Lithium Battery Specifications

Specifications: 48V/100Ah

Prepared Date: 2023-07-19

CUSTOMER APPROVED
Note: please use the battery according to the specifications in this acknowledgement. If the battery is damaged or other losses are caused due to failure to use the battery according to the specifications,our company will not be responsible for this.

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Revised Records

Ver.	Revised Content	Revised Date
A/0	A new release	2022-07-19

I Product overview

The battery pack uses LiFePO4 battery as the energy storage medium to form a48v100Ah battery pack to provide power output for the energy storage system

Ⅱ System Specification Parameters

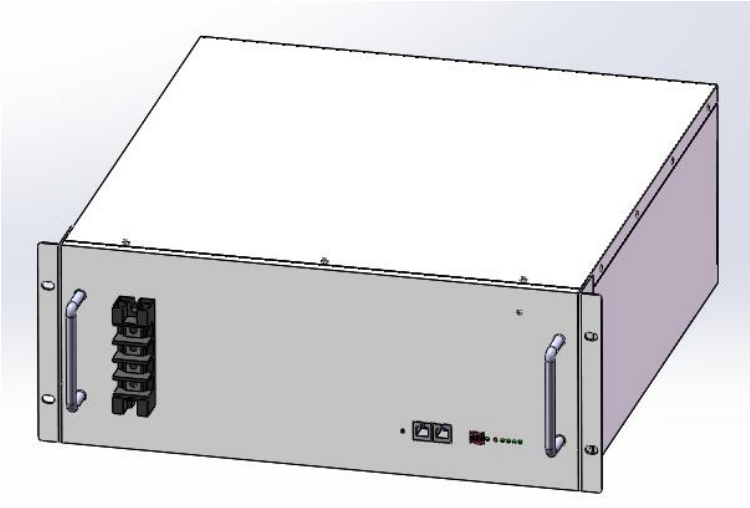
2.1 The basic structural performance parameters of the battery system are shown in the following table:

No.	Items	Parameters	Remark
1	Material	LiFePO4	
2	Nominal Voltage（V）	51.2	
3	Voltage Range（V）	41.6-57.6	
4	Nominal Capacity（Ah）	100	25±2℃,0.5C
5	Relative Humidity of Environment	15%-95%	
6	Storage Temperature	-10-35 ℃ More than 3 months -10-45 ℃ Within 3 months	
7	Charge voltage（V）	57.6	
8	Continuous charge current（A）	30	
9	Charging Limit （A）	10	Can be closed
10	Discharge Cut-off Voltage（V）	41.6	
11	Continuous discharge current（A）	80	
12	Charge Retention Capacity	96%,28 days	Long-term storage requires to be stored at about 40% ~ 60% capacity
13	Water and Dust Protection Standards	IP54	
14	Box material	Sheet metal box	
15	SOC range of application	5%-100%	

Ⅲ Product Appearance Introduction

3.1 The basic structural performance parameters of the battery system are shown in the following table:

Structural performance parameters	Box	One pc
	Box Color	Black
	Dust and Waterproof	IP54
	Installation Site	19 Inch Cabinet
	Fixed Form	M6 Bolt



for reference only

3.2 Capacity indication

Status	Norm./Alm/Protect	ON/OFF	RUN	ALM	Power Instructions LED						Note
		●	●	●	●	●	●	●	●	●	
OFF	Dormant	Runout	Runout	Runout	Runou	Runout	Runout	Runout	Runout	Runout	All Out
Standby	Norm	Light	Flash1	Runout	According to the electricity instruction						stand by
	Alm	Light	Flash1	Flash13							Module low pressure
Charging	Norm	Light	Light	Runout	According to the electricity instruction(Power charge indicates the maximum led flash 2)						Maximum power led flash (flash 2), the alm does not flash during the overcharge alarm
	Alm	Light	Light	Flash3							
	Overcharge protection	Light	Light	Runout	Light	Light	Light	Light	Light	Light	If there is no grid power, the indicator turns to standby state
	Temperature, overcurrent, and failure protect	Light	Runout	Light	Runout	Runout	Runout	Runout	Runout	Runout	Stop charging
Discharge	Norm	Light	Flash3	Ranout	According to the electricity instruction						
	Alm	Light	Flash3	Flash3							
	undervoltage protection	Light	Runout	Runout	Runout	Runout	Runout	Runout	Runout	Runout	Stop charging

	Temperature, overcurrent, short circuit, backconnection, failure protection is often bright out	Light	Runout	Light	Runout	Runout	Runout	Runout	Runout	Runout	Stop charging
lose efficacy		Runout	Runout	Light	Runout	Runout	Runout	Runout	Runout	Runout	Stop charging and Discharging

3.3 State Instructions

Status		**charging**						**discharging**					
Capacity indicator light		L6 ●	L5 ●	L4 ●	L3 ●	L2 ●	L1 ●	L6 ●	L5 ●	L4 ●	L3 ●	L2 ●	L1 ●
quantity of electricity （%）	0～16.6%	Ranout	Ranout	Ranout	Ranout	Ranout	Flash2	Ranout	Ranout	Ranout	Ranout	Ranout	Light
	16.6～33.2%	Ranout	Ranout	Ranout	Ranout	Flash2	Light	Ranout	Ranout	Ranout	Ranout	Light	Light
	33.2～49.8%	Ranout	Ranout	Ranout	Flash2	Light	Light	Ranout	Ranout	Ranout	Light	Light	Light
	49.8～66.4%	Ranout	Ranout	Flash2	Light	Light	Light	Ranout	Ranout	Light	Light	Light	Light
	66.4～83.0%	Ranout	Flash2	Light	Light	Light	Light	Ranout	Light	Light	Light	Light	Light
	83.0～100%	Flash2	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
running lights●		Light						Flash(Flash3)					

3.4 The flashing instructions

Flash Mode	Light	Ranout
Flash1	0.25S	3.75S
Flash2	0.5S	0.5S
Flash3	0.5S	1.5S

IV Product working mode

4.1 Key instructions

When the BMS is dormant, press the button (3~6s) and release, the protection plate is activated, and the led indicator lights up for 0.5 seconds from the "run". When the BMS is active, press the button (3~6s) and release, the protection plate is dormant, and the led indicator lights on for 0.5 seconds from the lowest power light. When the BMS is active, press the button (6~10s) and release, the protection plate is reset, and the led lights are all lit for 1.5 seconds simultaneously.

After the BMS is reset, the parameters and functions set by the upper computer are still retained. If you need to recover to the initial parameters, they can be achieved by the "recovery default value" of the upper computer, but the relevant running records and stored data remain unchanged (such as power, cycle times, protection records, etc.).

4.2 Dormant and Wake Up

4.2.1 Dormant

The system enters a low-power mode when any of the following conditions are met:

1）The monomer or overall over release protection is not removed within 30 seconds.

2）Press the button (3-6 s) and release the button.

3）。Minimum monomer voltage is lower than dormant voltage and lasts for dormant delay time (simultaneously with no communication, no protection, no equilibrium, no current)

4）Standby time exceeds 24 hours (no communication, no charge and discharge, no electricity).

5）Forced shutdown through the upper computer software. Before entering hibernation, make sure that the input is not connected to external voltage, otherwise low power mode.

4.2.2 Wake Up

When the system is in the low power mode, and if any of the following conditions are met, the system will exit the low power mode and enter the normal operation mode:

1）Access to the charger, the charger output voltage shall be greater than 48v

2）Press the button (3-6 s) and release the button.

3）With RS232 activation

Note: After the single or overall over discharge protection, enter the low power consumption mode, wake up regularly every 4 hours, and open the charge and discharge MOS. If it can be charged, it will exit from dormant and enter normal charging; if it cannot automatically wake up for 10 consecutive times, it will no longer

V Product Communication

5.1 RS232 Communication

The BMS can communicate with the upper position computer through the RS232 interface, which can monitor various battery information, including battery voltage, current, temperature, state, and battery production information, with a default baud rate of 9,600 bps.

5.2 CAN Communication

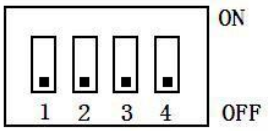
CAN Communication，Baud rate 500K。

5.3 RS485 Communication

With a dual RS485 interface to view information about PACK with a default baud rate of 9600bps. If you need to communicate with the monitoring equipment through the RS485, the monitoring equipment acts as the host machine, and polls the data according to the address, and the address setting range is 2 to 15.

5.4 Dial Switch Settings

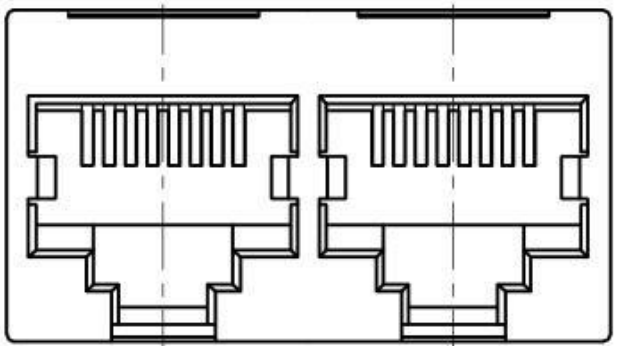
When the PACK is used in parallel, you can set addresses to distinguish different PACK through the dial switch on the BMS. To avoid the address being the same, the definition of the BMS dial switch refers to the following table.

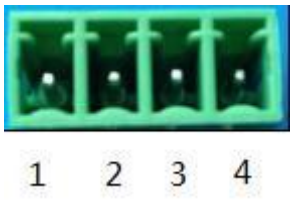


Add.	Dial switch position			
	#1	#2	#3	#4
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON
11	ON	ON	OFF	ON
12	OFF	OFF	ON	ON
13	ON	OFF	ON	ON
14	OFF	ON	ON	ON
15	ON	ON	ON	ON

VI Interface definition

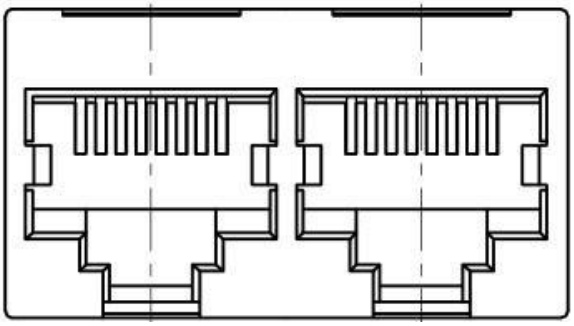
6.1 Interface diagram

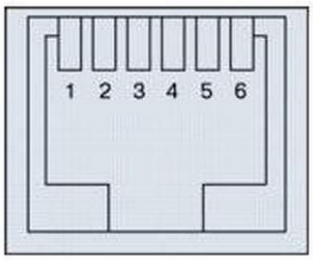




- CAN and RS485 interface

Dry Contact





Parallel communication port

RS232 Communication port

6.2 Electrical interface definition

RS232- adopts 6P6C vertical RJ11 jack	
RJ11 引脚 Pin	Defined Declaration
2	NC
3	TX（one board）
4	RX（one board）
5	GND

RS485--adopts 8P8C vertical RJ45 jack		CAN-adopts 8P8C vertical RJ45 jack	
RJ45 Pin	Defined Declaration	RJ45 Pin	Defined Declaration
1、8	RS485-B1	9、10、11、14、16	NC
2、7	RS485-A1	12	CANL
3、6	GND	13	CANH
4、5	NC	15	GND

RS485 And CAN interface

RS485--adopts 8P8C vertical RJ45 jack		RS485--adopts 8P8C vertical RJ45 jack	
RJ45 Pin	Defined Declaration	RJ45 Pin	Defined Declaration
1、8	RS485-B	9、16	RS485-B
2、7	RS485-A	10、15	RS485-A
3、6	GND	11、14	GND
4、5	NC	12、13	NC

Parallel Communication Port

VII Note

1. Battery Pack
   - No short circuit to the input and output terminals of the battery pack;
   - Battery don't use for a long time, at least charging once 2 months;
   - Stay away from the fire source, heat source, do not put the battery into the fire;
   - Violent vibration, impact and extrusion are strictly prohibited;
   - Pay attention to waterproof, to prevent the battery pack discharge port encountered water dripping, flooding;
   - Charging operating temperature: 0~45℃
   - Discharge working temperature: -5~45℃
   - Stay away from children
   - Do not remove the battery pack by yourself
   - If have problems, please contact our after-sales service department.

   If not according to the above requirements, it shall be solely responsible for all the consequences arising therefrom.
2. Charging operation:
   - Please use the special charging equipment provided for you or with the specified parameters;
   - It is strictly prohibited to use the charging equipment without professional certification to charge the battery pack;
   - Do not charge in unstable, excessive lampblack and dust and excessive places
   - Avoid charging in direct sunlight;
   - Charging, please maintain good ventilation and heat dissipation conditions;

VIII manufacture's liability

* The Company shall not be responsible for any accident caused by the violation of this Specification;

* The contents of this specification are subject to change by improving product quality or upgrading related technical parameters without notice. For the latest product information, please contact the company to request.