

48230KITS/48300KITS Assembly Instructions

**WARNING:**

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

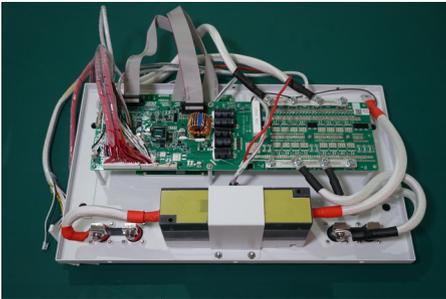
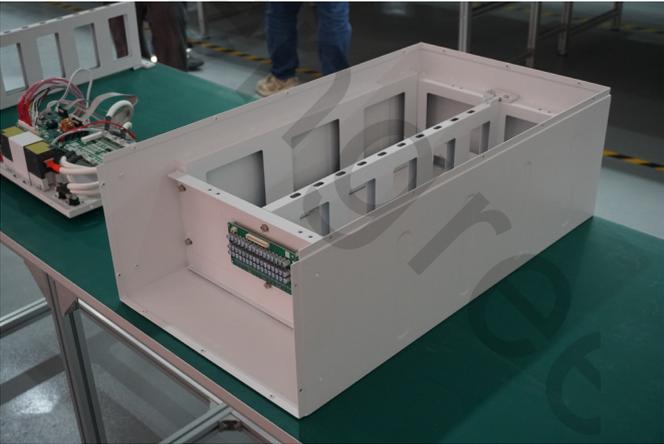
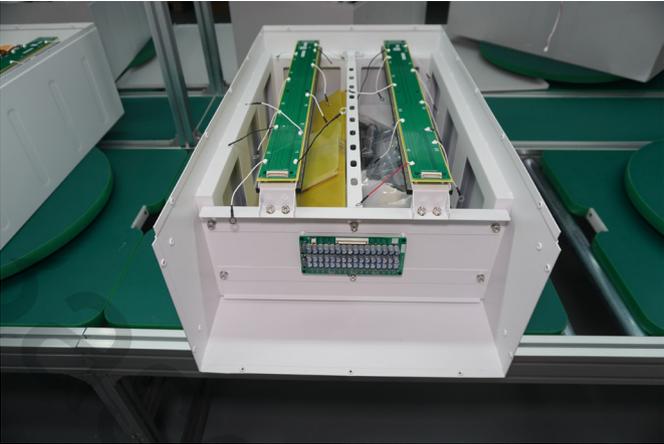
IMPORTANT:

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.

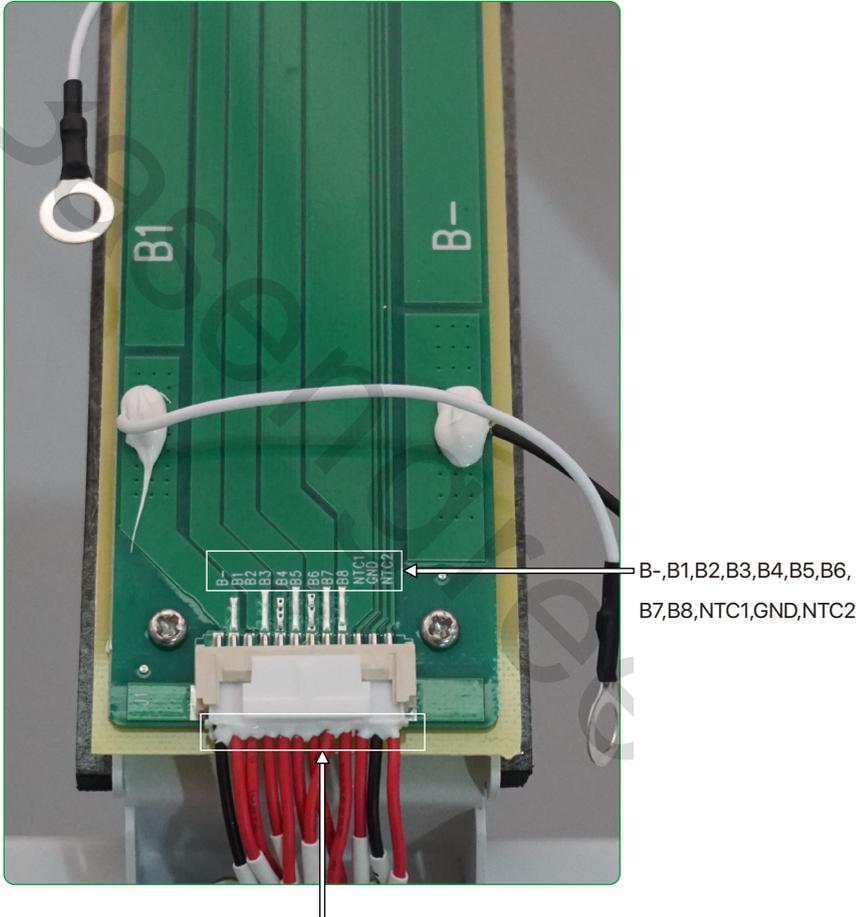
ALL DIY KIT accessories are included in the DIY box



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:

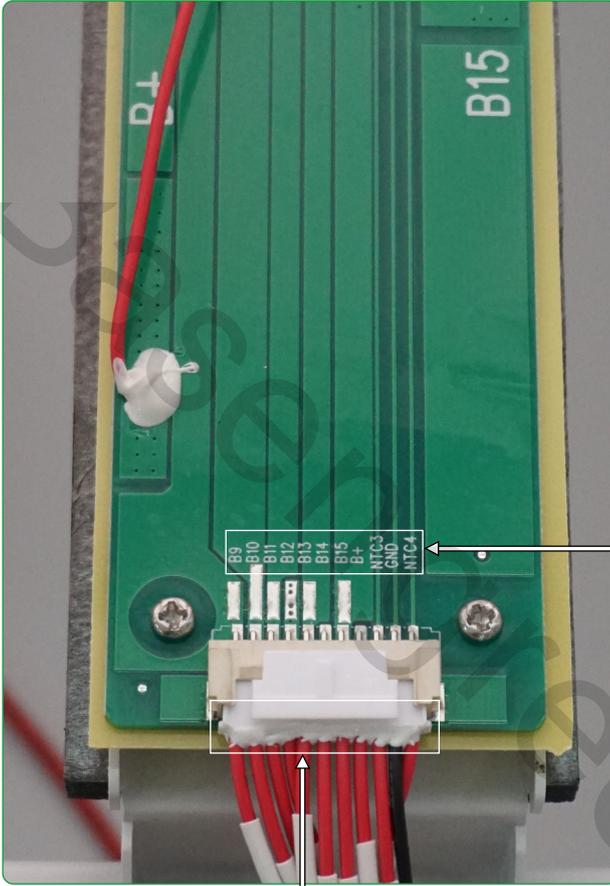
PCB1



PCB1 board is marked with wires, they are B-, B1, B2, B3, B4, B5, B6, B7, B8, NTC1, GND, NTC2, There are 12 lines on the collector terminal;

You must confirm the wiring before inserting, or else it will damage the BMS, and we won't provide after-sales service.

PCB2



B9,B10,B11,B12,B13,B14
B15,B+,NTC3,GND,NTC4

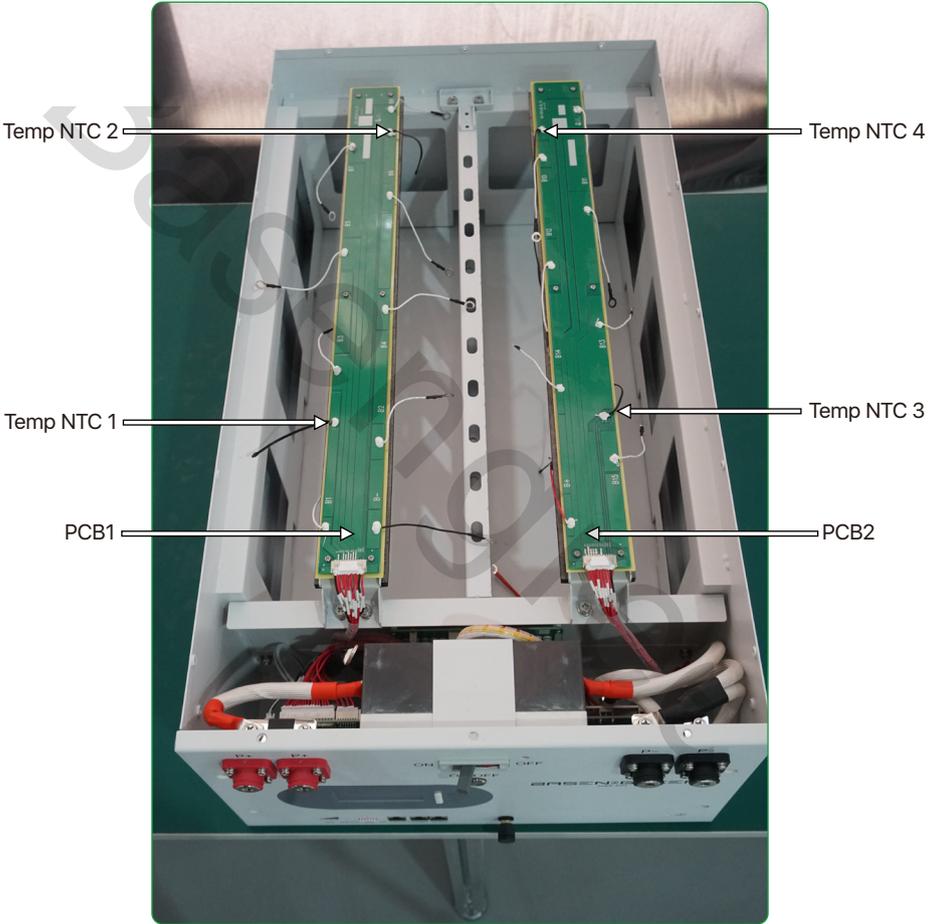


On PCB2 board, B9, B10, B11, B12, B13, B14, B15, B+, NTC3, GND, NTC4. There are **11 lines** on the acquisition line terminals.

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.

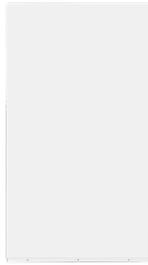


Packing list

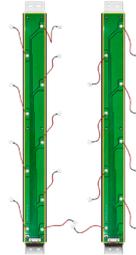
Please check the product carefully after receiving it, if any accessories are missed, please contact BASEN.



A (Pre-installed)
Shell*1



B (Pre-installed)
Cover plate*1



C (Pre-installed)
PCB bars*2
(integrated with
Temp NTC leads)



D (Pre-installed)
Front plate*1



E
Handle*2



F (Pre-installed)
LCD Display*1



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



H (Pre-installed)
Fire extinguishing
aerosol*2



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



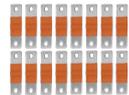
J (Pre-installed)
16S 5A active
equalizer*1



K
Fiberglass
Insulation plate*24



L
Screws*32



M
Flexible busbar*15



N
Inverter communication cable*1



O
USB-RS485
communication cable*1



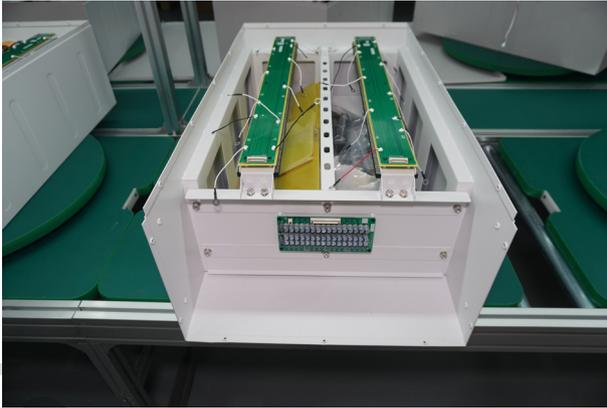
P
Side bracket



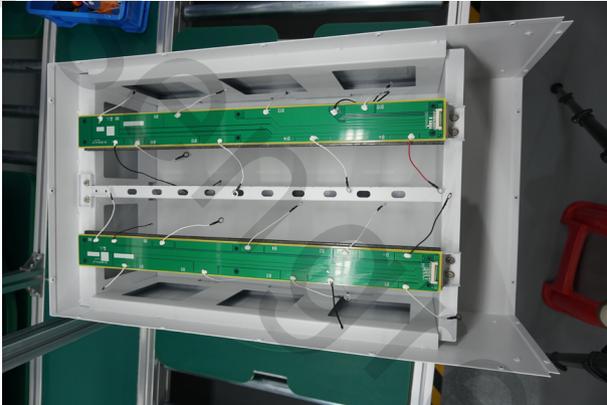
Q
Parallel communication cable*1



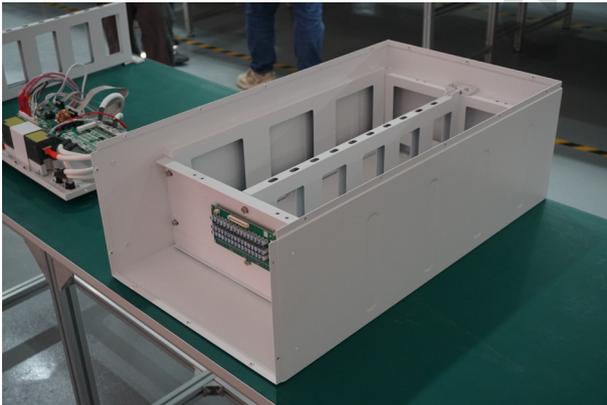
R
EVA cotton



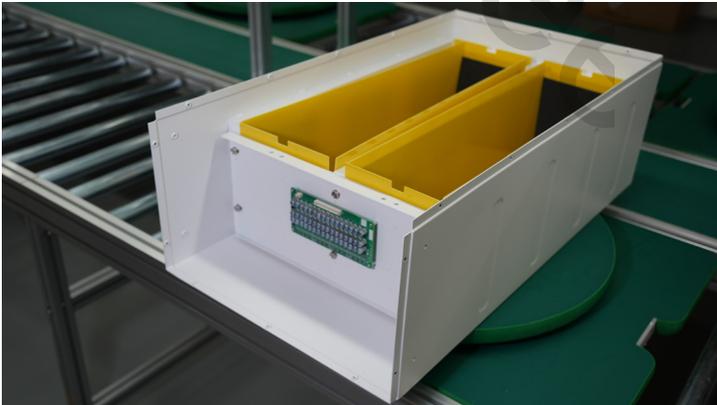
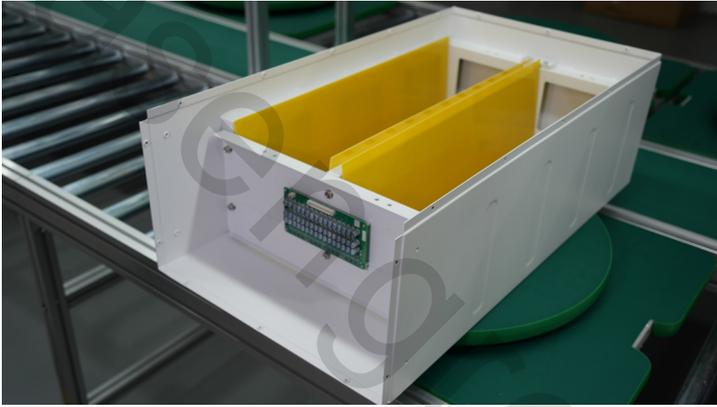
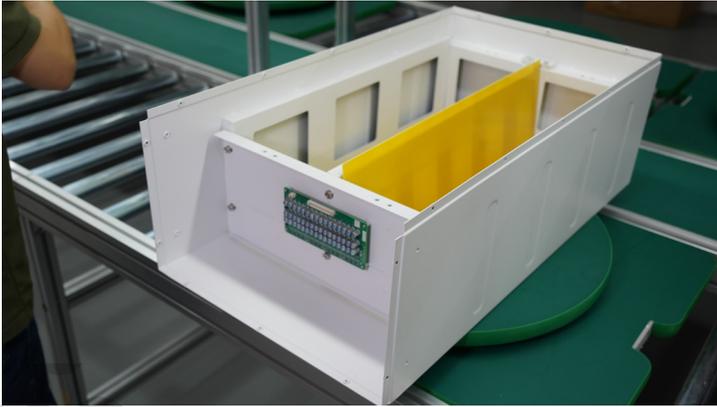
Remove the BMS front plate(D)



Remove the cover plate(B)



Remove the PCB bars (C)

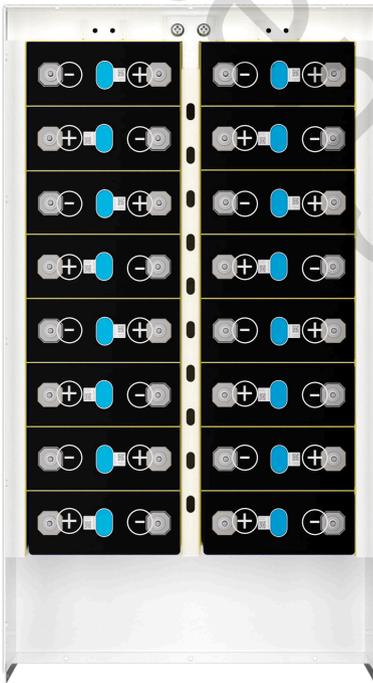


Put the fiberglass insulation plate (K)

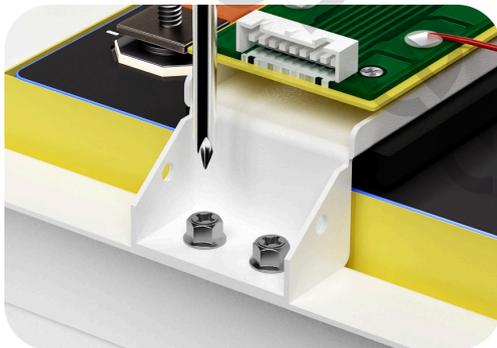
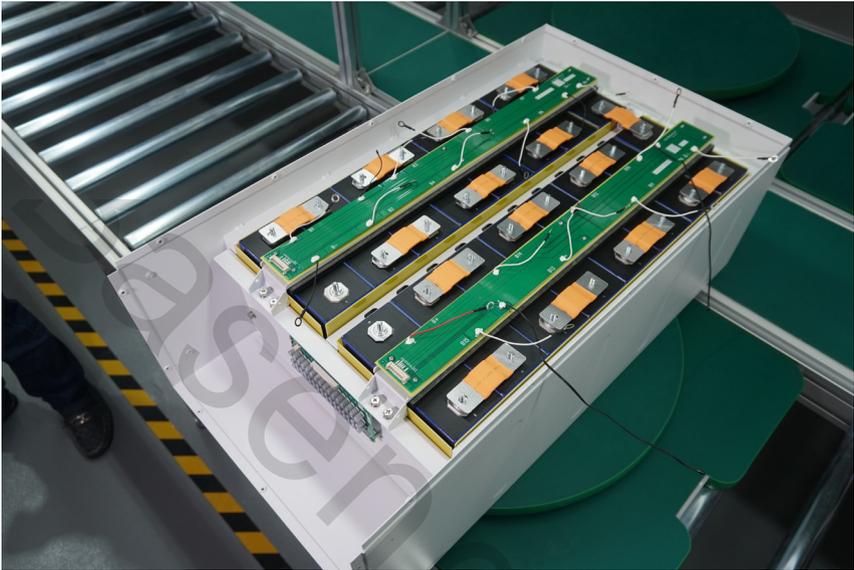


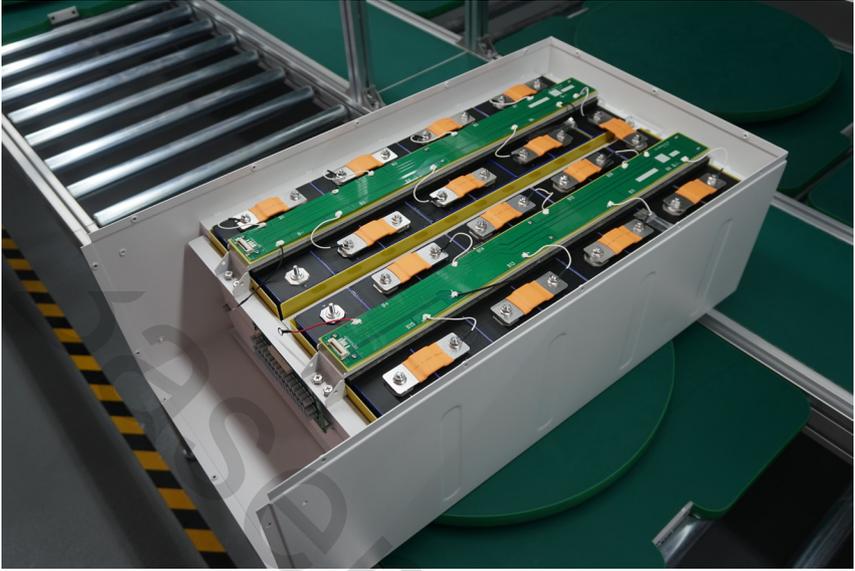
Voltage and internal resistance checking

Cells Voltage difference $\leq 20\text{mV}$



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

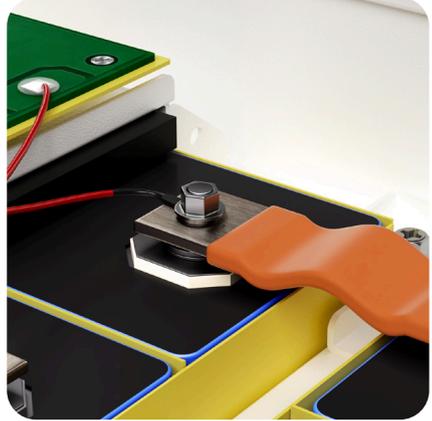




Link the PCB bars(C) and flexible busbar(M), then screw up(Torque: 6 Nm)



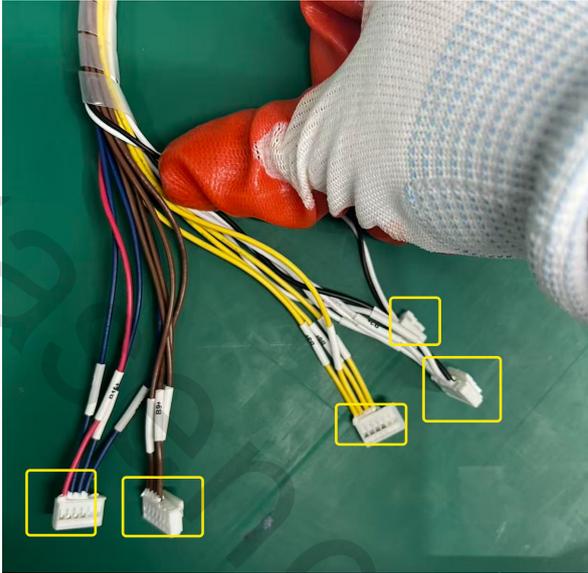
Linking Equalizer



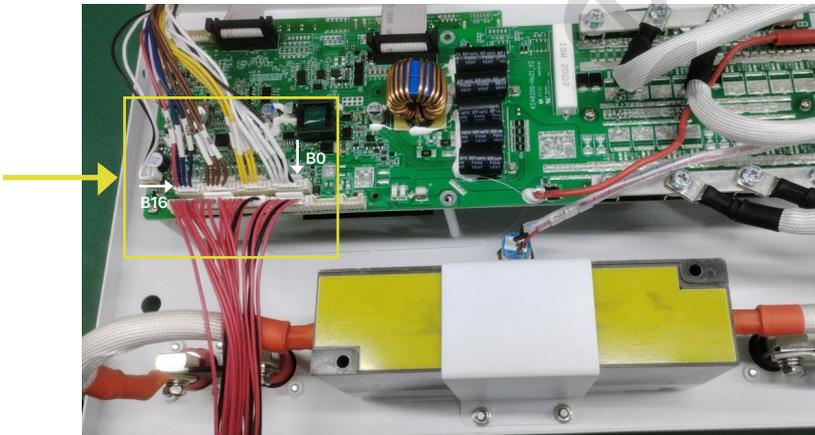
There are five wire set (pre-installed).

The pins from right to left are B0 to B16. The correct wiring method is: first connect the wires on the BMS side from B0 to B16 in sequence, and finally connect the rightmost wire.

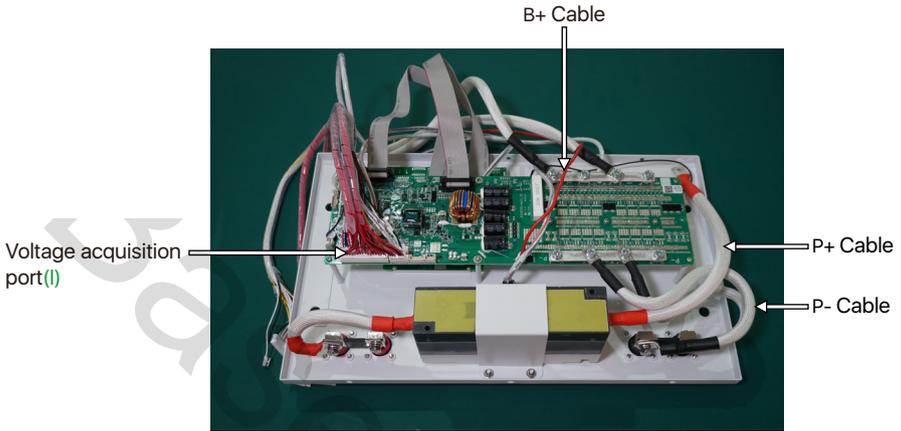
After confirming that it is correct, connect to the active equalizer.



See the diagram below. Please note that incorrect wiring will damage the active equalizer and is not covered under warranty.

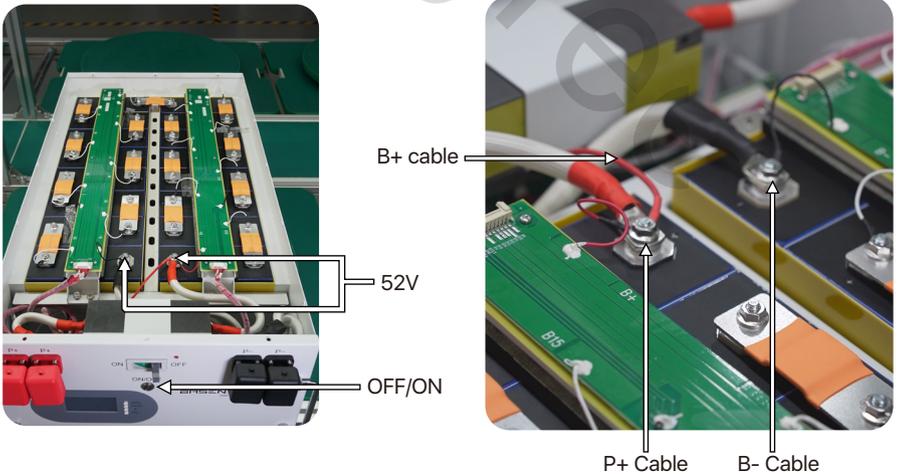


Put the BMS front plate(D) on, plug the voltage acquisition Cable P+ Cable to the main positive, and B- Cable to the main negative, then put the B+ Cable on, and stick the temperature NTC leads on the cells by heat proof tape.



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=DI6JekVXxc>



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.



Important: In a parallel system, every battery must have a unique DIP switch address between 1–15. Duplicate addresses will cause communication failure.

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

Operation of Upper System

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

DOWNLOAD CENTER

Residential Energy Storage Battery LiFePO4 Golf Cart Battery 12V/24V LiFePO4 Battery DIY Kit Brochure **Software**

App for Android



TP-00001

Bluetooth file download

Software-V3 (V1 and V3 software are incompatible.)



Software

BR-LV Series Upper Computer Software - V3 Download

User Manual

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

Software-V3 (V1 and V3 software are incompatible.)



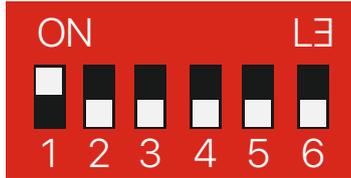
Software

BR-LV Series Upper Computer Software - V3 Download

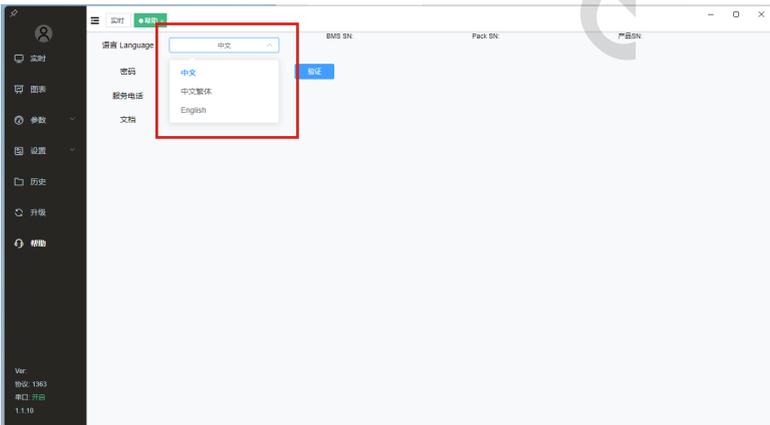
User Manual

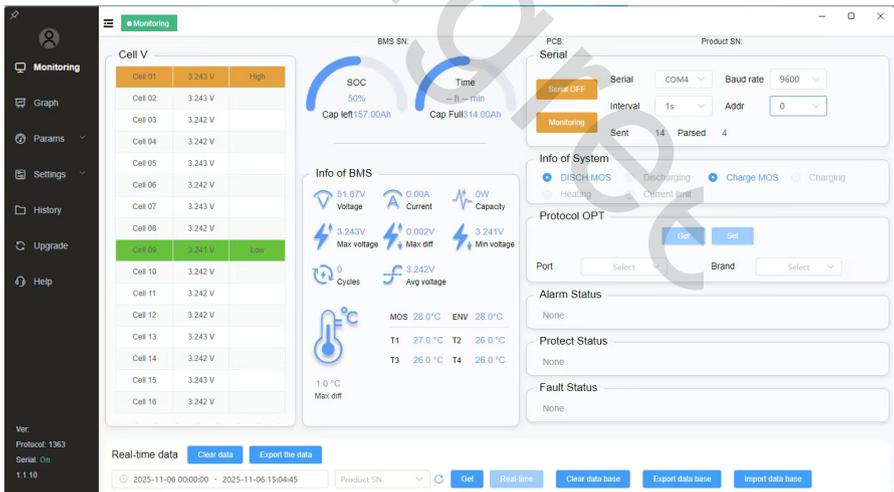
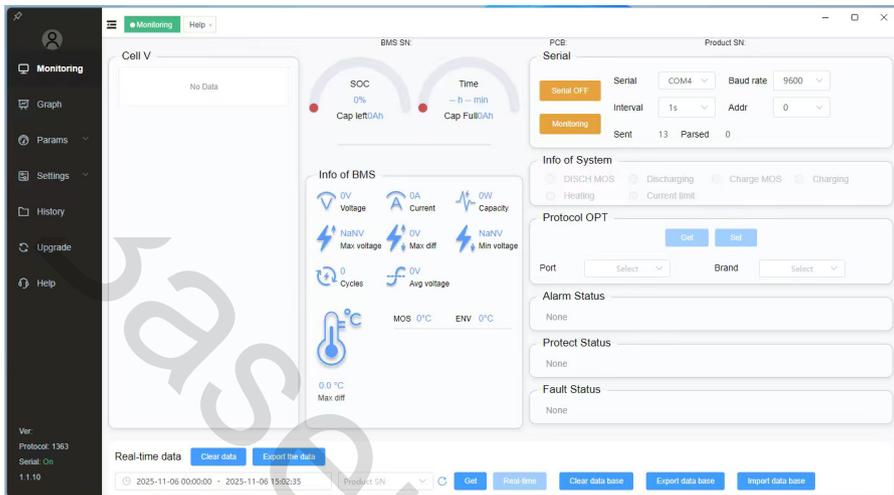
Firstly, connect the USB to RS485 Cable from Battery to the PC/Laptop, dip switch 1 on the front plate, download the PC software and open it.

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

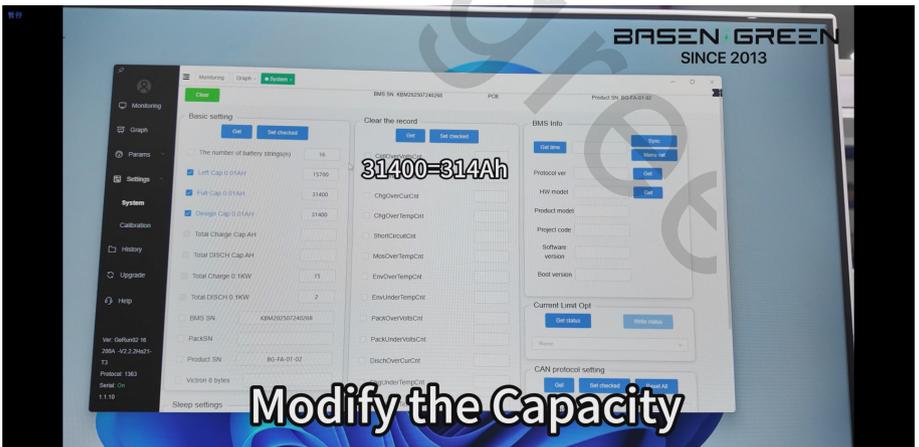
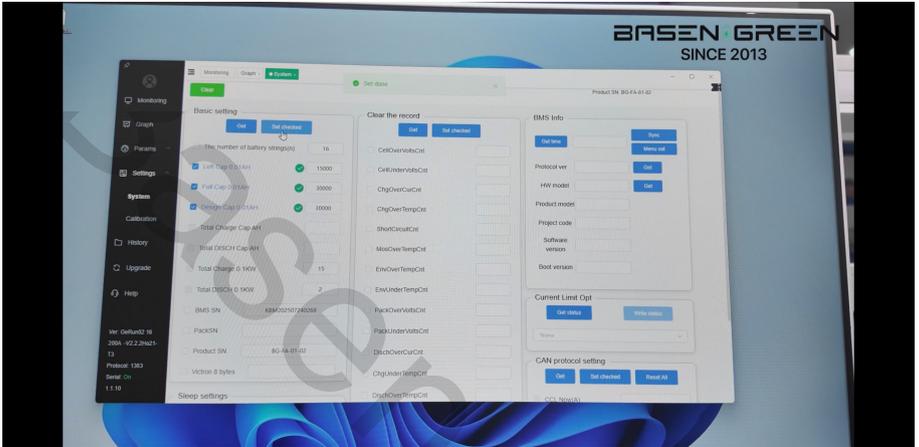


P.S: Please check the data on "single pack" page when only 1 pack is connected, the page of "Parallel group display" might show the nonsense characters.





Note: "Design Cap" means the rated capacity, the "Full Cap" means the actual full charge capacity, and "Left Cap" means the remaining capacity. For example, if the capacity is set to be 300 AH, but the actual battery capacity is 314 AH, modify the "Design Cap" to "31400" first, then modify the "Full Cap" to "31400", and modify the "Left Cap" to "15700"(Based on 50% SOC)



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

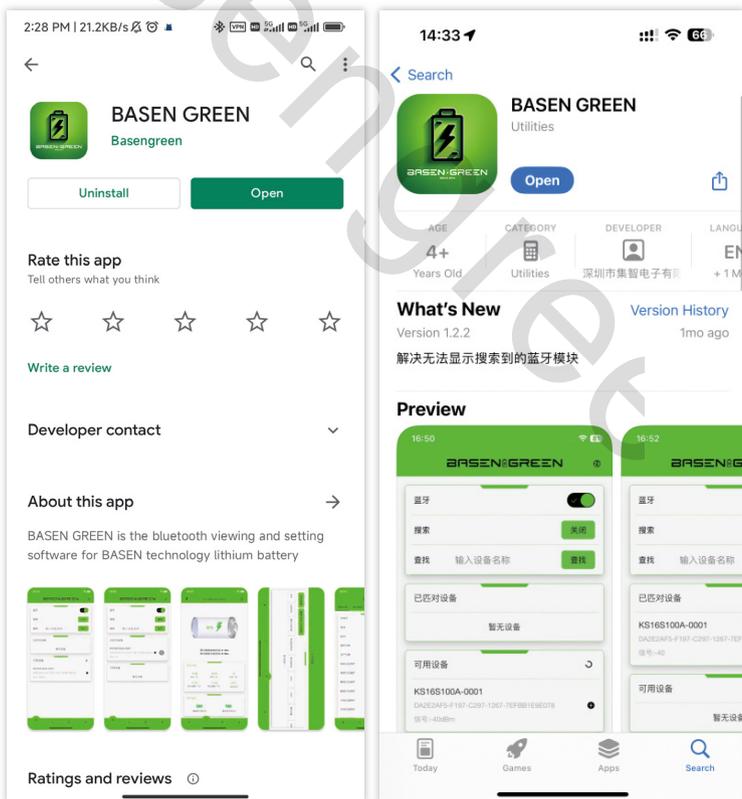
DIY KIT is equipped with a Bluetooth function, supports APP monitoring battery statuses. All information available in the battery, such as the state of charge, voltage, operating current, temperature, and other operating information are transmitted in real-time via the Bluetooth transmitter. The parameters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

Download: Android: "BASENGREEN" in Play Store

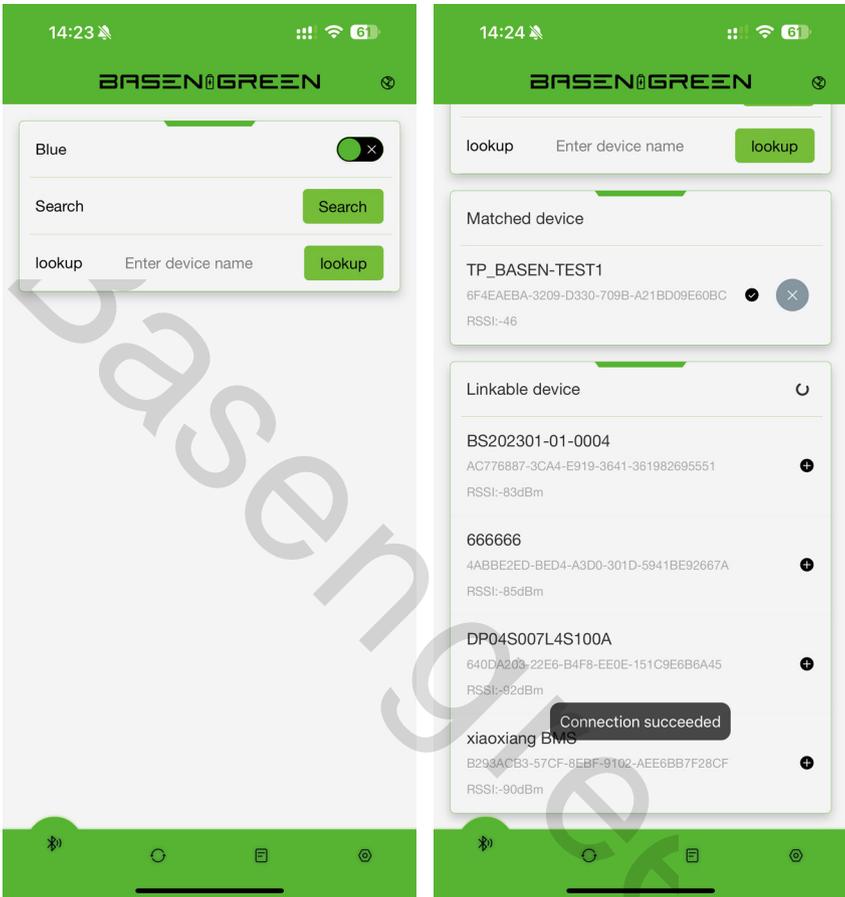
iOS: "BASENGREEN" in Apple Store

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'.



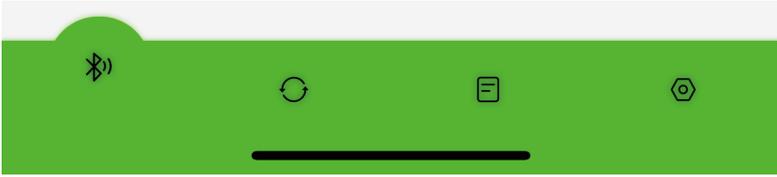
2. Turn on Bluetooth and search for the corresponding product's Bluetooth code



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

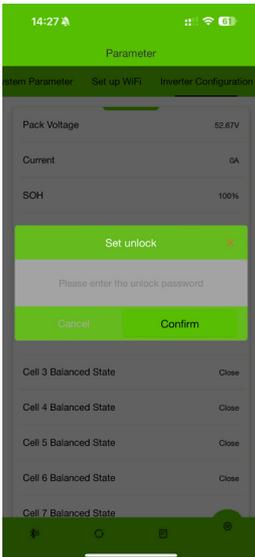
Set up WiFi: Setup WiFi function(Not available)

Inverter configuration: Communication protocol switching(Chapter 9.2)

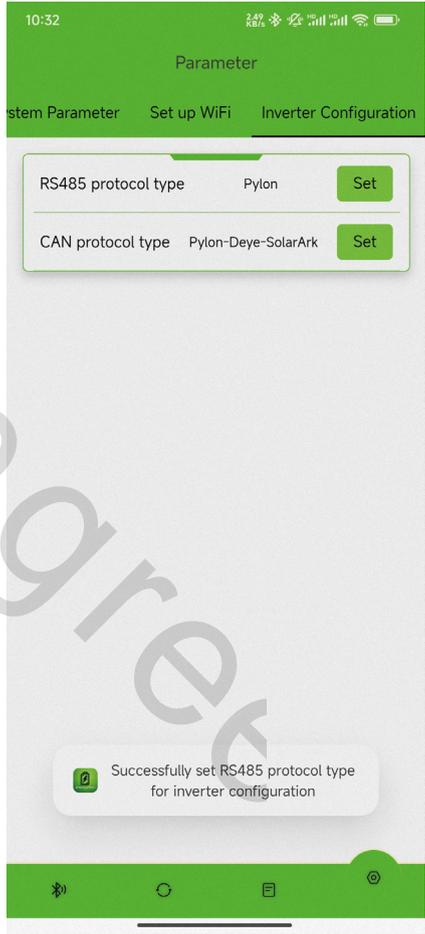
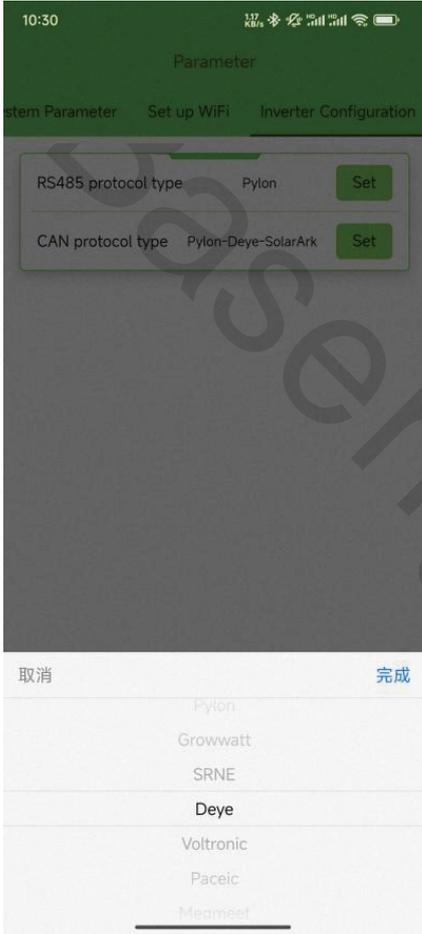
Operation of Communication Protocol Switch(Via Bluetooth App)

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

As the picture shown:

The screenshot shows the BMS monitoring software interface. The 'Brand' dropdown menu is open, and 'Victron' is selected. The interface displays various BMS parameters and settings.

Cell V	Voltage	Status
Cell 01	3.243 V	High
Cell 02	3.243 V	
Cell 03	3.241 V	Low
Cell 04	3.242 V	
Cell 05	3.243 V	
Cell 06	3.242 V	
Cell 07	3.243 V	
Cell 08	3.242 V	
Cell 09	3.241 V	
Cell 10	3.242 V	
Cell 11	3.242 V	
Cell 12	3.242 V	
Cell 13	3.242 V	
Cell 14	3.242 V	
Cell 15	3.242 V	
Cell 16	3.242 V	

Info of BMS

- Voltage: 51.67V
- Current: 0.00A
- Capacity: 0W
- Max voltage: 3.243V
- Max diff: 0.002V
- Min voltage: 3.241V
- Cycles: 0
- Avg voltage: 3.242V
- Temp: MOS 28.0°C, ENV 30.0°C, T1 27.0°C, T2 26.0°C, T3 26.0°C, T4 26.0°C
- Max diff: 1.0°C

Protocol OPT

Port: CAN, Brand: Select

Brand List: Victron, Pylon, Goodwe, Growatt, Volttronic, LXP, Deye, Solar

The screenshot shows the BMS monitoring software interface. The 'Brand' dropdown menu is open, and 'Pylon' is selected. The interface displays various BMS parameters and settings.

Cell V	Voltage	Status
Cell 01	3.243 V	High
Cell 02	3.243 V	
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Cell 06	3.242 V	
Cell 07	3.243 V	
Cell 08	3.242 V	
Cell 09	3.241 V	
Cell 10	3.242 V	
Cell 11	3.242 V	
Cell 12	3.242 V	
Cell 13	3.242 V	
Cell 14	3.242 V	
Cell 15	3.242 V	
Cell 16	3.242 V	

Info of BMS

- Voltage: 51.67V
- Current: 0.00A
- Capacity: 0W
- Max voltage: 3.243V
- Max diff: 0.002V
- Min voltage: 3.241V
- Cycles: 0
- Avg voltage: 3.242V
- Temp: MOS 28.0°C, ENV 30.0°C, T1 27.0°C, T2 26.0°C, T3 26.0°C, T4 26.0°C
- Max diff: 1.0°C

Protocol OPT

Port: 485, Brand: Select

Brand List: Pylon, SMK solar, VOLTTRONIC, GROWATT, SRNE, GP, HENG RUI, WYX ONK

Communication Protocol Switching via Screen

1. Introduction



There are 4 buttons on the side of screen

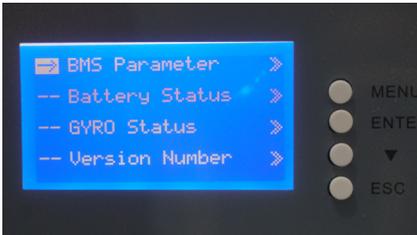
- MENU : Enter the "MENU" page
- ENTER : Confirm the change/enter the next page
 - ▼ : Select items/turn pages
- ESC : Back to the last page

2. Switch the communication protocol

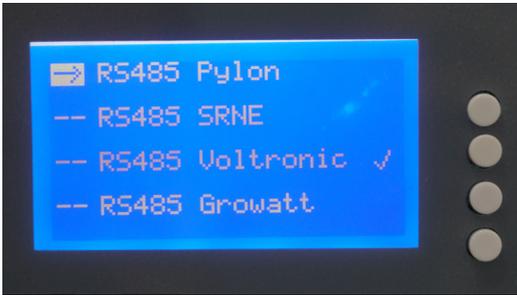
a. Turns on the battery, the screen will lights up and shows the data.



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



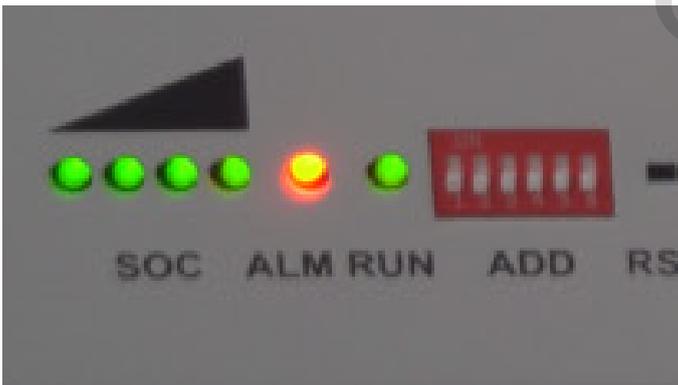
c. There are CAN/RS485 options, click the correct option based on the inverter model.
(Default communication protocol: Pylon)



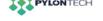
d. Choose the protocol and click the "ENTER" button.



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波特率	Interface Definition
维克托-Victron		CAN	Victron-CAN-V1.00- 211135	Active Upload	500K	7H、8L
古瑞瓦特-SPF Growatt-SPF		485	Growatt BMS-RS485-protocol-1xSoP_ESSL_V2.01 Growatt BMS-RS485-protocol-V2.0	MODBUS Standard protocols	9600	1B、2A
古瑞瓦特-SPF Growatt-SPF		CAN	Growatt BMS CAN-Bus-protocol-low-voltage-V1.05	Active Upload	500K	4H、5L
古瑞瓦特-SPH Growatt-SPF		CAN	Growatt BMS communication protocol of growatt low voltage-V1.01	Active Upload	500K	4H、5L
德业 Deye		CAN	Deye LV-CAN communication protocol	Active Upload	500K	4H、5L
德业 Deye		485	485 Modbus Protocol(4)-deye	MODBUS protocols	9600	1B、2A
高科-Solar		CAN	Growatt BMS CAN-Bus-protocol-low-voltage-V1.05	Active Upload	500K	4H、5L
固德威-Goodwe		CAN	Goodwe-CAN-V1.7-220228-SolarinverterFamily-EN	Active Upload	500K	4H、5L
日月元-Voltronic Power		485	Voltronic Power-485-V1.03-200325	MODBUS protocols	9600	3B、5A
首航-SOFAR		CAN	SOFAR-CAN-V1.00-211117-Rev6	Active Upload	500K	1H、2L
锦浪-Solis		CAN	Solis-CAN-V1.0-191228-lowVoltage	Active Upload	500K	4H、5L
鹏城-Luxpower		CAN	Luxpowertek Battery CAN Protocol -2021	Active Upload	500K	4H、3L
派能-Pylontech		485	Pylon-485-V3.5-161216-low voltage protocol	1363	115200	1B、2A
派能-Pylontech		485	Pylon-485-V3.5-161216-low voltage protocol	1363	9600	1B、2A
派能-Pylontech		CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
硕日-Srne		485	shuori BMS Modbus Protocol for RS485 V1.3(2020-11-24)	MODBUS	9600	7A、8B
美世乐 Must		CAN	PV1800F-CAN communication Protocol1.04.04	Active Upload	100K	6H、5L
艾思玛 SMA		CAN	SMA-CAN-V1.0.0-210630-FSS - ConnectingBat-TI-en-20W	Active Upload	500K	4H、5L
阳光电源 SUNGROW		CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
爱士维 AISWEI		CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
英威腾 INVT		CAN	Pylon-CAN-V1.2- 180408 -lowVoltage	Active Upload	500K	4H、5L
科士达 KSTAR		CAN	Kstar_CAN_Protocol-V1.11	Active Upload	500K	4H、5L
艾伏 Afore		CAN	Afore Communication Protocol CAN Bus Version V1.02_20210104	Active Upload	500K	4H、5L
索罗德-SOROTEC		CAN	CAN Protocol 1.0(SOROTEC Protocol)	MODBUS Standard protocols	500K	4H、5L
索罗德 SOROTEC		485	Protocol between Sorotec Inverter and Lithium Battery (RS485)	Active Upload	500K	1B、2A
SOL-ARK		CAN	Sol-Ark CAN Bus Protocol V1.2.pdf4-25-22		500K	4H、5L
迈格瑞能 MEGAREVO		CAN	Shenzhen MEGAREVO Hybrid Inverter-5K BMS Protocol V1.01	Active Upload	500K	4H、5L
MPP Solar		485	BMS 485 communication protocol 20200325(2)	MODBUS	9600	1B、2A
拓宝-TBB		CAN	CAN BUS Protocol of TBB Lithium Battery BMS Platform V 1.1	Active Upload	500K	4H、5L
盛能杰-Senergy		CAN	SenergyINV&BMS_CAN_Protocols	Active Upload		4H、5L

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