

Battery Monitor V2.1.12

Operating instructions of the upper monitor

1、 Unpress the upper monitor file

D BatteryMonitor V2.1.12_20并_中性

2、 Open the upper monitor software

- 1) Double-click to open the decompression file
- 2) Double-click to open the drawing upper monitor executable, Figure 2-1

名称	修改日期	类型	大小
agreement	2023/3/20 13:46	文件夹	
📒 de	2023/3/20 13:46	文件夹	
🔤 es	2023/3/20 13:46	文件夹	
🚬 ja	2023/3/20 13:46	文件夹	
Languages	2023/3/20 13:46	文件夹	
📁 logs	2023/3/20 13:46	文件夹	
RealTimeRecord	2023/3/20 13:46	文件夹	
🗖 ru	2023/3/20 13:46	文件夹	
Tu	2023/3/20 13:46 2023/3/20 13:45	文件夹 应用程序	2,091 KB
 Image: second se	2023/3/20 13:46 2023/3/20 13:45 2023/3/20 13:45	文件夹 应用程序 XML Configurati	2,091 KB 3 KB
 ru BatteryMonitor BatteryMonitor.exe BatteryMonitor.pdb 	2023/3/20 13:46 2023/3/20 13:45 2023/3/20 13:45 2023/3/20 13:45	文件夹 应用程序 XML Configurati PDB 文件	2,091 KB 3 KB 522 KB
 ru BatteryMonitor BatteryMonitor.exe BatteryMonitor.pdb BMS Upper Computer Guidance V2.1.9 	2023/3/20 13:46 2023/3/20 13:45 2023/3/20 13:45 2023/3/20 13:45 2023/3/20 13:45	文件夹 应用程序 XML Configurati PDB 文件 WPS PDF 文档	2,091 KB 3 KB 522 KB 3,922 KB
 ru BatteryMonitor BatteryMonitor.exe BatteryMonitor.pdb BMS Upper Computer Guidance V2.1.9 DevExpress.Data.v15.2.dll 	2023/3/20 13:46 2023/3/20 13:45 2023/3/20 13:45 2023/3/20 13:45 2023/3/20 13:45 2023/3/20 13:45	文件夹 应用程序 XML Configurati PDB 文件 WPS PDF 文档 应用程序扩展	2,091 KB 3 KB 522 KB 3,922 KB 5,082 KB
 ru BatteryMonitor BatteryMonitor.exe BatteryMonitor.pdb BMS Upper Computer Guidance V2.1.9 DevExpress.Data.v15.2.dll DevExpress.Data.v15.2 	2023/3/20 13:46 2023/3/20 13:45 2023/3/20 13:45 2023/3/20 13:45 2023/3/20 13:45 2023/3/20 13:45	文件夹 应用程序 XML Configurati PDB 文件 WPS PDF 文档 应用程序扩展 XML 文件	2,091 KB 3 KB 522 KB 3,922 KB 5,082 KB 1,098 KB

Figure 2-1



3. Load the upper monitor protocol

1) Open the upper monitor, click "Import Protocol", and select "Agreement" in the

upper monitor file to open, Figure 3-1

Battery Monitor V2.1.12	l parameter 🔺 Upload p	arameter 🕴 🗹 Real time 🕴	Communication log	d 🐶 History record 🕴 🐻 Calibra	te 🔒 Login 💷 SN 👱	Finware Update 📔 Sava layout		0 8 2
Pack00							Protocol name: BMS-	IGS BMS
Cell voltage(V) Max voltage: Max voltage 0.000 V	Min voltage: Min voltage 0.000 V	4 30 習 打开	0 50 60 70	Battery voltage	Battery infomation	acity 0.00 Ah	Protocol version: 2.0 Port config Port num Baud rate	COMB •
Voltage difference	7.000mV	$\leftarrow \rightarrow \lor \uparrow$	🛯 « 上位机 › BatteryMonitor V2.1.12	_20# ~ 〇 在	BatteryMonitor V2.1.1 🧳	P)%	Connect	Break
Cell01	Cell02	组织 * 新建文件夹			≣ • □	Ah	– Target config 🛛 🔲 Pack	addr Setting
0.000 V	0.000 V	> 🌰 OneDrive	名称	修改日期	美型 大小	nes	Pack 1	Pack 11
Cell03	Cell04		📁 Agreement	2023/3/20 15:43	文件夹	5%	Pack 2	Pack 12
0.000 V	0.000 V	🔚 東西 🛷	📁 de	2023/3/20 13:46	文件夹		Pack 3	Pack 13
Cell05 0.000 V	Cell06 0.000 V	🛓 下戦 🛷	📒 es	2023/3/20 13:46	文件夹	-	Dest d	Desk 14
Call07	C-1109	🔤 文档 🛷	📁 ja	2023/3/20 13:46	文件夹	·	PdCK 4	Pack 14
0.000 V	0.000 V	🔀 图片 🛷	📁 Languages	2023/3/20 13:46	文件夹)*C	Pack 5	Pack 15
Cell09	Cell10	🕑 音乐 🔹 🖈	📒 logs	2023/3/20 17:33	文件夹) TC	Pack 6	Pack 16
0.000 V	0.000 V	🛃 初版 📌	📁 RealTimeRecord	2023/3/20 13:46	文件夹	21	Pack 7	Pack 17
Cell11	Cell12	📜 产品中心					Pack 8	Pack 18
0.000 V	0.000 V	文件	丰名(N):	~ pr	otocol file(*.xml)		Pack 9	Pack 19
Cell13 0.000 V	Cell14 0.000 V			L	打开(Q) 取消) TC	Pack 10	Pack 20
Cell15	Cell16	BMS information			(Power temp	0.0 °C	Pack total	0
0.000 V	0.000 V	Manufacturer: CAN:PN Software Ver: 16.4	VG_DYE_Luxp_TBB Part model: Protocol version	un: 2.0			Cycle refresh	Multiple
Off line TXD	О ок	O ERR (〇 C:\Users\user\Desktop\上位制	\\BatteryMonitor V2.1.12_20井_中	Protect Warn N	ormal Color mark-Upper lin	nit Lower limit Unknown	RealTime Record 0

Figure 3-1

2) Select the protocol file corresponding to the string, the prefix EN corresponds to the English protocol, the prefix without EN corresponds to the English protocol (example: 16 string English protocol-----16S_V20_ADDR_EN), click open, Figure 3-2

ick00								Protocol name: BMS-16	s BM
Cell voltage(V) Max voltage: C9 Max voltage 0.000 V	- Min voltage: C16 Min voltage 0.000 V	40 30 10开	50 60 70		Battery in	fomation — ning capacity ×	y 0.00 Ah	Protocol version: 2.0 Port config Port num Baud rate 19	DMB ▼ 1200 ▼
Voltage difference	7.000mV	$\leftrightarrow \rightarrow \sim \uparrow$	≪ BatteryMonitor V2.1.12 → Agreement	~ C	在 Agreement 中搜索	P	1%	Connect	
Call01	Call02	组织 • 新建文件夹			≣ •		Ah	– Target config 🛛 🔲 Pack ad	ldr Sett
0.000 V	0.000 V	> 🔷 OneDrive	名称	修改日期	类型	大小	res)	Pack 1	Pack 11
Cell03 0.000 V	Cell04 0.000 V	-	135_V20_ADDR_EN	2022/8/31 14:29	XML 文件		*	Pack 2	Pack 12
Cell05	Cell06	▲ 下就 *	145_V20_ADDR	2022/8/31 14:25 2022/8/31 14:29	XML 文件 XML 文件		• •	Pack 3	Pack 13
Call07	Callon	📓 文档 🛷	155_V20_ADDR	2022/8/31 14:25	XML 文件			Pack 4	Pack 14
0.000 V	0.000 V	🔀 图片 🛷	155_V20_ADDR_EN	2022/8/31 14:29	XML 文件		°C)	Pack 5	Pack 15
Cell09	Cell10	🚱 音乐 🔹 🖈	165_V20_ADDR	2022/10/9 15:28	XML 文件		rc)	Pack 6	Pack 16
0.000 V	0.000 V	2 视频 🖈	165_V20_ADDR_EN	2022/8/31 14:29	XML文件		rc)	Pack 7	Pack 17
Cell11 0.000 V	Cell12 0.000 V	_ 产品中心 文件	===(N): 165_V20_ADDR_EN	~	protocol file(*.xml)	- 	"C	Pack 8	Pack 18
Cell13 0.000 V	Cell14 0.000 V				打开(2)	10096		Pack 9	Pack 19
Cell15	Cell16	-BMS information	G DVE Luxe TRR Rat model:		Power	temp (0.0 °C	Pack total	0
0.000 V	0.000 V	Manufacturer: CAN:PN Software Ver: 16.4	G_DYE_Luxp_TBB Part model: Protocol version: 2.0					Oucle refrech	

Figure 3-2



3) Click to determine, Figure 3-3

k00				Protocol name: BMS-165
Il voltage(V) Max voltage: Min voltage: Max voltage: Min voltage: 0.000 V 0.000 V otage difference 7.000mV 0.000 V 0.000 V 0.000 V 0.000 V	40 50 60 70 30 Soc: 53.9 % Mode: Oticcharge switch Ocharging switch Warn and Protect	Battery voltage 0.00V 0.00V 0.00A 0.00A file:CUber/user/Destop/LEBI/BatteryMo 00/-140/00/EBI/BatteryMo 00/-140/00/EBI/BatteryMo 00/-140/00/EBI/BatteryMo 00/-120/-120/-120/-120/-120/-120/-120/-1	Battery Information Remaining capacity 0.00 Ah (Remaining capacity 0.00 Ah) SOC 0.0 % Rated capacity 0.00 Ah (Battery cycles 0 times) X 0.0 % age 0.00 V re information remp1 0.0 % (Battery temp3 0.0 %) (Battery temp4 0.0 %) (Ambient temp 0.0 %)	
Cell15 0.000 V 0.000 V	Manufacturer: CAN:PNG_DYE_Luxp_TBB Part mode Software Ver: 164 Protectly	el: rersion: 20		Pack total 0

Figure 3-3

4. Communication port configuration

1) Select serial port (upper monitor automatic identification USB to 485 serial port, string slogan automatic recognition)

- 2) Baud rate: 19200
- 3) Click on the connection, Figure 4-1

Battery Monitor V2.1.12			
🛃 Import Protocol 🛛 📴 Load parameter 🔹 Up	ad parameter 🛛 🔀 Real time 🛛 🖤 Communication log 🛛 🖤 Real Time Record 🖤 History record 🖡 🖏 Calibrate	🌡 🕹 Login 🔢 SN 🙎 Firware Update 📔 Sava layout	
Pack00			Protocol name: BMS-165 BMS
Cell voltage(V) 最高: Max voltage 0000 V	40 50 60 30 50 60 70 0.00V	Remaining capacity 0.00 Ah	Protocol version: 2.0 (2) Port config Port num COM8 • Baud rate 1920 •
Voltage difference 0.000m	20, soc: 0 10 Mode: 0-90 Current	SOC 0.0 %) (Rated capacity 0.00 Ah)	Connect Break
Cell03 0.000 V Cell04 0.000 V Cell05 Cell05	System status Ordiochange switch Ocurrent limit witch Offengerstature control switch	Battery cycles 0 times SOH 0.0 % Bus voltage 0.00 V	Pack 1 Pack 1 Pack 1 Pack 1 Pack 2 Pack 2 Pack 2 Pack 1 Pack 3 Pa
0.000 V 0.000 V Cell08 0.000 V 0.000 V	Warn and Protect	Temperature infomation Battery temp1 0.0 °C	Pack 4 Pack 14 Pack 5 Pack 15
Cell09 0.000 V Cell11 0.000 V Cell12 0.000 V		Battery temp2 0.0 °C Battery temp3 0.0 °C	Pack 7 Pack 17 Pack 8 Pack 18
Cell13 0.000 V Cell14 0.000 V	BMS information	Ambient temp 0.0 °C	Pack 9 Pack 19 Pack 10 Pack 20
Cell15 0.000 V 0.000 V	Manufacturer: Part model: Software Ver: Protocol version:		Pack total 0 Cycle refresh Multiple
	C\Users\user\Desktop_t@fi\BatteryMonitor V2.1.12_20#_#	Protect Warn Normal Color mark-Upper lin	nit Lower limit Unknown RealTime Record 0

Figure 4-1



4) After a successful connection, the upper monitor will displays the battery

data,Figure 4-2

к00			Protocol name: BMS-16S	B
I voltage(V) Max voltage: C9 Max voltage 3.301 V Voltage difference	Min voltage: C16 Min voltage 3.294 V 7.000mV	40 50 60 30 70 70 20 soc: 3999 % 50 Current Current Startery voltage 52.76V	Protocol version: 2.0 Port config Port num Baud rate Connect Connect Deductd	AB V DO V Break
Cell01 3.300 V Cell03 3.300 V Cell05 3.296 V	Cell02 3.299 V Cell04 3.299 V Cell06 3.297 V	0 0 <td>Pack 3 Pack 4</td> <td>Pack 11 Pack 12 Pack 13 Pack 14</td>	Pack 3 Pack 4	Pack 11 Pack 12 Pack 13 Pack 14
Cell07 3.297 V Cell09 3.301 V	Cell08 3.297 V Cell10 3.295 V Cell12	Warn and Protect Battery temp1 19.1 °C Battery temp2 19.3 °C Battery temp3 19.7 °C Battery temp3 19.7 °C Battery temp3 19.7 °C Battery temp3 19.7 °C	Pack 5 Pack 6 Pack 7 Pack 8	Pack 15 Pack 16 Pack 17 Pack 18
Cell13 3.297 V Cell15 3.297 V	Cell14 3.300 V Cell16 3.294 V	BMS informations BMS in	Pack 9 Pack 10 Pack total	Pack 19 Pack 20 0

Figure 4-2

5、Login

Username:admin

Password:admin

Figure 5-1

Battery Monitor V2.1.12
😰 impert hindson 🕑 Load parameter 🔺 Upload parameter 🖗 Real time 🗣 Communication log 💚 Real Time Record 🖤 History record 🗟 Cathrate 🌡 Logn 📶 Di 🙎 Timuse Uplote 💾 Sava Jayout CAL + 45 +
Pack00 Protocol name: BMS-165 BMS
Cell voltage (1) Mix voltage: C16 Mix voltage:

Figure 5-1



6、Load parameters and upload parameters

Load parameters: Download the parameters from the upper monitor to the BMS Upload parameters: From the BMS upload parameters to the upper monitor

6.1、 Load parameters

 For the first load parameters, you need to "upload parameters" and then "close", Figure 6-1

Battery Monitor V2.1.12	- 6 - 2
🛿 👷 Import Protocol 📴 Load parameter 🔺 Upload parameter 🔄 Real time 🕸 Communication log 🕸 RealTime Record 🕸 History record 🔯 Calibrate 🔒 Login 📖 SN 🙎 Finance Uplate. 🗎 Sava layout 7	CAN * 485 *
Pack00	Protocol name: BMS-165 BMS
Cell voltage(V) Min voltage: C16 Min voltage 3.201 V Min voltage C1 C1 C2 C2 C2 C2 C2 C2 C2 C2	Protocol version: 2.0 (2) Port config Port num Baut rate Connect Break
Voltage difference 7.000mV Allow Num Name Value Unit Operate Gel00 2.298 V 0 Monomer high v3.500 V Download Temperature sensor invalidation Diversities Gel00 Cel004 3.390 V 3.299 V 1 Monomer high v3.500 V Download Gel005 Cel005 3.297 V 2 Monomer low pr 2.900 V Download Diversities Cel005 3.297 V 3 Monomer low pr 3.100 V Download Cel104 Diversities Salor V Cel005 2.297 V 3 Monomer low pr 3.100 V Download Cel104 Diversities Gel001 Cel102 S Monomer overv: 3.400 V Download Chars parameter Chars parameter Gel111 Cel112 Cel112 G Monomer overv: 3.400 V Download Chars parameter	Target config Pack addr Setting
3297 V 3299 V BMS informationg Cell15 Cell16 BMS informationg 3297 V 3294 V Power temp 19.8 °C Software Ver: 16.4	Pack 100 Pack total 0 Cycle refresh Multiple
Online TXD OK ERR OCLUSers/Wer/Desktop/LE@FijkBatteryMonitor V2.1.12_20Ff_eft Protect Warn Normal Color mark-Upper lim	it Lower limit Unknown RealTime Record 0

Figure 6-1

2) Click "Load Parameters" to select the parameter document to load, Figure 6-2

Pack00	anameter y 🔄 near anne y		grinstory record ; - Canorate	2 Secolar Indi 214 Z		Protocol name: BMS-165 BI
Cell voltage(V) Max voltage: C9 Max voltage: C9 Max voltage 3.301 V Voltage difference 7.000mV	30 ■ 11 ← → ~ ↑	10 50 60 70 (* BMS程序 > 参数标准 > 家雄参数	Battery voltage	Battery infomation (Remaining capacit ン な話参数 中提家 の	ty 89.97 Ah	Protocol version: 2.0 Port config Port num Baud rate Connect Break
Cell01 3.299 V 3.297 V	组织 · 新建文件夹 · OneDrive	名称 ^	修改日期	 ■ • ■ ● 	20 Ah	- Target config Pack addr Se
Cell03 3.299 V 3.298 V Cell05 Cell05 Cell06 3.297 V	■ 桌面 * ↓ 下就 *	 8曲家儲参数 1103家儲参数-15S 1103家儲参数-16S 	2021/9/15 11:43 2021/9/15 11:45	XML文件 XML文件	11 12 11 2V	Pack 2 Pack 12 Pack 3 Pack 13
Cell07 3.297 V 3.297 V	□ 文档 ★ ■ 図片 ★ ● 音年 ◆	 ▲ 48200-165 ★ 家体参校-155 	2023/3/8 16:57 2021/7/15 14:33	XML文件 XML文件	11 11 °C	Pack 4 Pack 14 Pack 15 Pack 6 Pack 16
Cell09 Cell10 3.301 V 3.295 V Cell11 Cell12	 祝频 	03 0	2021/3/21 13:24	AIVIL 33+	v	Pack 7 Pack 17 Pack 8 Pack 18
3.297 V 3.297 V Cell13 3.297 V 3.300 V	*	件名(10): 家储参数-165	v par	ameter file(*.xml) ~ 打开(Q) 取消	2° *C	Pack 9 Pack 19 Pack 10 Pack 20
Cell15 3.297 V 3.294 V	Manufacturer: CAN: Software Ver: 16.4	NG_DYE_Luxp_TBB Part model: Protocol version:	2.0 3	Power temp	9.8 °C	Pack total 0 Cycle refresh Multiple



Figure 6-2

3) Click "Set All", the prompt box pop up, and then click "Close" to complete the configuration, Figure 6-3

ck00	Protocol name: BMS-165 BMS
Cell voltage() Max voltage: C9 Max voltage: C9 Min voltage: C10 Min voltage: C10	Protocol version: 2.0
3.301 V 3294 V Int parameter 1 Fuction switch	Connect Break
Cellor S200V Cello2 S205V Cello2 C	Target config Pack addr Setting Pack 1 Pack 11
Cellos Cellos Monomering p.340 Mon	Pack 2 Pack 12 Pack 3 Pack 13
2.6 W 3 Monomer low pr/3.10C Cancel 2 Close	Pack 4 Pack 14 Pack 15 Pack 15
Cellop Cellop 3201 V 3205 V 5 Monomer overvc 3.400 V Download Chars parameter	Pack 7 Pack 17
Cell 3 Cell 4 6 Monomer under 2700 V Download	Pack 8 Pack 18 Pack 19 Pack 19
3.209 3.300 Cell15 Cell16 3.297V 3.24M V Manufacturer: CANPNG DVE Luxp T88 Part model: 19.8 °C	Pack 10 Pack 20 Pack total 0
Software Ver: 16.4 Protocol version: 2.0	Cycle refresh Multiple

Figure 6-3

6.2 Modify parameters

- 1) Click "Upload parameters" to upload the parameters from BMS
- 2) Change the BMS parameters and functional switches as required
- 3) Click "Set all" to complete the modification, Figure 6-4

Note: Follow the order of the red font in the figure

k00	parameter i 🖉 kear ame i 🕭 communication of i 💩 kear i me kecon i 📥 upport kecon i 🦛 canotate i 🕲 com multi sa 🛣 upport com 🗖 saka adom c	Protocol name: BM	S-165 B M
All voltage(V)	Battery voltage Battery information	Protocol version: 2.0 Port config Port num	COMB
3.301 V 3.293 V Voltage difference 8.000mV	Swe so Set al 22 Ose Int parameter Num Name Value Unit Operate Voltage sensor invalidation	Baud rate Connect	19200 V Break
Cell01 Cell02 3.300 V Cell03 Cell04	Monomer high v3.500 V Download Temperature sensor invalidation U Current sensor invalidation	Pack 1	Pack 11
3.300 V 3.299 V Cell05 Cell06 3.296 V 3.297 V	2 Monomer low pr 2,900 V Download Button switch invalidation	Pack 3 Pack 4	Pack 12 Pack 13 Pack 14
Cell07 3.297 V 3.297 V Cell09 Cell10	4 Monomer overvc3.650 V Download	Pack 5 Pack 6	Pack 15 Pack 16
3.301 V 3.295 V Cell11 3.296 V 3.297 V	S Monomer overvc3.400 V Download 6 Monomer unden 2.700 V Download Model Download	Pack 7 Pack 8	Pack 17 Pack 18
Cell13 3.297 V 3.299 V Cell15 Cell16	BMS informations	Pack 9 Pack 10 Pack total	Pack 20
3.297 V 3.293 V	Manufacturer: CAMPNG DYE Luxp_TB8 Part model: Software Ver: 164 Protocol version: 2.0	Cycle refresh	Multiple



Figure6-4

7. Configuration of the communication protocol

1) Click the "CAN" drop-down box and select the corresponding CAN protocol

according to the inverter type, Figure 7-1

Note: The 485 protocol is self-adapted and does not require manual selection

For CAN, the protocol has 6 options:

protocol type	Supported inverter brand
	派能 PYLON、固德威 GOODWE、德业
FN-ODLI	Deye、鹏城 LUXPOWER、TBB
GRWT	古瑞瓦特 GrowattSPF、SPH
VCTR	Victron
SMA-SF	SMA、首航 SOFAR
GINL	锦浪 Solis
STUD	Studer



Figure 7-1



2) Click "Close" to complete the configuration, Figure 7-2

k00					Protocol name: BMS-165
ell voltage(V) Max voltage: C9 – Max voltage 3.301 V	Min voltage: C16 Min voltage 3.294 V	40 50 60 30 70 20 soc: 30.9 %	Battery voltage 52.76V	Battery Information (Remaining capacity 89.93 Ah) (Total capacity 100.00 Ah) (SOC 89.9 %)	Protocol version: 2.0 Port config Port num Baud rate Connect Break
Cell01 3.300 V Cell03 3.300 V Cell03 3.297 V Cell05 3.297 V	Cell02 3.299 V Cell04 3.297 V Cell06 3.297 V	10- Mode: Standby 0- 0 System status 0 Obicharge witch © Charging witch © S Warn and Protect S	uccessful execution of Set CAN p	Rated capacity 100.00 Ah (Battery cycles 0 times) rotocolcommand 79 y	-Target config Pack addr
Cell09 3.301 V Cell11 3.297 V Cell13 3.297 V	Cell10 3.295 V Cell12 3.298 V Cell14 3.300 V	None warn		Battery temp2 22.2 °C Battery temp3 22.3 °C Battery temp4 22.6 °C Ambient temp 25.3 °C	
Cell15 3.297 V	Cell16 3.294 V	BMS information	del: Iversion: 2.0	Power temp 22.0 °C	Pack total 0

Figure 7-2

3) Click "Refresh", the manufacturer information will display the corresponding inverter manufacturer information, Figure 7-3

Battery Monitor V2.1.12			- 8 X
😫 Import Protocol 🛛 💽 Load parameter 🛧 Upload pa	arameter 🗄 🗹 Real time 🗄 💖 Communication log 🛛 💖 RealTime Record 🖤	History record 🛛 🐻 Calibrate 💈 🕹 Legin 📠 SN 🔮 Firware Update 🔛 Sava Jayou	t CAN = 485 =
Pack00			Protocol name: BMS-165 BMS
Cell voltage(V) Max voltage: C9 Min voltage: C16 Min voltage: 29 Voltage difference 3.301 V Cell03 3.300 V Cell03 3.297 V Cell03 3.297 V Cell04 3.301 V Cell05 Cell05 Cell06 3.297 V Cell07 Cell07 Cell07 Cell07 Cell07 Cell07 Cell07 Cell07 Cell07 Cell08 Cell07 Cell08 Cell07 Cell07 Cell07 Cell07 Cell07 Cell08 Cell07 Cell08 Cell08 Cell04 Cell07 Cell08 Cell07 Cell08 Cell18 Cell18 Cell16 Cell16 Cell18 Cell16 Cell16 Cell18 Cell16 Cell16 Cell18 Cell16 Cell16 Cell16 Cell16 Cell18 Cell16 Cell16 Cell16 Cell18 Cell16 Cell16 Cell18 Cell16 Cell16 Cell18 Cell16	Augustatus Discharge switch Charging switch Current limit switch Orem Warn and Protect None warn Manufacturer: CANPING DYE Lusp. TBB Dentsmarker: 200 Part model: Protect version: 200 Protect version: 200 Part model: Protect version: 200 Part model: Protect version: 200 Part model: Protect version: 200 Protect version: 200 Part model: Protect version: 200 Protect version: 2	Battery information S2.76V Current 0.000A generature control weitch Corrent control weitch Battery information Battery information	Protocol version: 2.0
BMS information	N:Growatt_SPF_SPH	Part model:	
Software Ver: 16	.4	Protocol version: 2.0	
BMS information			
Manufacturer: CA Software Ver: 16	N:Victron .4	Part model: Protocol version:2.0	



Manufacturer: CAN:SMA SOFAR	Part model:	
Software Ver: 16.4	Protocol version: 2.0	
BMS information		
Manufacturer: CAN:GINLONG	Part model:	
Software Ver: 16.4	Protocol version: 2.0	
BMS information		
Manufacturer: CAN:Studer	Part model:	
Software Ver: 16.4	Protocol version: 2.0	

Figure 7-3

8、Show page introduction

After the successful connection, the following red box refers to the display interface, Figure 8-1 and Table 8.1

:k00			Protocol name: BMS-16S
ell voltage(V) Min voltage: C16 Max voltage: C29 Min voltage: C16 Max voltage: C3 Min voltage: C16 3.01 V 2.284 V Voltage difference 7.000WV Cell03 2.298 V 2.290 V 2.298 V Cell03 Cell04 2.300 V Cell04 2.296 V 3.297 V Cell03 3.297 V Cell04 3.297 V Cell05 3.297 V Cell07 3.297 V Cell03 3.297 V Cell13 Cell14 2.297 V Cell14	Battery ver 30 30 30 50 60 70 80 52. 52. 52. 0.0 55 52. 0.0 55 52. 0.0 55 52. 0.0 55 52. 0.0 0.0 55 55 52. 0.0 0.0 0.0 55 55 55 55 55 55 55 55 55 5	Totage Battery information (Remaining capacity 69.92 Ah) (Remaining capacity 69.92 Ah) (OA (Soc 99.9%) (Rated capacity 100.00 Ah) (Red capacity 100.00 Ah) (Soc 99.9%) (Rated capacity 100.00 Ah) (Rated capacity 100.00 Ah) (Soc 99.9%) (Rated capacity 100.00 Ah) (Soc 99.9%) (Sold 100.00 Ah) (Soc 99.9%) (Battery cycles 0 times) (Soc 99.9%) (Sold 100.00 Ah) (Soc 99.9%) (Battery cycles 0 times) (Soc 99.9%) (Battery cycles 0 times) (Soc 99.9%) (Battery temp 1 21.6 °C) (Sattery temp 1 21.6 °C) (Battery temp 2 11.9°C) (Battery temp 2 21.9°C) (Battery temp 2 23.7°C) (Ambient temp 25.3°C) (Ambient temp 22.0°C) (Sattery temp 22.0°C)	Protocol version: 2.0 Pot config Pot rum Baud rate Connect Target config Pack addr Pack total Pack total Pack total Pot config Pack total Pack total Pack total Pack total Pot config Pack total Pack total Pack total Pot config Pack total Pack total Pot config Pack total Pack total Pot config Pack total Pack total Pot config Pack total Pot config Pack total Pot config Pack total Pot config Pack total Pot config Pack total Pot config Pack total Pot config Pot config Pack total Pot config Pack total Pot config Pack total Pot config Pack total Pack total Pot config Pack total Pot config Pack total Pot config Pack total Pot config Pack total Pot config Pack total Pot config Pack total Pack total

Figure 8-1

definition	instruction	prompt	expression
	Maximum voltage		Max voltage: C9
Max voltage	value and battery cell		Max voltage
	number		3.301 V
	Minimum voltage value		Min voltage: C16
Min voltage	and battery cell		Min voltage
	number		5.253 V



上海恩阶电子科技有限公司

Shanghai Energy Electronic Technology Co., Ltd.

Differential pressure	The voltage difference between the maximum voltage and the minimum voltage		(Voltage difference 7.000miV)
Battery voltage	Total battery voltage		Battery voltage
Current	Charging current or discharge current (negative value)		0.00A
Remaining capacity	Present battery capacity	Upload parameters Num59 can set the current capacity	(Remaining capacity 89.99 Ah)
Total capacity	Actual capacity after full charge		(Total capacity 100.00 Ah)
SOC	% Residual capacity	Remaining capacity / total capacity of * 100%	(SOC 89.9 %)
Rated capacity	Rated capacity	Upload parameters Num58 sets the capacity	(Rated capacity 100.00 Ah)
Battery cycle	Cycle index	When the cumulative discharge capacity reaches 80% of the full capacity, the cycle number will be increased once	(Battery cycles 0 times)
SOH	Health condition		SOH 100.0 %
Bus voltage	Port voltage. External voltage detection	When there is no external connection, the bus voltage is equal to the total battery voltage	(Bus voltage 52.78 V)
Discharge switch	Discharge switch indicator lamp	Green: Switch is connected Grey: the switch is off	ODischarge switch
Charge switch	Charging switch indicator lamp	Green: Switch is connected Grey: the switch is off	Charging switch
Current limit switch	Current-limiting switch indicator light	Green: Switch is connected Grey: the switch is off	OCurrent limit switch



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Temperature control switch	Temperature control switch indicator lamp	Green: Switch is connected Grey: the switch is off	OTemperature control switch
Warning and protection	BMS warning and protection display areas		Warn and Protect
Battery temperature	The 4 battery temperature values		Battery temp1 20.8 °C Battery temp2 21.5 °C Battery temp3 21.7 °C Battery temp4 22.4 °C
Ambient temperature	Ambient temperature value		Ambient temp 25.1 ℃
Power temperature	Power temperature value		Power temp 21.8 °C

Table 8.1

8.2 Parallel mode

1) Parallel selection

When multiple batteries (up to 20 groups) are connected in parallel, ensure that the BMS dial address (optional auto dial) is consistent with the address set by the upper monitor (pack x) (click the upper computer pack x icon to light up or turn gray), Figure

8-2

(01					Protocol name: BM	S-165
II voltage(V) Max voltage: C9 Max voltage 3.301 V Toltage difference Cello1 3.300 V Cello3 3.300 V Cello5 3.296 V	Min voltage: C16 Min voltage 3.284 V 7.000mV Cell02 3.299 V Cell02 3.299 V Cell03 3.299 V	System status Obicharge switch Ocharging switch Ocurrent limit sw	Battery voltage 52,76V -100 -100 -100 -100 -100 -100 -100 -10	Battery information (Remaining capacity 89.98 Ab) (Total capacity 100.00 Ab) (Soc 88.9 %) (Rated capacity 100.00 Ab) (Battery cycles 0 times) (SOH 100.0 %) (Bus voltage 52.79 V)	Protocol version: 2.0 - Port config Port num Baid rate Connect - Target config Park Pack Pack Pack	coMas v 19200 v Break :k addr Pack 13 Pack 13 Pack 13 Pack 13
Cell07 3.297 V Cell09 3.301 V	Cell08 3.297 V Cell10 3.295 V	Warn and Protect None warn		Battery temp1 20.7 °C	Pack 5 Pack 6 Pack 7	Pack 15 Pack 16 Pack 17
Cell11 3.297 V Cell13 3.297 V	Cell12 3.297 V Cell14 3.299 V			Battery temps 21.8 C Ambient temp 24.8 C	Pack 8 Pack 9	Pack 18 Pack 19 Pack 20
Cell15 3.297 V	Cell16 3.294 V	BMS information	el: rerrien: 2.0	Power temp 21.7 °C	Pack total	2

Figure 8-2



2) When confirming the number of connected machines, click Connect the upper monitor and select "Cycle Refresh". The upper monitor can see the number of parallel machines and package the refresh data, Figure 8-3

k02					Protocol name: BMS-16S
All voltage(V) Max voltage: C9 Max voltage 3.301 V /oltage difference	Min voltage: C16 Min voltage 3.294 V	40 50 60 30 70 20 soc: 339.92	Battery voltage	Battery infomation (Remaining capacity 89.98 Ah) (Total capacity 100.00 Ah) (SOC 89.9 %)	Protocol version: 2.0 Port config Port num Baud rate Connect Break
Cell01 3.300 V Cell03 3.300 V Cell03 3.296 V Cell07 3.297 V Cell07 3.301 V Cell09 3.301 V Cell09	Cell02 3.299 V Cell04 3.299 V Cell06 3.297 V Cell07 3.297 V Cell07 3.297 V Cell08 3.297 V Cell08 3.297 V	10 Mode: Standby 0 - System status - Obicharge witch Ocharging switch Occurrent limit witch (Warn and Protect None warn	90 -100 O.OOA	Rated capacity 100.00 Ah Battery cycles 0 times SOH 100.0 % Bus voltage 52.79 V Temperature infomation Battery temp1 20.5 % Battery temp2 21.2 % Battery temp3 21.4 % Battery temp3 22.3 %	- Target config Pack addr Pack addr Pack 2 Gall Pack 2
Cell15 3.297 V Cell15 3.297 V	Cell16 3.294 V	BMS information Manufacturer: CANStuder Part model: Software Ver: 16.4 Protocol version	n: 2.0	Power temp 21.8 °C	Pack 10 Pack 20 Pack total 2



3) On the upper monitor interface, you can click "Multiple" to view each group of

k02											F	Protocol r	name:	BMS-16S	B
ell voltage(V)	Multiple pack monitor										-		×	2.0	
Max voltage: C9 - N	PACK 00			PACK 01			PACK 02			PACK 03			1		
Max voltage	Batter/Volt:	0.00 V		BatteryVolt:	0.00 V		BatteryVolt:	52.76 V		BatteryVolt:	0.00 V				
3.301 V	Current:	0.00 A		Current:	0.00 A		Current:	0.00 A		Current:	0.00 A				
	Residual capacity:	0.0 Ah		Residual capacity:	0.0 Ah		Residual capacity:	90.0 Ah		Residual capacity:	0.0 Ah				Break
/oltage difference	Total capacity	0.0 Ah		Total capacity	0.0 Ah		Total capacity	100.0 Ah		Total capacity	0.0 Ah				
	Average voltage:	0.000 V		Average voltage:	0.000 V		Average voltage:	3.298 V		Average voltage:	0.000 V			Pack addr	
Cell01 C	Max voltage:	0.000 V +	100	Max voltage:	0.000 V	#00	Max voltage:	3.301 V	#09	Max voltage:	0.000 V	#00	-		
3.300 V 3.	Min voltage:	0.000 V 🔮	¥00	Min voltage:	0.000 V	#00	Min voltage:	3.294 V	#16	Min voltage:	0.000 V	#00		e	ack 11
Cell03 3.300 V 3.	PACK 04			PACK 05			PACK 06			PACK 07				•	ack 12
	PattonAlalti	0.00 V		Ratton Molt.	0.00.1/		Patton Maltu	0.001/		RattonAlolt	0.001/			P	ack 13
Cell05 C	Current	0.00 0		Current	0.00 4		Current	0.00 4		Gurranti	0.00 0				
3.297 V 3.	Residual canacity	0.0 4b		Residual canacitic	0.0 4b		Residual canacity	0.0 45		Residual capacity	0.00 Ab				ack 14
Cell07 C	Total capacity	0.0 Ab		Total capacity	0.0 4b		Total capacity	0.0 4h		Total capacity	0.0 Ab				Park 15
3.297 V 3.	Average voltage:	0.000 V		Average voltage:	0.000 V		Average voltage:	0.000 V		Average voltage:	0.000 V				uch 15
	Max voltage:	0.000 V	F00	Max voltage:	0.000 V	#00	Max voltage:	0.000 V	#00	Max voltage:	0.000 V	#00		P	ack 16
Cell09 C 3.301 V 3.	Min voltage:	0.000 V (FOO	Min voltage:	0.000 V	#00	Min voltage:	0.000 V	#00	Min voltage:	0.000 V	#00			Pack 17
Cell11 C	DACKOD			DA CK OD			DACKAG			DACKAR					Pack 18
3.297 V 3.	PACK U8			PACK US			PACK TU			PACK II					
0.840	BatteryVolt:	0.00 V		BatteryVolt:	0.00 V		BatteryVolt:	0.00 V		BatteryVolt:	0.00 V			P	ack 19
3 207 V 3	Current:	0.00 A		Current:	0.00 A		Current:	A 00.0		Current:	A 00.0				
3	Residual capacity:	0.0 Ah		Residual capacity:	0.0 Ah		Residual capacity:	0.0 Ah		Residual capacity:	0.0 Ah			ę	ack 20
Cell15 C	Total canacity	0 0 Ah		Total capacity	0 0 Ah		Total canacity	0.0 Ab		Total canacity	00 Ah		-		2
3297 V 329	4 V Man	nufacturer: (CAN:Studer	Part	model:										-

package data, Figure 8-4

Figure 8-4



9、Firmware Update

 The upper monitor is disconnected, click "firmware update", select the corresponding port number, and the port rate to select 19200, and click "Open", Figure 9-1

k00		Protocol name: BMS-165
Max voltage: Min voltage: 16 Max voltage: Min voltage: 16 Max voltage: Min voltage: 16 Voltage difference 7.000mV 6 Cell01 0.000 V 0.000 V Cell03 0.000 V 0.000 V Cell03 Cell04 0.000 V Cell05 0.000 V 0.000 V	40 50 60 70 Battery voltage Battery infomation 30 70 0.00V Battery infomation Battery infomation 20 - × Soc 0.00 Ah Total capacity 0.00 Ah 20 - × Soc 0.00 Ah Total capacity 0.00 Ah Port: C0M8 × Pack Num: Pack Num: Pack Num: Pack Num: Pack Num: Pack Num: Battery cortes 0 times SOH 0.0 % Bus voltage Bus voltage Bus voltage Bus voltage Battery cortes 0 times SOH 0.0 % Battery cortes 0 times SOH Dot Battery temp1 0.0 % Battery temp2 0.0 % Battery temp3 Battery temp3 0.0 % Battery temp3 0.0 % Battery temp3 0.0 % Battery temp4 Battery temp4 0.0 % Battery temp4	Protocol version: 2.0 Port config Port num Band rate Connect Target config Port num Band rate Connect Port and Port
Cell13 0.000 V Cell15 0.000 V Cell16 0.000 V Cell16 0.000 V	Ambient temp 0.0 °C Miniformations Power temp 0.0 °C Mundicturer: CANStuder Part model: Power temp 0.0 °C Software Vers 16.4 Protocol version: 2.0 Power temp 0.0 °C	Pack 10 Pack total 0

Figure 9-1

2) Click "Folder" to select the program to be upgraded in the prompt box

Battery Monitor V2.1.12	_ @ ¤
🛿 👷 Import Protocol 📴 Load parameter 🛧 Upload parameter 🕴 🖉 Real time 🕸 Communication log 🕸 RealTime Record 🕸 History record 🖓 Galibrate 🔝 Login 📖 SN 🙎 Finare Update 💾 Sava layout 🖉	
Pack00	Protocol name: BMS-165 BMS
Pack00 	Protocol version: 2.0 Port config Port config Port config Port and Baud rate Port and Port and Baud rate Port and Port and Baud rate Port and Baud rate Port and Baud rate Port and Baud rate Port and Baud rate Port and Port and Port and Baud rate Port and Port a
Cfilline TXD OK ERR CLUbers/User/User/User/User/User/User/User/U	Lower limit Unknown RealTime Record 0

(ehex),Figure 9-2

Figure 9-2



3) Click "Download" to show the download progress. If the error is reported, please

try several times, Figure 9-3

<00		Protocol name: BMS-165
Il voltage(V) Max voltage: C16 Max voltage: C16 Min voltage: C16 Min voltage 0.000 V Voltage difference 7.000mV	40 50 60 30 70 Battery voltage 0.000V Battery voltage 0.000V Set v1.0 − 0 × Set v1.0 − 0 ×	Protocol version: 2.0 Port config Port num Baud rate Connect Break
Cell01 Cell02 0.000 V 0.000 V Cell03 Cell04 0.000 V Cell05 Cell05 Cell06	Port: COM8 Pack Num: Pack0 Rated capacity 0.00 Ah BaudRate: 19200 Parity: None SOH 0.00 % DataBits: 8 Parity: Image: Comparition of the second	Pack addr
Cell07 Cell08 0.000 V 0.000 V Cell09 Cell10 0.000 V Cell12 Cell12 Cell12	StopBits: One O Close Reset Battery temp1 00 °C Program Update Battery temp2 00 °C Battery temp3 00 °C Choose file C.\Users\user\Desktop\BMSFE77\EMU1101\\ D Cancel Battery temp3 00 °C	Pack 5 Pack 6 Pack 7 Pack 7 Pack 17 Pack 17 Pack 18
Cell13 Cell14 0.000 V Cell14 0.000 V Cell16 0.000 V Cell16	Manufacturer: CANStuder Part model:	Pack 9 Pack 19 Pack 10 Pack 20 Pack total 0

4) After the program is downloaded, the prompt download is successful, and click"OK" to complete the upgrade, Figure 9-4

KUU			Protocol name: BMS-165
ell voltage(V) Max voltage: C9 Max voltage 0.000 V	Min voltage: C16 Min voltage 0.000 V	40 50 60 30 70 OLOOV Remaining capacity 0.00 Ab Total capacity 0.00 Ab	Protocol version: 2.0 Port config Port num Baud rate Connect Presk
Voltage difference	7.000mV	(SOC 0.0%)	
Cell01 0.000 V	Cell02 0.000 V	Port: COM6 Info × apacity 0.00 Ab Surgase cycles 0 times	Pack 1
Cell03 0.000 V	Cell04 0.000 V	Parity: None	Pack 2 Pack 1
Cell05 0.000 V	Cell06 0.000 V	DataBits: 8 reinformation	Pack 3 Pack 12 Pack 4 Pack 12
Cell07 0.000 V	Cell08 0.000 V	StopBits: One temp1 0.0 °C	Pack 5 Pack 1
Cell09 0.000 V	Cell10 0.000 V	Program Update UK temp2 0.0 °C	Pack7 Pack 17
Cell11 0.000 V	Cell12 0.000 V	100.0%	Pack 8 Pack 18
Cell13 0.000 V	Cell14 0.000 V	Ambient temp 0.0 °C	Pack 10 Pack 12
Cell15 0.000 V	Cell16 0.000 V	Minisimitaning Manufacturer: CANStuder Part model: Software Ver: 164 Protocol version: 2.0	Pack total 0

Figure 9-4



Note: This upgrade software can also be upgraded according to the corresponding address. If the BMS address matches the address of the package number, you can upgrade, Figure 9-5

<u><00</u>								Protocol name: BMS-	165
ll voltage(V) Max voltage: C9 Max voltage 0.000 V	Min voltage: C16 Min voltage 0.000 V	30,	-0 50 6 	20 70	Battery voltage	Battery infomatic (Remaining ca	pacity 0.00 Ah	Protocol version: 2.0 Port config Port num Baud rate Connect	COM8 • 19200 • Break
/oltage difference	7.000mV	10.	Set Port:	COM8	Pack Num:	Pack0	-	Treat soufig	tata
Cell01 0.000 V	Cell02 0.000 V		BaudRate:	19200	<	Pack0 Pack1	th) ES	Pack 1	Pack 11
Cell03 0.000 V	Cell04 0.000 V	- System status	Parity:	None	~	Pack2 Pack3	*	Pack 2	Pack 12
Cell05 0.000 V	Cell06 0.000 V	ODischarge switch C	DataBits:	8		Pack4 Pack5	v .	Pack 3	Pack 13
Cell07	Cell08	Warn and	StopBits:	One		Pack6 Pack7		Pack 5	Pack 15
Cell09	Cell10		Program Upd	date		Down		Pack 6	Pack 16
Cell11	Cell12				0.0%	سندي کا ل		Pack 7 Pack 8	Pack 17 Pack 18
Cell13	Cell14					(Ambient temp	p 0.0 °C	Pack 9	Pack 19
0.000 V Cell15	0.000 V	-BMS information				Power temp	0.0 °C	Pack 10 Pack total	Pack 20
0.000 V	0.000 V	Manufacturer: CAN:St Software Ver: 16.4	.uder	Part model: Protocol version:	2.0			Coulo astroit	

Figure 9-5