voltage, charge and discharge over current, battery high/low temperature, battery capacity, working mode, charge and discharge limit current, can be set in the battery monitoring system.
- Working mode: charging and discharging current limiting, constant voltage output, direct output and other working modes can be set in the monitoring system
- Multiple protection functions: hardware protection, battery protection, high and low temperature protection, output short circuit protection, etc.

3. Specifications

3.1 Appearance and interface

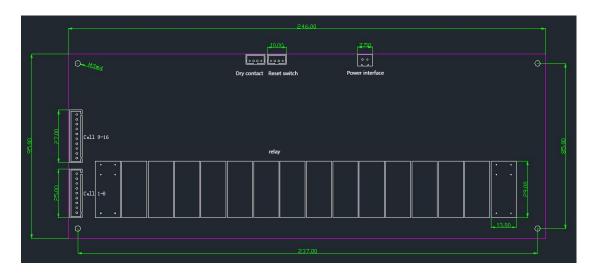


3.2 Electrical schematic diagram



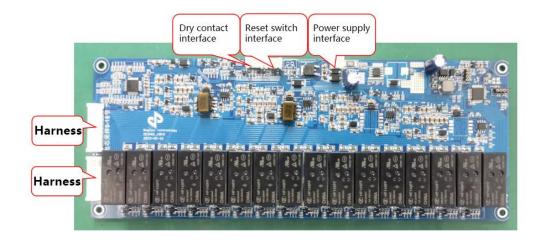
3.3 Active balanced board

3.3.1 Dimension





3.3.2 Installation method



3.3.3 \ Harness definition

Harness A (1-8batteries)					
NO	Balanced board	Cell wiring definition			
	wiring definition				
1	CELL1-	Connect to the negative pole of the first battery			
2	CELL1+	Connect to the positive pole of the first battery			
3	CELL2+	Connect to the positive pole of the second battery			

4	CELL3+	Connect to the positive pole of the third battery
5	CELL4+	Connect to the positive pole of the fourth battery
6	CELL5+ Connect to the positive pole of the fifth battery	
7	CELL6+	Connect to the positive pole of the sixth battery
8	CELL7+	Connect to the positive pole of the seventh battery
9 CELL8+ Connect to the positive pole of the eighth b		Connect to the positive pole of the eighth battery



Harness B (9-16batteries)						
NO	Balanced board	Cell wiring definition				
	wiring definition					
1	CELL9-	Connect to the negative pole of the ninth battery				
2	CELL9+	Connect to the positive pole of the ninth battery				
3	CELL10+	Connect to the positive pole of the tenth battery				
4	CELL11+	Connect to the positive pole of the eleventh battery				
5	CELL12+	Connect to the positive pole of the twelfth battery				
6	CELL13+	Connect to the positive pole of the thirteenth battery				
7	CELL14+	Connect to the positive pole of the fourteenth battery				
8	CELL15+	Connect to the positive pole of the fifteenth battery				
9	CELL16+	Connect to the positive pole of the sixteenth battery				
10	NC	NC				
	RIACK 750mm BO-					



	Power cord(2PIN shelling)					
NO Balanced board wiring definition		Cell wiring definition				
1	B-	Connect to the total negative of the battery				
2	B+	Connect to the total positive of the battery				
1 2	XHB2. 54/2P SHELLIN BLACK RED	IG				

3.3.4The difference between active and passive balancing

Passive balancing: By way of resistance discharge, the battery with higher voltage is discharged, and the electricity is released in the form of heat. The advantages are low cost and simple circuit design; The disadvantage is that the balance is performed on the basis of the lowest battery remaining capacity, and the capacity of the battery with a small remaining capacity cannot be increased, and 100% of the balanced power is wasted in the form of heat. If the equalizing current is small, then in the case of a large-capacity battery pack with a large difference in power, the efficiency of the power balance effect is very low, and it takes a long time to achieve balance.

Active balancing: Equalization is carried out by means of power transfer, with high efficiency and low loss.Regardless of whether the battery is charging, discharging, or standing still, as long as the pressure difference is greater than the set value, the equalization will start. Therefore, as long as there is a pressure difference, the active equalization time should be working 24 hours a day until the pressure difference is less than the set value. stop within the range. Since the active equalization is not limited by the charging time, the equalization time is longer, and the equalization current is relatively large, so it is more suitable for use in large-capacity battery packs.

3.3.5 Software internal setting parameters

NO	Item	Setting	Instruction
1	Individual under voltage protection	2800mV	When any cell reaches the under voltage protection value, the balance board will shut down after 1 minute
2	Equalized minimum start voltage	3000mV	In order to balance the batteries in all states, they can be balanced in
3	Equalized minimum sustaining voltage	2900mV	standby, charging, and discharging; when the batteries are relatively low, the energy is insufficient, and equalization is prohibited. A

<u> 3LI LO3 Z</u> (BUL(3.01) BATTERY PACK SPECIFICA	(11OIV	VV VV .SEPLOS.COIVI
			minimum start-up equalization voltage is deliberately set.
4	Equalized starting pressure difference	50mV	Cell voltage difference is over than 50mV and the active equalization is turned on
5	Equalized closing pressure difference	30mV	After equalization, the pressure difference is less than 30mV to stop active equalization
6	Equalized the duration of a single shot	60S	Active balance open and close the relay for 60S, and balance open
7	Equalization interval	3S	intermittently for 3S; real-time monitoring of cell voltage reaches the open condition
8	Equalized working hour	24h	Turn off the equalization after the continuous equalization time exceeds 24h
9	Equalized over temperature protection released	70 ℃	The balance board detects that the temperature reaches the protection value and closes the balance, and
10	Equalized over temperature protection	90℃	waits for the temperature to reach the recovery value before turning on the balance
11	Standby shutdown time	10h	The continuous standby state is not balanced, and the shutdown is performed after more than 10H
12	Equalized current	2A	When the balance board is turned on, the balance current can reach 2A.
13	Power consumption	15mA	Power consumption in standby mode is less than 15mA

3.3.6 Reset button LED light indication

Status	Function instruction
Standby	The active balance board is in the standby state and the LED
	light is flashing
Turn on	The active balance board is in the balance state and the LED
equalization	light is always on
Turn on	Press the reset button and the LED light flashes once, then turn
	on the equalization board
Turn off	Press the reset button and the LED light flashes 6 times, then
	the LED light goes out and then shuts down
Stop equalized	In the balance state, press the reset button LED light flashes 4
	times to stop equalization, press the reset button LED light
	flashes 4 times to start equalization

3.3.7 Active balancing logic

Active balance the total battery power. After the balance is turned on, the total battery power is used to convert the charging voltage to charge the battery cells; the balance board can open up to 3 battery charging balances at the same time, and monitor in real time which battery cell is the lowest, and charge the lowest battery with 2A current.

3.3.8 Operation guide



In order to avoid the disadvantage of reducing the battery life caused by frequent correction of the remaining capacity of the battery cell with a large current. After pressing the equalization function switch, the active equalization function is turned on, and the equalization state refers to 2.6.6, and the single equalization time is ≤24h. It is recommended to turn on active balancing once a month.

3.4 Parameters

Items	Specifications			
Rated energy(kWh)	14.336KWh			
Configuration	1P16S			
Nominal Voltage(V)	51.2V			
Working Voltage(V)	42V~58.4V			
Nominal Capacity(Ah)	280Ah			
Rated charge/discharge Current(A)	100A@25± 2℃			
Maximum charging current	200A@25± 2℃			
Maximum discharge current	200A @25± 2℃			
Working Temperature	0-40 °C (Charge) -20-40 °C (Discharge)			
Humidity(%)	5~80%			
Altitude Limited(m)	0-3000m			
Weight(Kg)	113Kg± 3kg			
Dimension(mm)	817×412×267mm			
Storage temperature and humidity	-10 °C ~ 35 °C (Within one month of storage) 25±2 °C (Within three months of storage) 65%±20% RH			
cycle life	6000 cycles @25 [℃]			
	$10 {\rm OACharge}$ and discharge current ${\rm 80\%DOD}$			
IP grade	IP20			
Communication mode	CAN&RS485			

3.5 Protection parameters

3.3.1 Individual cell over voltage parameters

	Individual cell over voltage parameter					
Functions	Status	Item	Default	Configurable Range		
	ON	Over voltage warning	3500mV	Over voltage warning recovery - over voltage protection		
Over voltage		Over voltage warning recovery	3400mV	3000mV - over voltage warning		
warning		Under voltage warning	2900mV	Under voltage protection - under voltage warning recovery		
		Under voltage warning recovery	3000mV	Under voltage warning - 3300mV		
		Over voltage protection	3650mV	Over voltage warning - 4500mV		
		Over voltage protection recovery	3400mV	Over voltage warning recovery - over voltage protection		
over voltage protection	Over voltage recovery condition		voltage reco 2. The rema intermittent Both conditio	I cell voltage decrease to over overy threshold. Sining capacity lower than 96% of the power supply. Sins should be satisfied.		
			Output curre	ent ≥1A		

3.3.2 Individual cell low voltage parameters

	Individual cell low voltage parameter					
Functions	Status	Item	Default	Configurable Range		
	ON	Under voltage protection	2700mV	1500mV - under voltage protection recovery		
		Under voltage protection recovery	2900mV	Under voltage protection - under voltage warning		
under voltage protection		Under voltage protection condition	protection th	dividual cell gets under voltage nreshold, BMS maintain on with inverter for 1 minutes and		
		Under voltage protection recovery	Input curren	t≥1A		

3.3.3 Pack over voltage parameters

	Pack over voltage parameter				
Functions	Status	Item	Default	Configurable Range	
		Over voltage warning	56.0V	Over voltage warning recovery - over voltage protection	
		Over voltage Warning recovery	54.0V	53.0V - over voltage warning	
Over voltage warning		Under voltage warning	46.4V	Under voltage protection - under voltage warning recovery	
		Under voltage Warning recovery	48.0V	Under voltage warning - 55.0V	
	ON.	Over voltage protection	57.6V	Over voltage warning - 60.0V	
Over voltage		Over voltage protection recovery	54.0V	Over voltage warning recovery - over voltage protection	
protection	ON	Over voltage protection recovery conditions	voltage reco	overy threshold. Saining capacity is lower than 96% of the threshold.	
		Conditions	Both condition	ons should be satisfied.	
			Output curre	nt≥1A	

3.3.4 Pack low voltage parameters

	Pack low voltage parameter				
Functions	Status	Item	Default	Configurable Range	
		Under voltage protection	41.6V	36.0V - under voltage warning recovery	
		Under voltage protection recovery	46.0V	Under voltage protection - under voltage warning	
Under voltage protection		Under voltage protection condition	protection th	otal voltage gets under voltage nreshold, BMS maintain ion with inverter for 1 minutes and .	
		Under voltage protection recovery conditions	Input current	≥1A	

3.3.5 Cell high/low temperature(charging) parameters

	Cell high/low temperature (charging) parameters					
Functions	Status	Item	Default	Configurable Range		
		High temperature warning	50℃	High temperature warning recovery - high temperature protection		
		High temperature warning recovery	47℃	35 °C - high temperature warning		
		High temperature protection (charging)	55℃	High temperature protection recovery - 8 0 $^{\circ}\mathrm{C}$		
Cell	Cell temperature (Forbidden Charging)	High temperature protection recovery	50℃	High temperature warning recovery - high temperature protection		
temperature (Forbidden		Low temperature warning	2 ℃	Low temperature protection - low temperature warning recovery		
		Low temperature warning recovery (charging)	5 ℃	Low temperature warning - 10 ℃		
	Low temperature protection	- 10℃	-20 °C - low temperature protection recovery			
	Low temperature protection recove	Low temperature protection recovery	0℃	Low temperature protection - low temperature warning recovery		

3.3.6 Cell high/low temperature(charging) parameters

		Cell high/low tempe	rature (di	scharging) parameters
Functions	Status	Item	Default	Configurable Range
		High temperature warning	52℃	High temperature warning recovery - high temperature protection
		High temperature warning recovery	47℃	35°C∼Discharging high temperature warning
Cell temperature (Forbidden discharging)		High temperature protection	55℃	Discharging over temperature recovery~80 $^{\circ}$
	ON	High temperature protection recovery	50℃	High temperature warning recovery - high temperature protection
	Low temperature warning	-10℃	Low temperature protection - low temperature warning recovery	
	Low temperature warning recovery	3 ℃	Low temperature warning - 10 $^{\circ}\mathrm{C}$	
		Low temperature protection	-15℃	-30 $^{\circ}\!$
		Low temperature recovery	0 ℃	Low temperature protection - low temperature warning recovery

3.3.7 Ambient high/low temperature parameters

		Ambient high/	low tempe	rature parameters
Functions	Status	Item	Default	Configurable Range
		High temperature warning	50℃	High temperature warning recovery - high temperature protection
		High temperature warning recovery	47℃	-20 $^{\circ}$ C − high temperature warning recovery
		High temperature protection	60℃	High temperature protection recovery -80 $^{\circ}\mathrm{C}$
Ambient temperature ON	High temperature protection recovery	55℃	High temperature warning recovery - high temperature protection	
·	temperature ON	Low temperature warning	0 ℃	Low temperature protection - low temperature warning recovery
		Low temperature warning recovery	3 ℃	Low temperature warning - $60^{\circ}\!$
		Low temperature protection	- 10℃	-30 °C - low temperature protection recovery
		Low temperature protection recovery	0 ℃	Low temperature protection - low temperature warning recovery

3.3.8 MOSFET high/low temperature parameters

	MOSFET high/low temperature parameters				
Functions	Status	Item	Default	Configurable Range	
		High temperature warning	90℃	High temperature warning recovery - high temperature protection	
MOSFET temperature ON	High temperature warning recovery	85℃	60 $^{\circ}$ C - high temperature warning		
	High temperature protection	100℃	High temperature warning - 120 ℃		
		High temperature protection recovery	85℃	High temperature warning recovery - high temperature protection	

3.3.9 Charging current limiting parameters

	Charging current limiting parameters					
Functions	Status	Item	Default	Configurable Range		
Current limiting (charging)	OFF	Active current limiting	101	When the charger current > 10 A, current limiting activated.		
		Passive current limiting	10A	When the charger current > charging over current warning (configurable), current limiting activated.		
	Charging current limiting time delay	5 min	After the current limiting being activated, BMS re-check the current to judge whether to maintain current limiting.			

3.3.10 Charging over limiting parameters

		Charging current	t limiting pa	arameters
Functions	Status	Item	Default	Configurable Range
Over current		Over current warning	200A	Charging over current warning recovery - charging over current protection
warning (charging)	ON	Over current warning recovery	195A	0A - charging over current warning
		Over current protection	210A	0A~150A
Over current protection (charging)	ON	Over current protection time delay	10\$	Configurable
, 5 0,		Over current	BMS	detects any output discharge current.
		protection recovery conditions	Afte	er 60 seconds, the protection recovers automatically.
Effective	Ch	arging current (in)		1000mA
charging Cha current	rging current (out)		700mA	

3.3.11 Discharging over limiting parameters

Discharging over current parameters				
Functions	Status	Item	Default	Configurable Range
Over current		Over current warning	-205A	Over current protection - over current warning recovery
warning	ON	Over current warning	-203A	Over current warning -0A
		recovery		

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		Over current protection	-210A	Transient over current protection - 0 A
Over current	ON	Over current protection time delay	105	Configurable
p. stession		Over current protection recovery conditions		S detects any input charge current. 60 seconds, the protection recovers automatically.

3.3.12 Transient over limiting parameters

		Transient over	current para	ameters
Functions	Status	Item	Default	Configurable Range
ON Over current protection (Transient)		Over current protection	-300A	Discharge over current protection - 300A
	ON	Over current protection time delay	30mS	Configurable
		Over current protection recovery		WS detects any input charge current. er 60 seconds, the protection recovers automatically.
` '		Over current lock	Continuously over current for 2 times. The over current lock times exceeded.	
OFF	OFF	Over current lock times	5 times	
		Over current lock release		Connected with charger

3.3.13 Short circuit parameters

Short circuit parameters						
Functions	Status	Item	Default	Configurable Range		
ON	Short circuit protection current value and time delay	Progra	mmed into the software (can not be edited) Cannot be turned off			
Chart aircuit		Short circuit protection recovery		BMS detects any input charge current. seconds, the protection recovers automatically.		
protection	Short circuit protection	Short circuit protection lock		ontinuously short in the output circuit. ver current protection lock times exceeded.		
	ON	Short circuit protection lock times		5 times		
		Short circuit protection lock release		Connected with charger		

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Effective	Discharge current (in)	-1000mA		
Discharging	Discharge current (out)	-700mA		
current	Discharge carrent (out)	-700IIIA		

3.3.14 Cell balance parameters

		Short circuit para	meters		
Functions	Status	ltem	Default	Configurable Range	
	ON	Standby balance	When there is no chargi current flow, the standby activated	by equalization will be	
-		Standby time	10 hours	configurable	
	ON	Charging equalization	When at the charging or float chargin the charging equalization will be act		
	Balance -	Activate voltage	3350mV	Configurable	
Cell balance		Activate voltage difference	30mV		
		End voltage	20mV		
	ON	Temperature	According to the temperature range of no equalization (ambient temperature)		
		No equalization high temperature	50℃	_ Configurable	
		No equalization low temperature	0 ℃		
Cell failure	ON	Voltage difference	500mV Configura		
cen famale	ON	Voltage difference recovery	300mV	Comparable	

3.3.15 Cell balance parameters

	Capacity parameters						
	Nominal c	apacity	200AH	5-200Ah			
	Remaining capacity	Calculated accordi	ngly to the cell voltage	Configurable			
	Cycle life accumulated capacity	20%	Cycle life (configurable)				
Capacity	ON	Remaining	15%				
		capacity warning					
	OFF	Remaining capacity protection	8%	Output current flow will be cut off.			
Reset button	Power on/a	ctivation	When the BMS is in the sleep state, press the 1S reset button, the BMS will be activated, and the LED indicators will turn on in turn, then the BMS will turn into the normal working state				

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Shut down/ hibernate	When the BMS is in standby or working state (except charging), press the 3S reset button, the BMS will be hibernated, and the LED indicator lights will turn on in turn, and then the BMS will
	go into hibernation state;

3.3.16 Other parameters

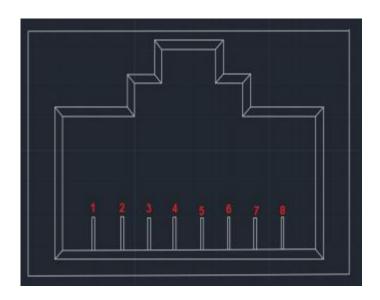
Pre- charging	2000ms	0-5000ms	The pre-charging function will be activated once the BMS powered on.				
BMS power consumption	ON	Longest standby time	48 hours (Do not connected with charger, and no effective charging current.)				
	1						
		Start heating temperature	0℃	Configurable			
Heating	ON	Stop heating temperature	10 ℃				
		Heating function activation	reaches the setting value, the heating function Heating function disabled when at standby and				
External		When a	t the standby status, the BMS ca	an be powered on/off			
switch	OFF		through external switc	hes.			
LCD screen	ON	Monitoring so	ftware to check the cell voltage	, temperature and current.			
Charging activating	ON	1 minutes	The BMS powered off after under voltage protection. Press the button for recovering from protection status and activate output current.	Configurable			
Compensating	Connection fault impedance	10mΩ	Default between 8 and 9	Battery connection line impedance compensation			
impedance	Compensation 1	0 m Q	9	Configurable			
	Compensation 2	0 m Q	13				

4. Communication

4.1 CAN communication

BMS transmit information through CAN interface. Buad rate 500KBITS/S. CAN interface applies 8P8C connectors. And CAN connector communicates with inverter or CAN TEST. RS485 collect the information. Then CAN transmit the battery pack information to PCS.

CAN connector definition:



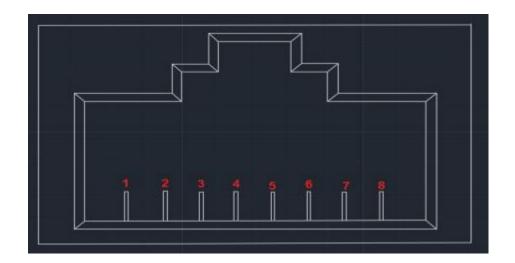
PINS	DEFINITION			
1、2、7、8	NC			
4	CAN-H			
5	CAN-L			
3、6	GND			

4.2 RS485

BMS could collect battery pack information through RS485 communication.

Baud rate: 19200bps. RS485 interface applies 8p8c connectors.

RS485 connectors definition:

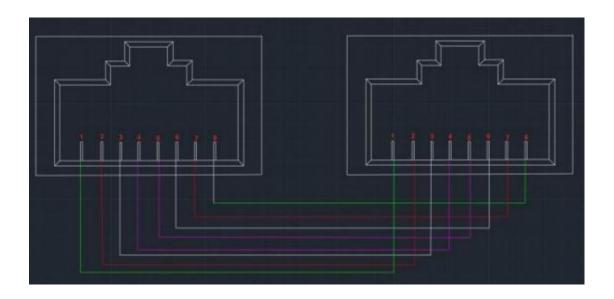


PINS	DEFINITION				
1/8	RS485-B				
2/7	RS485-A				
3/6	GROUND				
4/5	NC (dangling)				

4.3 Parallel

When connected in parallel with RS485 connectors. CAN connectors act as upper communication interface. End devices could get the collected battery information through CAN interface.

RS485 connector connection:



5. Working mode

5.1 Charging mode

When a charger was detected, and the charger voltage is 0.5V+ more than the battery voltage, BMS will turn on the charging MOSFET.And when the charging current reaches the effective charging current value, enters charging mode.

5.2 Discharging mode

When a loads was detected, and the discharging current reaches the effective discharging current value, BMS enters discharging mode.

5.3 Standby mode

When the BMS not in charging mode, nor discharging mode, it enters standby mode.

5.4 Power off mode

5.4.1 Power off

When meet any condition as below, the system will be power off(without charger only)

- 1) Individual or entirety battery remain over discharge protecting mode within 30 seconds.
- 2) Press the button in 3 seconds. (make sure no charger connected, otherwise it will not enter low power mode.)

5.4.2 Awaken

When meet any condition as below, the system will be enter working mode

- 1) Connect the charger and the voltage need reach more than 300V.
- 2) Press the power button in 3 seconds to start the system

6. LED indicator

6.1 LED lights

One running indicator (Green)

One warning indicator (Red)

And four capacity indicator (Green)

•	•	•	•	•	•
	SC	ALARM	RUN		

6.2 Capacity indicators

Status	Charging				Discharging			
Capacity	L4	L3 •	L2	L1 •	L4	L3	L2	L1 •
0-25%	OFF	OFF	OFF	Blink	OFF	OFF	OFF	Green
25%-50%	OFF	OFF	Blink	Green	OFF	OFF	Green	Green
50%-75%	OFF	Blink	Green	Green	OFF	Green	Green	Green
≥75%	Blink	Green	Green	Green	Green	Green	Green	Green
Running	Green					ВІ	ink	

6.3 Lights blinking explanation A

Blink Type	Lighten TIEM	OFF TIME		
Blink A	0.25\$	3.75\$		
Blink B	0.5S	0.5S		
Blink C	0.5S	1.5S		

6.4 Running status indicators

		RUN	ALM	SOC				
SYSTEM	Running			•	•		•	REMARK
OFF	Sleeping	OFF	OFF	OFF	OFF	OFF	OFF	OFF
STANDBY	Running	Blink A	OFF	OFF	OFF	OFF	OFF	Standby
				According to the remaining				
	Running	Green	OFF	capacity		LED Blink B		
	Over current			According to the remaining				
	warning	Green	Blink B	capacity		LED Blink B		

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CHARGE	Over voltage protection	Blink A	OFF	OFF	OFF	OFF	OFF	
3	Temp And over							
	current	Blink A	Blink A	OFF	OFF	OFF	OFF	
	protection							
	Running		OFF	According to the remaining				
	warning	Blink C	Blink C	capacity				
DISCHARGE	Temp Over current, short circuit protection	OFF	RED	OFF	OFF	OFF	OFF	
	Under voltage protection	OFF	OFF	OFF	OFF	OFF	OFF	No discharge

6.5 Installation and commissioning

NO	ltem	Quantity	Photo
1	Battery Box	1 PCS	SEPLOS

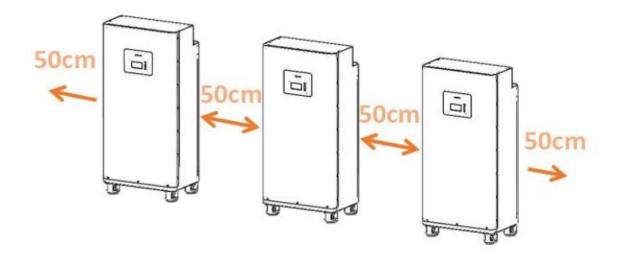
6.6 Installation instructions

Check battery status before installation



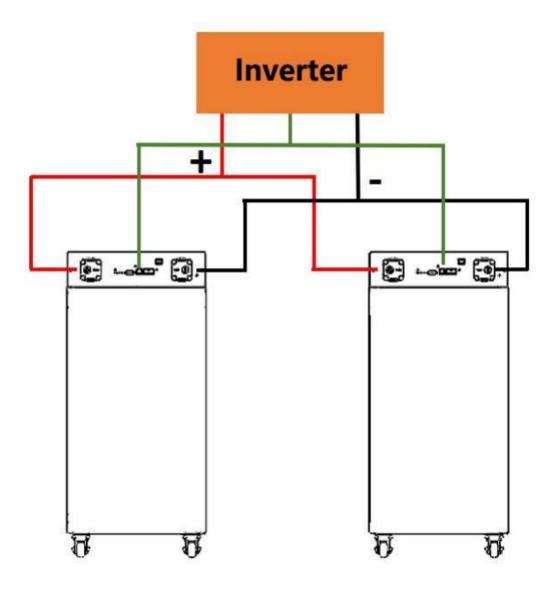
7. Safety precautions

- ✓ Recommended to hang the battery on the vertical wall.
- \checkmark The temperature should be between 10 $^{\circ}$ C and 30 $^{\circ}$ C to maintain the best operating state.
- ✓ The installation site should be some free space around the battery to dissipate heat (as shown in the figure below), which is suitable for installation on the concrete surface or other non-flammable surfaces.
- ✓ Do not place the battery on flammable building materials.



7.1 Harness connection

The battery should be turned off before connecting.



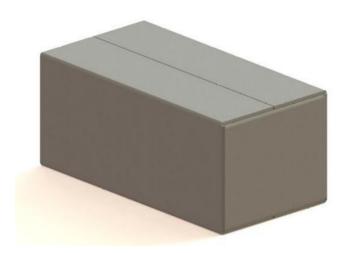
8. Package

Packed in a dry, dust proof and moisture-proof packaging box. The products shall be packed with plastic film/EPE and packed in cartons.

Specification: L 97cm*W50cm*H 36cm

Package quantity: 1 set

Weight: 113kg



9. Safety precaution

- Do not use the pack if there's any deformation.
- Do not stack up the battery.
- Please be notice the polarity of the battery and port.
- Make sure the insulation of equipment, use the tool and instrument correctly.
- The installation site should stay away from fire and Inflammable, keep ventilating and dry.
- Do not disconnect the battery terminals when its running.
- Not allow non-technology staff to open all of function module.
- Please fully charge a new battery pack, or a long-time-no-use battery pack with a designed charger.
- Do not uninstall, open, extrude, bend, impale or break the battery.
- Do not refit the battery or connect to other object, do not immerse the battery into any
 water, sea water, or drinks and other liquids. stay away from fire, explosive material or other
 dangerous item.
- Do not allow the battery short circuit, do not any metal or conductor contact the terminal.
- Do not let the battery fall. if does, especially on the solid surface, please contact the service center.
- If there is any signs of Electrolyte leakage, do not let it get any direct contact with your bare skin or eyes. If it happened, use plenty of water to clean up or ask doctor for help.
- Do not uninstall the battery cell, or there will cause internal short even fire disaster or other issue.
- Do not burn the battery or throw it to the fire, otherwise, there will be cause the fire of the battery.