



Product Specification Approval

(Product Name):	LiFePO4 16S 48V 100A Common port with Balance	
(Product Number):	SBMS 16S100A	
(Customer Name):		
(Customer P/N):		
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Date:		



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1. Introduction

With the wide application of lithium batteries in the lithium battery industry, requirements for high performance, high reliability and high cost performance are also put forward for battery management systems. This product is a BMS specially designed for lithium batteries. It can collect, process and store the information and data of the battery pack in real time during use to ensure the safety, availability and stability of the battery pack.

2. Product Overview and Features :

- ◆ Using professional high-current trace design and technology, it can withstand the impact of ultra-large current
- ◆ The appearance adopts the injection molding sealing process to improve moisture resistance, prevent the oxidation of components, and prolong the service life of the product
- ◆ dust proof, shockproof, anti-squeezing and other protective functions
- ◆ There are complete overcharge, over-discharge, over-current, short circuit, equalization functions
- ◆ The integrated design integrates acquisition, management, communication and other functions into one

3. Electrical characteristics

3.1 Basic parameters

No	Test content		Factory default parameters	Unit	Remark
1	Discharge	Rated discharge current	100	A	
	Charging	Charging voltage	58.4	V	
		Rated charging current	100	A	1C
2	Passive equalization function	Equalization turn-on voltage	3.525	V	
		Equilibrium On Condition	Satisfy both: 1. Under charging 2.		



		Achieving the set equilibrium turn-on voltage				
		Balance current	30±10	mA	Remark	
3	Single Cell over-charge protection	Single Cell over-charge protection voltage	3.65±0.05	V		
		Single Cell over-charge protection delay	1±0.5	S		
		Single Cell over-charge protection release voltage	3.55±0.05	V		
		Single Cell over-charge protection release delay	1±0.5	S		
4	Single Cell over-discharge protection	Single Cell over-discharge protection voltage	2.3±0.05	V		
		Single Cell over-discharge protection delay	1±0.5	S		
		Single Cell over-discharge protection release voltage	2.7±0.05	V		
		Single Cell over-discharge protection release delay	1±0.5	S		
5	Charge/discharge over-current protection	Discharge over-current protection current	360±50	A		
		Discharge over-current protection delay	1±0.5	S		
		Release condition	Removing the load is lifted			
		Charge over-current protection current	140±20	A		
		Charge over-current protection delay	1±0.5	S		
		Release condition	Remove the charger to release			
6	Short circuit protection	Short circuit protection conditions	External load short circuit			
		Short circuit protection delay	10~500	uS	The actual test is subject to the customer's battery sent back to our company for testing.	
		Short circuit protection released	remove load release			
		Charging high temperature protection temperature	/	°C		

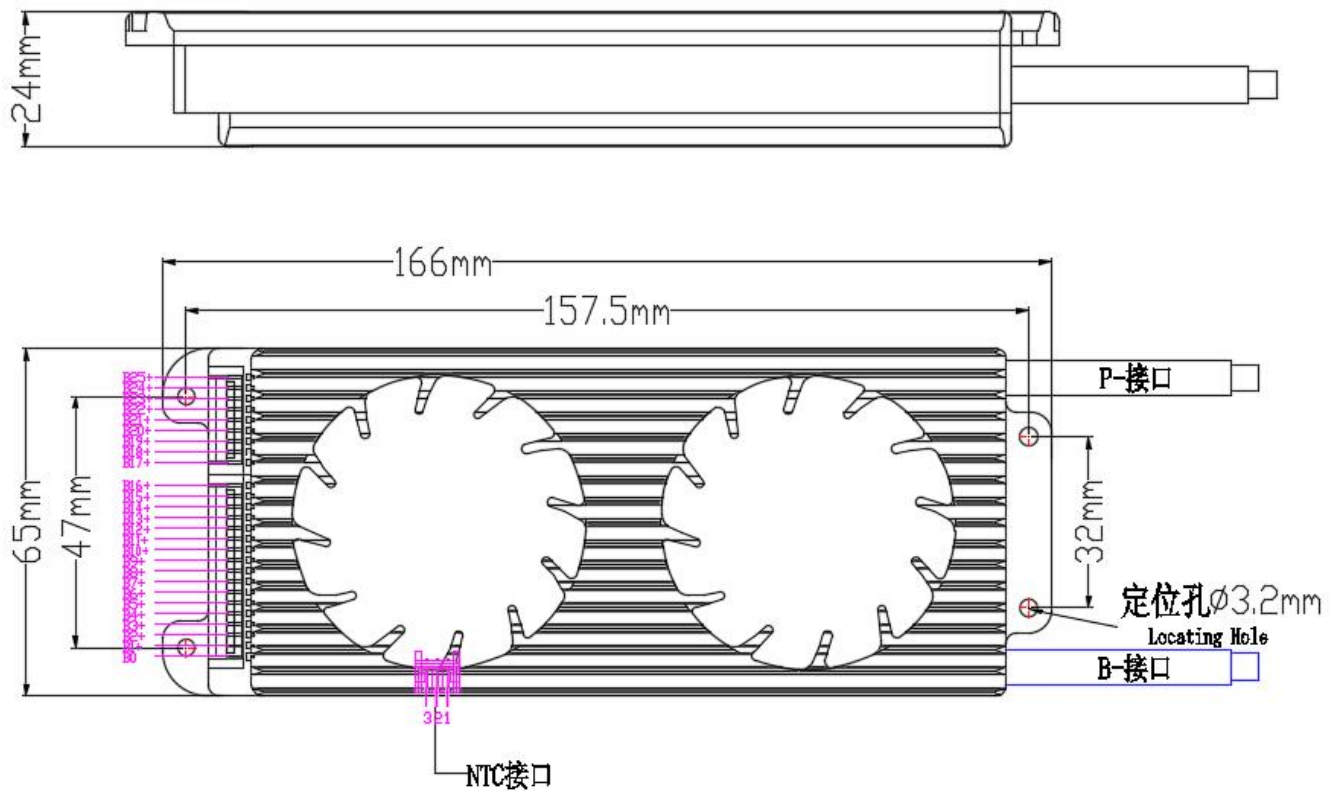


7	Temperature protection	Charging low temperature protection temperature	/	°C	
		Discharge high temperature protection temperature	/	°C	
		Discharge low temperature protection temperature	/	°C	
		Temperature protection release conditions	The recovery temperature is reached and the load is disconnected		
8	Internal impedance	Main circuit on-resistance	<20	mΩ	
9	Current consumption	Self-consumption current during operation	<500	uA	Not include module self-consumption
		Self-consumption current in sleep mode	0	uA	Entry: no communication, no current, no key signal
10	Control switch	□有 <input checked="" type="checkbox"/> 无			
11	BMS size	Long * Width * High (mm) 166*65*24			

3.2 Reliability parameters

NO	Project	Condition
1	Detection accuracy	Current detection accuracy: $\leq (\pm 3\% \text{FSR})$ voltage detection accuracy: $\leq \pm 15\text{mV}$ Temperature detection accuracy: $\leq 2^\circ\text{C}$
2	Working environment conditions	-40°C ~ 85°C Operating temperature: -40°C ~ 85°C
		5% ~ 90%RH Relative humidity: 5% ~ 90%RH
3	Storage environment conditions	-40°C ~ 85°C Storage temperature: -40°C ~ 85°C
		5% ~ 75%RH Relative humidity:

4. Dimensional drawing of BMS(interface for reference only, unconventional standard, please refer to 4.1 Interface pin specification)



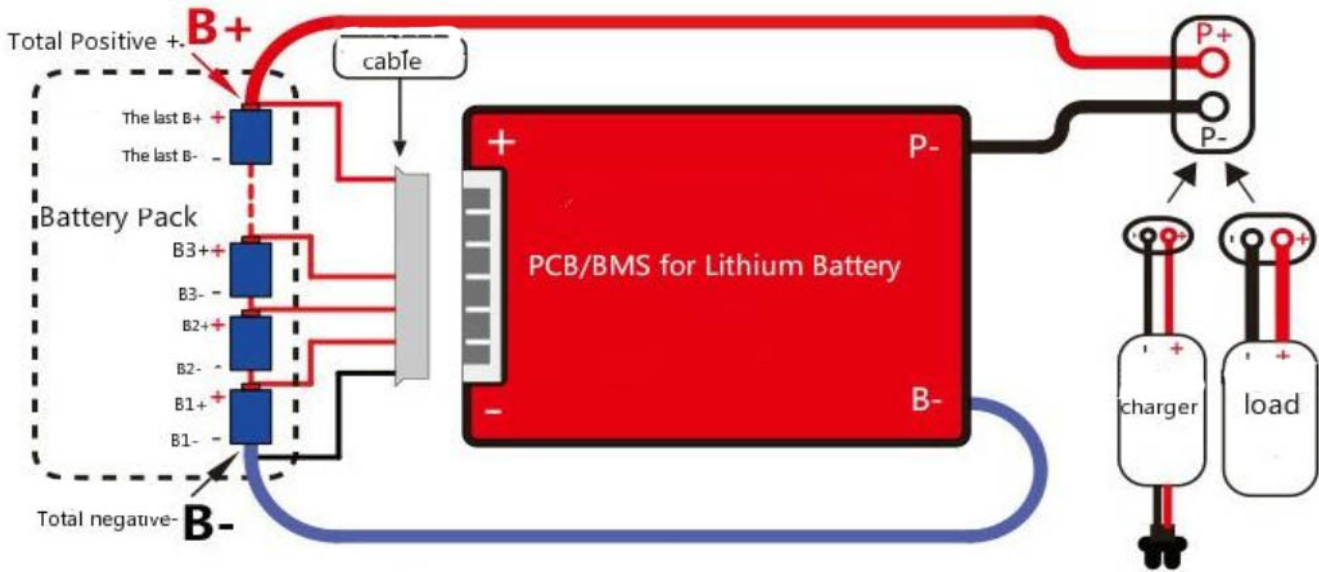
4.1 Interface pin instructions

Interface name	Pin	Label	Definition description
B-interface Standard Parts	/	B-	Battery negative, connect to battery negative
P-interface Standard Parts	/	P-	The charge and discharge negative terminal of the protection board is connected to the negative terminal of the charge and discharge
Sampling line interface Standard Parts XHB 2.5 17 Pin	1	B0	1 Connect to the negative terminal of the first battery
	2	B1+	1 Connect to the positive terminal of the first battery
	3	B2+	2 Connect to the positive terminal of the second battery
	1 Connect the positive terminal of the last battery
NTC1 PH2.0 2Pin	1	GND	GND
	2	NTC	Temperature line

4.2

Line name	Default specification
B- P- Output Line	3135 7AWG L=85mm M6
Collecting line	1007 24AWG L=450mm (17PIN)

5. Wiring diagram



5.1 Wiring Instructions

- First connect the B-line of the protection board (thick blue line) to the total negative pole of the battery pack
- The cable starts from the thin black wire connected to B-, the second wire is connected to the positive electrode of the first string of batteries, and the positive electrode of each string of batteries is connected in turn; then insert the cable into the protection board
- After the line is completed, measure whether the voltages of battery B+ and B- are the same as those of P+ and P-. The same means that the protection board is working normally; otherwise, please re-operate according to the above;
- When removing the protection board, first unplug the cable (if there are two cables, first pull out the high-voltage cable, then pull out the low-voltage cable), and then disconnect the power cable B-.



7. Precautions

1. BMS of different voltage platforms cannot be mixed. For example, NMC BMSs cannot be used on LFP batteries.
2. The cables of different manufacturers are not universal, please make sure to use our company's matching cables
3. Take measures to discharge static electricity when testing, installing, touching and using the BMS
4. Do not let the heat dissipation surface of the BMS directly contact the battery cells, otherwise the heat will be transferred to the battery cells and affect the safety of the battery
5. Do not disassemble or change BMS components by yourself
6. The company's protective plate metal heat sink has been anodized and insulated. After the oxide layer is damaged, it will still conduct electricity. Avoid contact between the heat sink and the battery core and nickel strip during assembly operations.
7. If the BMS is abnormal, please stop using it and use it after the problem is solved

8. Special Note

Our products undergo strict factory inspection and testing, but due to the different environments used by customers (especially in high temperature, ultra-low temperature, under the sun, etc.), it is inevitable that the protection board will fail. Therefore, when customers choose and use BMS, they need to be in a friendly environment, and select a BMS with a certain redundancy capability.