

BRSENIGREEN

# 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:**

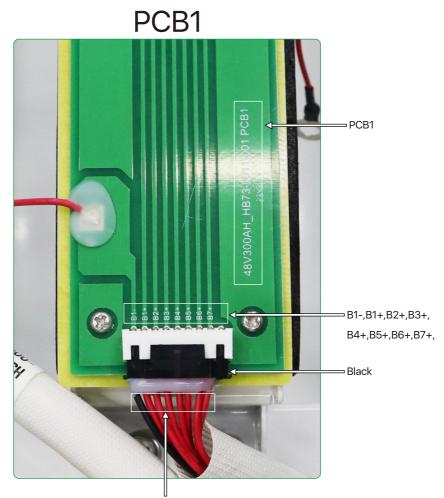
Read these instructions carefully before beginning assembly. Failure to follow these instructions may result in serious injury.

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.

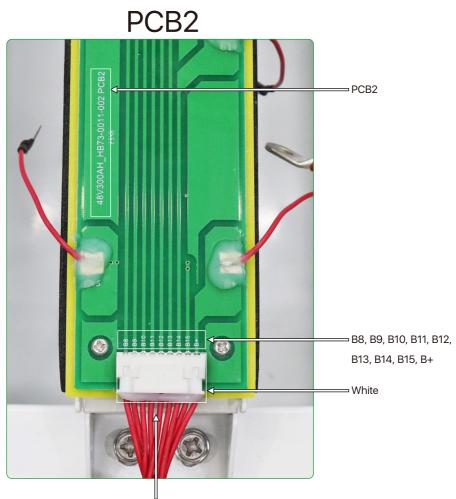




When receiving the 48V kits accessories, the customers need to check whether the collection line of PCB bars is wrong inserted or not, it means that PCB1 and PCB2 have assembly errors, PCB1 and PCB2 board are marked, as shown in the following picture:



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.

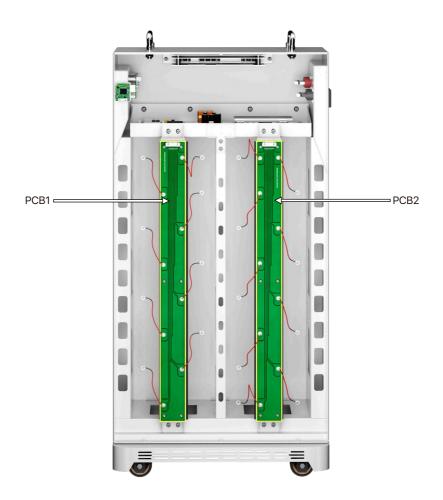




On PCB2 board, B8, B9, B10, B11, B12, B13, B14, B15 and B +. There are **9 lines** on the acquisition line terminals. PCB2 has no black wires, you must confirm the wiring before inserting, otherwise it will damage the BMS and we will not provide after-sales service.

# 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 bar\*2



**D** (Pre-installed) Bracket\*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 leads\*1



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



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

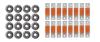


K Fiberglass Insulation plate\*24





L (Pre-installed) Removable wheels\*4



**M** Nuts\*32 Flexible busbar\*16



Inverter communication cable\*1



O M8\*12mm combination screws\*2



P Expansion bolts\*10



USB-RS485 communication cable\*1

# **Recommended Tools**

Before installing the battery pack, the user needs to have the tools as following list:

Picture	ltem	Description
	Level	Make sure the bracket is properly installed
	Hammer Drill	Drill holes on the wall
7	Impact Wrench Set	Locking expansion bolts
	Electric Screwdriver	Wiring
5	Hammer	Hanging the bracket
1	Crimping Tool	Crimping tool for RJ45 terminal
	Crimping Plier	Crimping tool for insulated electric connectors
	Adjustable wrench	Loosening/tightening screws
<b>R</b>	Crimping Plier	Crimping tool for insulated electric connectors
	Adjustable wrench	Loosening/tightening screws





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





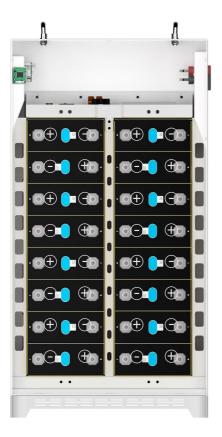
Put the fiberglass insulation plate (K)







Cells Voltage difference ≤ 20mV



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



Please install it horizontally, and then place it vertically after completing all installation work

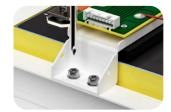




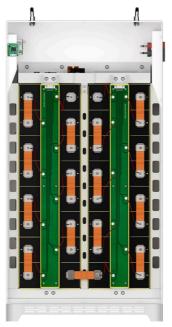


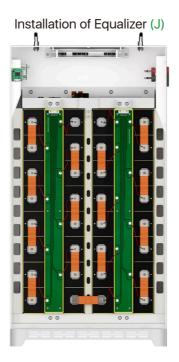






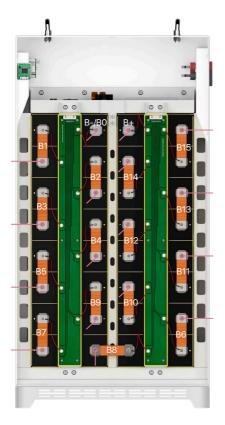
Link the PCB bars(C) and flexible busbar(M), then screw up(Torque: 5-6 Nm)





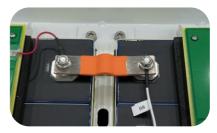


Linking Equalizer Cables (J)



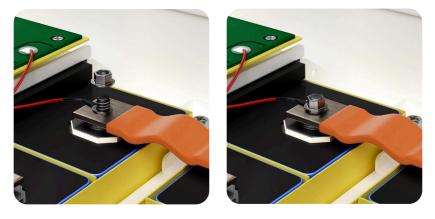


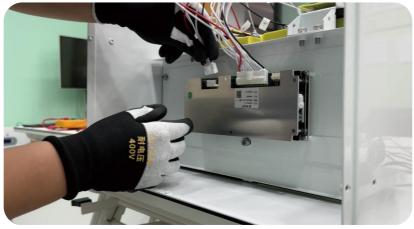
Each wire has a corresponding label



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

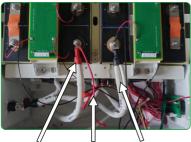
Important: Please connect all balancer's voltage sample cables correctly before plugging the connectors, incorrect wiring will damage the device.



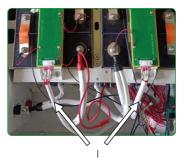


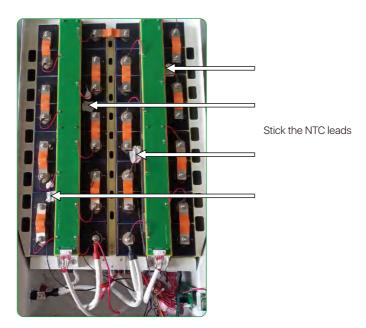


Connect the voltage acquisition lead to the balance bars, the P+ lead to the main positive, and Blead to the main negative. Then put the B+ lead on, and stick the temperature NTC leads(H) on the cells by heat proof tape, as shown in figure.



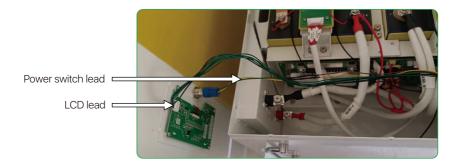
P+lead B+lead B-lead





15

Connect the power switch lead and LCD lead. Using the volt meter to test the battery voltage in main positive and negative terminals. It should be >52 V if everything is connected. Turn on the power switch, the LCD and the indicator lights up. The installation is successful, as shown in figure.





(The LCD and indicators lights up)

# Wall Mounted Installation

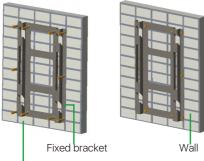
### Notice for Installation

- a. The wall for installation should be a solid brick or cement wall with a strong load-bearing capacity, and the thickness of the wall should not be less than 100mm.
- b. In indoor installation, it needs to leave enough space to be installed and operated easily and pay attention to ventilation. Do not place flammable materials around the battery.
- c. In outdoor installation, it needs to be surrounded by protective measures, and make a rain protection.

#### Installation Procedure

- a. Mark the drilling position using the wall mounting plate, and level using a spirit level.
- b. Place the wall mounting plate close to the wall firmly, mark the drilling position, and remove the wall mounting plate.
- c. Drill holes in the wall using the driller. The hole diameter is 12mm and the depth is 60mm.
- d. Fix the M8 Expansion bolts, tightening torque: 20N.m
- e. Lift the battery parallel to the ground, and hang the battery module on the bracket as shown in the following figure:

### Installation Diagram







Expansion Bolts

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

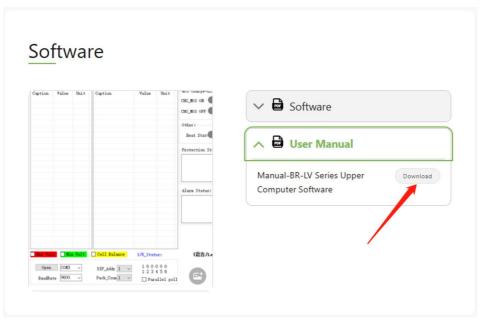
		4-6	BIT		
Address	Di	p Switch	Position		Illustration
Address	#1	#2	#3	#4	Illustration
0	OFF	OFF	OFF	OFF	ON L3 1 2 3 4
1	ON	OFF	OFF	OFF	ON L3 1 2 3 4
2	OFF	ON	OFF	OFF	ON L3 1 2 3 4
3	ON	ON	OFF	OFF	ON L3
4	OFF	OFF	ON	OFF	ON L3
5	ON	OFF	ON	OFF	ON L3
6	OFF	ON	ON	OFF	ON L3
7	ON	ON	ON	OFF	ON L3 1 2 3 4
8	OFF	OFF	OFF	ON	ON L3
9	ON	OFF	OFF	ON	ON L3
10	OFF	ON	OFF	ON	ON L3
11	ON	ON	OFF	ON	ON L3 1 2 3 4
12	OFF	OFF	ON	ON	ON L3 1 2 3 4
13	ON	OFF	ON	ON	ON L3 1 2 3 4
14	OFF	ON	ON	ON	ON L3 1 2 3 4
15	ON	ON	ON	ON	ON L3

# **Operation of Upper System**

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

	DOW	NLOAD CENTER			
Residential Energy Storage Battery	LiFePO4 Golf Cart Battery	12V/24V LiFePO4 Battery	DIY Kit	Brochure	Software
App for Android	V 🖨 Bluetooth file download		Na ki se energe Sakar d Han se Annee Annee Charles pil	Software  BR-HV (High Voltage) Series  Upper Computer Software - V11.80-100  BR-HV (High Voltage) Series  Upper Computer Driver  BR-LV Series Upper Computer Driver	Denninad Denninad Denninad

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.

ADD

IF

ON



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

ST

JN

ALM

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.

空	参数	配置	存储			
显示	多组显示	显示记录	并机分组显示 并	机分组数据存储		
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<mark>大电)</mark> 闭串	COM3		〕单体匀衡 拨码地址 1 ∨ Pack数量 1 ∨	12345	3 L	



			STORAGE and Parallel group	display P	arallel	oacket data storage	
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8 9 10 11 12 13 14 15 16 4 V_SUM V_SUM V_SUM V_MAX V_MAX V_MIN V_DIFF	3, 285 3, 284 3, 284 3, 285 3, 285 3, 285 3, 284 3, 284 3, 284 52, 55 3, 284 3, 284 3, 286 3, 284 0, 002	A A A A A A A A A A A A A A A A A A A	TENP3 TENP4 MOS_Temp Ambient_Temp Current SOH	28 28 27 29 0.00 100.00%	# > ddd	Protection Statur:	StriP-coul
Vex Vol Open BaudRa	_	~	Cell Balance DIP_Addr 1 ~ Pack_Coun 1 ~	S/R_Statu 100 123 □ Par:	000		

inglePack Mu		cord Par	allel group disp	lay Paralle	el packet da	ata storage
0 1 2						Address 0 v CAN type Pylon v Read Set
						Now address: 1 485 type Pylon v Read Set
ntervals 4000	÷ Po	oll time 10	100 🔹 Read	Count: 13		Real-time data read successfully
Pack Volt 52 Remain_Ca 28	0.00 Ah Fu	k Curr	0.00 A SOC	100 % S	0 Times	CHS MOS On DISS MOS On Charge Discha Battery system Valt S2 97 V Total_Cap 040 Ah SOC 99 M
Caption	Value	Unit				Volt 02.01 V Istal_cap 000 An SUC 00 W
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Min_Vol	3.292	11			100 %	Curr o K Menain_cap 000 An
Vol_Diff	0.045	¥	-			
						Max_Cell_V 3353 nV Max_Batt_T 18.0 °C Max_Amb_T 19.0 °C
Vol 01	3.301	V	Caption	Value	Unit	
Vol 02	3.334	V	-	19.0	C	Min Cell V 3291 nV Min Batt T 15.0 °C Min Amb T 19.0 °C
Vol 03	3.298	V	Amb_Temp		10	MILCONT, WARDAILT C MILCHNOT
Vol 04	3.334	V	MOS_Temp	15.0	U	
Vol 05	3, 335	V				Charge 🜑 Discharge 🜑 Volt high alarm 🜑 Volt low alarm
Vol 06	3, 300	V	Max_Temp	16.0	01	
Vol 07	3, 336	V	Min_Temp	15.0	03	á] arm
Vol 08	3, 298	V	Temp_Diff	1.0	C	
Vol 09	3, 294	v				
Vol 10	3, 337	V	Temp 01	16.0	C	· · · · · · · · · · · · · · · · · · ·
Vol 11	3, 292	v	Temp 02	16.0	C	
Vol 12	3, 336	v	Temp 03	15.0	Ċ	Protect
Vol 13	3, 294	v	Temp 04	16.0	ť	^
Vol 14	3.293	v				
Vol 15	3, 296	v	-			
Vol 15 Vol 16	3.295	v	-			Fault
	5.295	v				

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(280000mAh).

O PARAE CONFIG ST			
Common Config 3 chanc	e full capcity		
	nAH Write 4 Write	Count15S(555) ~ Vrite	
	sAH Write	7 Read	
	nAH Write Read	Sleep	
PCB Barcode (S chang	e Vrite Cle	ar	
Norminal ca	© Write	Read Write	
Adjust Clear Log Swith Onlin	_Updata Param1 Param2 Anti-theft	Batt Code Enable switch	
	Zero_Calib	1	
Charge: (1-5000mA) 100			
Charge: ()6000sA) 500	0 🔍 Adjust Beset		
DisCharge: (1-5000mA) 100	0 💠 Adjust Reset		
DisCharge: (>5000mA) 500	0 🔹 Adjust Reset		
Calibration Cell Voltage	All Calibration		
Mea_Nus 1 ‡ 2500 sV	16 🚖 String		
1 🗘 2500 eV	Calibrate Point & 2600 sV		
Calibrate Foint A Foint B			
Foint A Foint B	Calibrate Foint B 3300 nV		Clear
			(2) password: "6666
			or "888888"
		1	Write Nominal Capacity OK
		Status	
			Change Password ******
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Status: communication On-Comp, addr-[BMS: HI-FI005-B2002105-91.0.3 [[PLB Barcode: 18123076

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**

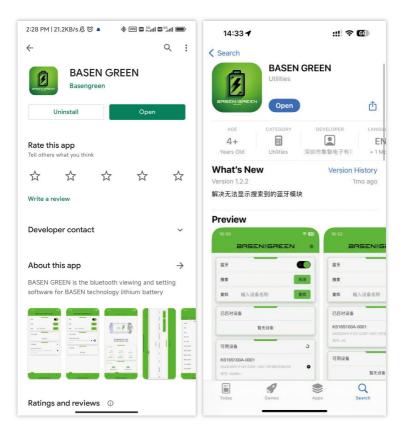
DIY KIT is equipped with a Bluetooth function, supports APP monitoring battery statuses. All information available in the battery, such as the state of charge, voltage, operating current, temperature, and other operating information are transmitted in real-time via the Bluetooth transmitter. The parameters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

## Download: Android: "BASENGREEN" in Play Store

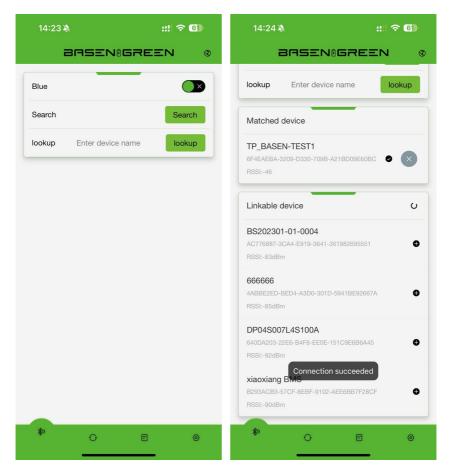
iOS: "BASENGREEN" in Apple Store

## 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)

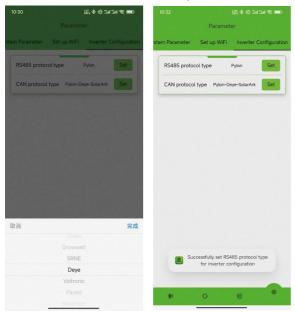
Inverter configuration: Communication protocol switching(Chapter 9.2)

## 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

Family_BMS-V1.1.635-15	- 0
NFO PARAM CONFIG STORAGE SingleFack MultiPacks Record Parallel group display Parallel packet data	
0         1         2         3         4         5         6         7         8         9         10         11         12         13         14         15           16         17         18         19         20         21         22         23         24         25         26         27         28         29         30         31	Now address: 405 type (forward) Wictron Geologie
Intervals 4000 © Fall time 1000 © Read Count: Pack Volt 0 V Pack Curr 0 A SOC 0 \$ SOH 0 \$ Remain_Ca 0 Ah Full_Cap 0 Ah Cycles 0 Times -	Status: Progling Sifu NTAR CHE_MES_0W DISO DISO Regiment Agrice Discharge
Caption Value Unit	Battery system           Valt         V           Valt         V           Tetal_Cop         Ab           Res_Call_V         AV           Aver         Valt high alors
	Tratest
	Fault

# **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 **V**, enter the "CommType Set" page.



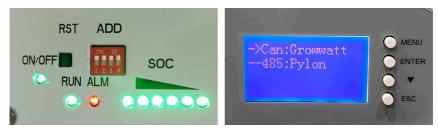
c. There are CAN/RS485 options, click the correct option based on the inverter model. (Default communication protocol: Pylon)



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**

Invert	er Brand	Communication method	Protocol Name	Protocol Remarks	Communication Potter rate	Interface Definition
维克托-Victron	wictron 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	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	GOODHE	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	SCIFAR	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		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
素瑞德-SOROTEC	SOROLEC Power Solutions Expert	CAN	CAN Protocol 1.0(SOROTEC Protocol)	MODBUS Standard protocols	500K	4H、5L
素瑞德 SOROTEC	SOROCEC Power Solutions Expert	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	Wilsolar	485	BMS 485 communication protocol 20200325(2)	MODBUS	9600	1B、2A
拓宝-TBB	///// THE POHEN	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

**Need additional information?** 

Just Contact BASEN!

# BRSENIGREEN

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