Specification confirmation

customer name				
Customer ID				
Customer material number				
product model	JK -PB2A16S-20P			
edition	V 1.01			
date				
List of accessories	order number	name	model	quantity
	1	BMS board	JK -PB 2A 16S - 2 0 P	1
	2	display screen	LCD -3.2-RS485-V1.0	1
	3	interface board	JK -CN -Link -V1.01	1
	4	B + lantern line	GB +-3.5mm -25cm16AWG	1
	5	M 6 screw gasket	M 6*10	4
	6	Interface transfer	HY 2.0-XH 2.54-22AWG -30CM	1
	7	Interface transfer	2X H 2.54-22AWG -30CM	1
	8	Interface transfer	IDC 2.54mm-20P-30cm	1
	9	Dry terminal	WJ 15EDGK-3.81-4P	1
	10	RJ 45 Network cable	CAT 5E-8P Pand-40cm	1
	11	Balanced sampling line	HY 2.0-6P /7P -22AWG -90CM	4
	12	Device activation switch	GH 1.25-6P-50CM terminal line	2

	13	Display of wire	GH 1.25-6P-40CM	1
	14	Heating transfer wiring	HY 2.0-5P-24AWG15CM	1
Polar-space BMS			**Customer confirmation**	
lay down:			**examine:**	
approval:			**approval:**	

configuration table

function	**Log storage**	Regiment 1000 pieces
	Charging limit	10A
		Definition: The charging current is opened after the charging protection current is greater than the set value
	equalizing current	The □ 1A group, 2A
	maximum current	□ 100A group 150A □ 200A
	display screen	.2A 3-inch color LCD
	Dry contact point	The group has □ not have
		Definition: dry contact 1-PIN1 to PIN2: normally open, closed during fault and protection; dry contact 2-PIN 3 to PIN 4: normally open, low power alarm closed
	Heating function	Definition: when charging, the cell temperature is lower than-20° C to open the heating, heating to-10° C stopped heating. (Temperature-configurable)
	Anti-connection protection	The group has □ not have
	Weak current switch	The group has □ not have
	buzzer	The group has □ not have
	locate function	□ have No group
	Sampling socket	vertical
	Dial switch	4 bits, used for RS 485 correspondence address selection
	LED lamp	□ Unless ALM group RUN group OF / OFF group SOC 5
	Current detection	Group 10

	of the electrical resistance	
	Cell capacity	Configuration
	bar code	two-dimension code
communication	**CI**	□RS 232 Group RS485 group in parallel with RS485 group CAN
	Upgrade way	Group RS485 (upper machine)
	PDA	have
communicating protocol		
VOC		

catalogue

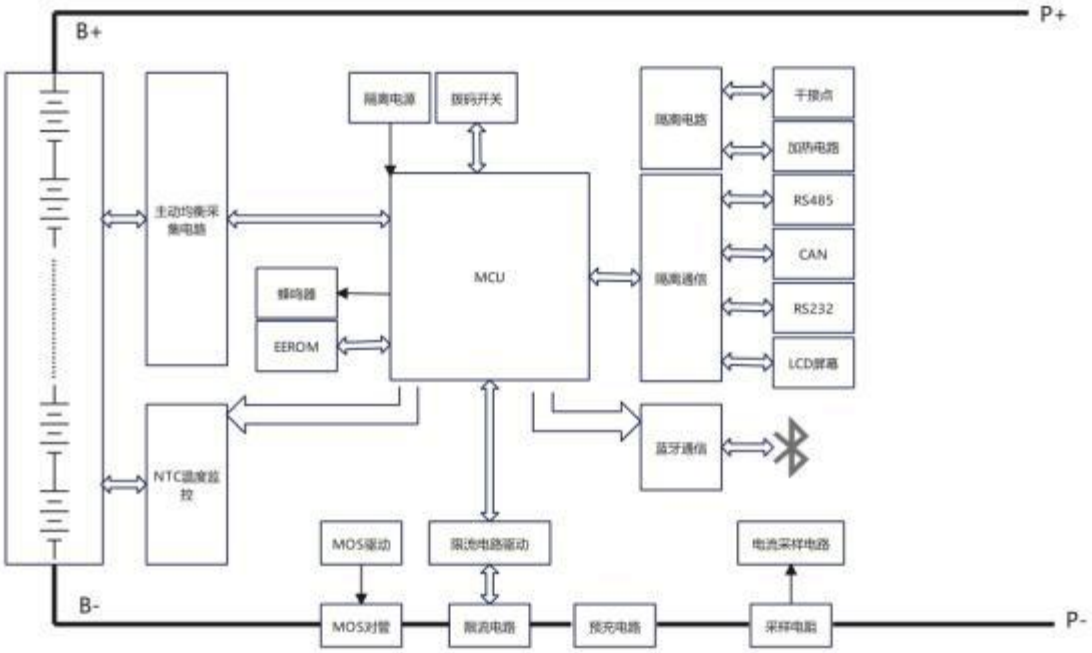
1. Overview

With the rapid growth of the renewable energy storage market, the demand for battery management systems is increasing. This product is a smart lithium battery protection board for energy storage applications. It adopts precise detection technology to realize the protection of overcharge, overdischarge and overflow of energy storage batteries, and ensure the safe and reliable operation of the energy storage system. At the same time, it integrates the advanced active voltage balancing function, which can monitor the voltage of each battery cell in real time, and improve the service life of the battery pack through the active balance management. This product provides an intelligent battery protection solution for a wide range of energy storage applications.

2. Functional features

- With the active balancing function
- APP remote operation
- Support for PC terminal upper computer operation
- Information screen display
- High-precision voltage acquisition
- High-precision current acquisition
- Isolation of the power supply circuit
- 4-way temperature detection and protection
- LED status indication
- Over-pressure and over-pressure, flow protection
- Information screen display
- Supports RS485 \ CAN \ RS232 communication
- Battery capacity estimation
- Accurate time logging
- short-circuit protection
- MOS temperature detection and protection

3. Functional schematic block diagram



4. Use of environmental conditions

test item	parameter	unit
working temperature	-30~70	℃
storage temperature	-30~70	℃
Working humidity	10~80	%RH
Storage humidity	10~85	%RH
supply voltage	20~70	V
Work power consumption	19mA@58V	-
Standby power consumption	200uA@58V	-

5. Specification and parameters

order number	Indicator project		Ex-factory default parameters	Whether can set	remarks
1	String number	Support battery	Lithium iron, ternary, lithium titanate	Can set	All the parameters were lithium iron parameters
		Support string number	8~16 、7~16、14~16	Can set	
		Equalize the trigger differential pressure voltage	10mV	Can set	
2	Single body over, charge protection	Single-body overcharge protection voltage	3600mV	Can set	
		Single-body overcharge recovery voltage	3550mV	Can set	
3	Single-less, pressure protection	Single-body undervoltage protection voltage	2600mV	Can set	
		Single-body undervoltage recovery voltage	2650mV	Can set	
		Single unit undervolta ge automatic shutdown voltage	2500mV	Can set	
4	Active average, balance function	Equalize the differential voltage trigger voltage	10mV	Can set	
		Equalize the starting operating voltage	3000mV	Can set	
		Maximum equilibrium current	1A	Can set	
		Maximum charging current	25A	Can set	

5	Overall overcharge protection	Charge over time delay	2s	Can set
		The charging overcharge alarm is lifted	60s	Can set
		Charge overcurrent limit current	10A	Do not set
6	Overall overrelease protection	Maximum discharge current	150A	Can set
		Discharge over, flow delay	300s	Can set
		The charge discharge discharged, the alarm is lifted	60s	Can set
7	short-circuit protection	Short-circuit protection current	300A	Do not set
		Short-circuit protection time delay	20us	Can set
		Short-circuit protection is lifted	60s	Can set
8	Temperature protection	Charge overtemperature protection	70°C	Can set
		Charging over temperature recovery	60°C	Can set
		Discharge over, temperature protection	70°C	Can set
		Discharge over, temperature recovery	60°C	Can set
		Charging low temperature protection	-20°C	Can set
		Charging low temperature recovery	- 10°C	Can set
		The MOS over-temperature protection	100°C	Can set
		The MOS overtemperature recovery	80°C	Can set
		Battery alarm temperature	60°C	Can set
		Battery alarm recovery	50°C	Can set

6, LED instructions

LED, working form, state indication

state	Normal / alarm / protection	ON /OFF	R UN	A LM	L 1	L 2	L 3	L 4	L 5	L 6	explain
shut down	normal	go out	go out	go out	go out	go out	go out	go out	go out	go out	
balanced	normal	bright	twinkle	go out	According to the power display					go out	
charge	normal	bright	twinkle	go out	According to the power display					go out	
	Overcurrent / over temperature / overvoltage / charging failure	bright	twinkle	twinkle	According to the power display					go out	
discharge	normal	bright	twinkle	go out	According to the power display					go out	
	Overflow / overtemperature / undervoltage / discharge failure	bright	twinkle	twinkle	According to the power display					go out	
other report an emergency	Password not modified / Short-circuit / the temperature is different ordinary	bright	twinkle	twinkle	According to the power display					go out	

Note: When the device address is set to 0, do the host, the last LED light L6 flashes. When set to other values, the slave is extinguished, and the slave and the host communicate successfully. Capacity indication

state		charge					discharge				
Capacity indicator light		r ?	r cun	r ?	rS	rJ	r ?	r cun	r ?	rS	rJ
electrici	0 A S0 \	go out	go out	go out	go out	bright	go out	go out	go out	go out	bright
	S 01-inch	go	go	go	brig	brig	go	go	go	brig	brig

ty	0 \	out	out	out	ht	ht	out	out	out	ht	ht
meas ure (\)	inch 0 one Q0 \	go out	go out	brig ht	brig ht	brig ht	go out	go out	brig ht	brig ht	brig ht
	Q0180 \	go out	brig ht	brig ht	brig ht	brig ht	go out	brig ht	brig ht	brig ht	brig ht
	80- -J00 \	brig ht	brig ht	brig ht	brig ht	brig ht	brig ht	brig ht	brig ht	brig ht	brig ht

7. Boot instructions

(1) Press it into the screen interface of the device, press the key to switch the device, press to activate the device, and long press to close the device.

(2) You can switch the device on the screen, press the activate device, and long press to close the device.

8. Communication instructions

8.1, RS 232 communication

Can the equipment pass through the K2S? The S interface communicates with the upper computer, so that it can monitor various battery information through the upper computer, including battery voltage, current, temperature, state and battery production information, etc. The default port rate is oQ00pb2.

8.2. CAN communication

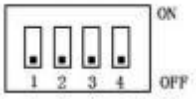
CV column communication Default communication rate S? Under 0.

8.3, RS 485 communication

There are two ways of K 2 inch 8? Communication interface, where one parallel output of two interfaces for viewing battery pack information, default port rate JJ? S 00. By setting the dial switch to set the communication address, you can query the data of all battery packets, the address setting range 0 a J?.

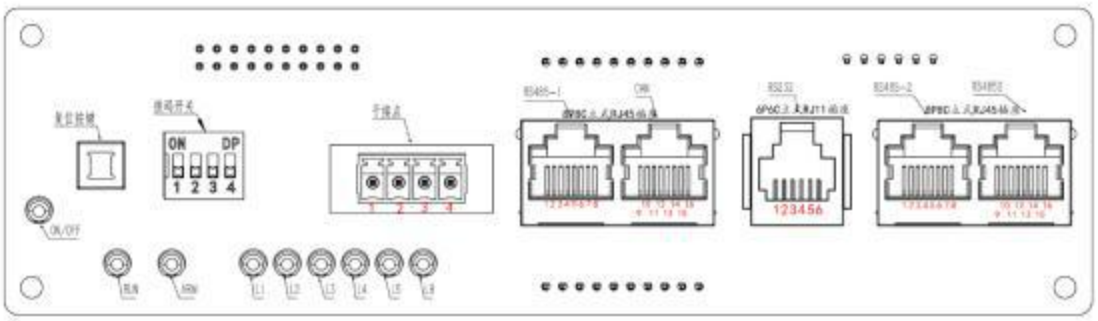
8,4 dial code switch setting

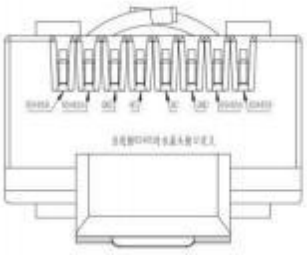
When multiple battery packs are used in parallel, the battery packs should be set at different addresses through the dial switch for normal use. Below the dial switch address table.



address	Dial the code on, close the position			
	1	2	3	4
0	OF F	OF F	OF F	OF F
1	ON	OF F	OF F	OF F
2	OF F	ON	OF F	OF F
3	ON	ON	OF F	OF F
4	OF F	OF F	ON	OF F
5	ON	OF F	ON	OF F
6	OF F	ON	ON	OF F
7	ON	ON	ON	OF F
8	OF F	OF F	OF F	ON
9	ON	OF F	OF F	ON
10	OF F	ON	OF F	ON
11	ON	ON	OF F	ON
12	OF F	OF F	ON	ON
13	ON	OF F	ON	ON
14	OF F	ON	ON	ON
15	ON	ON	ON	ON

9. Interface definition





Dry contact interface definition

The pin number	The pin definition	remarks
1	C OM 1	S1 and COM1 lead on in the alarm condition
2	S1	
3	C OM 2	S2 and COM2 are turned on at low charge conditions
4	S2	

The CAN and RS4851 interface definitions

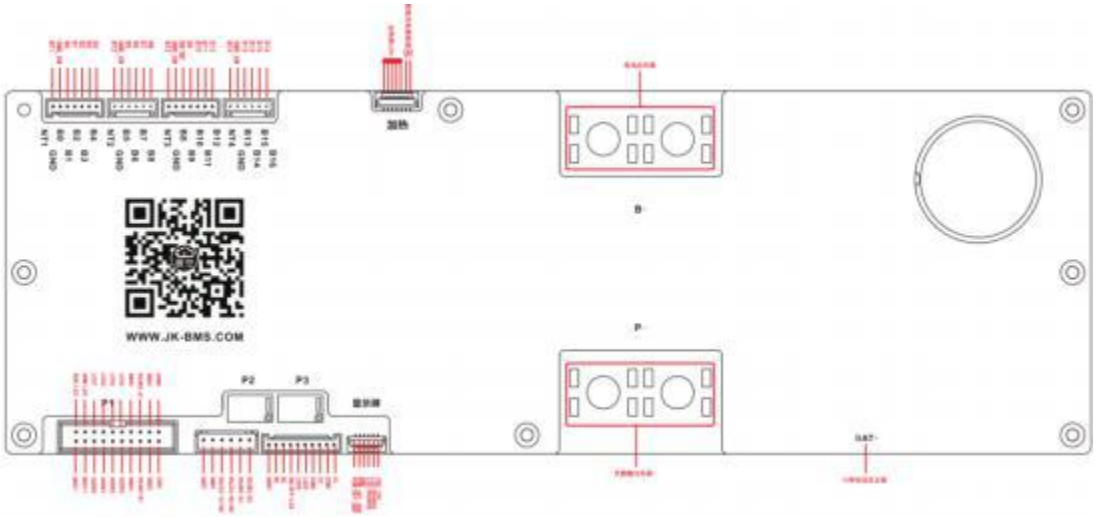
RS 485-Use the 8P8C vertical RJ 45 socket		CAN-adopts the 8P8C vertical RJ 45 socket	
The pin number	The pin definition	The pin number	The pin definition
1、8	RS485B1	9、10、11、14、16	N C
2、7	RS 485-A1	12	CAN L
3、6	G ND	13	CAN H
4、5	N C	15	G ND

RS 232 Interface definition

RS232-Use a 6P6C vertical RJ 11 socket		
The pin number	The pin definition	remarks
1、2、6	N C	
3	RS 232_TX	
4	RS 232_RX	
5	G ND	

RS 485-2 parallel interface definition

RS 485-Use the 8P8C vertical RJ 45 socket		RS 485-Use the 8P8C vertical RJ 45 socket	
The pin number	The pin definition	The pin number	The pin definition
1、8	RS 485B2	9、16	RS 485-B2
2、7	RS 485-A2	10、15	RS 485-A2
3、6	G ND	11、14	G ND
4、5	N C	12、13	N C



Definition of the protective board interface

joggle	defined declaration			
BAT +	Connect to the total positive electrode of the cell PACK to power the BMS board.			
B_	Connect to the total negative electrode of the cell PAC K.			
P_	Battery PACK negative electrode, is also a charge and discharge negative electrode, charge and discharge of the same outlet			
Cell and temperature	NT 1	Connect the NTC 1 temperature probe	NT 3	Connect the NTC 3 temperature probe
	G ND	Connect the NTC 1 temperature probe	G ND	Connect the NTC 3 temperature probe
	B0	The first string of negative electrode of the cell	B8	N C
	B1	The first string of positive electrode of the cell	B9	The ninth string positive electrode of the cell
	B2	The second string positive electrode of the cell	B10	The 10th string positive electrode of the cell
	B3	The third string positive electrode of the cell	B 11	The 11th string positive electrode of the cell
	B4	The fourth string positive electrode of the cell	B12	The 12th string positive electrode of the cell
	NTC 2	Connect the NTC 2 temperature probe	B13	The 13th string positive electrode of the cell
	G ND	Connect the NTC 2 temperature probe	B14	The 14th string positive electrode of the cell
	B5	The fifth string positive electrode of the cell	B15	The 15th string positive electrode of the cell
	B6	The sixth string positive electrode of the cell	B16	The 16th string positive electrode of the cell
	B7	The seventh string positive electrode of		

		the cell		
	B8	The eighth string positive electrode of the cell		

Heating connection, mouth definition

joggle	defined declaration
C D +	Charging indicates the input positive electrode
CD -	Charging indicates the input negative electrode
H+	Heat the negative electrode

Display screen interface definition

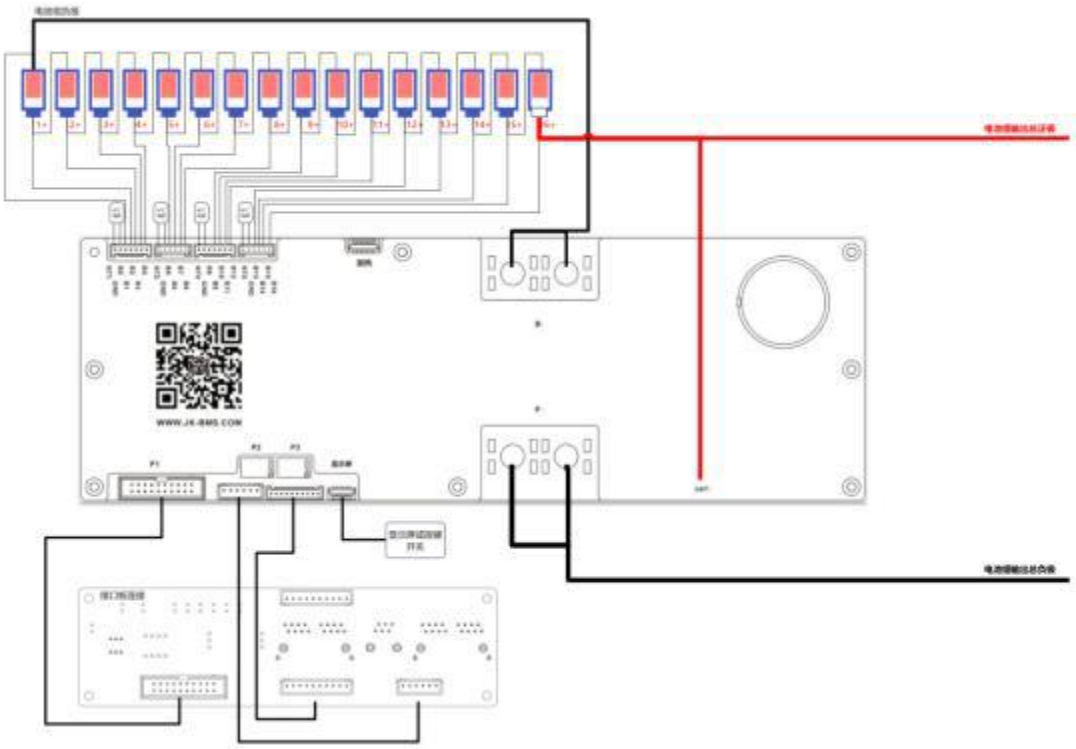
joggle	defined declaration
VCC _ 10V	The display screen supplies the positive electrode
LCD _485A	Display screen data transmission signal
LCD _485B	Display screen data transmission signal
G ND	The display screen supplies the negative electrode
POW _OFF _COG	Positive electrode of the equipment power supply switch
PO W _OFF _GND	Equipment power supply switch negative electrode

Note: The P 1 \ P 2 \ P 3 interface is mainly used to connect the interface board.

10. Wiring diagram

There are strict sequence requirements on the protection board. First, weld B-, P-, B +, P +, and connect the battery sampling line from low to high

Device, after the key activation. Load or charger can be added after all cables are installed. When removing, first unplug the charger or load, remove the battery sampling line connector in order from high to low, and finally remove B +, P +, B-and P-.



11. Dimensions

unit:mm