

TOPBMS LTO BMS 5S-12S 5S 6S 12V10S 11S 12S 24V 15S

36V 200A 500A Bluetooth RS485 Modbus NTC Lithium

Titanate Battery 2.3V 2.8V EV Solar E-Bike

**TOPBMS**

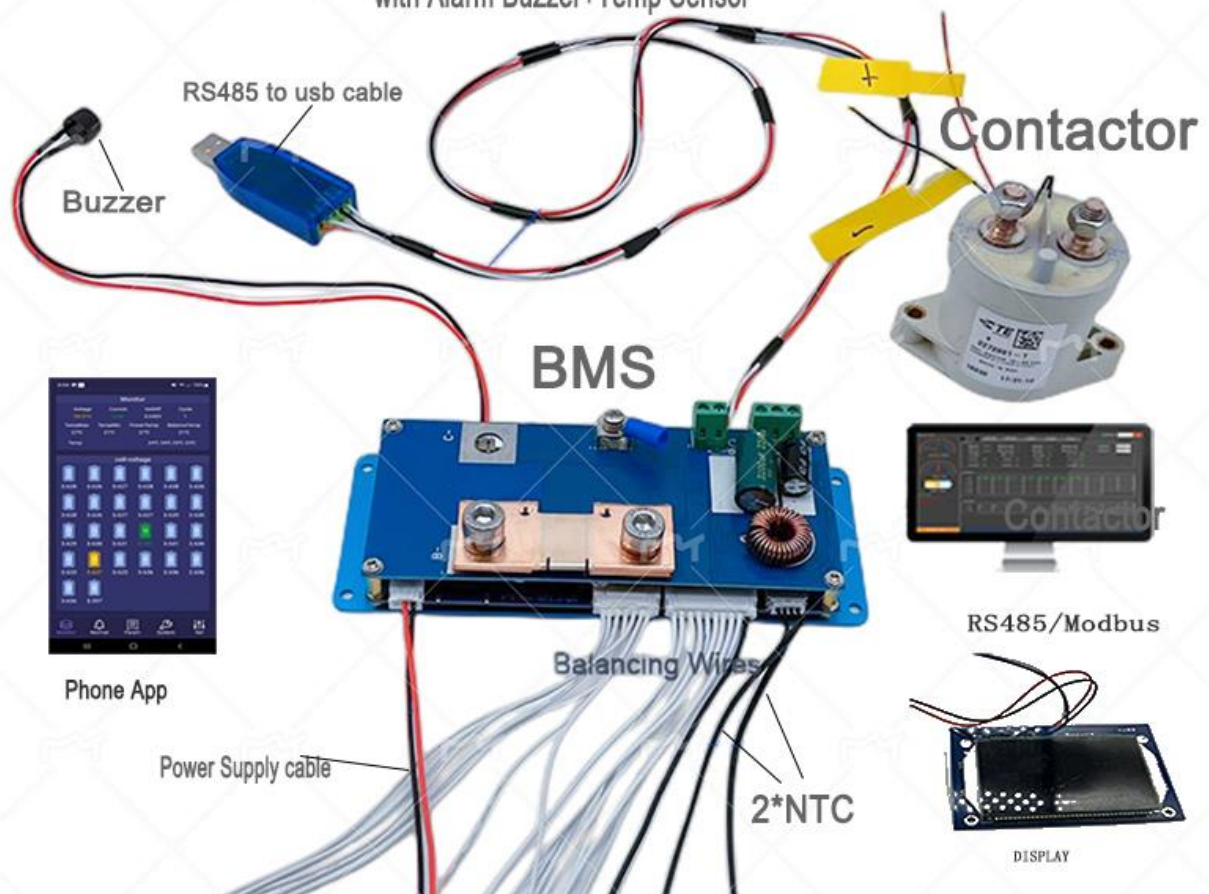
[www.cleverbms.com](http://www.cleverbms.com)

## Smart BMS 3S-16S with B/T+RS485

Compatible with LTO Batteries connected in 3-16 series

Discharging/ Charging 200A-500A

with Alarm Buzzer+Temp Sensor

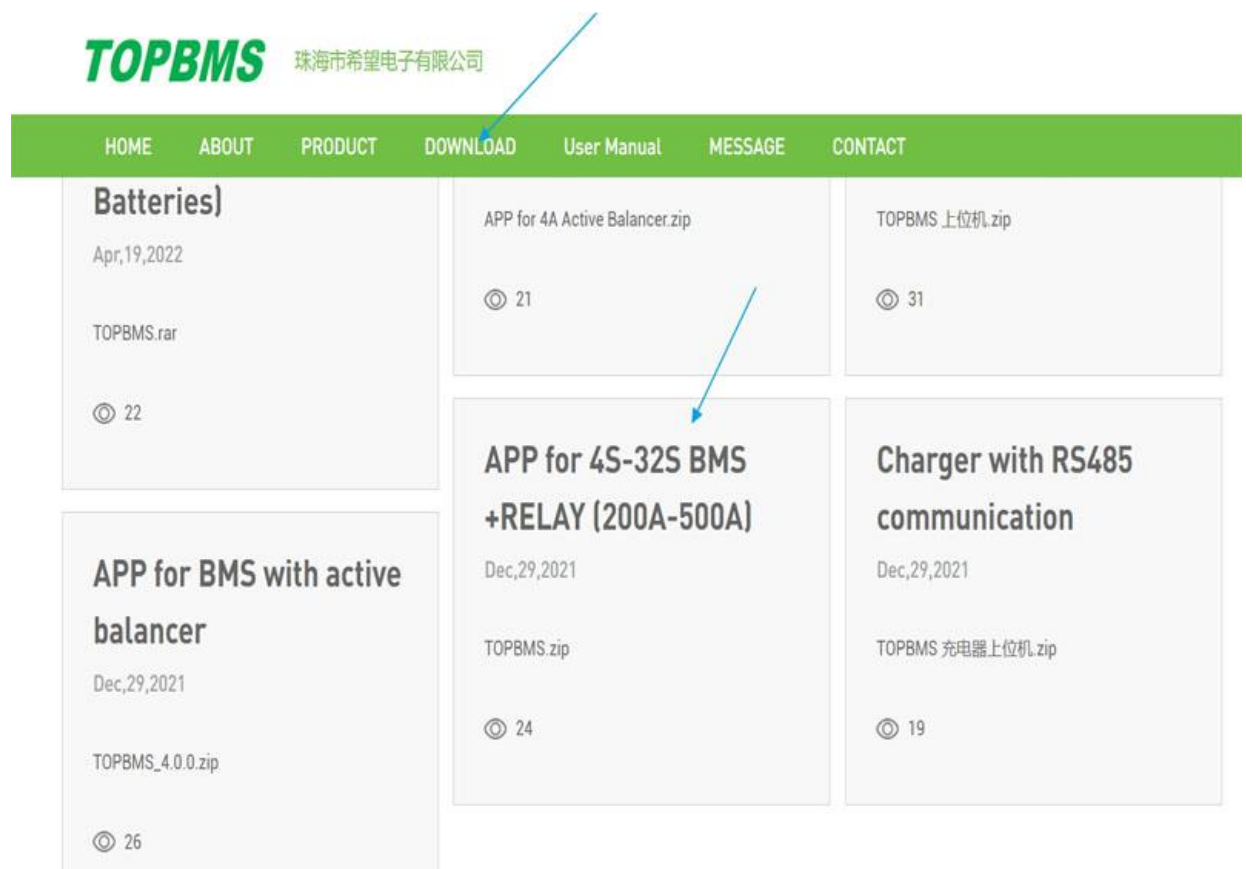


Please go to the website :[www.cleverbms.com](http://www.cleverbms.com) to download bluetooth APP and rs485 software for PC

Please go to the website :

[www.cleverbms.com](http://www.cleverbms.com) to download

Bluetooth APP : APP for 4S-32S BMS +RELAY



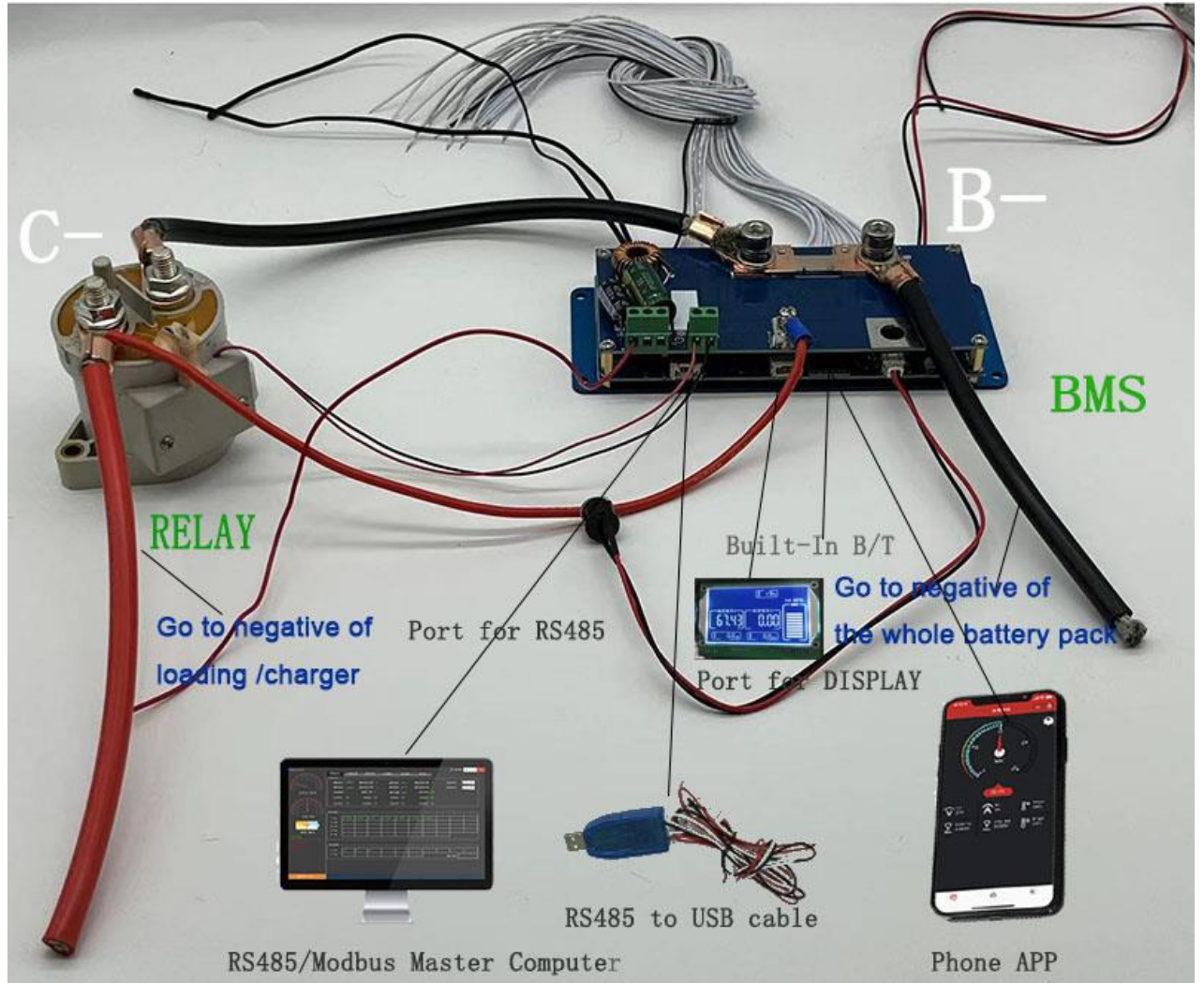
**TOPBMS** 珠海市希望电子有限公司

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<b>Batteries)</b> Apr,19,2022 TOPBMS.rar © 22	APP for 4A Active Balancer.zip © 21	TOPBMS 上位机.zip © 31
<b>APP for BMS with active balancer</b> Dec,29,2021 TOPBMS_4.0.0.zip © 26	<b>APP for 4S-32S BMS +RELAY (200A-500A)</b> Dec,29,2021 TOPBMS.zip © 24	<b>Charger with RS485 communication</b> Dec,29,2021 TOPBMS 充电器上位机.zip © 19

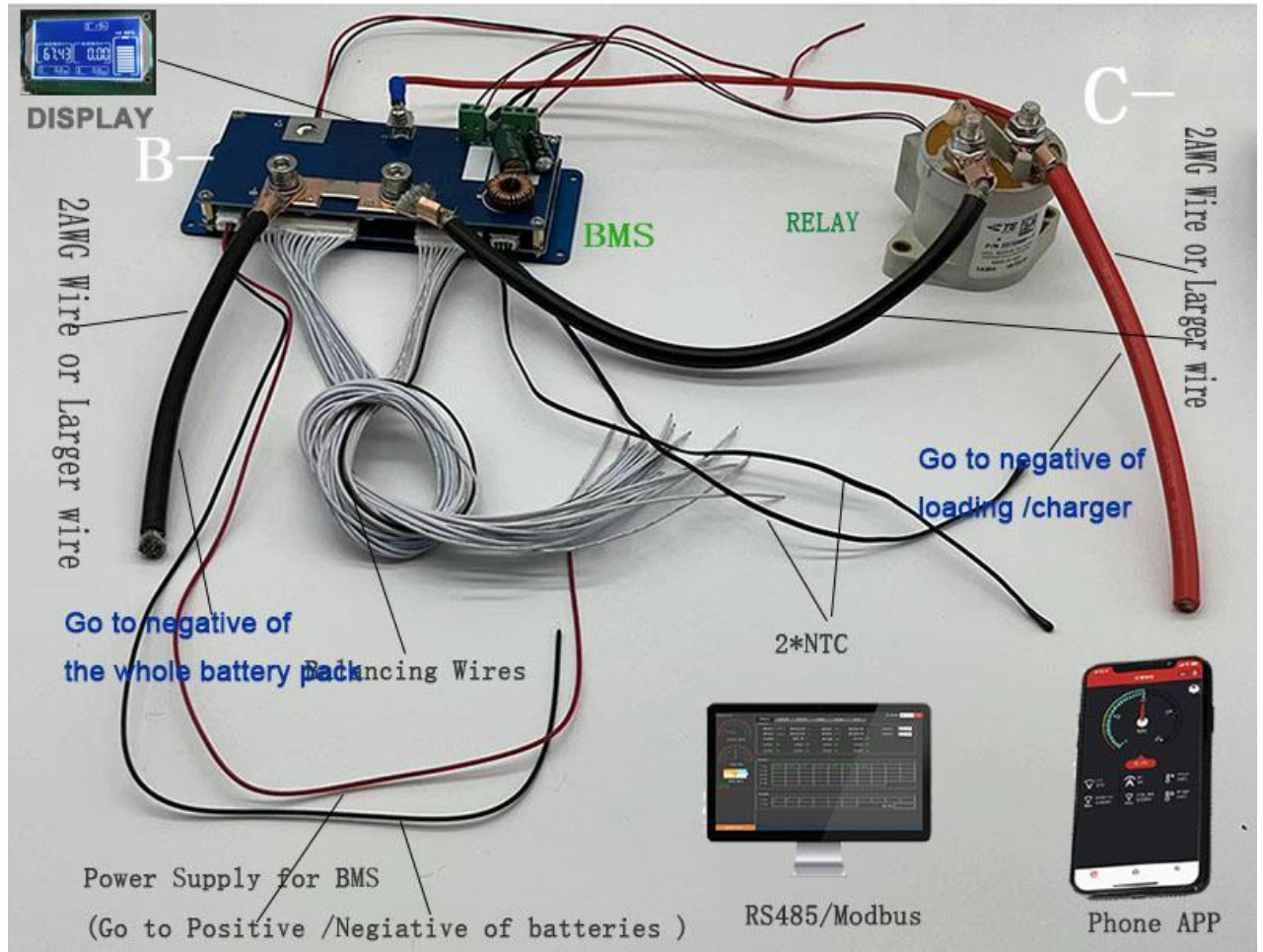
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# BMS with Bluetooth +RS485/Modbus-1



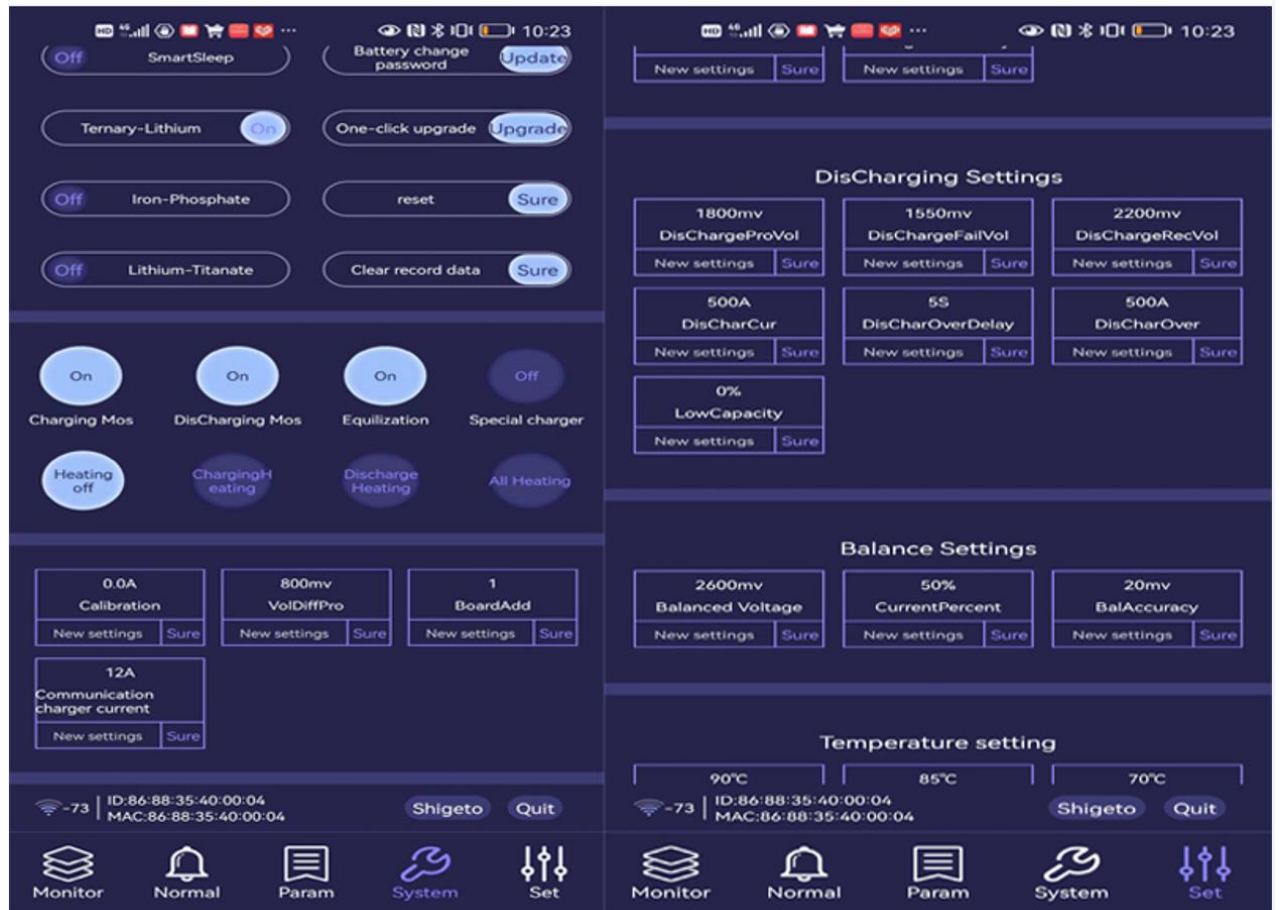
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## BMS with Bluetooth +RS48/Modbus-2



# Phone APP

Password :123456



Note: Go to website([www.cleverbms.com](http://www.cleverbms.com)) to see video of Phone APP Instrcution

# PC Software of BMS talk to PC

BMS Lithium Battery Management System

PortNo: COM4  
DevNo: 1

Connect

English

Remain: 0 %

Voltage: 0 V

Current: 7 A

MacCode: 342589975  
BlueTooth: 26541C98068E  
Factory: 2012年12月31日

Monitor Alarm Param Normal DLoad Graph Update LeaseSet

### Battery Info

CapacitySet:	20 ah	CellSet:	14 C
CurrentPercent:	50 %	LowCapacity:	0 %
BalAccuracy:	20 mv	DisCharCapacity:	0 ah
BalanceVol:	3800 mv	CalibrationCapacity:	0 ah

### Battery Operation

Ternary-Lithium ReStart

Iron-Phosphate Reset

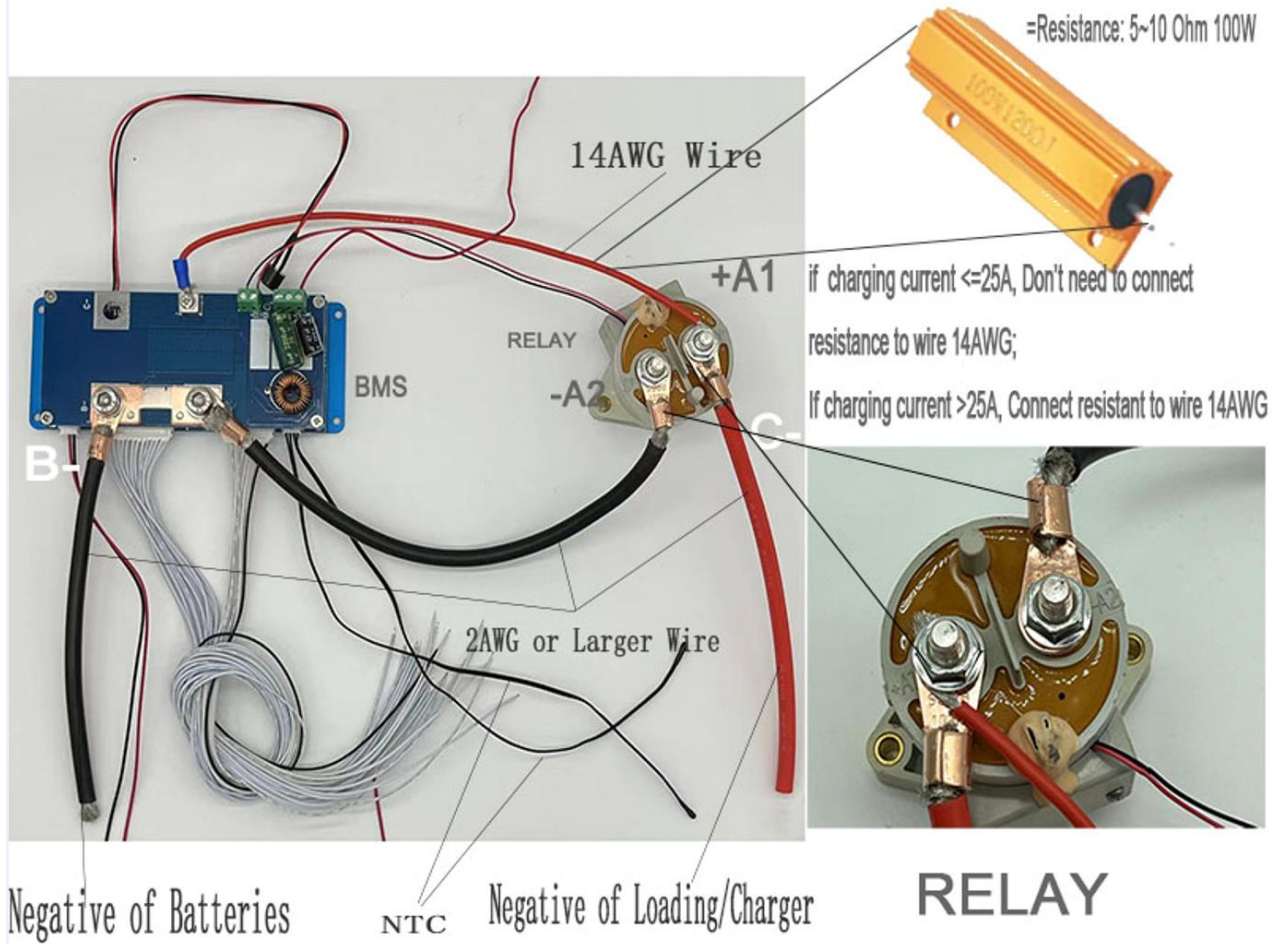
Lithium-Titanate Modify

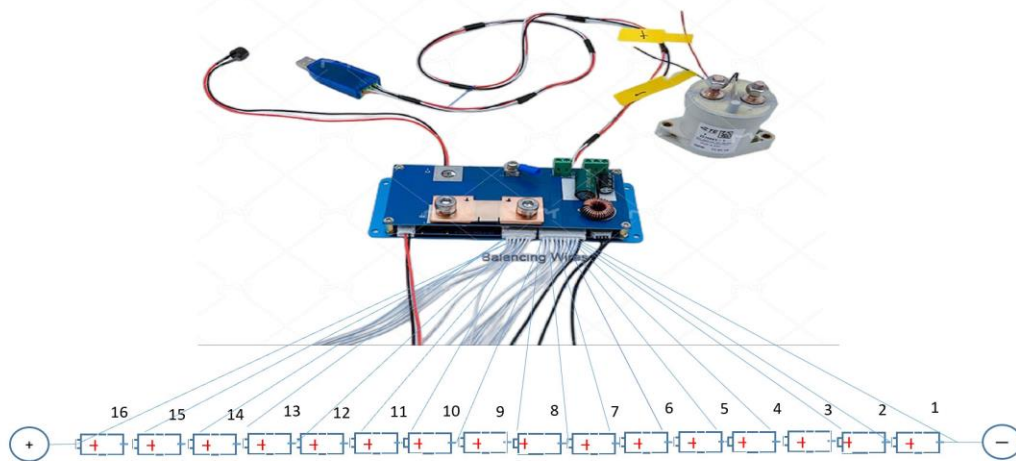
Charge MOS:  Discharge MOS:  Equalization:  Special Charger:

HeaterClose:  ChargeHeater:  DisChargeHeater:  AllHeater:

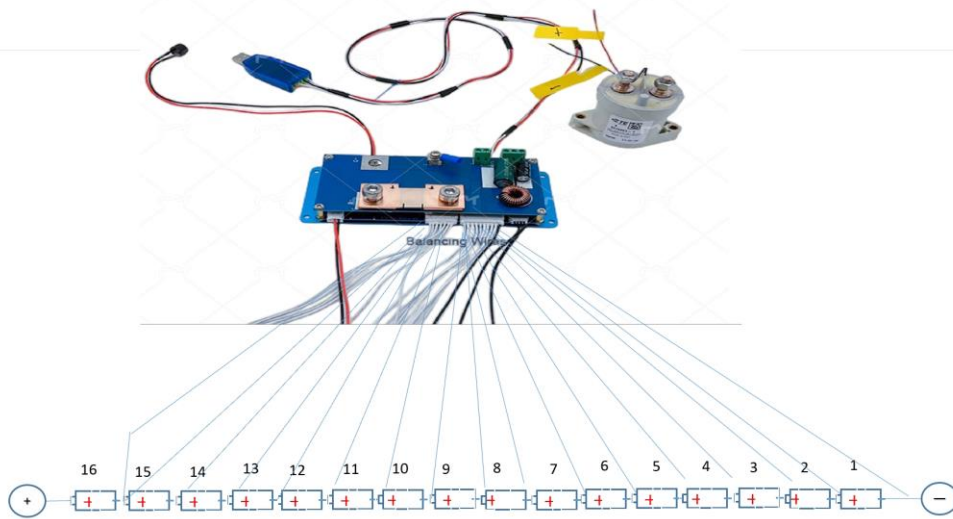
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# BMS RELAY Wiring Instruction



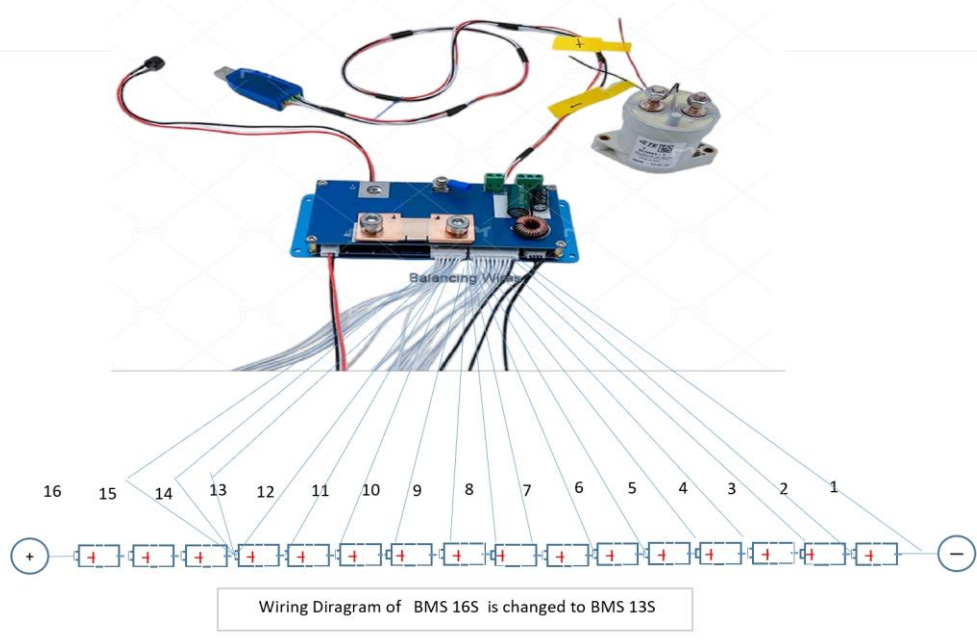
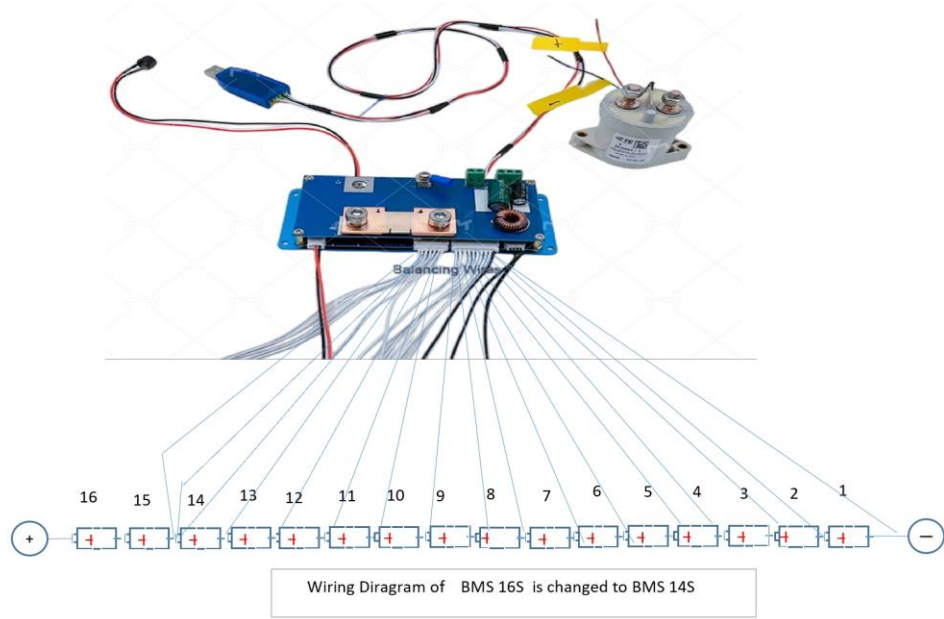


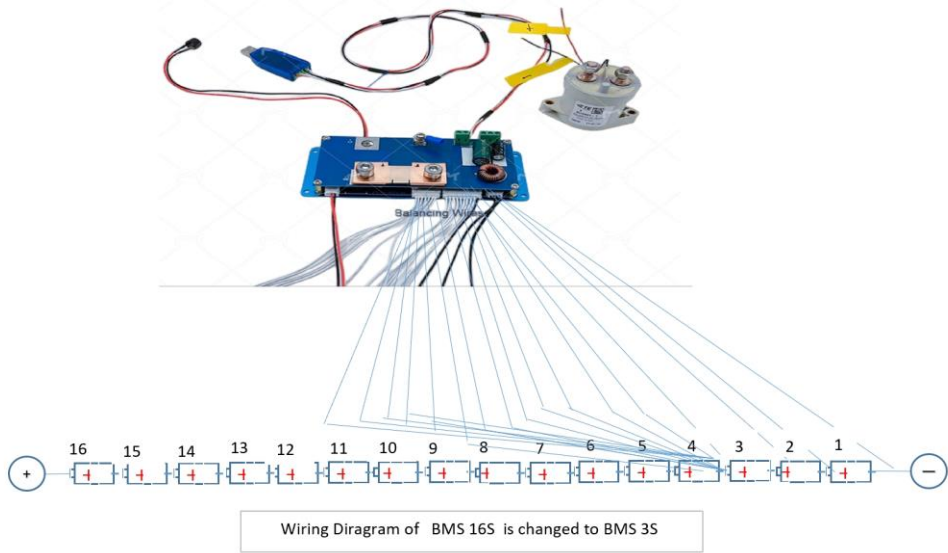
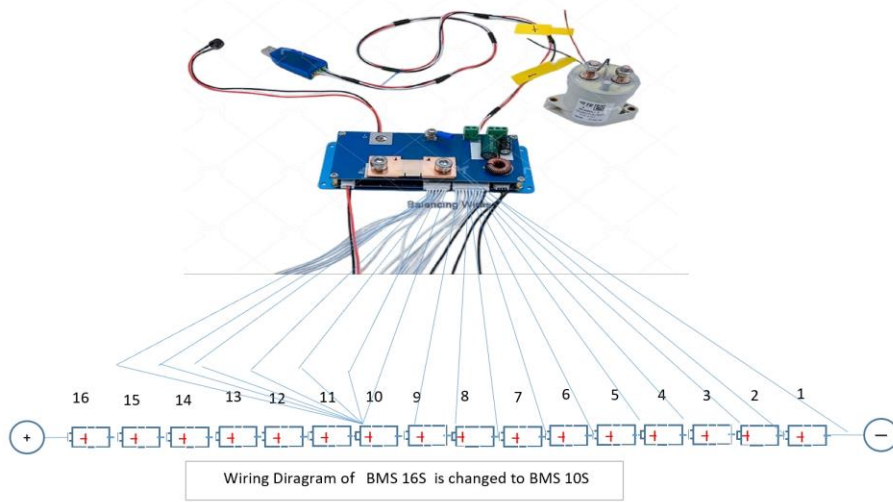
Wiring Diagram of BMS 16S

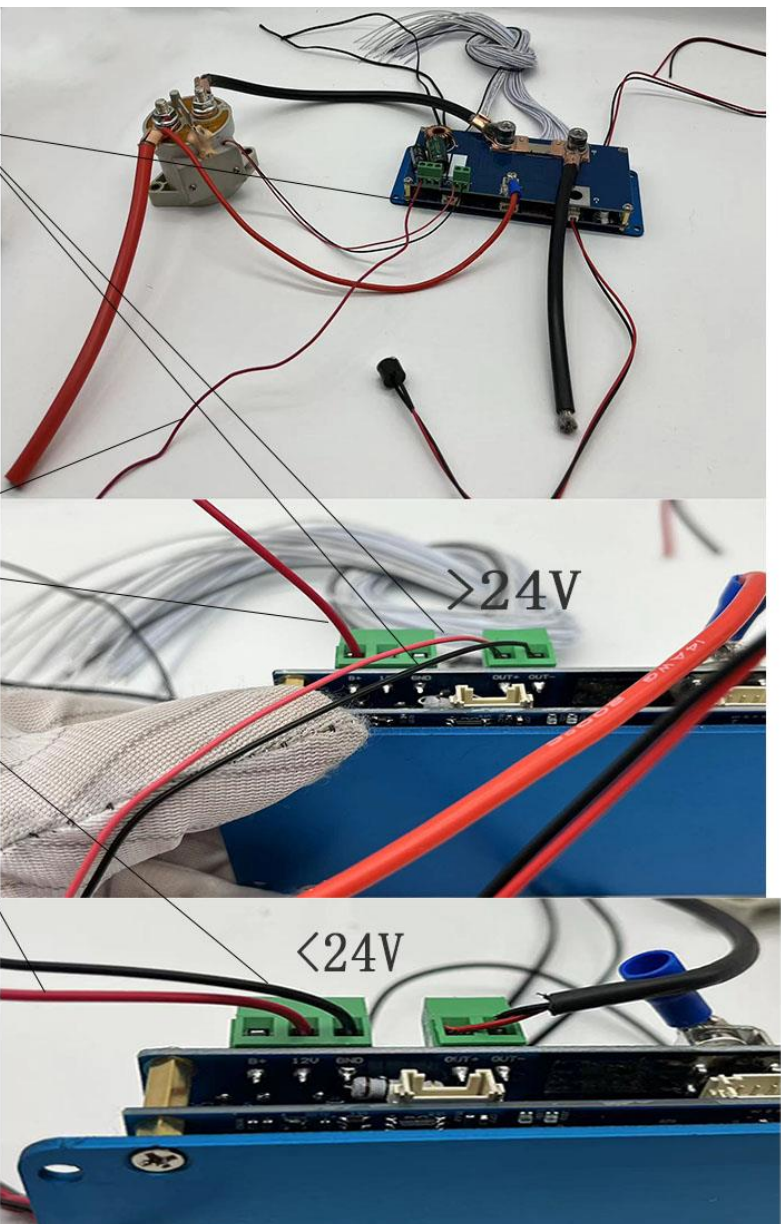


Wiring Diagram of BMS 16S is changed to BMS 15S







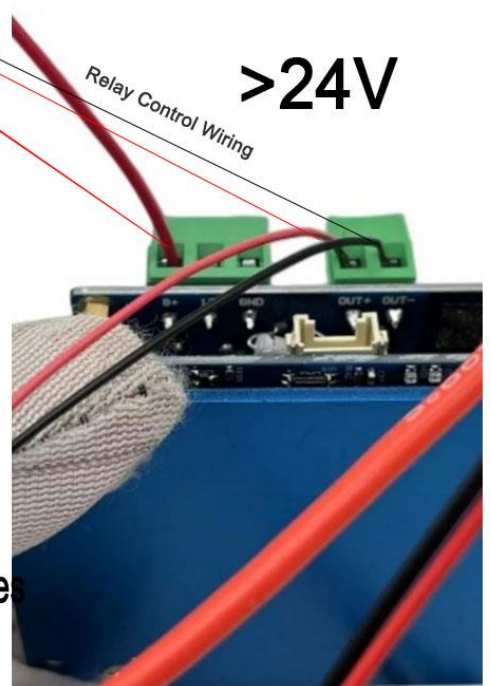
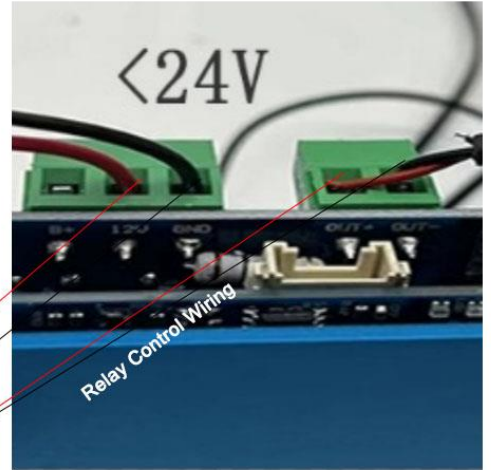
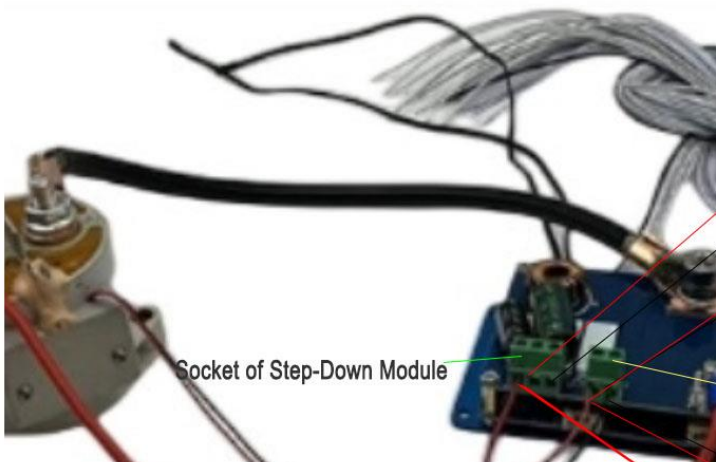


Wires goes to RELay

Wires go to the total positive of batterie (>24V)

Wires go to the total negative and positive of batteries (<24V)

# TOPBMS



Step-Down Module Wiring :

If Nominal Voltage of batteries pack  $>24V$ ,

Wires go to the total positive of batteries

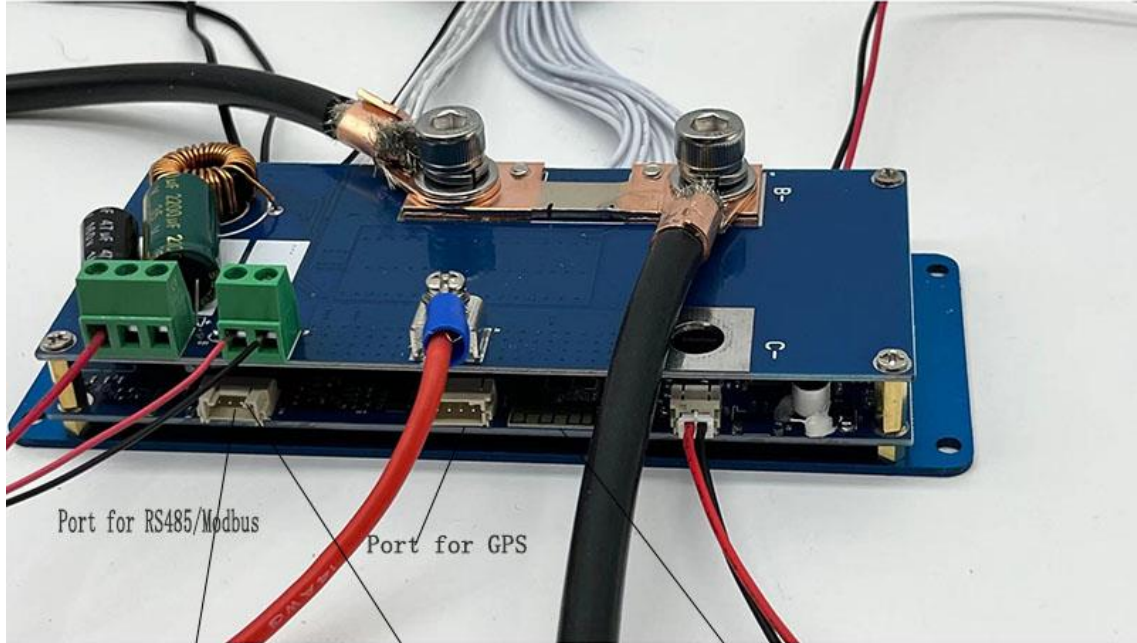
If Nominal Voltage of batteries pack  $\leq 24V$ ,

Wires go to the total negative and positive of batteries

TOPBMS

# BMS Communication Ports Description

Email: 66057580@qq.com



RS485/Modbus Master Computer



RS485 to USB cable

Built-In B/T



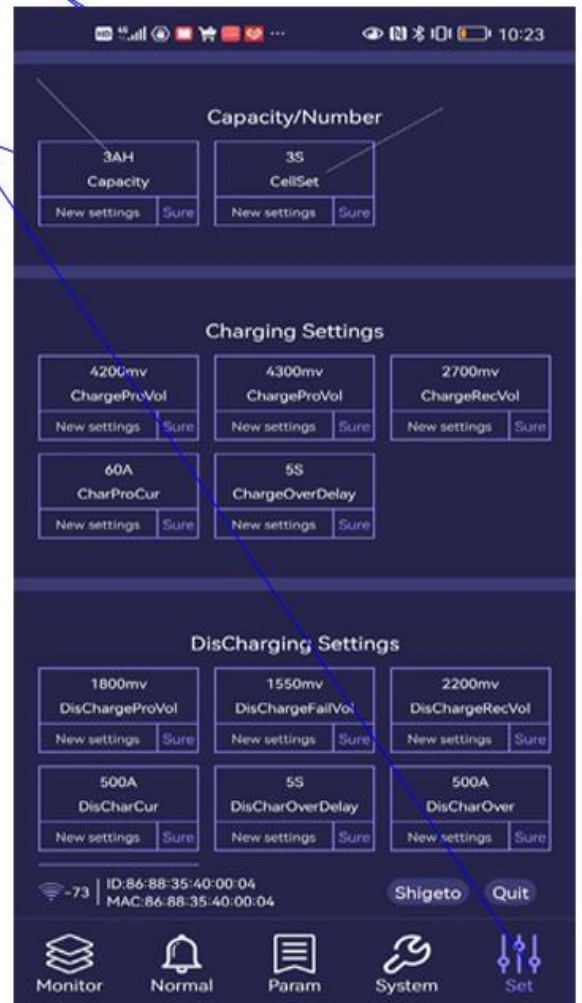
Phone APP

## 四 Parameters Sheet

TOPBMS 3S-32S BMS 200A-500A						
L*W*H 165*65*35mm						
功能	项目	功能	Voltage			Comment
		Batteries Type	Li-ion (3.7V)	LiFePo4 (3.2V)	LTO (2.3V)	
Over Voltage Protection	Level 1 Charging Protection	1500mV-4500mV	4200mV	3650mV	2800mV	Level 1 protection Voltage
	Level 2 Charging Protection	2950mV-4800mV	4300mV	3750mV	2950mV	Level 2 Protection voltage shall be set larger than Level 1 protection Voltage
	Over-charging Protection Delay Time	4S-10S				
	Over-charging Protection Recovery Voltage		4100mV	3550mV	2700mV	充电恢复设置电压必须小于充电保护电压 Over-charging Protection recovery Voltage shall be set smaller than Level 1 protection Voltage
Under Voltage Protection	Level 1 Discharging Protection	1500mV-4500mV	2750mV	2500mV	1800mV	
	Level 2 Discharging Protection		2500mV	2250mV	1600mV	Level 2 discharging protection shall be set smaller Level 1
	Over-discharging Protection Delay Time	4S-10S				
	Over-discharging Protection Recovery Voltage		3100mV	2900mV	2200mV	Over-discharging Protection Recovery Voltage shall be set larger than Level 1 Discharging Protection Voltage
High Temperature Protection	Power Module of BMS			90℃		
	Balancing Module of BMS			70℃		
				65℃		
High Temperature Protection Recovery	Power Module of BMS			85℃		
	Balancing Module of BMS			65℃		
	Batteries			60℃		
Low Temperature Protection		-30degree Max			MANUAL SET	
Low Temperature Protection Recovery		-10degree Max			MANUAL SET	
Current	Charging Current	0-500A				For example : If you order <del>bms</del> 40A , you can set the max value of charging current to 40A
	Continuous discharging current	0-500A				For example : If you order <del>bms</del> 40A , you can set the max value of discharging current to 40A
	Peak discharging current	600-1500A				For example : If you order <del>bms</del> 40A , you can set the max value of peak current to 120A
Balancing	Balancing start Volt	1000mV-4300mV	4100mV	3400mV	2600mV	
	Voltage Diff	1-30mV	20mV	20mV	20mV	
	Balancing Current	2-40mA	40mA	40mA	40mA	
Voltage acquisition resolution		5mv				
Temp Acquisition Tolerance		1-5%				
SOC Acquisition Tolerance		1-10%				
BMS Communication	Bluetooth					
	485-1					The port for charger with RS485
	485-2					The port for PC
	CAN					Not Applicable
Consumption	BMS +Bluetooth	2.5mA				
	BMS+CAN	7.5mA				
	Sleep Mode	50uA				
供电		20V-150V				电池组供电

## STEP1 Start Up of BMS and Relay

After you enter the phone app, please go to the button "SET" and then set the correct batteries capacity and cell series in the app.



# Step 2:How to Set Discharging /Charging

## Charging Setting:

Please make sure to set charging current larger than actual one in the charging settings

## Dischaging Setting :

Please make sure to set discharging current larger than the actual one in the discharging settings;  
Discharging over current is 2 times larger than discharging current

Attention:the bms will be dead if the set discharging/charging is less than actual one !!



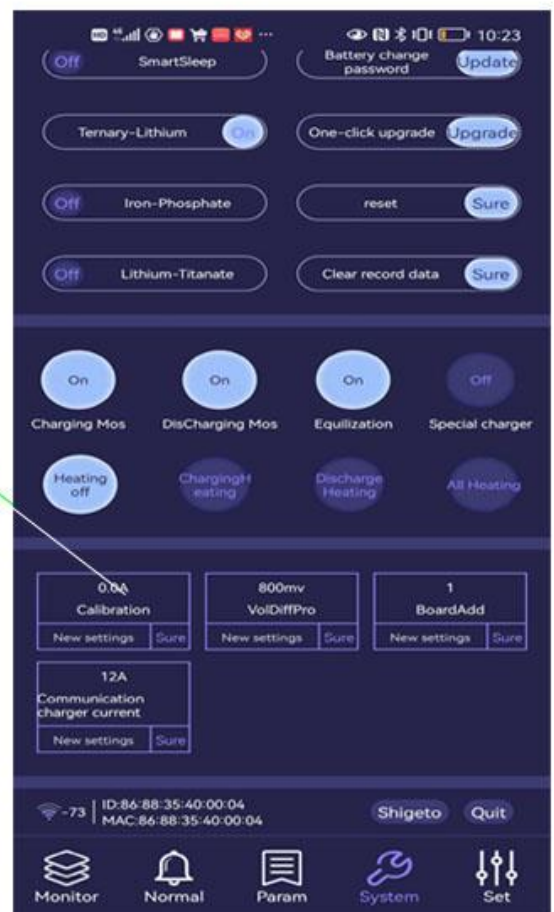


# Step 3.1

## Current Calibration-1

In the beginning. The BMS and relay can't work without the loading and without *current calibration*;

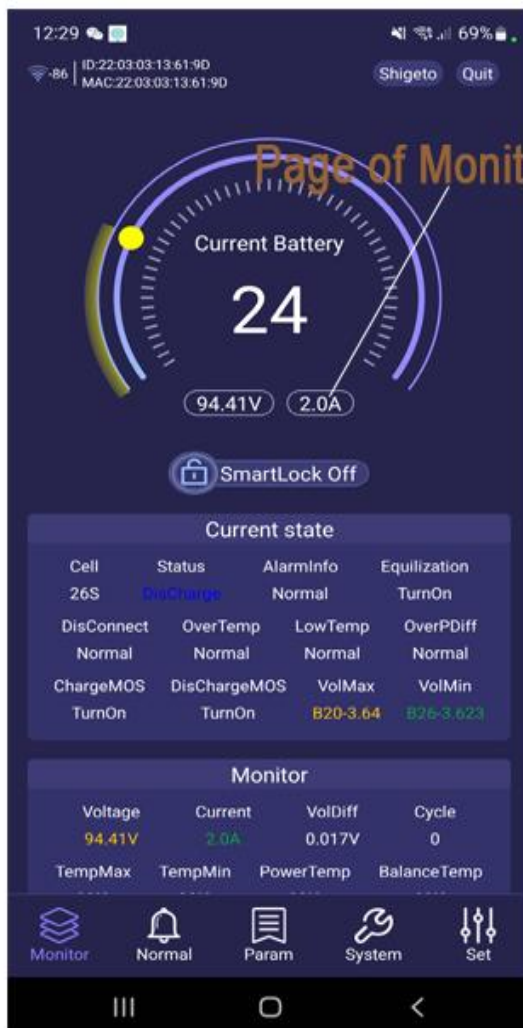
Please set the correct discharging current in the *current calibration* after connect loading; Afterwards, the BMS and relay works



## Step 3.2

# Current Calibration-2

Enter 2A in calibration and check if page of "monitor" shows 2A;  
If yes, the calibration is completed successfully



Attention: you can enter 2~more in the calibration

# STEP 4 SOC Calibration

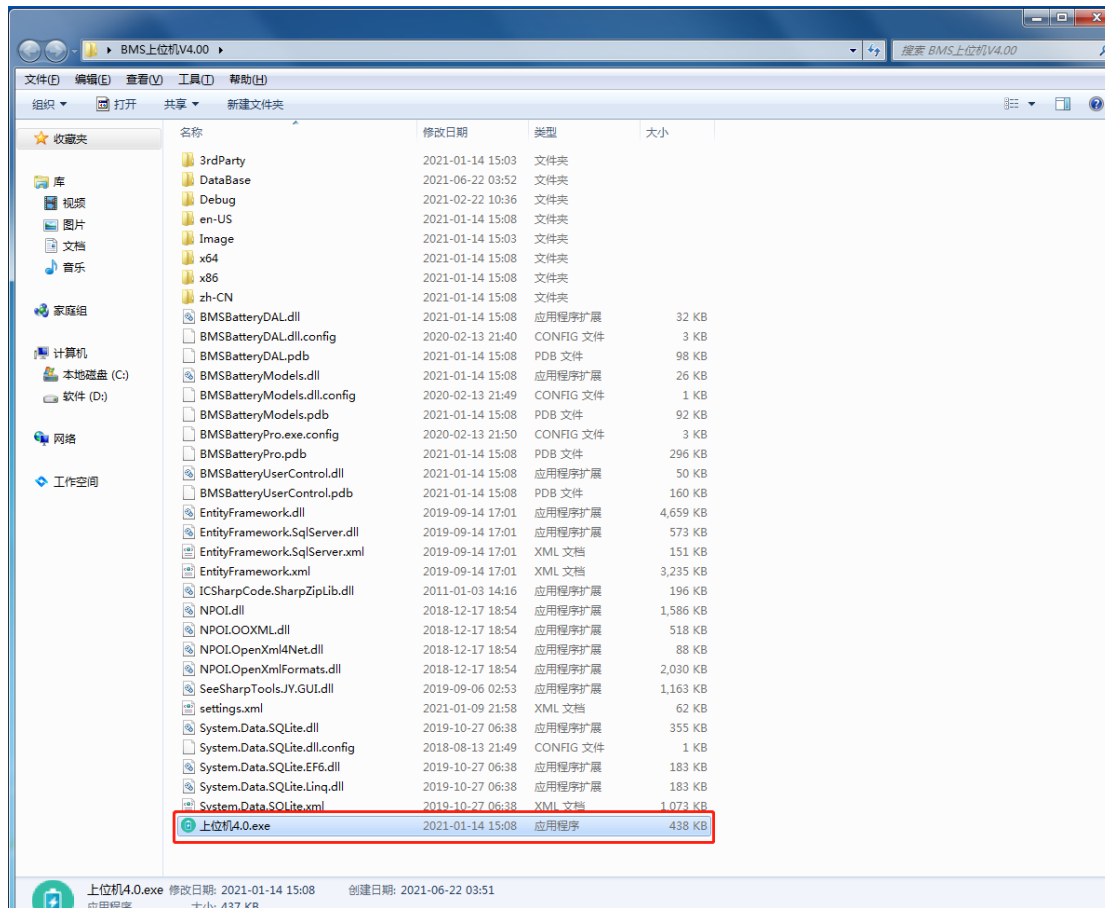
Set the actual capacity of the batteries pack in the phone APP ,and Discharge the batteries to under-voltage protection and then Charge batteries to the over voltage protection and then SOC can be corrected and calibrated



# PC Software Instruction OF

## BMS talk to PC

### Step1 : PC Software Installation



## Step2 : Select the correct Port

BMS Lithium Battery Management System

PortNo: COM4  
DevNo: 1

Connect

English

Remain: 0 %  
Voltage: 0 V  
Current: 7 A

MacCode: 342589975  
BlueTooth: 26541C98068E  
Factory: 2012年12月31日

Monitor Alarm Param Normal DLoad Graph Update LeaseSet

### Battery Info

CapacitySet:	20 ah	CellSet:	14 C
CurrentPercent:	50 %	LowCapacity:	0 %
BalAccuracy:	20 mv	DisCharCapacity:	0 ah
BalanceVol:	3800 mv	CalibrationCapacity:	0 ah

### Battery Operation

Ternary-Lithium  
Iron-Phosphate  
Lithium-Titanate

ReStart  
Reset  
Modify

Charge MOS: Discharge MOS: Equalization: Special Charger:

HeaterClose: ChargeHeater: DisChargeHeater: AllHeater:

Step3 : The address " 1 " cannot be changed. After this, press the button "Connect"

The screenshot displays the TOPBMS-V1 software interface. On the left, there is a control panel with a 'Connect' button, a language dropdown menu (set to English), and a battery icon. Below the battery icon, there are two gauges: one for 'Remain: 00.0 %' and one for 'Voltage: 0.000 V'. At the bottom left, there are input fields for 'MacCode: 00000000', 'BlueTooth: 00000000', and 'Factory: 2000-01-01'. The main area is divided into three sections: 'BasicInfo', 'StatusInfo', and 'Cell-Voltage (V)'. The 'BasicInfo' section shows various parameters like VolMax, VolMin, TempMax, PowerTem, and Temp. The 'StatusInfo' section shows the status of various components like Stand, DisConnect, DisChaPro, ChargePro, OverTemp, LowTemp, ChargeMOS, DisChaMOS, OverPDif, and Balance. The 'Cell-Voltage (V)' section shows a grid of 24 cells, each with a voltage reading of 0.000 V. At the bottom, there is a status bar with 'Software: V4.10', 'Firmware: V4.10', 'System Time: 2022-02-16 15:54:00 Wednesday', and 'Password Status: 🔒'.

BasicInfo			
VolMax	0.000 V	B00	VolDiff 0.000 V
VolMin	0.000 V	B00	Circle 0.0000 T
TempMax	0.000 °C		TempMin 0.000 °C
PowerTem	0.000 °C		BalanceTe 0.000 °C
Temp	0.0 °C		

StatusInfo			
Status	Stand	DisConnect	OK
DisChaPro	OK	ChargePro	OK
OverTemp	OK	LowTemp	OK
ChargeMOS	Open	DisChaMOS	Open
OverPDif	OK	Balance	Open

Cell-Voltage (V)							
1	2	3	4	5	6	7	8
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	10	11	12	13	14	15	16
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	18	19	20	21	22	23	24
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

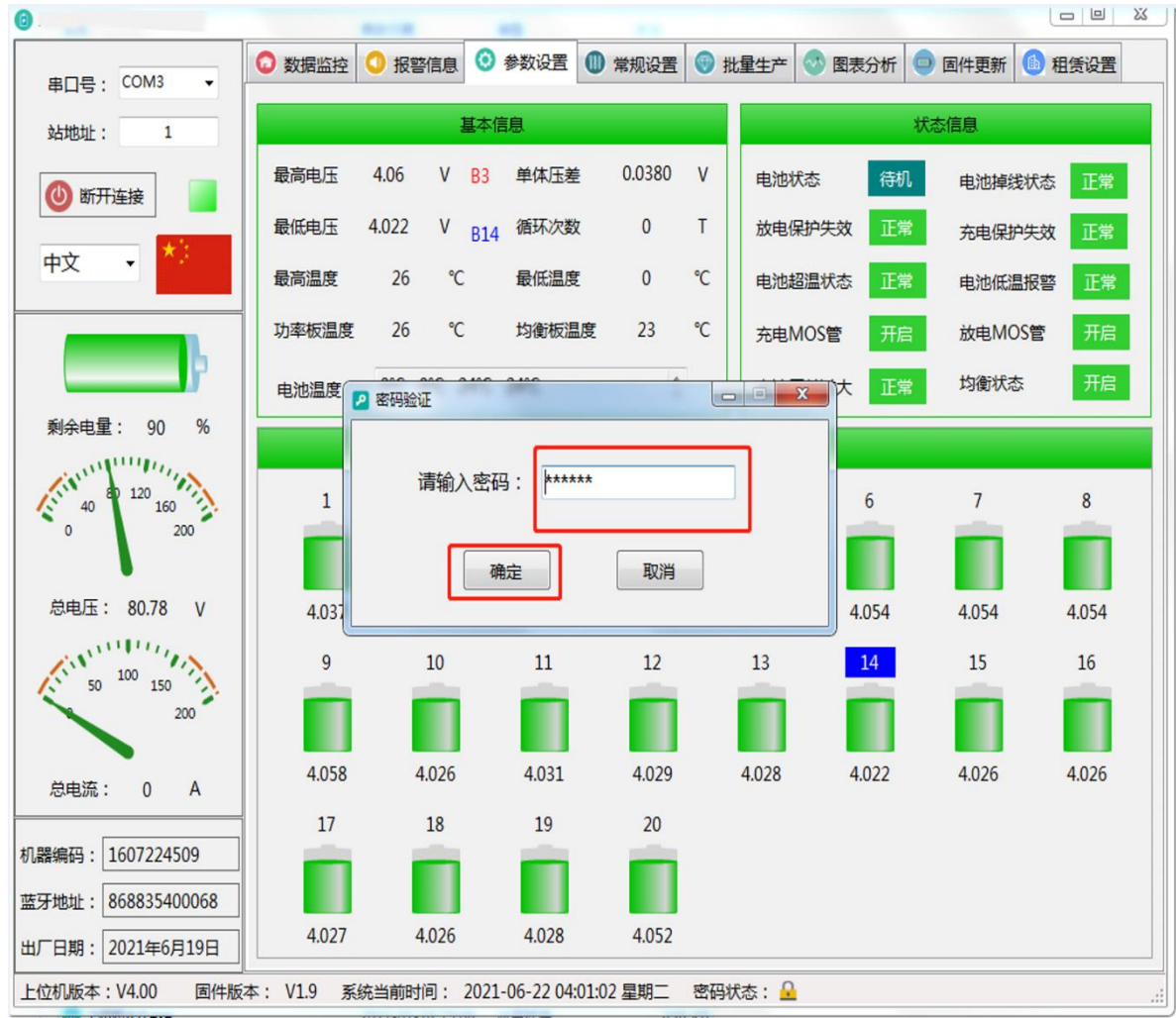
Software: V4.10    Firmware: V4.10    System Time: 2022-02-16 15:54:00 Wednesday    Password Status: 🔒

Step 4: According to different customers ,the PC software has English and Chinese version ; The monitoring can be used to check the data of each cell, battery situation



Step 5: if you want to set the parameters, please enter

password :123456





Step6 :Enter data to be set to confirm the modification. The modification is successful



Step7 In the "Normal:,No of battery in series can be set based on the actual situation ; In the meanwhile, according to the battery properties you can select the protection mode

The screenshot displays the BMS Lithium Battery Management System interface. The top navigation bar includes tabs for Monitor, Alarm, Param, Normal, DLoad, Graph, Update, and LeaseSet. The 'Normal' tab is selected. On the left, there are input fields for PortNo (COM4), DevNo (1), a Connect button, a language dropdown (English), and a battery icon. Below these are gauges for Remain (0%), Voltage (0 V), and Current (7 A). At the bottom left, there are fields for MacCode (342589975), BlueTooth (26541C98068E), and Factory (2012年12月31日).

The main content area is divided into two sections: Battery Info and Battery Operation. The Battery Info section contains the following data:

CapacitySet:	20	ah	CellSet:	14	C
CurrentPercent:	50	%	LowCapacity:	0	%
BalAccuracy:	20	mv	DisCharCapacity:	0	ah
BalanceVol:	3800	mv	CalibrationCapacity:	0	ah

The Battery Operation section includes three battery type selection buttons: Ternary-Lithium, Iron-Phosphate, and Lithium-Titanate. It also features ReStart, Reset, and Modify buttons. Below these are four control buttons: Charge MOS, Discharge MOS, Equalization, and Special Charger. At the bottom, there are four heater control buttons: HeaterClose, ChargeHeater, DisChargeHeater, and AllHeater. Two blue arrows point to the 'Normal' tab and the 'CellSet' field, with a text label 'Setting of CELL in series' pointing to the latter.

## Step 8: you can set the protection parameters you expect

BMS Lithium Battery Management System

Monitor Alarm Param Normal DLoad Graph Update LeaseSet

PortNo: COM5  
 DevNo: 1  
 Connect  
 English

Remain: 0 %  
 Voltage: 0 V  
 Current: 7 A

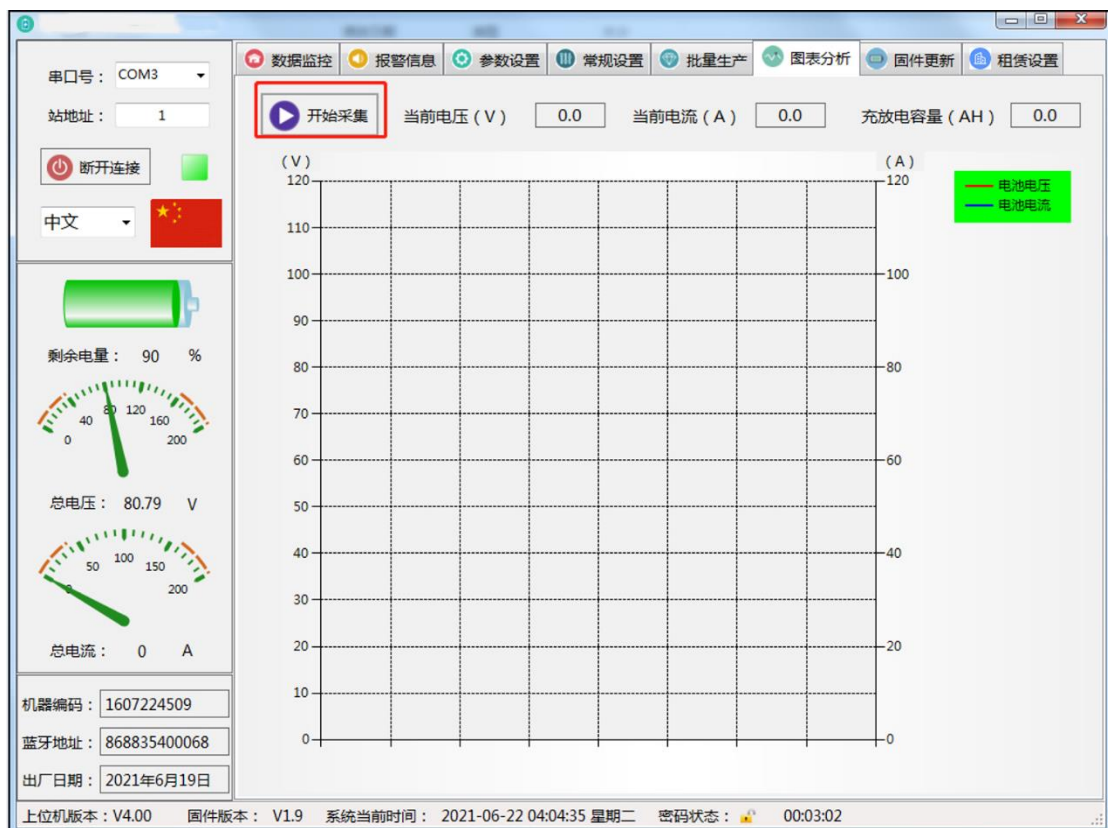
MacCode: 342589975  
 BlueTooth: 26541C98068E  
 Factory: 2012年12月31日

### Mass Production ParamSet

Parameter	Actual	Set	Result
Charge-Pro (mv) :	4350		
Charge-Pro (mv) :	4200		Open
Charge-Rec (mv) :	4150		
Charge-Pro (A) :	40		
Discharge-Fail-Pro (mv) :	2550		
Discharge-Pro (mv) :	2750		
Discharge-Pro (A) :	2900		
Discharge-Pro (A) :	80		
Balance Voltage (mv) :	3800		
Capacity (AH) :	20		
Cell-Set (Cell) :	14		
PasswordSet:	123456		
BlueToothName:		Set	
Bluetooth-Reading:	0		Read

Save  
 DLoad

## Step9:可以查看电压电流曲线



## Step 10 可以更新固件一键休眠





**TOPBMS**

Official website: [www.cleverbms.com](http://www.cleverbms.com) ; Wechat: +8617841591535

Aliexpress website: <https://www.aliexpress.com/store/4687150>