Low Voltage BMS PLUS Product Specification

Product Series: Low Voltage BMS PLUS

Product Model: TB-S48V100A

Version: V2.2

Compiler: Lucas	Reviewer: Ethan	Ratify: Gary
2026-1-10	2026-1-11	2026-1-12

Revision History			
Date	**Version**	**Revision Notes**	**Revised by**
2026-3-18	V1.0	New Version	Fu
2026-4-15	V2.0	Formatting and description adjustments	Liuqi
2026-4-30	V2.1	Parameters modification	May
2026-5-12	V2.2	Images replacement	May

Catalog

1. Protocol Overview

1. 1. Introduction

This product is an intelligent lithium battery BMS dedicated to lithium iron phosphate battery communication backup power supply. The core has comprehensive protection, flexible expansion and precise management and control capabilities, and is suitable for the reliable operation requirements of peak shaving and valley filling, remote power supply and backup power supply scenarios.

1. 1. 1. Core Protection and Balancing Capabilities

It integrates seven core protection functions of overcharge, overdischarge, overcurrent, overtemperature, undertemperature, short circuit and reverse connection, as well as anti-theft and water inlet detection functions to protect the safety of the battery pack in an all-round way; Support voltage balance control during charging, effectively prolong the battery cycle life and improve the stability of power supply.

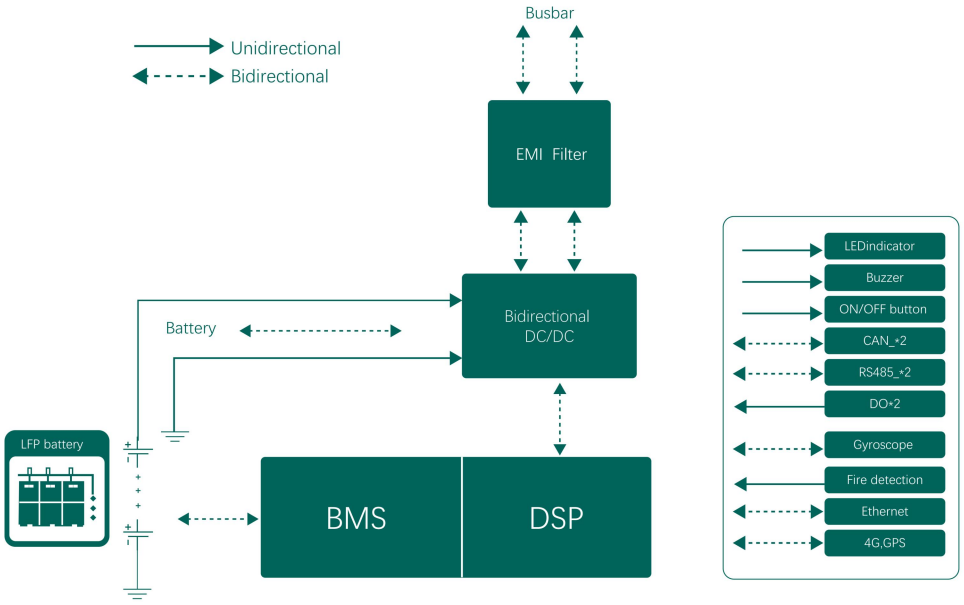
1. 1. 2. Communication and parallel extension characteristics

Stable communication is achieved through CAN bus or RS485 bus, which supports reliable parallel connection of multiple groups of devices (the maximum number of parallel groups is 32 groups), supports the configuration parameters of the host computer, real-time data monitoring and software upgrade, and the operation is convenient and efficient.

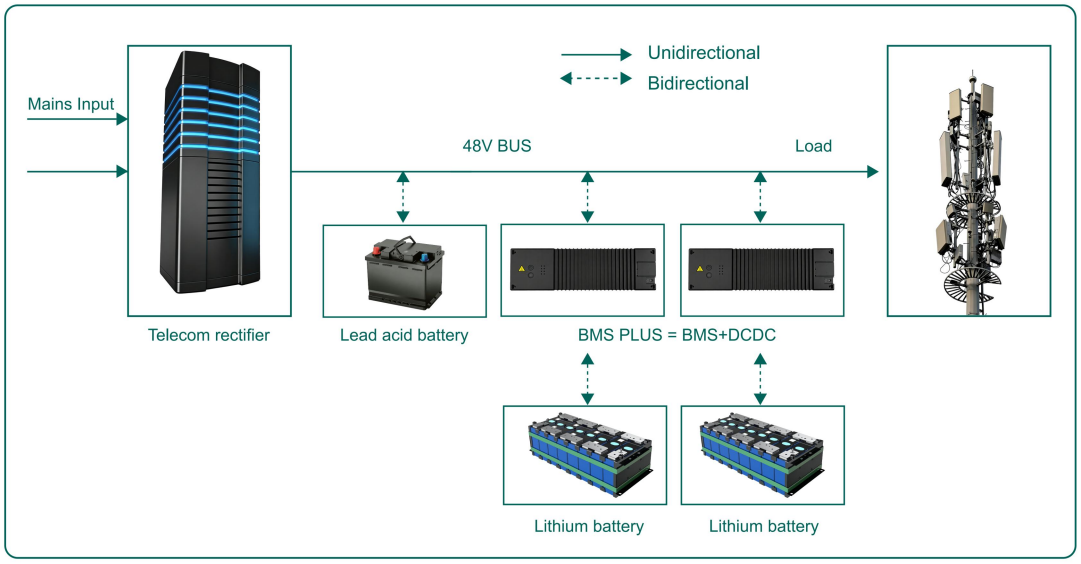
1. 1. 3. Compatibility and internal architecture

Compatible with 15-string, 16-string lithium iron phosphate battery packs, ready to use without additional adaptation. The product adopts a separate architecture of BMU and BDC: BMU (Battery Management Unit) is responsible for voltage/temperature monitoring of single cell, accurate calculation of SOC, operation logic control, parameter setting and external communication; As the core interface between the battery pack and the main circuit, BDC (Bidirectional DC Converter) realizes constant current/constant voltage charge and discharge, working mode switching and protection instruction execution, so as to ensure the stable and efficient operation of the power supply system.

1. 2. Scheme topology diagram



(Product Internal Framework Diagram)



(System Working Framework Diagram)

1. 3. Application Environment

Indicator item	Parameters or descriptions
Operating ambient temperature range	-20℃ ~60℃ (for use above 55℃, power derating

	requirements need to be met)
Storage ambient temperature range	-40℃～+70℃
Operating ambient humidity range	5~95 (45℃±2℃) %RH
Storage ambient humidity range	≤95 (45℃±2℃) %RH
Altitude	0~4000m (1800m ~4000m reduction: 1℃ every 220m)
Heat dissipation mode	Natural heat dissipation
Protection rating	IP20

2. Product Overview

2. 1. Product Shipment List

Accessory Name		Quantity	Unit	Physical drawing
BMS motherboard		1	Block	
wiring harness	Voltage sampling line	1	sleeve	
	NTC temperature sensor	1	sleeve	
Connector terminal	6pin connector terminal	1	PCS	
	4pin connector terminal	1	PCS	

2. 2. Key Product Characteristics

Parameter Item	Parameters or descriptions
Overall dimensions of motherboard	405*108*32mm (length*width*thickness)
Working mode	Power Mode/Battery Mode/Mixed Mode/Maintenance Mode/Other Mode (Reserved)
Boost output value	54V DC, ≤ ±0.5% (Two-way)
Operating voltage	36V ~60V DC
Rated power	4800W, ≤ ±2% (bi-directional)
Maximum continuous charging current	100A
Maximum continuous discharge current	120A
Battery charging current limit value	2A to 100A
Battery discharge current limit	0A ~125A

Parameter Item	Parameters or descriptions
value	
Operating power consumption	≤10W
Number of cell voltage detection channels	15S
Detection range and accuracy of monomer voltage	2~4.5VDC, ≤ ±10mV (at-20~ +60℃)
Current detection accuracy	> 50A, ±2%; ≤50A, error ≤1A
Quantity and accuracy of temperature detection	8 cell temperature sampling, 1 ambient temperature sampling, 2 MOS tube temperature sampling
Temperature detection accuracy	≤±2℃ @0℃~+50℃ ≤±3℃ @-40℃~+85℃
NTC	10K Ω/3950
Total battery voltage detection accuracy	0~60V DC, ≤ ±0.2V
SOC Accuracy	≤±5%
Single cell balance mode	Passive discharge balance, 200mA ± 20%
Trunk node output	Dry contact 1: Cell failure (cell voltage 1V is too low, voltage difference 800mV is too large). Dry contact 2: BMS failure (charge MOS damaged, discharge MOS damaged, NTC disconnected)
Heating/Fan Control	1-way/48V DC/4A (optional)
Fan strategy	On condition: any cell temperature> 40℃ or MOS temperature> 50℃ OFF CONDITION: All cell temperature <35℃ and MOS temperature <45℃
Fire interface	have
LED	8
Communication mode	CAN, RS485, 4G (Extended)
Data Storage	≥100000 historical data records
Pre-charging function	have
Reverse connection protection	have (Note: Only support reverse connection after boot protection, does not support online reverse connection)
Host computer	have
gyroscope	have
Communication anti-theft	have
Wireless module	All Netcom (4G standard) mode to access the mobile monitoring network, realize remote control, peak shaving and valley filling, GPS positioning/anti-theft, and

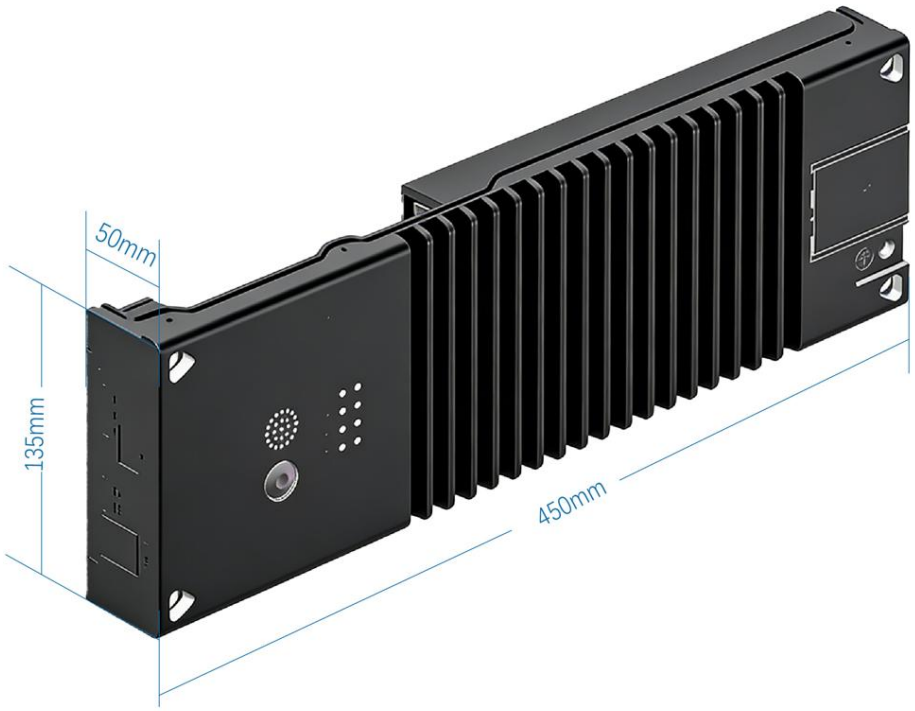
Parameter Item	Parameters or descriptions
	remote upgrade. (Optional)

2. 3. List of protocols

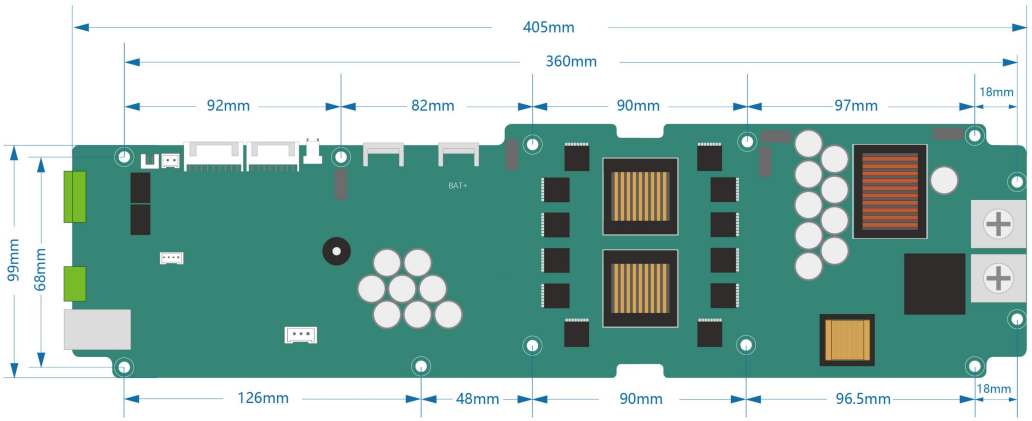
Serial number	Host computer selection	RS485 Protocol	Host computer selection	CAN protocol
1	/	Aogani MODBUS V1.10	/	/

2. 4. Dimension drawing of the whole machine

TB100-S48V100A:



2. 5. PCB Size Diagram



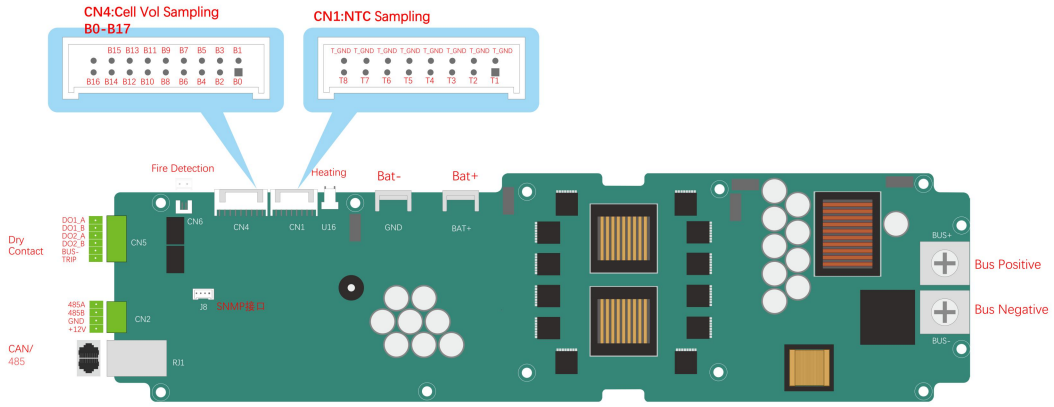
3. Port Functions

3. 1. Motherboard Port Function Diagram

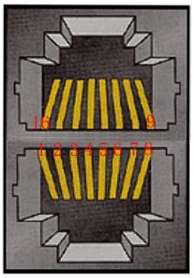
Serial number	Name	Functional Description	remark
1	Ground terminal	M6 crimped terminal/120A/, locked to front panel	
2	Battery side terminal	Battery side positive and negative interface, terminal size M6/torque requirement 4N·m	The size of wiring diameter is recommended to be greater than 25mm² and not less than 16mm²
3	Key switch	Manual power on/off, maintenance buttons	
4	buzzer	Audible alarm	
5	indicator light	Refer to 3.6 for detailed functions and functions	

6	Communication interface	Double layer RJ45 terminal, 485/CAN escalation information and communication cascade	
7	Extending Reserved Interface	reserve	
8	FE interface	SNMP communication interface	
9	Dry junction	Dry contact alarm	

3. 2. Motherboard Port Definition



3. 3. Communication interface definition



(CAN/RS485 Communication Port)

(8P8C Vertical RJ45

Communication interface brand: Huacan Tianlu

Model: HC-RJ45-059A-2*1-3

(Note: Double layer RJ45, the signal definition of both sockets is the same)

Communication port pin	Interface definition
1	485A
2	485B
3	NC
4	CANB_H
5	CANB_L
6	NC
7	CANA_H

8	CANA_L

(Dry Contact) (DTU Interface)

Dry contact brand: JILN Model: JL15EDGRC-35004G01		Expanding Interface Brand: JILN Model: JL15EDGRC-35006G01	
Dry contact pin	**Interface definition**	**Extending Interface Pins**	**Interface definition**
1	DO1_A	1	RS485_A
2	DO1_B	2	RS485_B
3	DO2_A	3	GND
4	DO2_B	4	12V +
5	reserve	/	/
6	reserve	/	/

3. 4. Power interface definition

(Battery Terminal) (Bus Terminal)

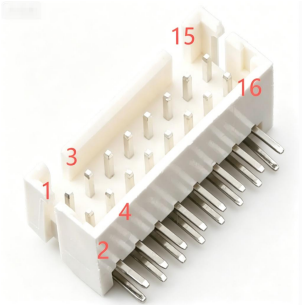
Bus Battery Terminal Brand: XFCN (Xingfei) Model: TTR64170200-1300		Heating interface brand: SAMZO Model: 182016040TD6	
Interface Name	**Interface definition**	**Heating Pin**	**Interface definition**
B+	Cell-side positive electrode	P+	Bus side positive electrode

B-	Battery side negative electrode	P-	bus side negative electrode

(Heating Interface) (Fire Interface)

Heating interface terminal brand: SHOU HAN (First Korea) Model: VH3.96-2P WZ		Fire interface terminal brand: HCTL (Huacan Tianlu) Model: XH-2AW	
Heating Pin	**Interface definition**	**Fire Pin**	**Interface definition**
1	HEAT-	1	GND
2	HEAT +	2	FIRE

3. 5. Cell/NTC Sampling Interface Definition



(Cell Sampling Terminal) (NTC Sampling Terminal)

Battery sampling interface brand: HCTL (Huacan Tianlu) Model: HC-XHD-2*9AW		NTC sampling interface brand: HCTL (Huacan Tianlu) Model: HC-XHD-2*8AW	
Cell pin	**Interface definition**	**NTC pin**	**Interface definition**
1	B0	1	T_GND

2	B1	2	T1
3	B2	3	T_GND
4	B3	4	T2
5	B4	5	T_GND
6	B5	6	T3
7	B6	7	T_GND
8	B7	8	T4
9	B8	9	T_GND
10	B9	10	T5
11	B10	11	T_GND
12	B11	12	T6
13	B12	13	T_GND
14	B13	14	T7
16	B14	15	T_GND
16	B15	16	T8
17	B16	/	/

3. 6. LED Indicator Description

LED light operating status indication:

status	Normal/Alarm/Protection	RUN	ALM	CHG	DCHG	Electricity indicator				Description
shut down	dormancy	Off	Off	Off	Off	Off	Off	Off	Off	Total off
await the opportune moment	Normal	Always on	Off	Off	Off	Display by battery				Standby state
	Alarm (non-temperature)	Flash 1	Off	Off	Off					

	Alarm (temperature type)	Flash 1	Flash 3	Off	Off					
Maintenance mode	Maintenance Installation	Flash 2	Flash 2	Off	Off					
charging	Normal	Always on	Off	Always on	Off					
	Alarm (non-temperature)	Flash 2	Off	Always on	Off					
	Alarm (temperature type)	Flash 2	Flash 3	Always on	Off					
	Overcharge protection	Flash 1	Off	Off	Off					
	Over/Under/Over Current Protection	Flash 1	Flash 2	Flash 1	Off	Off				When current =0, the CHG lamp goes off
(electric) discharge	Normal	Always on	Off	Off	Always on					
	Alarm (non-overcurrent)	Always on	Flash 3	Off	Always on					
	Alarm (overcurrent type)	Always on	Always on	Off	Always on					
	Over-discharge protection	Flash 1	Off	Off	Off					
	Over/Under/Over Current Protection	Flash 1	Flash 2	Off	Flash 1					When current =0, the DCH lamp goes off
Charge/discharge/standby	malfunction	Off	Always on	Off	Off	Off	Off	Off	Off	BMS voltage sampling device, damaged charging MOS, disconnected temperature sensor and other hardware failures
locking machine	Anti-theft locking machine	Off	Always on	Off	Off	bright	Off	Off	Off	

LED lamp power description:

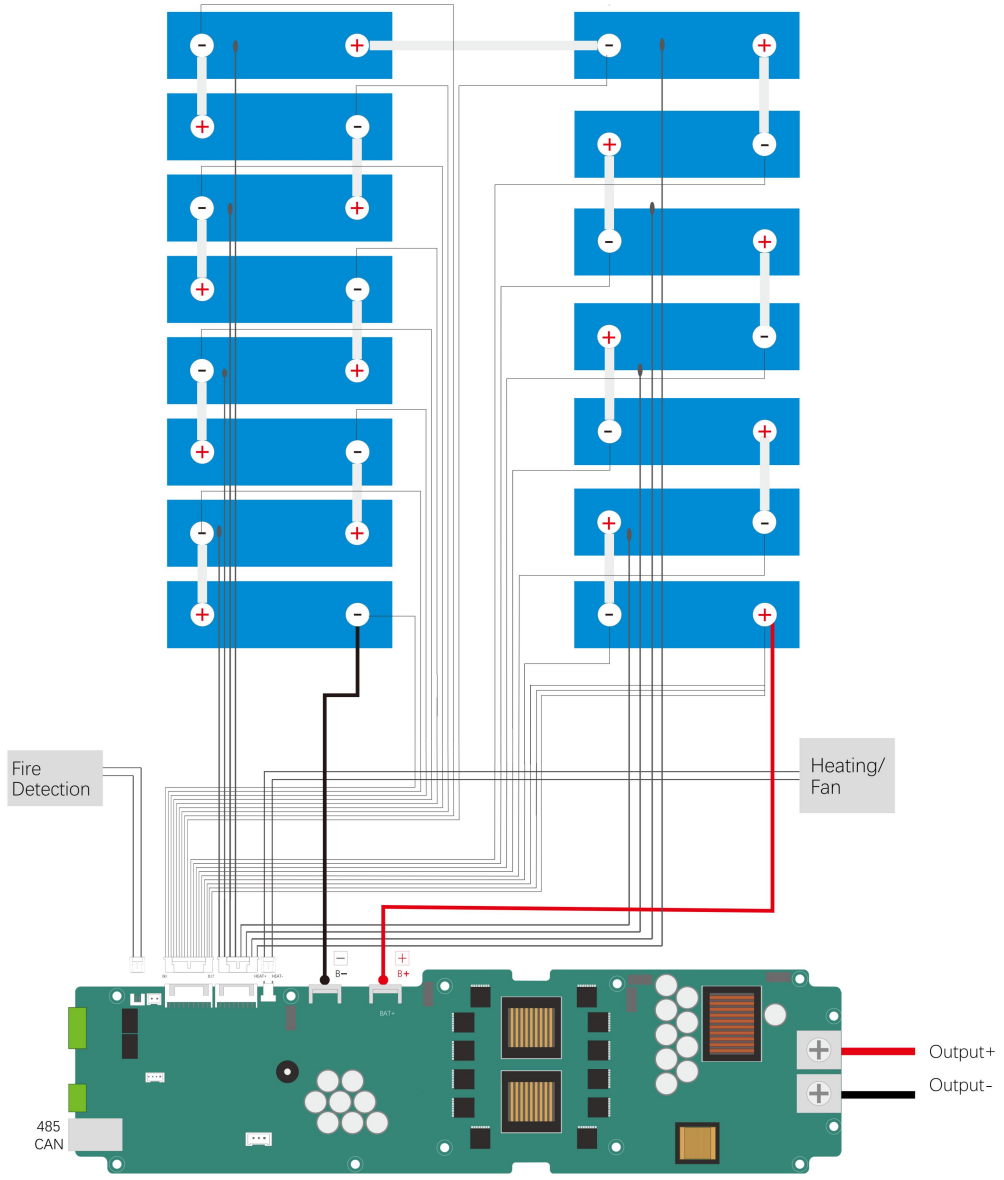
Flicker state	cycle	bright	Off
Flash 1	4S	0.25S	3.75S
Flash 2	1S	0.5S	0.5S
Flash 3	2S	0.5S	1.5S

SOC lamp display and capacity correspondence:

Capacity Status	Electricity indicator LED			
	LED1	LED2	LED3	LED4
[0%, 25%)	bright	Off	Off	Off
[25%,50%)	bright	bright	Off	Off
[50%,75%)	bright	bright	bright	Off
[75%,100%]	bright	bright	bright	bright
Light condition: If there is a single cell voltage higher than the sleep voltage when standing or when charging and discharging, the capacity indicator lamp will always be on according to the capacity ratio.				

3. 7. BMS Installation Steps

Installation Schematic:



Step Description:

1. Power-on wiring sequence: As shown in the figure, ① connect the negative electrode of the battery pack with the B-terminal of BMS; (2) Insert the cell sampling line and the temperature sampling line into the CN4 number terminal and the CN1 number terminal on the BMS board respectively; ③ Finally, connect the positive electrode of the battery pack and the B + terminal of BMS.

2. Power-off and disconnect sequence: ① First disconnect the connection between the positive electrode of the battery pack and the B + terminal of BMS; ② Then disconnect the battery cell sampling line terminal CN4 and the temperature sampling line terminal CN1; ③

Finally, disconnect the connection between the negative electrode of the battery pack and the B- terminal of the BMS.

3. 8. Parallel Machine Description

1. The lithium battery packs adopt CAN bus mode for parallel communication. By default, the maximum parallel connection of 32 groups is supported. The rated power of a single module is 4.9KW, and it has the function of automatically allocating addresses.

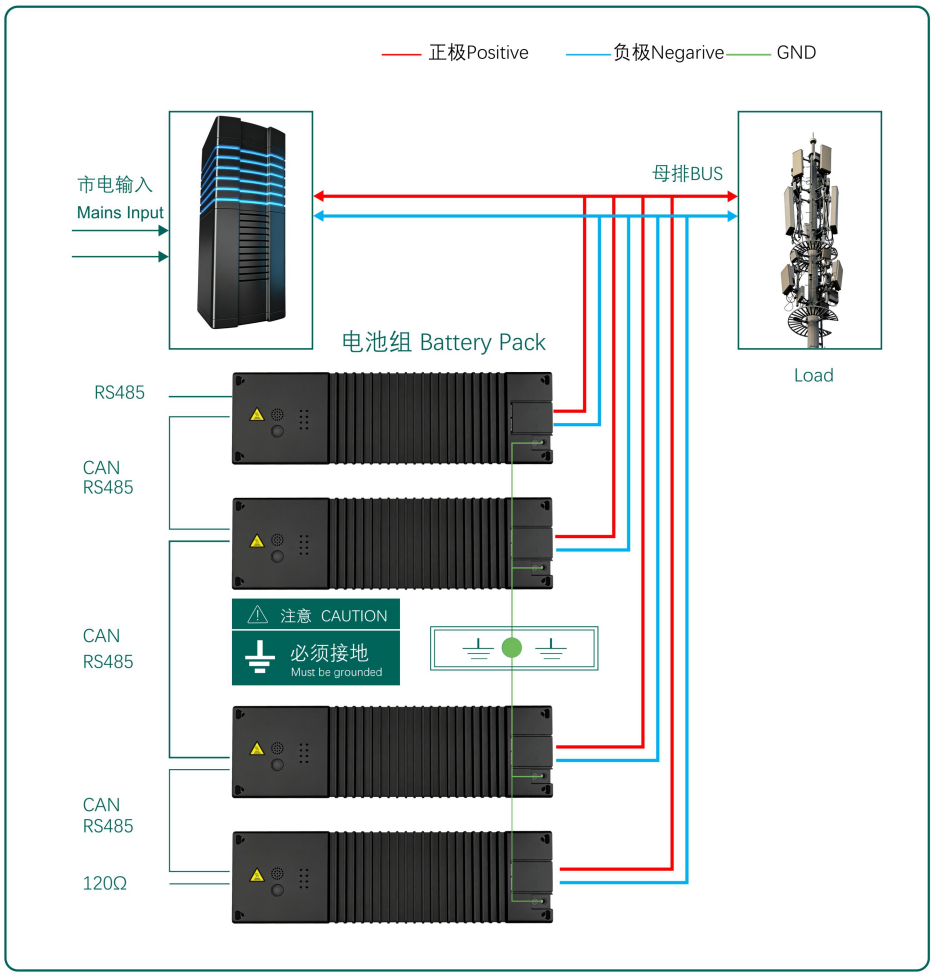
2. Communication between lithium battery pack and switching power supply controller/FSU and other devices through RS485;

3. After multiple sets of intelligent lithium batteries are parallel, the last battery must match the 120 Ω terminal resistance;

4. When the intelligent lithium battery is parallel, the address of the intelligent lithium battery starts from 0, and the address of each intelligent lithium battery is added by 1. If it is required to be monitored in parallel with the FSU, the conventional battery address setting needs to be connected to the address of the intelligent lithium battery

5. Current balance imbalance between parallel modules ≤5%

3. 8. 1. Parallel wiring



(Schematic diagram of parallel machine)

4. Parameter List

4.1. System parameters

Projects	Details	Set value	remark
Standby sleep voltage	Standby sleep voltage setting value	2.9V	Eligible range: 2.9±0.02V
Consumed current	Standby power consumption (normal standby pass-through)	≤10W	Cannot be set
	Internal consumption during sleep	≤300uA	Cannot be set
Full charge	Constant pressure value	52.5 ± 0.3V	During constant voltage charging, when

settings	Constant current value	5 ± 0.5A	the overall voltage is greater than the constant voltage value and the current is less than the constant current value, the BMS will consider the battery to be full, and the charging MOSFET will be turned off.
charge balance	Equalized turn-on voltage	3.45V	
	Equalized opening differential pressure	20mV	
	balance current	100~200mA	Cannot be set
Intelligent replenishment	Forced resume charging on after overcharge	5 days	
SOC Settings	Rated capacity	314AH	
	Factory SOC	28%	

4. 2. Protection Parameter Setting

Projects	Details	Set value	Remarks (Qualified Scope)
Monomer overcharge protection	Single overcharge detection voltage	3.65V	3.65V ± 0.05V
	Single overcharge detection delay time	1000 ms	500~3000 ms
	Single overcharge release voltage	3.3V	Acceptance range: 3.3±0.05V
Monomer over-discharge protection	Single over-discharge detection voltage	2.5V	2.5±0.05V
	Detection delay time of monomer overdischarge	1000 ms	500~3000ms
	Monomer over-release release	3.05V or Charge recovery	3.05±0.05V
Overall	Overall overcharge	54.75 V	54.75±0.5V

overcharge protection	detection voltage		
	Overall overcharge detection delay time	1000 ms	500~3000ms
	Overall overcharge release voltage	51V	51±0.5V After the overall overcharge recovery voltage is <51V, the protection is released with a delay of 1S.
Overall over-discharge protection	Overall over-discharge detection voltage	37.5V	37.5±0.5
	Overall overdischarge detection delay time	1000 ms	500~3000ms
	Total excessive release	43.5V	43.5±0.5V
Overcurrent protection	Charging overcurrent protection	110A/10S	110A±3A
	Discharge overcurrent protection	Discharge 125A/15 sec	125A±3A
Short circuit protection	Short circuit protection	have	The short-circuit protection action is triggered for 3 consecutive times, and the BMS enters the secondary protection, which is no longer automatically restarted. It should be able to resume work by manual restart or automatic restart when the voltage of the output port of the lithium battery returns to above 43.2V
	Conditions of protection	Load short circuit	
Temperature protection	Charging High Temperature Protection	55℃	55±2℃

Charging high temperature protection delay time	4000ms	3500~4500ms
Charge high temperature recovery	50℃	50±2℃
Discharge high temperature protection	55℃	55±2℃
Discharge high temperature protection delay time	4000ms	3500~4500ms
Discharge high temperature recovery	50℃	50±2℃
Charging cryogenic protection	0℃	0±2℃
Charging cryogenic protection delay time	4000ms	3500~4500ms
Low temperature recovery of charge	5℃	5±2℃
Discharge cryogenic protection	-20℃	-20±2℃
Discharge cryogenic protection delay time	4000ms	3500~4500ms
Discharge cryogenic recovery	-15℃	-15±2℃
Ambient temperature high temperature protection	90℃	90±2℃
Ambient temperature high temperature protection delay time	4000ms	3500~4500ms
Ambient temperature high temperature recovery	85℃	85±2℃

	Ambient Temperature Cryogenic Protection	-20℃	-20±2℃
	Ambient temperature cryogenic protection delay time	4000ms	3500~4500ms
	Ambient Temperature Cryogenic Recovery	-15℃	-15±2℃
	High temperature protection of mos tube	115℃	115±2℃
	High temperature protection delay time of mos tube	4000ms	3500~4500ms
	High temperature recovery of mos tube	105℃	105±2℃

4. 3. Alarm Parameter Setting

Projects	Details	Set value	Remarks (Qualified Scope)
Single overcharge alarm	Single overcharge detection voltage	3.55V	3.65±0.05V
	Single overcharge detection delay time	3000ms	2000~4000ms
	Single overcharge recovery voltage	3.3V	3.45±0.05V
Monomer over-discharge alarm	Single over-discharge detection voltage	2.70V	2.80±0.05V
	Detection delay time of monomer overdischarge	3000ms	2000~4000ms
	Monomer overdischarge recovery	2.9V	3.00±0.05V
Overall overcharge alarm	Overall overcharge detection voltage	53.3V	53.3±0.5V
	Overall overcharge detection	3000ms	1000~4000ms

	delay time		
	Overall overcharge recovery voltage	52.5V	52.5±0.5V
Overall over-discharge alarm	Overall over-discharge detection voltage	40.5V	40.5±0.5V
	Overall overdischarge detection delay time	3000ms	2000~4000ms
	Overall overdischarge recovery	43.5V	43.5±0.5V
Temperature alarm	Charging high temperature alarm	50 ℃	50±2℃
	Charging high temperature alarm delay	3000ms	2500~3500ms
	Charge high temperature recovery	45 ℃	45±2℃
	Discharge high temperature alarm	50 ℃	50±2℃
	Discharge high temperature alarm delay	3000ms	2500~3500ms
	Discharge high temperature recovery	45 ℃	45±2℃
	Charging low temperature alarm	5℃	5±2℃
	Charging low temperature alarm delay	3000ms	2500~3500ms
	Low temperature recovery of charge	8℃	8±2℃
	Discharge low temperature alarm	-15℃	-15±2℃
	Discharge low temperature alarm delay	3000ms	2500~3500ms
	Discharge cryogenic recovery	-12℃	-12±2℃
	MOS High Temperature Alarm	110℃	110℃±2℃
	MOS high temperature alarm delay	3000ms	2500~3500ms
	MOS High Temperature Recovery	100℃	100℃±2℃

	Ambient high temperature alarm	55℃	55±2℃
	Ambient high temperature alarm delay	3000ms	2500~3500ms
	Ambient high temperature recovery	50℃	50±2℃
	Ambient low temperature alarm	-10℃	-10±2℃
	Ambient low temperature alarm delay	3000ms	2500~3500ms
	Ambient cryogenic recovery	0℃	0±2℃
SOC Alarm	SOC too low alarm	20%	-
	SOC too low recovery	25%	-
Differential pressure alarm	Differential pressure alarm	1000mV	1000±20m V
	Excessive pressure differential alarm released	500mV	500 ± 20m V

4. 4. BMS Parameter Setting Summary Table

BMS Parameter Setting Summary Table

Serial number	Testing items		Setting Range	Default value
1	balance function	Equilibrium condition	Under charging and standing, monomer pressure difference> 20mV, V> 3.5V	open
2	Communication anti-theft	/	Enable, time can be set	close
3	Warming function	/	Enable, temperature can be set	close
4	Working mode	/	Power Mode/Battery Mode/Hybrid Mode/Maintenance Mode/Other Mode	Power management
5	Discharge BUS voltage	Set value	43~57V	57V
6	Discharge BUS current	Set value	0~125A	100A
7	Discharge BUS power	Set value	0～100%	100%
8	Charging BAT voltage	Set value	40~60V	54.5V
9	Average charge current	Set value	2~100A	100A

BMS Parameter Setting Summary Table				
Serial number	Testing items		Setting Range	Default value
10	Charging BAT Power	Set value	4～130%	100%
11	Discharge depth DOD	Set value	0～100%	100%
12	Discharge BUS step voltage	Set value	40~58V	46.00V
13	Cell Voltage Number	Set value	15～16	15
14	Quantity of temperature detection	Set value	0～8	8
15	Modbus Address	Set value	Cannot be set	214

5. Bidirectional DC/DC technical parameters

5. 1. Charging operating status

Projects	Unit	minimum value	Typical value	Max.	remark
Bus charging voltage range	VDC	42	54	60	
Battery Voltage Range	VDC	36	49	56	
Output limit power	W	/	4900	5120	
Current limiting current	A	/	100	120	Battery current
Current limiting accuracy	%	/	/	±2.5%	Battery current
Efficiency	%	/	98. 6%	/	Rated voltage, 50A charging
Source effect (battery current)	%	/	/	±0.5%	Battery current change ratio
On/Off Overshoot (Battery Current)	%	/	/	5%	
Bus overvoltage protection	V	/	/	62	If the charging voltage is higher than the threshold value, the charging circuit should be disconnected
Bus undervoltage protection	V	32	/	/	The output voltage is less than the threshold value, and the delay is 10s

5. 2. Discharge operating state

Projects	Unit	minimum value	Typical value	Max.	remark
Battery Voltage Range	VDC	42	49	57	
Bus voltage range	VDC	43	51	56	
Discharge limit power	W	/	4900	5120	
Current limiting current	A	/	100	120	Bus current
Current limiting accuracy	%	/	/	±2.5%	Bus current
Bus-side voltage ripple	mV	/	/	200mV	
Charge-to-discharge switching time	ms	/	/	10ms	
Efficiency	%	/	98. 6%	/	
Battery undervoltage protection	V	40	/	/	When the input voltage is detected to be continuously less than the threshold value, the discharge circuit is closed
Bus undervoltage protection	V	30	/	/	The output voltage continues to be less than the threshold, and the discharge circuit is closed

5. 3. Safety requirements

Serial number	Items		Test Requirements	Remarks
1	Electrical resistance strength	DC pair communication	500Vac or 707Vdc/30mA/1min	No flying arc, no breakdown
		DC pair housing	500Vac or 707Vdc/30mA/1min	No flying arc, no breakdown
		Communication pair housing	500Vac or 707Vdc/30mA/1min	No flying arc, no breakdown
2	Insulation resistance	DC pair communication	≥10M Ω @ 500Vdc	At normal atmospheric pressure, relative humidity is 90%, and the test DC voltage is 500V

5. 4. EMC and Lightning Protection Test Requirements

Items		Test Requirements	Remarks
surge	Power interface surge protection level	Power port line-to-line shall meet the requirements of GB/T 17626.5-2019 Class 4 (open circuit test voltage 2kV), and line-to-ground shall meet the requirements of GB/T 17626.5-2019 Class 4 (open circuit test voltage 4kV).	
	Surge Protection Level of Communication Interface	Communication port line-to-line shall meet the requirements of GB/T 17626.5-2019 Class 2 (open circuit test voltage 0.5kV), and line-to-ground shall meet the requirements of GB/T 17626.5-2019 Class 2 (open circuit test voltage 1kV)	
	Surge Protection Level of Communication Interface	Communication port line-to-line shall meet the requirements of GB/T 17626.5-2019 Class 2 (open circuit test voltage 0.5kV), and line-to-ground shall meet the requirements of GB/T 17626.5-2019 Class 2 (open circuit test voltage 1kV)	
Electromagnetic compatibility	CE	CLASS A	EN55032/CISPR32
	RE	CLASS B	EN55032/CISPR32
	ESD	Contact discharge: 8KV, criterion B Air discharge: 15KV, criterion B	GB/T 17626.2-2006
	EFT	DC port: 0.5kV, criterion B Signal port: 0.25kV, criterion B	GB/T17626.4

6. Working mode

6. 1. Normal working mode

1、Power mode:

The output voltage can be set through external monitoring, and the discharge is output at constant voltage according to the output voltage setting value, which is suitable for peak-valley arbitrage and other scenarios. When the output voltage setting value is higher than the external power supply, it can be transferred to discharge, and when the output voltage setting value is lower than the external power supply voltage-0.4V, it can be transferred to charging.

2、Mixed mode:

In the charging state, it automatically follows the external power supply voltage, up to 53V. After being transferred to discharge, it is output at a constant voltage of-0.9V of the power supply voltage. When discharged, it can be mixed with ordinary lithium battery or lead-acid battery to achieve priority discharge. After the power supply calls, it is higher than the output voltage of intelligent lithium battery +0.4V. Intelligent lithium battery can be transferred to charging, which is suitable for the backup scene of base stations and compatible with the mixed scene of old and new batteries in old and new stations.

3、Battery Mode:

Pure lithium battery mode, no constant voltage function, suitable for aging charging cabinet, home storage and other fields.

6. 2. Maintenance mode

Long press the soft switch button for 14~22 seconds to enter the maintenance mode. In this mode, four status indicators will flash at the same time (except for the SOC indicator), and the BMS will be activated, but the internal power main circuit will be cut off, and it will not charge or discharge. After entering the maintenance mode, press and hold the soft switch button for 14~22 seconds to exit the maintenance mode.

By entering the maintenance mode function, it can meet the situation that the existing network battery is not powered down, and the system can be expanded online.

6. 3. On and Off

Shutdown: Shutdown is achieved by pressing the soft switch for 4~12s or by issuing a complete shutdown instruction from the host computer.

Power on: In the case of shutdown, the power on can be achieved by pressing the soft switch button for 2~4s

7. Precautions

Always read this operating guide and all precautions carefully before starting any installation or operation to avoid accidents. When operating our equipment, we must strictly abide by the safety specifications and engineering design specifications of relevant industries and the equipment precautions and special safety instructions provided by our company.

Specific operation requirements:

1. Accessories and connections:

· All accessories for accessing products must be standard accessories provided by our company.

· Private access to unauthenticated external devices or accessories is strictly prohibited. If you have special needs, you must confirm with our technical support department in advance. The Company shall not be liable for any circuit board damage caused by unauthorized access to non-standard or unlicensed equipment.

2. Assembly operation:

· When assembling, ensure that all parts of the protective plate avoid direct contact with the surface of the battery cell to prevent damage to the battery cell.

· All assemblies must be strong and reliable.

3. Operation protection:

· During operation, prevent high-temperature or metal objects such as lead heads, soldering irons and solders from touching components on the circuit board to avoid damage.

· Always pay attention to and take protective measures: anti-static, moisture-proof, waterproof, etc.

4. Parameters and conditions:

· Strictly follow the design parameters and use conditions of the equipment. All operating parameters (e.g. voltage, current, temperature, etc.) shall not exceed the limits specified in this specification. Irregularities may result in damage to the protective board or other circuit components.

5. Power operation:

· When performing power-on or power-off operations, the prescribed power-on and power-off sequence must be strictly followed.

6. Battery connection:

· When connecting the battery pack, make sure that the polarity is correct, and it is strictly prohibited to connect wrong or reverse connection.

7. Initial power-on check:

· After completing the assembly of the battery pack and the protective board, if there is no voltage output or it cannot be charged on the first power-up, the power supply should be turned off immediately and all wiring should be carefully checked to see if it is correct.

The final right of interpretation belongs to the Company (Shenzhen Tringo Control Co., Ltd.).

Shenzhen Tringo Control Co., Ltd.

Company add（RD center): 4F, Bldg.4, Nantai Yunchuang Valley, Fenghuang Str., Guangming Dist., Shenzhen, CN

Web：www.tg-ep.com

Our company reserves the right to modify the equipment parameters without prior notice.