

SEPLOS SMART BMS SOFTWARE

BATTERYMONITOR USER MANUAL

Dongguan Seplos Technology Co., Ltd

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1. Applicable products

The BatteryMonitor software is used to monitor battery pack information. It's applicable to SEPLOS PUSUNG, PUSUNG-R, PUSUNG-S, MASON series and SEPLOS 24V 48V Smart BMS.

2. Compatible Operating System

The software is compatible with winXP /win7/win10/mac 6 bit operating system.

3. Software Interface

| Battery Momitor V2.1.0 | | | |
|--|---|---|---|
| 👱 Import Protoco 🕞 Load parameter 🔺 Upload p | arameter 🛛 🗹 Real time 🛛 🕸 Communication log 👘 RealTime Reco 🚹 🖤 History record 🛛 🖏 Calibrate 🕯 | 🕹 Login 🏢 SN 🔮 Firware Update 🗎 Sava layou | t Language = CAN = 485 = |
| Pack00 Cell milage no Kernitage Cell Kernitage Ce | Atter voltage acter | - Battery (Infantica (Institute Operator 10: 21: 10: 3) (Institute Operator 10: 21: 10: 3) (Institute Operator 10: 30: 30: 4) (Institute Operator 10: 30: 3) (Institute Operator 10: 30: 3) (Institute Operator 10: 30: 3) (Institute Operator 10: 30: 3) (Institute Operator 10: 30: 3) | Protectioner 20 9 |
| Coll307 Coll308 A.355 Y A.355 Y Coll309 Coll309 A.351 Y Coll309 A.351 Y Coll309 A.351 Y Coll309 A.351 Y Coll301 A.351 Y Coll301 A.350 Y Coll301 A.350 Y Coll314 Coll309 Y Coll301 A.350 Y Coll301 | Warn and Protect 5 None warn | Batters fast 21.9 8 Satters fast 21.7 0 Satters fast 21.7 0 | Image: Constraint of the second of the se |
| IX 10 000 | C:\Users\Administrat10ktop\BettaryNomitor V2.1.8 seplos\Agree | Trotect Farm Nermal Color mark-Upper | limit Lower limit Unknown RealTime Record 0 |

- 1. Menu
- 2. Individual cell information
- 3. Pack information
- 4. Function switch information

- 5. System status
- 6. Manufacturer information
- 7. Battery information
- 8. Temperature information
- 9. Connection information
- 10. Battery status

4. Brief introduction

4.1 Import protocol

SEPLOS BatteryMonitor is compatible with PUSUNG, PUSUNG-S, PUSUNG-R, SUTEN-W, and MASON-135, MASON-280,MASON-206 series. When using BatteryMonitor for the first time, click 'import protocol', choose the folder "Agreement", and select the corresponding model.

| | (| 50 | | - | And a strength | | Protocol version : 第128 | |
|--------------------|-------------------|--------------------------|-----------------------|-------------------|-------------------|------------------------|-------------------------|--------|
| Min voltage : | 4.5 1377 | | | | | | Port config | |
| Min where | (3) • • • UHL (0) | ↓ 2021-工作 → 技术资料 → 02 8M | 5 + BMS授料 + BattaryMo | nitor V2.1.8 mini | i > Agreement > • | 4 混然 Agreement ♀ | Port num | COM1 * |
| V 000.0 | · (8)以• 新建文件夹 | | | | | II • 🔟 😣 | Baud rate | 9600 * |
| | A | - 朱欣 | 橡奴日期 | 80 | 大小 | | Connect | |
| difference 0.000mV | Coalse | 1 radius 200 | 2021 12 20 17 21 | 1014 m | | | | |
| | 1 TSK | a success | 2021-12-29 17/32 | X3+20 | | | Target config Pack add | y Sett |
| | I BICATANA | Time T | 2021-12-29 17/32 | 文件完 | | | | |
| | ST WEEKSHINGER | COS VOD ADDR EN | 2021-05-09 10:32 | X142C | 64.92 | | | |
| | CneDrive | 105 X20 ADDR EN | 2021-05-00 10:26 | YAR TOR | 65 103 | | Pack 1 | Pa |
| | Anodesk 360 | TIS VOI ADDE EN | 2021-05-00 19:25 | YMI TOR | 65 KB | | | |
| | S | 125 V20 ADDR EN | 2021-05-00 19-25 | YAN TOPS | 65 KB | | | |
| | 1 A 10 | 135 V20 ADDR EN | 2021-05-00 19-25 | XMI TOR | 65 KB | | Pack 2 | Pau |
| | A WPSPAR | THE 145 YOU ADDR FN | 2021-05-00 19-25 | XMI 228 | 67 KB | | | |
| | 10 A | 155 V20 ADDR EN | 2021-05-09 19:25 | XML STR | 67 KB | | | |
| | 12.55 E | 165 V20 ADDR EN | 2021-05-09 19:24 | XML 文档 | 68 K8 | | Pack 3 | Pas |
| 1 | 日間内 | | | | | | | |
| 2 | V R VR | | | | | | | |
| | 1 85 | | | | | | Pack 4 | Par |
| | a del | | | | | | | |
| | A LUMPS | | | | | | | |
| | G 1216 | | | | | | Pack S | Par |
| | The second second | | | | | | | |
| | No. No. No. | | | | | | | |
| | S 124012 | | | | | | Dark G | 0. |
| | SolidWorks | | | | | | | - |
| | | | | | | | | |
| | | | | | | | | - |
| | | | | | | | | - |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | Pack B | |
| | | | | | | | | |
| | 277 | | | | | | | |
| | Ma | | | | | | Pack total | |
| | | Par. | | | | - Constant filett such | | |
| | So | and the | | | | · protect may sm() · | | |
| | | | | | | | Curla cafrach | |

4.2 Load Parameter

Users can set parameters according to different battery performances. Click

'save as' to save the modified parameters in your devices, and click 'load parameter' to import the document data into the BMS. After importing, click "Set all". And the modified parameters was imported successfully. (The modification of this parameter should be confirmed with SEPLOS engineers. Any unauthorized modification done to the affected the BMS would void out of the warranty.)——Appendix 1



4.3 Upload Parameter

As mentioned in 3.1, users can set parameters according to different battery performances. There's function switches on the right. Which is to control the ON/OFF of each BMS functions. After modifying the parameters, click "Set all" to save. (The modification of this parameter should be confirmed with SEPLOS engineers. Any unauthorized modification done to the affected the BMS would void out of the warranty.)

| | parameter 🛉 Opicad p | namena i 💭 kee onie i A communication og i A kenning krond 🦓 Lenning Lander i Sorgin 📷 zav skor i C | anguage • CAN • 465 • | |
|--------------------|----------------------|---|-----------------------|----------------|
| ack00 | | | Protocol name: E0 | 5-165 P |
| - Cell voltage(V) | | Battery voltage Battery infomation | Protocol version: 2. | |
| Max voltage: C6 | Max voltage: C14 | 40 50 60 | Port config | |
| Max voltage | Min voltage | 📩 Parameter Xanage 👘 🖸 🖾 | Port num | C0M226 |
| 3. 379 V | 3.350 V | f Save as 💣 Set all 🔛 Close | Baud rate | 19200 💌 |
| | | Int parameter Puction switch | Connect | Break |
| Voltage difference | 19.000mV | Num Name Value Unit Operate Voltage sensing failure ON | -Target config 🗌 Pe | ck addr Settin |
| 3. 364 Y | 3. 368 V | 0 Single high volt3.500 V Domitees | Pack 1 | Pack 9 |
| Cell03 3.365 V | Cel104 3. 373 V | 1 Single high pres 3, 400 V Download Current sensor failure | Pack 2 | Park 10 |
| Cell05 3.364 V | Cel106 3.379 V | 2 Single low press 2.900 V Download Key switch failure DN | Pack 3 | Pack 11 |
| Cel107 | Cel108 | 3 Nonoser low pres 3, 000 v Download Cell pressure failure ON | Pack 4 | Park 12 |
| | | 4 Monomer overvolt 3.650 V Domnload | Pack 5 | Pack 13 |
| Cell09 3.374 W | Cell10 3. 368 V | 5 Overvoltage mono3.400 V Bornload Chars parameter | Pack 6 | Pack 14 |
| Cell11 3.367 V | Cell12 3.364 V | 6 Monomer undervol 2.700 V Domiload Model: 1101-SP06 Domiload | Pack 7 | Pack 15 |
| Ce1113 3.372 Y | Cell14 3.360 V | | Pack 8 | |
| Ce1115 | Ce1116 | Dis informations | Pack total | 0 |
| 3.310 1 | 3, 303 Y | Software Ver: 2.7 Protocol version: 2.0 | Cycle refresh | Multiple |

4.4 Communication log

Record the detailed communication information between BMS and BatteryMonitor in real time. And save the communication information as a document for easy viewing afterwards.

| communication log | | | | | - 6 |
|-----------------------------|---------------------|---------------------------------------|-----------------------------------|------------------------|-------------|
| Start 🗄 Save 🥒 Clear 🕴 🌚 Hi | ex | | | | |
| Direction | Line | Iype | Pormat | Data | Note |
| Request | 2021-12-28 11:28:23 | Get Fack=Oremote communication data | ASCII | 20004644 E | Request OF |
| Response | 2021-12-28 11:28:23 | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | ASCII | 200046008 | Response Ok |
| Request | 2021-12-28 11:28:24 | Get Pack#Otelemetry data | ASCII | 20004642 E… | Request Ok |
| Response | 2021-12-28 11:28:24 | | ASCII | 200046001 | Response Ok |
| Request | 2021-12-28 11:28:25 | Get Pack=Oremote communication data | ASCII | 20004644E | Request Ok |
| Response | 2021-12-28 11:28:25 | | ASCII | 200046008 | Response Ok |
| Request | 2021-12-28 11:28:27 | Get Pack=Otelemetry data | ASCII | ~ 2 0 0 0 4 6 4 2 E··· | Request Ok |
| Response | 2021-12-28 11:28:27 | | ASCII | 200046001 | Response Ok |
| Request | 2021-12-28 11:28:28 | Get Pack=Oremote communication data | ASCII | 20004644E** | Request Ok |
| Response | 2021-12-28 11:28:28 | | ASCII | ~ 2 0 0 0 4 6 0 0 8 | Response Ok |
| Request | 2021-12-28 11:28:29 | Get Pack#Otelemetry data | ASCII | ~ 2 0 0 0 4 6 4 2 E··· | Request Ok |
| Response | 2021-12-28 11:28:29 | | ASCII | ~ 2 0 0 0 4 6 0 0 1 | Response Ok |
| Request | 2021-12-28 11:28:30 | Get Pack=Oremote communication data | ASCII | ~ 2 0 0 0 4 6 4 4 E… | Request Ok |
| Response | 2021-12-28 11:28:30 | | ASCII | ~ 2 0 0 0 4 6 0 0 8… | Response Ok |
| Request | 2021-12-28 11:28:31 | Get Pack=Otelemetry data | ASCII | ~ 2 0 0 0 4 6 4 2 E··· | Request Ok |
| Response | 2021-12-28 11:28:31 | | ASCII | ~ 2 0 0 0 4 6 0 0 1… | Response Ok |
| Request | 2021-12-28 11:28:32 | Get Pack#Oremote communication data | ASCII | ~ 2 0 0 0 4 6 4 4 E··· | Request Ok |
| Response | 2021-12-28 11:28:32 | | ASCII | ~ 2 0 0 0 4 6 0 0 8 | Response Ok |
| Request | 2021-12-28 11:28:33 | Get Pack=Otelemetry data | ASCII | ~ 2 0 0 0 4 6 4 2 B··· | Request Ok |
| Response | 2021-12-28 11:28:33 | | ASCII | ~ 2 0 0 0 4 6 0 0 1 | Response Ok |
| Request | 2021-12-28 11:28:34 | Get Pack=Oremote communication data | ASCII | ~ 2 0 0 0 4 6 4 4 E··· | Request Ok |
| Response | 2021-12-28 11:28:34 | | ASCII | ~ 2 0 0 0 4 6 0 0 8 | Response Ok |
| Request | 2021-12-28 11:28:36 | Get Pack#Otelemetry data | ASCII | ~ 2 0 0 0 4 6 4 2 E··· | Request Ok |
| Response | 2021-12-28 11:28:36 | | ASCII | ~ 2 0 0 0 4 6 0 0 1 | Response Ok |
| Request | 2021-12-28 11:28:37 | Get Pack#Oremote communication data | ASCII | ~ 2 0 0 0 4 6 4 4 8 | Request Ok |
| Response | 2021-12-28 11:28:37 | | ASCII | ~ 2 0 0 0 4 6 0 0 8 | Response Ok |
| Request | 2021-12-28 11:28:38 | Get Pack=Otelemetry data | ASCII | ~ 2 0 0 0 4 6 4 2 E··· | Request Ok |
| Response | 2021-12-28 11:28:38 | | ASCII | ~ 2 0 0 0 4 6 0 0 1 | Response Ok |
| Bequest | 2021-12-28 11:28:39 | Get Pack=Oremote communication data | ASCII | ~ 2 0 0 0 4 6 4 4 E | Request Ok |
| Response | 2021-12-28 11:28:39 | | ASCII | ~ 2 0 0 0 4 6 0 0 8 | Response Ok |
| Request | 2021-12-28 11:28:40 | Get Pack#Otelemetry data | ASCII | ~ 2 0 0 0 4 6 4 2 5 | Request Ok |
| Response | 2021-12-28 11:28:40 | | ASCII | ~ 2 0 0 0 4 6 0 0 1 | Response Ok |
| Request | 2021-12-28 11:28:41 | Get Pack=Oremote communication data | ASCII | ~ 2 0 0 0 4 6 4 4 8 | Request Ok |
| Response | 2021-12-28 11:28:41 | | ASCII | ~ 2 0 0 0 4 6 0 0 8 | Response Ok |
| Request | 2021-12-28 11:28:42 | Get Pack#Otelemetry data | ASCIT | ~ 2 0 0 0 4 6 4 2 E··· | Request Ok |
| Response | 2021-12-28 11:28:42 | | | - 00046001 | Response Ok |
| Received. | 2021 12 22 11 22 12 | Con Technologica communication data | 1920 新建 PPT 演示文稿.ppt - WPS Office | | AT IL |

4.5 Real Time Record

Click 'Real Time Record'. And By clicking "Run" to record the battery status information in real time, including key information like the warning information,

the cell voltage, total battery voltage and so on. After recording, click 'save' to save the record as EXCEL file. (The capacity of the record storage depends on the capacity of the device).



4.6 History Record

When the battery status changes, the BMS will record the real-time data of the battery at this time. Click "Get all", And the BatteryMonitor will read all historical records of BMS (the upper limit of records is 500). Click "Save" to save as an Excel spreadsheet. (If a battery failed, this is an important reference for after-sales personnel to judge the cause of the failure).

| | Date | Time | Mode | Warn | Ce1101(V) | Cel | 1102 (V) | Ce1103(V) | Ce1104(V) | Cel105(V) | Cel105(V) | Cel107(V) | Cell |
|----|------------|----------|-----------|------------------|-----------|-------|----------|-----------|-----------|-----------|-----------|-----------|------|
| 1 | 2000-12-12 | 01:15:50 | Standby | None | 3 | . 296 | 3.296 | 3. 29 | 3.29 | 6 3.1 | 296 3.29 | 3 3, 296 | 1 |
| 2 | 2021-11-27 | 14:29:29 | Discharge | None | 3 | . 299 | 3. 300 | 3. 30 | 3, 30 | 0 3.: | 299 3.30 | 3, 300 | 1 |
| 3 | 2021-11-27 | 14:29:35 | Standby | None | 3 | . 299 | 3. 300 | 3. 30 | 3. 30 | 0 3.: | 299 3.30 | 3.300 | (|
| 4 | 2021-11-27 | 14:29:46 | Shutdown | None | 3 | . 299 | 3. 300 | 3. 30 | 3, 30 | 0 3.1 | 299 3.30 | 3.300 | 1 |
| 5 | 2021-11-27 | 14:55:53 | Standby | None | 3 | . 275 | 3. 275 | 3. 27 | 3. 27 | 5 3.: | 275 3.27 | 3.276 | 1 |
| 6 | 2021-11-27 | 14:55:57 | Charge | Cell pressure f- | 3 | . 297 | 3. 289 | 3. 29 | 1 3.28 | 9 3.1 | 290 3.28 | 3 3, 290 | 1 |
| 7 | 2021-11-27 | 14:36:01 | Standby | Intermittent po | 3 | . 278 | 3.278 | 3.28 | 3. 27 | 8 3.1 | 278 3. 27 | 3 3. 278 | 1 |
| 8 | 2021-11-27 | 14:56:05 | Discharge | Intermittent po- | 3 | . 277 | 3.278 | 3.27 | 3. 27 | 8 3.1 | 278 3. 27 | 3 3. 278 | 1 |
| 9 | 2021-11-27 | 14:56:12 | Discharge | Cell pressure f- | 3 | . 230 | 3.247 | 3.24 | 3. 24 | 8 3.: | 246 3.24 | 3 3. 247 | |
| 10 | 2021-11-27 | 14:56:16 | Standby | Remaining capac- | 3 | . 268 | 3. 268 | 3. 27 | 3. 26 | 8 3.1 | 268 3.26 | 3 3. 269 | l. |
| 11 | 2021-11-28 | 11:13:54 | Standby | Manual charging- | 3 | . 298 | 3. 298 | 3. 29 | 3. 29 | 7 3.: | 297 3.29 | 3.298 | 1 |
| 12 | 2021-11-28 | 11:14:24 | Shutdown | Manual charging | 3 | . 300 | 3. 300 | 3. 30 | 3. 29 | 9 3.: | 299 3.29 | 3.299 | j . |
| 13 | 2021-12-22 | 15:32:07 | Standby | Temperature sen- | 0 | . 113 | 0.111 | 0.11 | 5 0.13 | 1 0. | 144 0.15 | 0.165 | j . |
| 14 | 2021-12-23 | 14:15:36 | Standby | None | 3 | . 271 | 3. 268 | 3.26 | 3.26 | 5 3.1 | 269 3.26 | 3 3. 268 | J |
| 15 | 2021-12-23 | 18:16:30 | Standby | None | 3 | . 268 | 3.266 | 3.26 | 5 3. 26 | 3 3.: | 267 3.26 | i 3.265 | 1 |
| 16 | 2021-12-23 | 22:17:26 | Standby | None | 3 | . 267 | 3. 265 | 3.26 | a 3. 26 | 1 3.1 | 266 3.26 | 3.264 | i . |
| 17 | 2021-12-24 | 02:18:18 | Standby | None | 3 | 266 | 3. 264 | 3. 26 | 3.26 | 0 3.1 | 265 3.26 | 3. 263 | j. |
| 18 | 2021-12-24 | 06:19:09 | Standby | None | 3 | . 265 | 3. 263 | 3. 26 | 3. 25 | 9 3.: | 264 3.26 | 3.262 | 1 |
| 19 | 2021-12-24 | 10:20:00 | Standby | None | 3 | . 264 | 3. 262 | 3. 26 | 3. 25 | 9 3. | 263 3.25 | 3 3.261 | |
| 20 | 2021-12-24 | 14:20:56 | Standby | None | 3 | . 263 | 3. 262 | 3. 26 | 3. 25 | 8 3. | 263 3.25 | 3 3. 261 | |
| 21 | 2021-12-24 | 18:21:56 | Standby | None | 3 | . 263 | 3.261 | 3.26 | 3. 25 | 7 3.: | 262 3.25 | 3 3, 260 | 1 |
| 22 | 2021-12-24 | 22:22:56 | Standby | None | 3 | . 262 | 3.261 | 3.25 | 3. 25 | 7 3. | 3, 25 | 3 3.259 | į. |
| 23 | 2021-12-25 | 02:23:56 | Standby | None | 3 | . 261 | 3. 260 | 3.25 | 3. 25 | 6 3.1 | 261 3.25 | 3.258 | 1 |
| 24 | 2021-12-25 | 06:24:55 | Standby | None | 3 | . 260 | 3.259 | 3. 25 | 3. 25 | 5 3. | 261 3.25 | 3 3.257 | |
| 25 | 2021-12-25 | 10:25:50 | Standby | None | 3 | . 259 | 3. 259 | 3. 25 | 3. 25 | 5 3. | 260 3.25 | 3 3.257 | |
| 26 | 2021-12-25 | 14:26:45 | Standby | None | 3 | . 259 | 3. 258 | 3. 25 | 5 8. 25 | 4 3.1 | 259 3. 25 | 3.256 | 1 |
| 27 | 2021-12-25 | 14:27:45 | Shutdown | None | 3 | . 259 | 3. 258 | 3. 25 | 5 3.25 | 4 3.1 | 259 3. 25 | 3. 286 | (|
| 28 | 2021-12-27 | 15:19:04 | Standby | None | 3 | . 262 | 3.261 | 3. 25 | 3. 25 | 8 3. | 262 3. 26 | 3.260 | (|
| 29 | 2021-12-27 | 18:54:55 | Charge | None | 3 | . 258 | 3. 285 | 3. 29 | 3. 32 | 4 3.1 | 306 3.33 | 3. 305 | 1 |
| 30 | 2021-12-27 | 19:25:02 | Charge | None | 3 | . 400 | 3. 414 | 3. 41 | 3.44 | 1 3. | 410 3.45 | 3.407 | |
| 31 | 2021-12-27 | 19:55:08 | Charge | None | 3 | 416 | 3. 426 | 3. 42 | 3.44 | 9 3 | 422 3. 46 | 3.418 | 1 |
| 32 | 2021-12-27 | 20:03:21 | Standby | None | 3 | . 399 | 3. 405 | 3.40 | 3. 42 | 1 3. | 402 3. 44 | 3.398 | 1 |
| 33 | 2021-12-28 | 00:04:13 | Standby | None | 3 | . 339 | 3. 339 | 3. 34 | 3. 34 | 0 3. | 339 3. 34 | 1 3.339 | 1 |
| 34 | 2021-12-28 | 04:05:16 | Standby | None | 3 | . 339 | 3. 338 | 3. 33 | 3. 33 | 8 3. | 338 3.34 | 3, 339 | 1 |

4.7 Calibrate

Zero calibration

When the battery is in the standby state, the BMS should read 0A. If there is any deviation in the current, click "Execute" to calibrate.

"Current Calibration" and "Voltage Calibration" are the function buttons for BMS factory calibration and professional manufacturer's secondary calibration. It is forbidden to use without high-precision equipment.

Clicking "Get time" BMS will get computer time automatically.

Clicking "Set time" to manually edit the time.

Control Switch

This functional area is a key function switch button that is convenient for engineers to debug the new system.

| | - @ 2 |
|---|---|
| Calibrate parameter | Bas clock |
| Sam California type Table Dail Operate 0 Pero california 6.000 A Encoute 1 Current Californi 25.000 A Encoute 2 Voltage californi 3.000 Y Encoute | 8:54:11 85-51 -1 505 |
| | Get time Set time Control switch |
| | Ufford Ufford |
| | |

4.8 Login

Account: admin

Password: admin

Most functions should log in for further modification

4.9 Serial Number

SN code is the identification of a BMS.

| Battery Monitor V2.1.8 | | | | - @ 22 |
|---|---|---|--|--|
| 💈 👱 Import Protocol 🕞 Load parameter 🔺 Upload pa | arameter 🕴 🗹 Real time 🕴 🚏 Communication Io | og 🖤 RealTime Record 🖤 History record 🕯 🐻 Calibrate 🕯 🕹 | 🕽 Login 📖 SN 🔮 Firware Update 🗎 Sava lay | out Language * CAN * 485 * |
| Pack00 | | | | Protocol name : EMS-165 |
| Pack00 | OPIC STATES OPIC | Bitter value Partie Partie Partie Bruce Bruce Bruce Bruce Bruce Bruce Bruce Bruce | Entrery information (Researching Capacity 12, 20, 20, 40 Testal 10, 55, 6, 1) 10, 0, 0, 1 10, 0, 1 10 | Protocol user WG-HG Protocol versions 2.0 Protocol versions 2.0 P |
| 8.374 Y 1.363 Y 61115 61115 3.361 Y 2.366 Y HHI 100 00 | BIG information Numsfacturer: CANProtocol:Fylon Software Ver: 2.7 | Part model : 1101-5706 Protocol version: 2.0 Makisizrator/Desktop/BattaryNonitor V2.1.8 org/on/Agreem | (Forer Tap 30.7 D) | Pack total 0 Opcle refreeh Multiple per limit Lower limit Diskows rollier Proced 0 |
| ATH 🔧 🔍 🗼 新建文件夹 (2) | EST BisClient EST BISDA 1.10 | Battery Mo SWSetting Washing Will Pf | РТ | * 3 😼 🖓 🛞 11:41 🗮 |

4.10 Firmware Update

Firmware update is for BMS program update. First, Select the right Port number.

And click 'Open'.

Then click the file pattern next to 'Download' and choose the updated program. Then click Download. After downloading to 100%, the update of the BMS program will be completed.

| . Battery Monitor VZ.1.8 | - # X |
|--|--|
| 🛿 👷 Import Protocol 📴 Load parameter 🔺 Upload parameter 🔄 🖓 Real time 🕼 Communication log 👘 RealTime Record 👘 History record 🕼 Calibrat 🎲 Colore 🕼 Calibrate 🕼 Login 📖 Si 🙎 Finvare Update 🗃 Sava Isyou | it Language • CAN • 485 • |
| Pack00 | Protocol name: BMS-165 |
| Coll voltage (7) Extravoltage (14) Extravoltage (13) Extravoltage (14) Extravoltage (13) Extravoltage (14) Extravoltage (13) Extravoltage (14) Extravoltage (15) Extravoltage (15) Extravoltage (15) < | Protocol version 2.0 |
| Cililion Cililion | |
| L 000 T A 000 T B6 information@ Fart soft: 100-1996 C01135 C010 T B6 information@ Fart soft: 100-1996 C000 T C000 T B6 information@ Fart soft: 100-1996 Stream Ver: 2.7 Protocol version 2.0 Fart soft: 100-1996 C010 rest Maintenant Desites (Desites Maintenant Desites (Desites | Pack total 0 Cycle refresh Whitiple |
| CFAR 😽 🔍), Bill XAA (2) ESTINGLIER ESTINGLIER | S ± 3 5 00 ± 11 S ± 3 5 00 ± 11 2021/12/28 □ ■ |

5. Software interface introduction

5.1 Individual cell voltage display area

It displays the voltage value of all cells, the maximum cell voltage value, and minimum cell voltage value. And the voltage difference between the maximum cell voltage and the minimum cell voltage.

| Max voltage | Min voltage |
|--------------------|-------------|
| 3.368 V | 3.346 V |
| Voltage difference | 22.000 |
| Cel101 | Cel102 |
| 3.352 V | 3.358 V |
| Cel103 | Cel104 |
| 3,351 V | 3.361 V |
| Cel105 | Cell06 |
| 3.354 V | 3.367 V |
| Cell07 | Cel108 |
| 3.351 V | 3.354 V |
| Cell09 | Cellio |
| 3.361 V | 3.356 V |
| Cell11 | Cell12 |
| 3.355 V | 3.350 V |
| Cell13 | Cell14 |
| 3.360 V | 3.346 V |
| Cell15 | Cell16 |
| 3.368 V | 3.351 V |

5.2 Pack information

The pack information area shows the battery SOC, battery status (turning off, turning on, standby, charging and discharging), input and output current, and voltage value.



5.3 Function switch information

Discharging switch, charging switch, current limiting switch and temperature control switch.

Green means on; White means off.



5.4 System status

No alarm, cell high voltage alarm, cell low voltage alarm, cell overvoltage protection, cell undervoltage protection, total voltage high voltage alarm, total voltage low voltage alarm, total voltage overvoltage protection, total voltage undervoltage protection, charging overvoltage Protection, charging high temperature alarm, charging low temperature alarm, charging over temperature protection, charging under temperature protection, discharging high temperature alarm, discharging low temperature alarm, discharging over temperature protection, discharging under temperature protection, charging over current alarm, discharging over current alarm, over charge current protection, discharging overcurrent protection, residual capacity protection, residual capacity alarm, etc.



5.5 Manufacturer information

Manufacturer information area displays inverter protocol, BMS product number, software version and protocol version.



5.6 Battery information

Battery information area shows the remaining capacity of the battery, battery capacity, battery SOC, rated capacity, number of cycles (80% DOD), battery SOH status, and the total voltage.

| Remaining Capac | ity 22.10 Ah |
|-----------------|--------------|
| Total Capacity | 89.48 Ah |
| SOC | 24.6 % |
| Rated Capacity | 100.00 Ah |
| Battery Cycles | 2 times |
| SOH | 100.0 % |
| Bus Voltage | 53.82 V |

5.7 Temperature information

BMS detects the temperature of cells, ambient and BMS board.

Cell temperature from 4 cells in the different positions, namely Battery Tmp1,

Battery Tmp2, Battery Tmp3, Battery Tmp4.

BMS temperature is the temperature from BMS MOSFET namely Power TMP.

| Battery Tmp2 | 32.7 °C |
|--------------|----------|
| Battery Tmp3 | 32. 3 °C |
| Battery Tmp4 | 31.8 °C |
| Ambient Tmp | 27.5 °C |
| Power Tmp | 29.3 °C |

5.8 Connection information

15 batteries can be connected in parallel at the same time for monitoring. Click on the number of which battery information is needed, and the battery information will be automatically displayed among the 15 batteries if there is no operation.



5.9 Battery status

Disconnected: off-white

Connected: Green

Red light is protection, yellow light is warning, light green is normal, white means reaching an upper limit, and gray is unknown problem.

| 联机 | TXD | 0 | OK | 0 | | C:\Lisers\Administrat | | Revenue a la constante de la constante | Protect | Normal Color mark-Upper limit | Lower limit Unknown RealTime Record 0 |
|----|-----|---|----|---|--|-----------------------|--|--|---------|-------------------------------|---------------------------------------|
|----|-----|---|----|---|--|-----------------------|--|--|---------|-------------------------------|---------------------------------------|

6. Appendix 1

Voltage sensor failure

OFF

Temperature sensor failure

When the cell temperature exceed 20 °C, the cell temperature failure warning will be activate.

Current sensor failure

OFF

Button switch failure

The failure of power switch would activate the button switch failure warning

Cell voltage difference failure

If the voltage difference value exceeds the setting value, cell voltage difference failure will be activated.

Charging switch failure

OFF

Discharging switch failure

OFF

Current limiting switch failure

OFF

Cell high voltage warning

When an individual cell voltage value exceeds the setting value, the cell high voltage warning will be activated, and BMS would ask the inverter for a Maximum of 10A charging current.

Cell low voltage warning

When a individual cell voltage value is lower the setting value, the cell low voltage warning will be activated.

Cell over voltage protection

When an individual cell voltage value exceeds the setting value, the cell over voltage protection will be activated, and the BMS will cut off the charging MOSFET.

Cell under voltage protection

When an individual cell voltage is lower than the setting value, cell low voltage protection will be activated, and the BMS will cut off the discharging MOSFET.

Cell low voltage forbidden to charge

If an individual cell is lower than the setting value, no charge could be conducted.

Pack high voltage warning

When the pack voltage value exceeds the setting value, the pack high voltage warning will be activated, and the BMS would ask for a Maximum of 10A charging current from the inverter.

Pack low voltage warning

When the pack voltage value is lower than the setting value, the pack low voltage warning will be activated,.

Pack over voltage protection

When the pack voltage exceeds the setting voltage, the pack over voltage protection will be activated, and the BMS will cut off the charging MOSFET.

Pack under voltage protection

When the Pack voltage is lower than the setting value, the pack under voltage protection will be activated, and the BMS will cut off the discharge MOSFET.

Charging high temperature warning

When at the charging status, and the cell temperature exceeds the setting value, the charging high temperature warning will be activated. And the BMS will ask the inverter for a Maximum of 10A charging voltage.

Charging over temperature protection

When at the charging status, and the cell temperature exceeds the setting value, the charging over temperature protection will be activated. And the BMS will cut off the charging MOSFET automatically.

Charging low temperature warning

When at the charging status, and the cell temperature is lower than the setting value, the charging low temperature warning will be activated.

Charging under temperature protection

When at the charging status, and the cell temperature is lower than the setting value, the charging low temperature protection will be activated. And the BMS will cut off the charging MOSFET automatically.

Discharging high temperature warning

When at the discharging status, and the cell temperature exceeds the setting value, the discharging high temperature warning will be activated.

Discharging over temperature protection

When at the discharging status, and the cell temperature exceeds the setting value, the discharging high temperature protection will be activated. And the BMS will cut off the discharging MOSFET automatically.

Discharging low temperature warning

When at the discharging status, and the cell temperature is lower than the setting value, the discharging low temperature warning will be activated.

Discharging under temperature protection

When at the discharging status, and the cell temperature is lower than the setting value, the discharging low temperature protection will be activated. And the BMS will cut off the discharging MOSFET automatically.

Ambient high temperature warning

When the ambient temperature exceeds the setting value, the ambient high temperature warning will be activated.

Ambient over temperature protection

When the ambient temperature exceeds the setting value, the ambient high temperature protection will be activated. And the BMS will cut off both charging and discharging MOSFET automativally.

Ambient low temperature warning

When the ambient temperature is lower than the setting value, the ambient low temperature warning will be activated.

Pack over temperature cooling

Preserved functions

Over current protection (Transient)

Within the setting period, when the discharging current is lower than the setting value, the transient

current over-current protection will not be activated.

Recovery conditions: charging or 60 seconds after the protection conducted.

Transient over current locking

If the transient current over-current protection was continuously activated for 5 times, the transient over current locking will be activated.

Recovery conditions: charging

> Discharging current short circuit protection

When the discharging current exceeds 500A, and the duration is 100us exceeds the setting duration, the discharge current short circuit protection will be activated.

Recovery conditions: charging, or 60 seconds after the protection conducted.

Discharging current short circuit locking

If the discharging current short circuit protection was continuously activated for 5 times, the discharging current short circuit locking will be activated.

Recovery conditions: charging

Cell low temperature heating

When at the charging status, if the cell temperature is lower than the setting value, the heating function will be activated.

Ambient under temperature protection

When the ambient temperature is lower than the setting value, the ambient under temperature protection will be activated. And the BMS will cut off both discharging and charging MOSFET automatically.

MOSFET high temperature warning

When the MOSFET temperature exceeds the setting value, the MOSFET high temperature warning will be activated.

> MOSFET over temperature protection

18

When the MOSFET temperature exceeds the setting value, the MOSFET over temperature protection will be activated. And the BMS will cut off both discharging and charging MOSFET.

Charging over current warning

When at the charging status, if the charging current exceeds the setting value, the charging current over-current warning will be activated.

Discharging over current protection

When at the discharging status, if the discharging current exceeds the setting value, the charging current over-current protection will be activated. And BMS will cut off the discharge MOSFET automatically.

Charging over current protection

When the charging current exceeds the setting value, the charging over current will be activated. And the BMS will cut off the charging MOSFET.

Intermittent power supply function

When the SOC reaches 100%, if the SOC exceeds the setting value (which is 96%), the charging MOSFET will be cut off. And the battery can not be charged.

Remaining capacity warning

When the SOC percentage is lower than the setting value, the remaining capacity warning will be activated.

Remaining capacity protection

When the SOC percentage is lower than the setting value, the remaining capacity protection will be

activated. And the BMS will cut off the discharge MOSFET.

Output reverse polarity protection

OFF

Connection failure

OFF

Output soft start function

When the BMS is power on, the voltage value between P+ terminal and P- terminal will get closer to the battery real voltage gradually.

Charging equalization function

When at the charging status, if the cell voltage is higher than setting value, and the voltage difference

value exceeds the setting value, the BMS charging equalization function will activated.

Equalization over time forbidden

When the equalization period exceeds the setting time, the charging equalization function will be turned

off.

Equilization over temperature forbidden

When at the charging over temperature protection status, equalization function can not be activated.

Automatic charging activation

OFF

Active charging current limiting

When the active charging current limiting function is turned on, the charging current will be limited to 10A.

Passive charging current limiting

When charging current exceeds the setting value, the passive charging current limiting function is turned on. And the charging current will be limited to 10A.

Switch turn-off function

To control the external switch status, if this function is turned on, the RESET button will be invalid.

History record function

Click to record the historical data of the battery

LCD display function

To control the function of the LCD Screen button.

Warning protection connection point

OFF

multiple circuits expansion connection point

OFF