48230KITS/48300KITS
Assembly Instructions

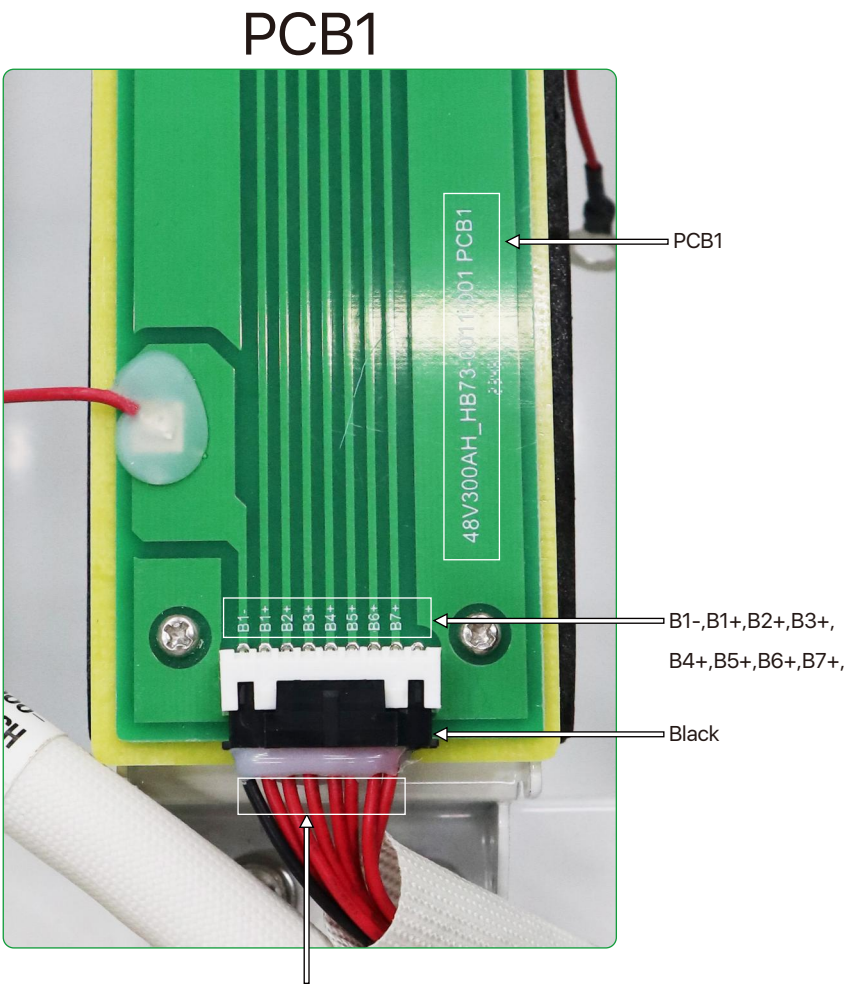
WARNING:
If any parts are missing, damaged or worn, stop using this KITS. Repair the KITS with manufacturer supplied parts.

IMPORTANT:
Read these instructions carefully before beginning assembly. Failure to follow these instructions may result in serious injury.
Carefully unpack all parts and identify them with the parts list before attempting to assemble the KITS. Remove all cardboard and plastic covering from DIY KITS parts. Please examine all packing material before discarding it.

ALL DIY kIT accessories are
included in the DIY box

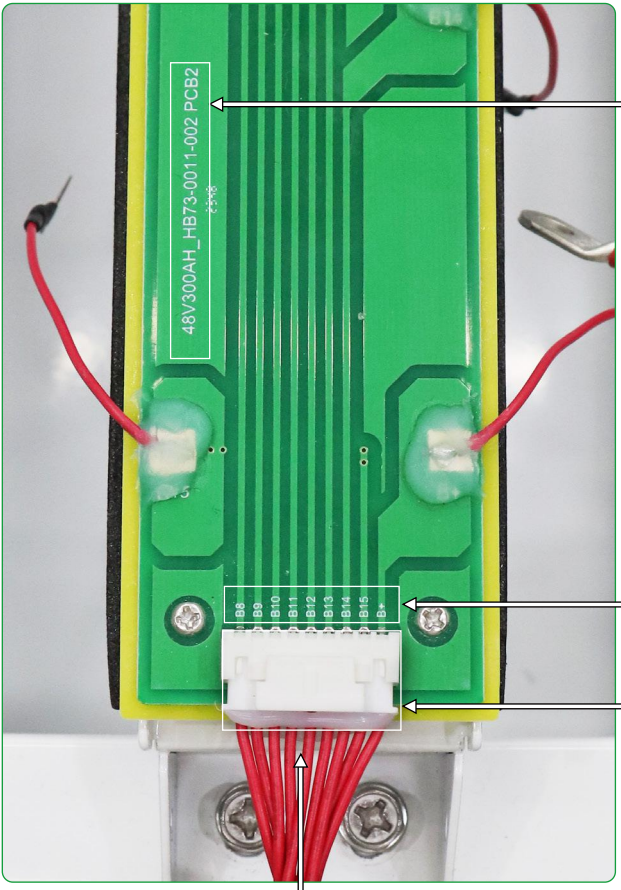
Wire pre-installation

When receiving the 48V kits accessories, the customers need to check whether the collection line of PCB bars is wrong inserted or not, it means that PCB1 and PCB2 have assembly errors, PCB1 and PCB2 board are marked, as shown in the following picture:



PCB1 board is marked with wires, they are B1-, B1 +, B2 +, B3 +, B4 +, B5 +, B6 +, B7 +, and there are 8 lines on the collector terminal; "B1-" is black, you must confirm the wiring before inserting, or else it will damage the BMS, and we won't provide after-sales service.

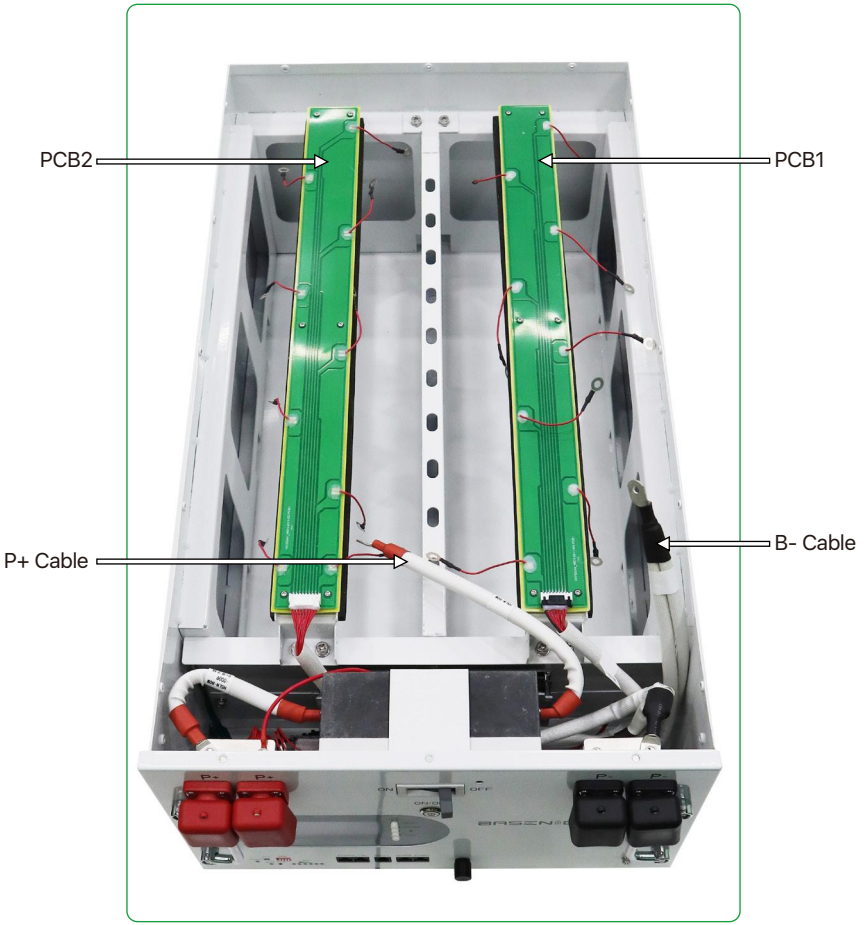
PCB2



On PCB2 board, B8, B9, B10, B11, B12, B13, B14, B15 and B +. There are 9 lines on the acquisition line terminals. PCB2 has no black wires, you must confirm the wiring before inserting, otherwise it will damage the BMS and we will not provide after-sales service.

Note:

Please make sure that the goods you receive are as follows. If you receive the goods and they are inconsistent with the picture, you should report to our customer service in time. Do not assemble them without permission.

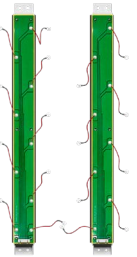


Packing list

Please check the product carefully after receiving it, if any accessories are missed, please contact BASEN.

A (Pre-installed)
Shell*1

B (Pre-installed)
Cover plate*1



C (Pre-installed)
PCB bars*2

D (Pre-installed)
Front plate*1

E (Pre-installed)
Handle*2

F (Pre-installed)
LCD Display*1

G (Pre-installed)
BASEN GREEN
16S 200A BMS*1

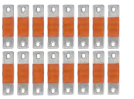
H (Pre-installed)
Temperature
NTC v s*1

I (Pre-installed)
16S voltage
acquisition cable*1

J (Pre-installed)
16S 2A active
equalizer*1

K
Fiberglass
Insulation plate*24

L
Screws*32

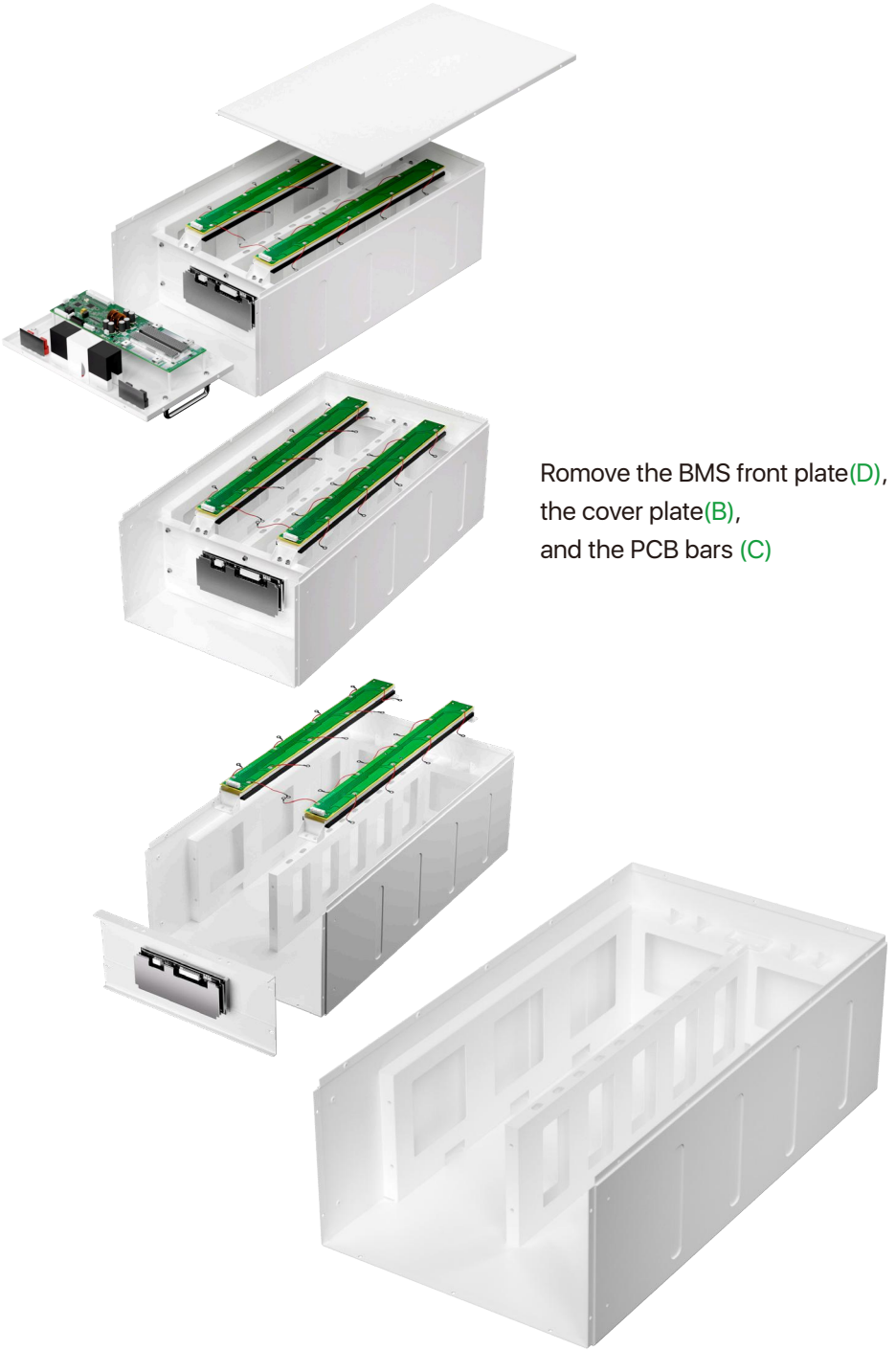


M
Flexible busbar*16

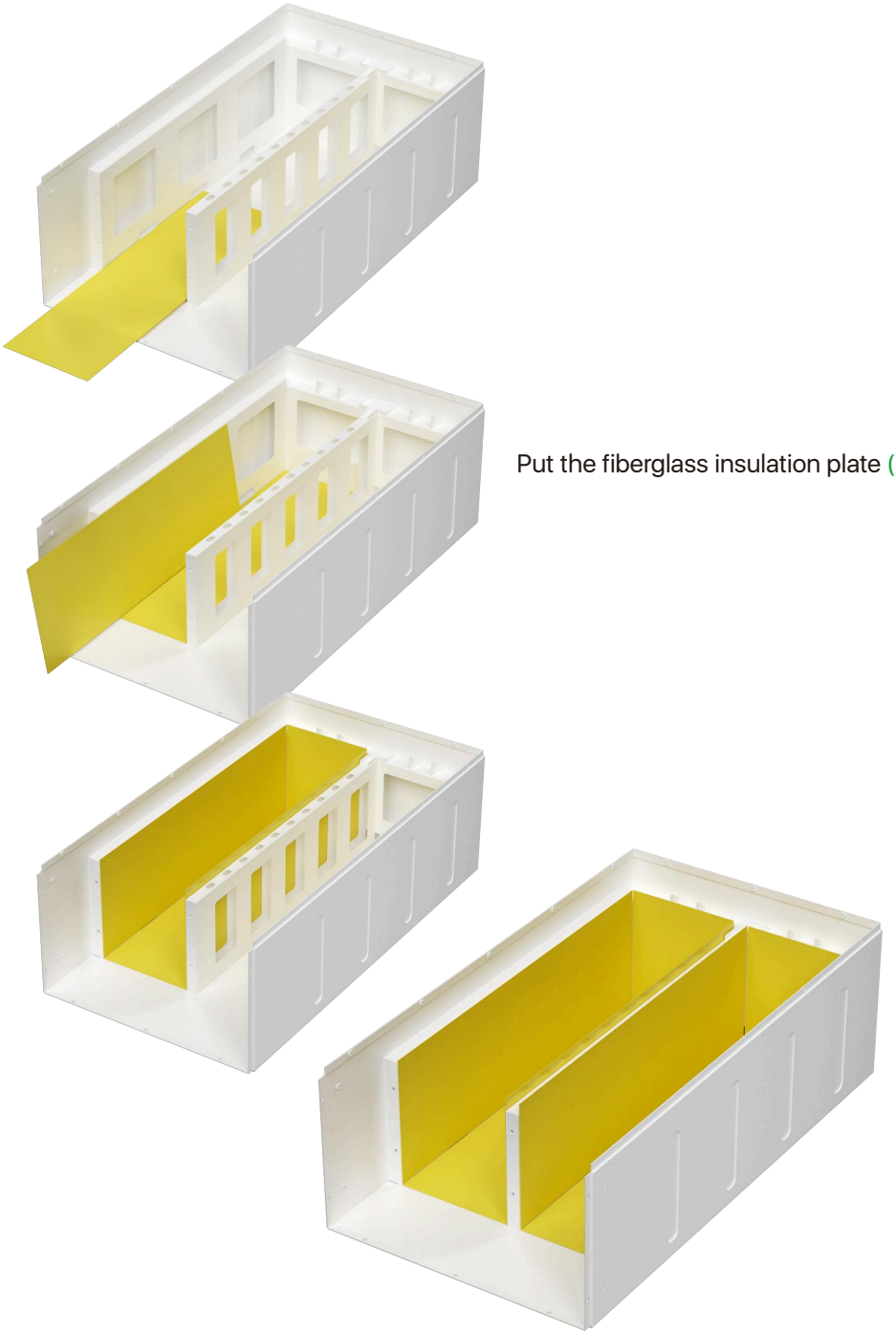
N
Inverter communication cable*1

O
USB-RS485
communication cable*1

P
Side bracket

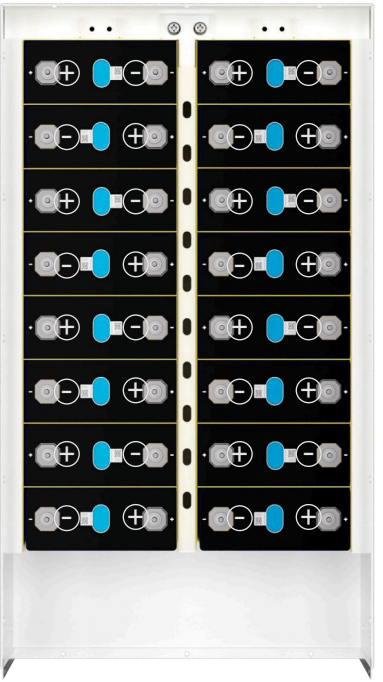


Romove the BMS front plate(D),
the cover plate(B),
and the PCB bars (C)

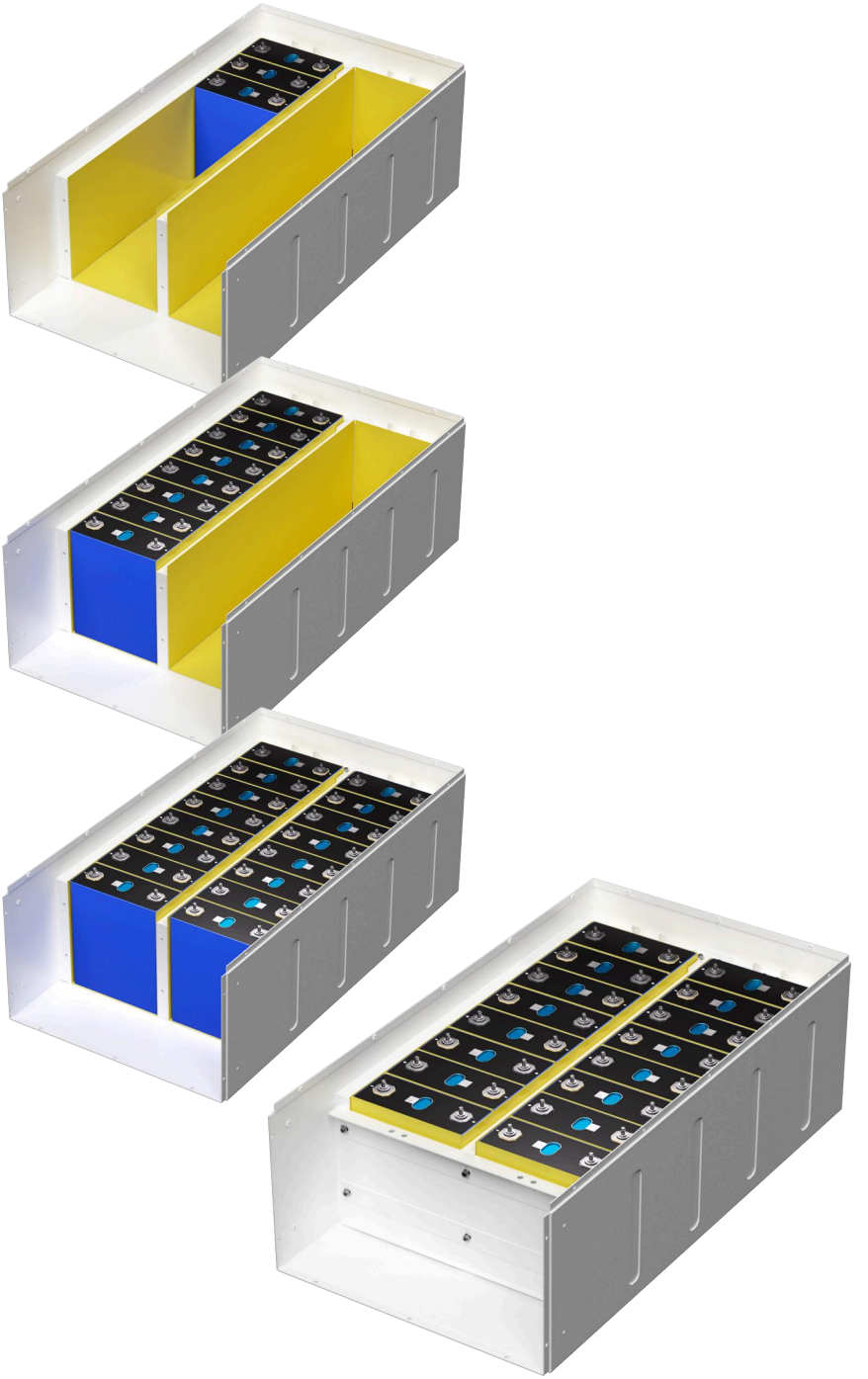


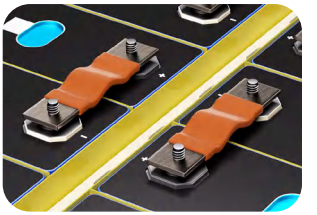
Put the fiberglass insulation plate (K)

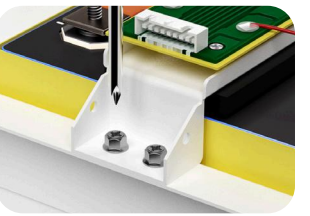
Cells Voltage difference ≤ 20mV



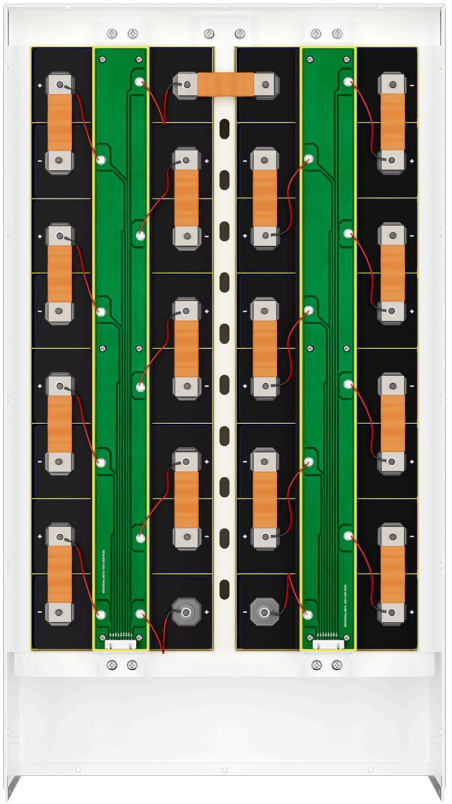
Place the battery cells in the chassis, separated by fiberglass insulation plate (K)



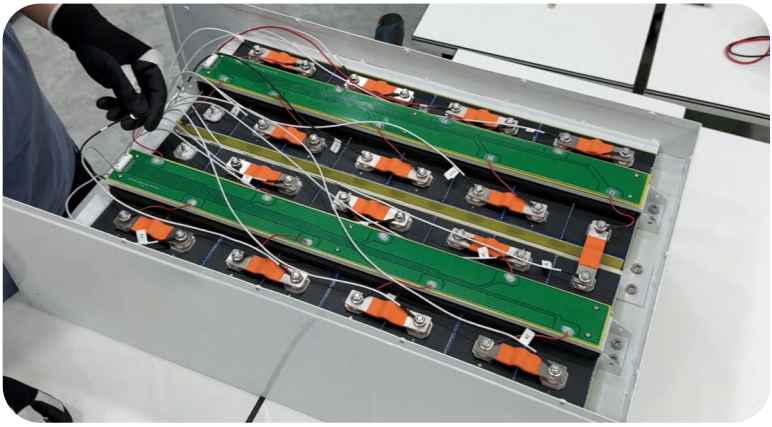




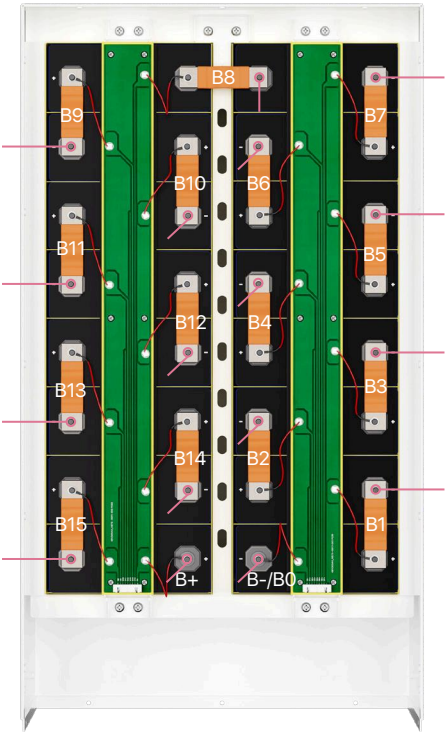
Link the PCB bars(C) and flexible busbar(M), then screw up(Torque: 5-6 Nm)



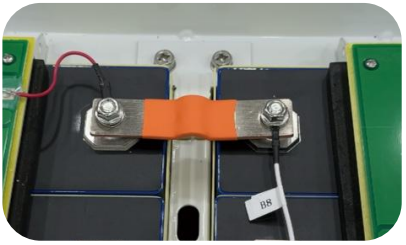
Installation of Equalizer (J)



Linking Equalizer Cables (J)

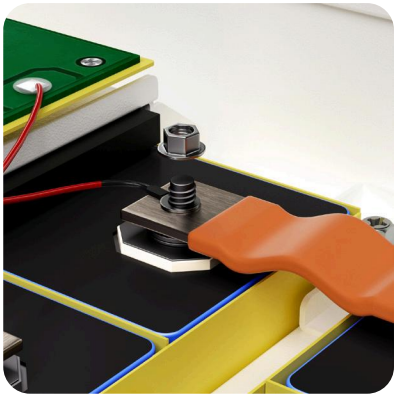


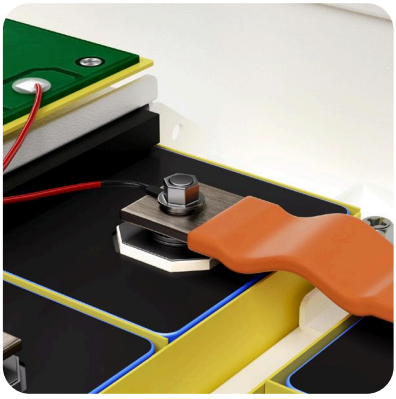
Each wire has a corresponding label

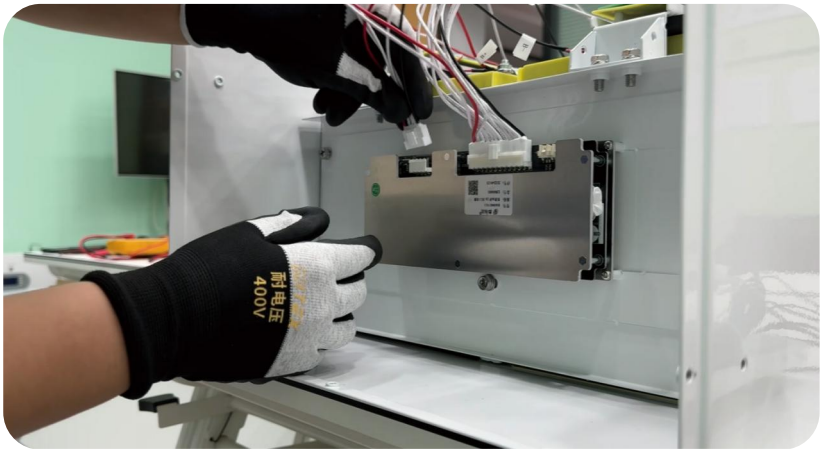


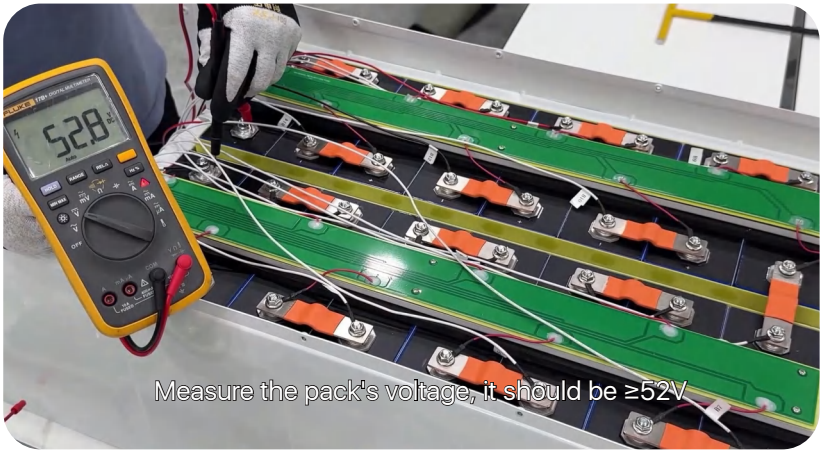
Link the other end of the flexible busbar according to the corresponding value.

Important: Please connect all balancer's voltage sample cables correctly before plugging the connectors, incorrect wiring will damage the device.

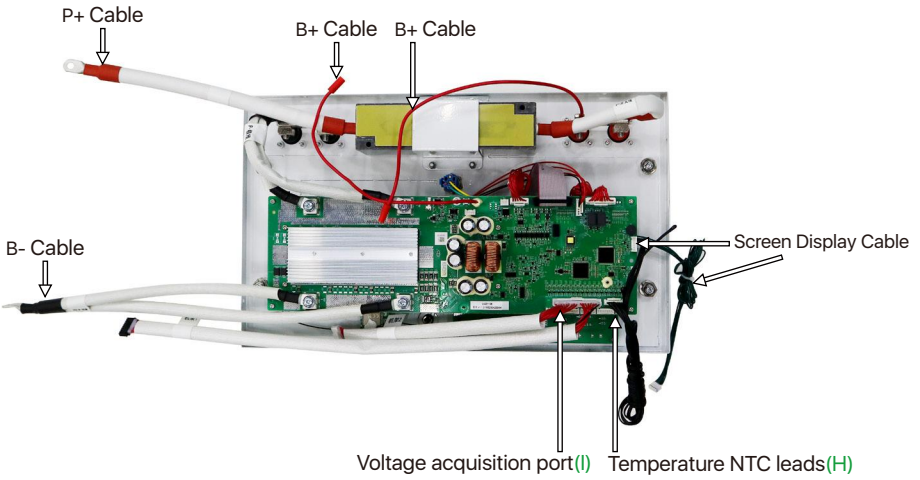





耐电压
400V

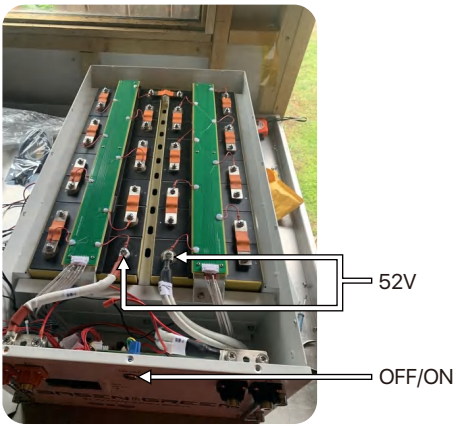

528
Measure the pack's voltage, it should be ≥52V

Put the BMS front plate(D) on, plug the voltage acquisition Cable P+ Cable to the main positive, and B- Cable to the main negative, then put the B+ Cable on, and stick the temperature NTC leads(H) on the cells by heat proof tape.



Check every connection, the voltage between the main positive and the negative is >52V, then turn the button on, the LCD and the indicator work out, then the assembly operation is completed.

Unbox and install video: https://www.youtube.com/watch?v=KxcEyd8IVSY&t=7s



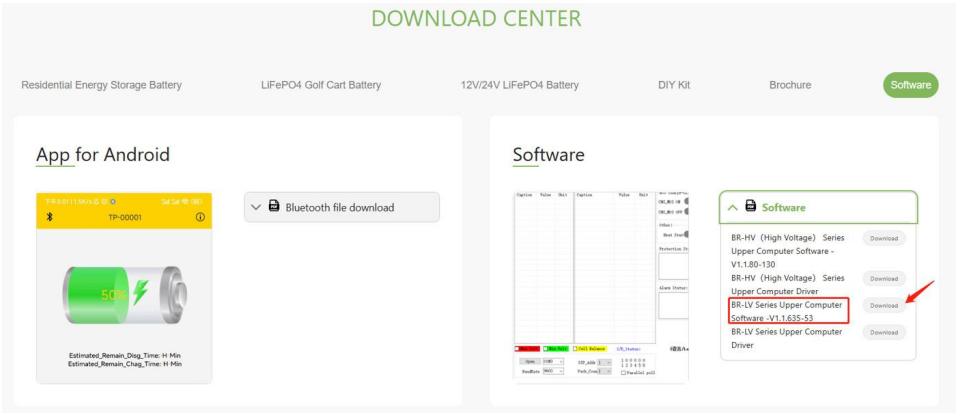
P.S.: It is recommended to do 1-2 times of complete cycle(fully charged and discharged) in the first running of the battery pack.

Please refer to the table below to set the DIP switch for parallel connection of different batteries.

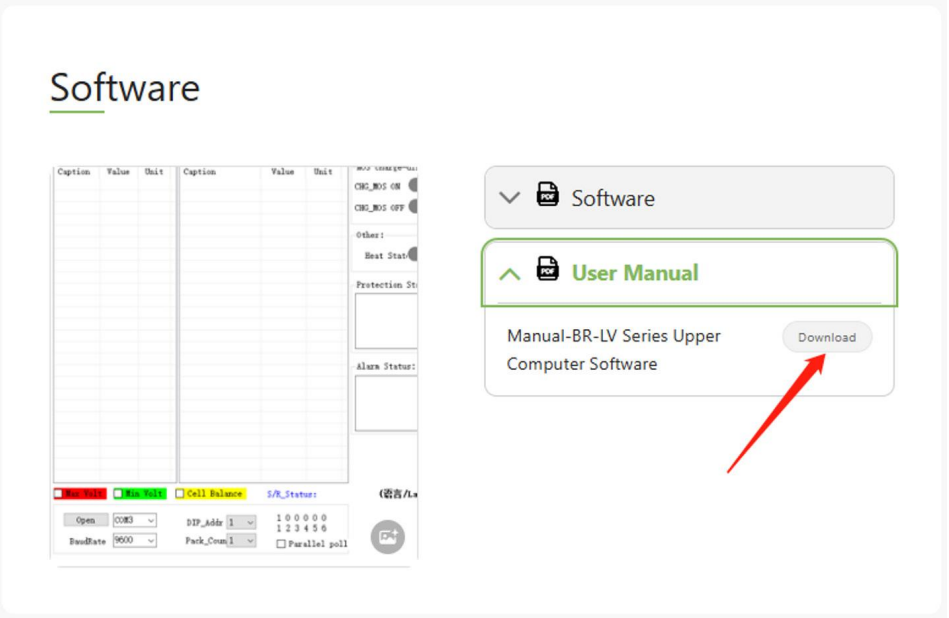
4-BIT					
Address	Dip Switch Position				Illustration
	#1	#2	#3	#4	
0	OFF	OFF	OFF	OFF	
1	ON	OFF	OFF	OFF	
2	OFF	ON	OFF	OFF	
3	ON	ON	OFF	OFF	
4	OFF	OFF	ON	OFF	
5	ON	OFF	ON	OFF	
6	OFF	ON	ON	OFF	
7	ON	ON	ON	OFF	
8	OFF	OFF	OFF	ON	
9	ON	OFF	OFF	ON	
10	OFF	ON	OFF	ON	
11	ON	ON	OFF	ON	
12	OFF	OFF	ON	ON	
13	ON	OFF	ON	ON	
14	OFF	ON	ON	ON	
15	ON	ON	ON	ON	

Operation of Upper System

Download: https://www.basenpower.com/download/

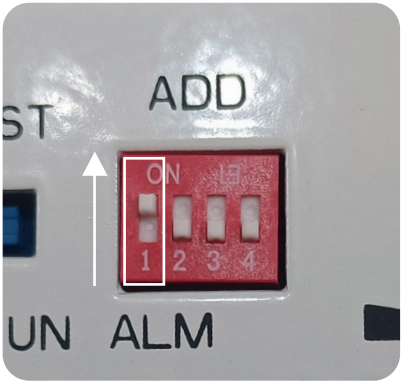


PS: To install the PC computer software for the first time, please download and read the user manual(https://www.basenpower.com/download)

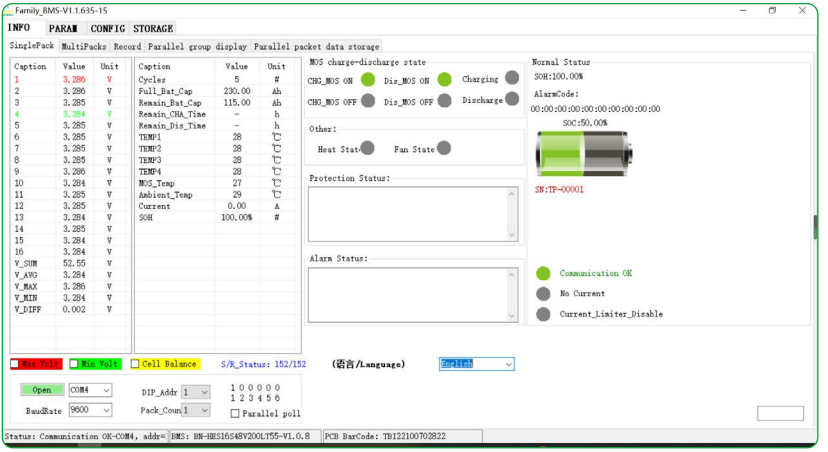


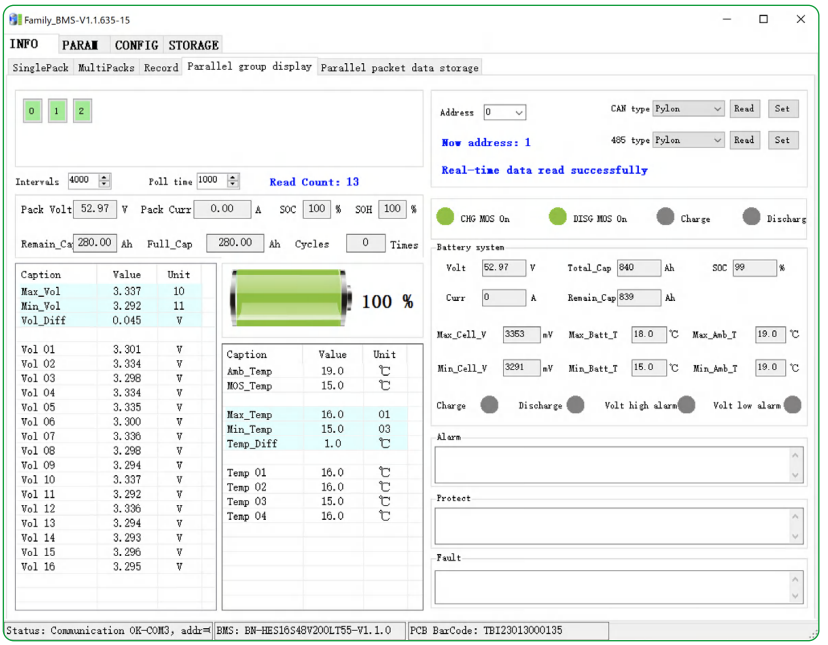
Firstly, connect the USB to RS485 Cable from Battery to the PC/Laptop, dip switch 1 on the front plate, download the PC software and open it.

Secondly, modify the language, and check the status of the battery pack



P.S: Please check the data on "single pack" page when only 1 pack is connected, the page of "Parallel group display" might show the nonsense characters.

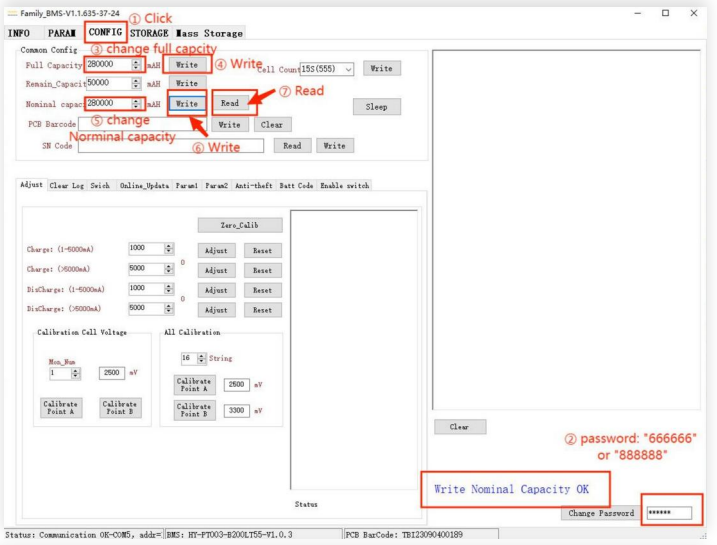

Family_BMS-V1.1.635-15
INFO
PARAM
CONFIG
STORAGE
SinglePack
MultiPacks
Record
Parallel group display
Parallel packet data storage
Caption
Value
Unit
Cycles
Full_Bat_Cap
Remain_Bat_Cap
Remain_CHA_Time
Remain_Dis_Time
TEMP1
TEMP2
TEMP3
TEMP4
MOS_Temp
Ambient_Temp
Current
SOH
MOS charge-discharge state
CHG_MOS ON
Dis_MOS ON
Charging
CHG_MOS OFF
Dis_MOS OFF
Discharge
Other:
Heat State
Fan State
Protection Status:
Alarm Status:
Normal Status
SOH:100.00%
AlarmCode:
00:00:00:00:00:00:00:00:00:00
SOC:50.00%
SN:TP-00001
Communication OK
No Current
Current_Limiter_Disable
Max Volt
Min Volt
Cell Balance
S/R_Status: 152/152
(语言/Language)
English
Open
COM4
BaudRate
9600
DIP_Addr
Pack_Coun
1 0 0 0 0 0
1 2 3 4 5 6
Parallel poll
Status: Communication OK-COM4, addr=
BMS: BN-HES16S48V200LT55-V1.0.8
PCB BarCode: TBI22100702822

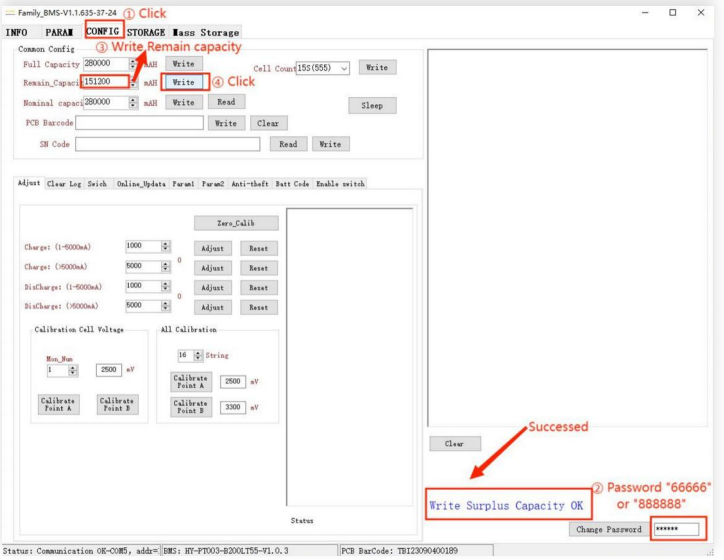

Family_BMS-V1.1.635-15
INFO
PARAM
CONFIG
STORAGE
SinglePack
MultiPacks
Record
Parallel group display
Parallel packet data storage
0
1
2
Address
CAN type
Pylon
Read
Set
Now address: 1
485 type
Pylon
Read
Set
Real-time data read successfully
Intervals
4000
Poll time
1000
Read Count: 13
Pack Volt
52.97
V
Pack Curr
0.00
A
SOC
100
%
SOH
100
%
Remain_Ca
280.00
Ah
Full_Cap
280.00
Ah
Cycles
0
Times
CHG MOS On
DISG MOS On
Charge
Discharg
Battery system
Volt
52.97
V
Total_Cap
840
Ah
SOC
99
%
Curr
0
A
Remain_Cap
839
Ah
Max_Cell_V
3353
mV
Max_Batt_T
18.0
℃
Max_Amb_T
19.0
℃
Min_Cell_V
3291
mV
Min_Batt_T
15.0
℃
Min_Amb_T
19.0
℃
Charge
Discharge
Volt high alarm
Volt low alarm
Alarm
Protect
Fault
Caption
Value
Unit
Max_Vol
3.337
10
Min_Vol
3.292
11
Vol_Diff
0.045
V
Vol 01
Vol 02
Vol 03
Vol 04
Vol 05
Vol 06
Vol 07
Vol 08
Vol 09
Vol 10
Vol 11
Vol 12
Vol 13
Vol 14
Vol 15
Vol 16
100 %
Amb_Temp
MOS_Temp
Max_Temp
Min_Temp
Temp_Diff
Temp 01
Temp 02
Temp 03
Temp 04
Status: Communication OK-COM3, addr=4
BMS: BN-HES16S48V200LT55-V1.1.0
PCB BarCode: TBI23013000135

Note: "Nominal capacity" means the rated capacity, and "Full capacity" means the actual full charge capacity

（1） Full capacity modification

For example, if the capacity is set to be 300 AH, but the actual battery capacity is 280 AH, then when the "Full capacity" is modified to 280 AH(280000mAh), the "Nominal capacity" also needs to be changed to 280 AH(2800000mAh).





Important: After modifying the capacity, it is needed to perform a complete cycle(full charging and discharge) 1-2 times for the BMS to learn the latest status.

Operation of Bluetooth

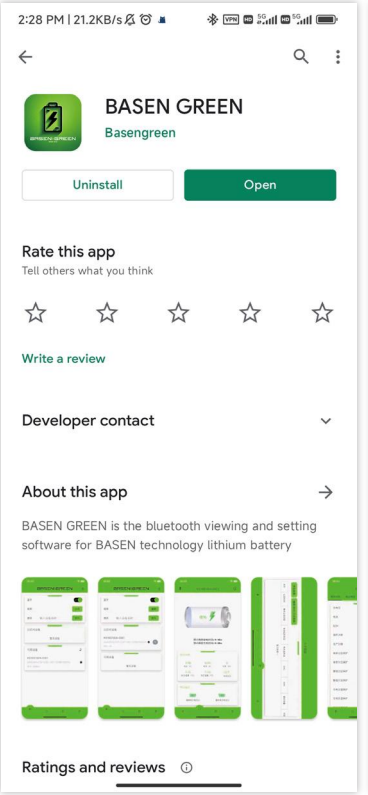
DIY KIT is equipped with a Bluetooth function, supports APP monitoring battery statuses. All information available in the battery, such as the state of charge, voltage, operating current, temperature, and other operating information are transmitted in real-time via the Bluetooth transmitter. The parameters can be made visible with the BASENGREEN App.

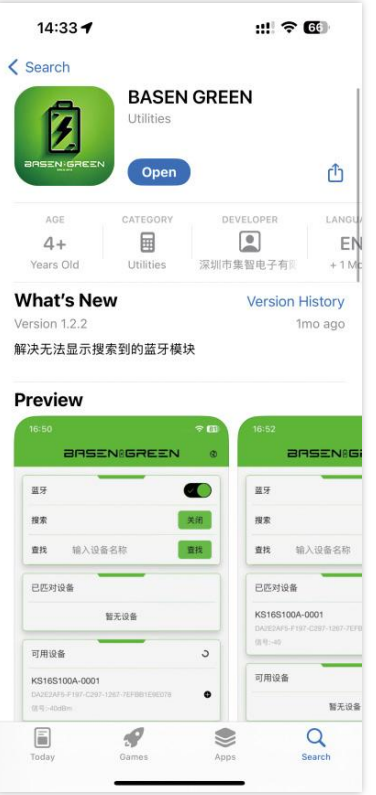
Download: Android: "BASENGREEN" in Play Store

iOS: "BASENGREEN" in Apple Store

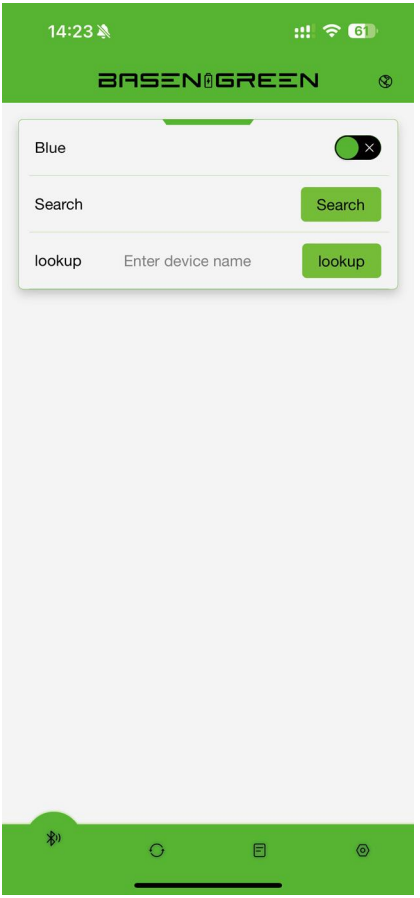
Bluetooth

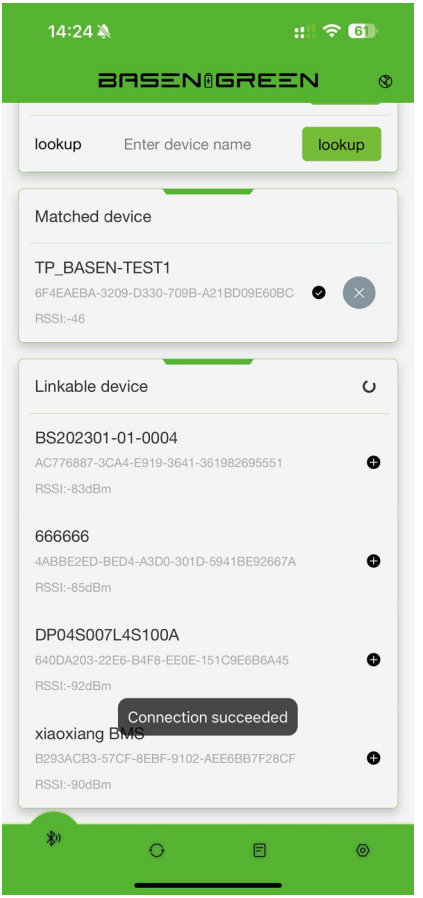
1. For Android users, please visit the Google Play Store and search for 'BASENGREEN'. For iOS users, go to the Apple Store and look up 'BASENGREEN'.





2. Turn on Bluetooth and search for the corresponding product's Bluetooth code



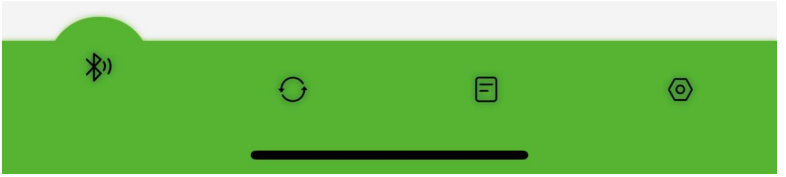


NOTE:

a. If you selected a battery to connect to and the app doesn't confirm the connection, it might be someone else is already connected to the battery. Only one device connects to the battery at the same time.

b .The Bluetooth app supports status monitoring only. It does not support any modified operation except communication protocol switching

3. Menu



Bluetooth list: Check the Device list and connect it.

Homepage: Check the status of battery-SOC, Volt, Current, Temperature, etc.

Historical Data: Not available

Setting: Base Message: Check the pack voltage, current, cycle time, etc.

Cell Voltage: Check the cells voltage.

Language: English/Chinese switching.

Fault Data: Not available

System Parameter: Not available

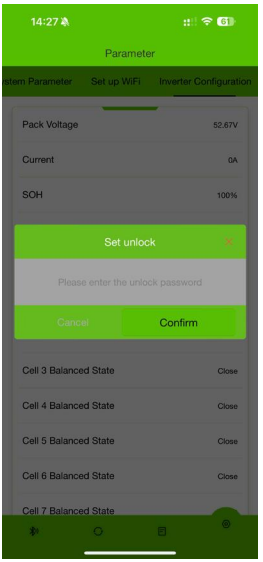
Set up WiFi: Setup WiFi function(Not available)

Inverter configuration: Communication protocol switching(Chapter 9.2)

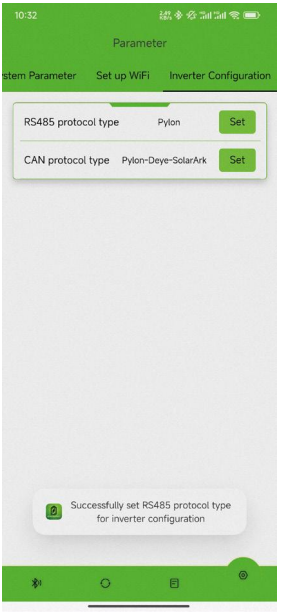
Operation of Communication Protocol Switch(Via Bluetooth App)

a. Connect to the Bluetooth app first

b. Swipe left to find 'Inverter Configuration'. Set unlock code is 888888



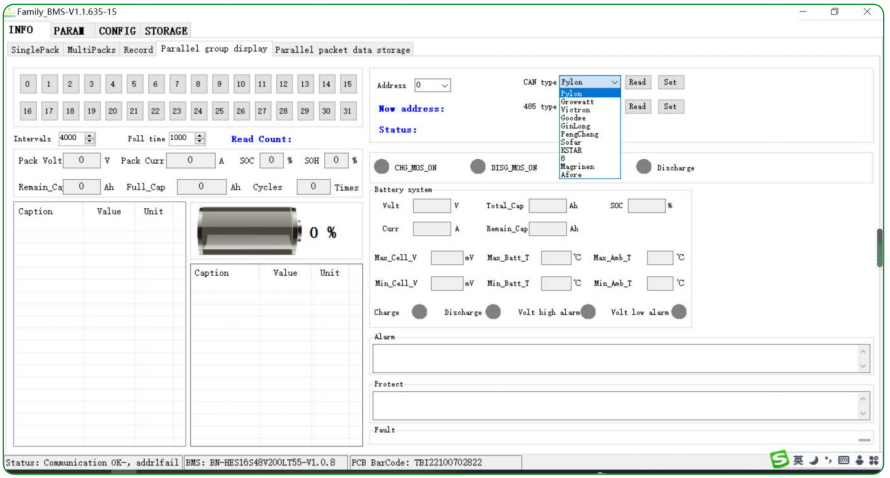
c. Choose the communication protocol and set, the battery pack will be restart after few second with “bee” sound. Then set up is successful.



Switching communication protocols via PC

Open the PC software and follow the path:

INFO—Parallel Group Display—CAN Type/RS485 Type—Read—Choose the protocol—Set



Communication Protocol Switching via Screen

1. Introduction

There are 4 buttons on the side of screen

MENU : Enter the "MENU" page

ENTER : Confirm the change/enter the next page

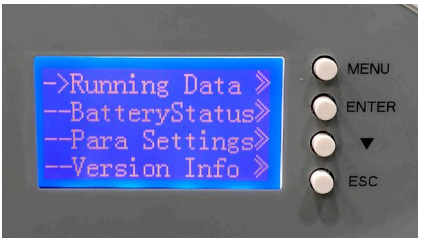
▼ : Select items/turn pages

ESC : Back to the last page

2. Switch the communication protocol

a. Turns on the battery, the screen will lights up and shows the data.

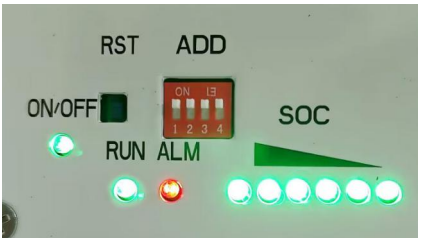
b. Click "MENU" button, then click ▼, enter the "CommType Set" page.



c. There are CAN/RS485 options, click the correct option based on the inverter model. (Default communication protocol: Pylon)

d. Choose the protocol and click the "ENTER"button.

e. All of the indicators will light up after 3-5 seconds, and then it has a "bee" sound. The screen will show the latest communication protocol, which means the protocol has been updated successfully.



Communication Compatible List

BASEN BMS Inverter Communication Protocol Matching Table						
Inverter Brand		Communication method	Protocol Name	Protocol Remarks	Communication Potter rate	Interface Definition
维克托-Victron	victron energy	CAN	Victron-CAN-V1.00- 211135	Active Upload	500K	7H、8L
古瑞瓦特-SPF Growatt-SPF	Growatt	485	Growatt BMS-RS485-protocal-1xSxxP_ ESSL _V2.01 Growatt BMS-RS485-protocal-V2.0	MODBUS Standard protocols	9600	1B、2A
古瑞瓦特-SPF Growatt-SPF	Growatt	CAN	Growatt BMS CAN-Bus-protocol-low-voltage-V1.05	Active Upload	500K	4H、5L
古瑞瓦特-SPH Growatt- SPF	Growatt	CAN	Growatt BMS communication protocol of growatt low voltage-V1.01	Active Upload	500K	4H、5L
德业 Deye	Deye 德業	CAN	Deye LV-CAN communication protocol	Active Upload	500K	4H、5L
德业 Deye	Deye 德業	485	485 Modbus Protocol(4)-deye	MODBUS protocols	9600	1B、2A
尚科-Scolar	SACOLAR	CAN	Growatt BMS CAN-Bus-protocol-low-voltage-V1.05	Active Upload	500K	4H、5L
固德威-Goodwe	GOODWE	CAN	Goodwe-CAN-V1.7-220228-SolarinverterFamily-EN	Active Upload	500K	4H、5L
日月元-Voltronic Power	Voltronic Power	485	Voltronic Power-485-V1.03-200325	MODBUS protocols	9600	3B、5A
首航-SOFAR	SOFAR	CAN	SOFAR-CAN-V1.00-211117-Rev6	Active Upload	500K	1H、2L
锦浪-Solis	solis	CAN	Solis-CAN-V1.0-191228-lowVoltage	Active Upload	500K	4H、5L
鹏城-Luxpower	LUXPOWER TEK	CAN	Luxpowertek Battery CAN Protocol -2021	Active Upload	500K	4H、3L
派能-Pylontech	PYLONTECH	485	Pylon-485-V3.5-161216-low voltage protocol	1363	115200	1B、2A
派能-Pylontech	PYLONTECH	485	Pylon-485-V3.5-161216-low voltage protocol	1363	9600	1B、2A
派能-Pylontech	PYLONTECH	CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
硕日-Srne	SRNE	485	shuori BMS Modbus Protocol for RS485 V1.3(2020-11-24)	MODBUS	9600	7A、8B
美世乐 Must	MUST美世乐	CAN	PV1800F-CAN communication Protocol1.04.04	Active Upload	100K	6H、5L
艾思玛 SMA	SMA	CAN	SMA-CAN-V1.0.0-210630-FSS -ConnectingBat-TI-en-20W	Active Upload	500K	4H、5L
阳光电源 SUNGROW	SUNGROW	CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
爱士惟 AiSWEI	AiSWEI	CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
英威腾 INVT	invt	CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
科士达 KSTAR	KSTAR	CAN	Kstar CAN_Protocol-V1.11	Active Upload	500K	4H、5L
艾伏 Afore	Afore	CAN	Afore Communication Protocol CAN Bus Version V1.02_20210104	Active Upload	500K	4H、5L
索瑞德-SOROTEC	SOROTEC	CAN	CAN Protocol 1.0(SOROTEC Protocol)	MODBUS Standard protocols	500K	4H、5L
索瑞德 SOROTEC	SOROTEC	485	Protocal between Sorotec Inverter and Lithium Battery (RS485)	Active Upload	500K	1B、2A
SOL-ARK	Sol-Ark	CAN	Sol-Ark CAN Bus Protocol V1.2.pdf4-25-22		500K	4H、5L
迈格瑞能 MEGAREVO	MEGAREVO	CAN	Shenzhen MEGAREVO Hybrid Inverter-5K BMS Protocol V1.01	Active Upload	500K	4H、5L
MPP Solar	MPP Solar	485	BMS 485 communication protocol 20200325(2)	MODBUS	9600	1B、2A
拓宝-TBB	TBB POWER	CAN	CAN BUS Protocol of TBB Lithium Battery BMS Platform V 1.1	Active Upload	500K	4H、5L
盛能杰-Senergy	Senelgy 盛能杰	CAN	SenergyINV&BMS_ CAN_Protocols	Active Upload		4H、5L

Need additional information?

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