

BMS TOOLS SETUP WHITESHEET

The PC software “BMS Tools” provides real-time battery analysis and diagnostics. The battery cannot communicate with BMS Tools and a closed loop inverter at the same time. The steps outlined below will walk through the initial set up of BMS Tools.

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WALKTHROUGH



1. Using an RS-485 (RJ45 Pins 1-B, 2-A) to USB-A cable, connect to the RS-485 port of the battery and then to a USB-A port on a Windows computer.
2. Set the battery’s DIP switches to ID: 64. (all switches ON)
3. Power on the battery pack.
4. Confirm the RS485 cable’s COM is set correctly in the BMS Tools program. Refer to the Device Manager on the PC for more information.

BMS_TOOLS V1.0

COM: COM30 Refresh Baud Rate: 115200 ID: 1 Start Monitoring

Model Information

Com State: Offline Model: _____

Version: _____ SN: _____

Battery Information

Status: _____ Heater: _____ SOC: _____ % SOH: _____ %

Voltage: _____ V Current: _____ A Capacity: _____ AH Remain C: _____ AH

Max Vol: _____ V Min Vol: _____ V Vol Diff: _____ V Max C-C: _____ A

Max Temp: _____ °C Min Temp: _____ °C Temp Diff: _____ °C Cell Num: _____

Temperature Information(°C)

PCB Temp: _____ Ambient Temp: _____

Temp01: _____ Temp02: _____ Temp03: _____ Temp04: _____

Voltage(V)

Cell01: _____ Cell02: _____ Cell03: _____ Cell04: _____ Cell05: _____ Cell06: _____ Cell07: _____ Cell08: _____

Cell09: _____ Cell10: _____ Cell11: _____ Cell12: _____ Cell13: _____ Cell14: _____ Cell15: _____ Cell16: _____

Error Status

Voltage Error _____

Temperature Error _____

Current Error _____

Cell Unbalance _____

Warn Status

Pack OV _____

Cell OV _____

Pack UV _____

Cell UV _____

Charge OC _____

Discharge OC _____

Temp Anmaly _____

MOS OT _____

Charge OT _____

Discharge OT _____

Charge UT _____

Discharge UT _____

Low Capacity _____

Other Error _____

Protect Status

Pack OV _____

Cell OV _____

Pack UV _____

Cell UV _____

Charge OC _____

Discharge OC _____

Temp Anmaly _____

MOS OT _____

Charge OT _____

Discharge OT _____

Charge UT _____

Discharge UT _____

Float Stopped _____

Discharge SC _____

5. Change the Baud Rate to 9600.

BMS_TOOLS V1.0

Monitor Status

COM: COM30 Refresh Baud Rate: 9600 ID: 1 Start Monitoring

BMS Monitoring | BMS Parameter | Historical Record | BMS Datalog | Communication

Model Information

Com State: Offline Model: _____

Version: _____ SN: _____

Battery Information

Status: _____ Heater: _____ SOC: _____ % SOH: _____ %

Voltage: _____ V Current: _____ A Capacity: _____ AH Remain C: _____ AH

Max Vol: _____ V Min Vol: _____ V Vol Diff: _____ V Max C-C: _____ A

Max Temp: _____ °C Min Temp: _____ °C Temp Diff: _____ °C Cell Num: _____

Temperature Information(°C)

PCB Temp: _____ Ambient Temp: _____

Temp01: _____ Temp02: _____ Temp03: _____ Temp04: _____

Voltage(V)

Cell01: _____ Cell02: _____ Cell03: _____ Cell04: _____ Cell05: _____ Cell06: _____ Cell07: _____ Cell08: _____

Cell09: _____ Cell10: _____ Cell11: _____ Cell12: _____ Cell13: _____ Cell14: _____ Cell15: _____ Cell16: _____

Error Status

Voltage Error _____

Temperature Error _____

Current Error _____

Cell Unbalance _____

Warn Status

Pack OV _____

Cell OV _____

Pack UV _____

Cell UV _____

Charge OC _____

Discharge OC _____

Temp Anomaly _____

MOS OT _____

Charge OT _____

Discharge OT _____

Charge UT _____

Discharge UT _____

Low Capacity _____

Other Error _____

Protect Status

Pack OV _____

Cell OV _____

Pack UV _____

Cell UV _____

Charge OC _____

Discharge OC _____

Temp Anomaly _____

MOS OT _____

Charge OT _____

Discharge OT _____

Charge UT _____

Discharge UT _____

Float Stopped _____

Discharge SC _____

6. Change the "ID" to 64.

BMS_TOOLS V1.0

Monitor Status

COM: COM30 Refresh Baud Rate: 9600 ID: 64 Start Monitoring

BMS Monitoring | BMS Parameter | Historical Record | BMS Datalog | Communication

Model Information

Com State: Offline Model: _____

Version: _____ SN: _____

Battery Information

Status: _____ Heater: _____ SOC: _____ % SOH: _____ %

Voltage: _____ V Current: _____ A Capacity: _____ AH Remain C: _____ AH

Max Vol: _____ V Min Vol: _____ V Vol Diff: _____ V Max C-C: _____ A

Max Temp: _____ °C Min Temp: _____ °C Temp Diff: _____ °C Cell Num: _____

Temperature Information(°C)

PCB Temp: _____ Ambient Temp: _____

Temp01: _____ Temp02: _____ Temp03: _____ Temp04: _____

Voltage(V)

Cell01: _____ Cell02: _____ Cell03: _____ Cell04: _____ Cell05: _____ Cell06: _____ Cell07: _____ Cell08: _____

Cell09: _____ Cell10: _____ Cell11: _____ Cell12: _____ Cell13: _____ Cell14: _____ Cell15: _____ Cell16: _____

Error Status

Voltage Error _____

Temperature Error _____

Current Error _____

Cell Unbalance _____

Warn Status

Pack OV _____

Cell OV _____

Pack UV _____

Cell UV _____

Charge OC _____

Discharge OC _____

Temp Anomaly _____

MOS OT _____

Charge OT _____

Discharge OT _____

Charge UT _____

Discharge UT _____

Low Capacity _____

Other Error _____

Protect Status

Pack OV _____

Cell OV _____

Pack UV _____

Cell UV _____

Charge OC _____

Discharge OC _____

Temp Anomaly _____

MOS OT _____

Charge OT _____

Discharge OT _____

Charge UT _____

Discharge UT _____

Float Stopped _____

Discharge SC _____

7. Select, "Start Monitoring".

The screenshot shows the 'Monitor Status' window in BMS_TOOLS V1.0. The 'Start Monitoring' button is highlighted with an orange border. The 'Com State' is currently 'Offline'.

Model Information		Error Status		Warn Status		Protect Status	
Com State	Offline	Voltage Error		Pack OV		Pack OV	
Model		Temperature Error		Cell OV		Cell OV	
Version		Current Error		Pack UV		Pack UV	
SN		Cell Unbalance		Cell UV		Cell UV	
Battery Information		Temperature Information(°C)		Charge OC		Discharge OC	
Status		Heater		Discharge OC		Temp Anmaly	
SOC		%	SOH		%	MOS OT	
Voltage		V	Current		A	Charge OT	
Capacity		AH	Remain C		AH	Discharge OT	
Max Vol		V	Min Vol		V	Charge UT	
Vol Diff		V	Max C-C		A	Discharge UT	
Max Temp		°C	Min Temp		°C	Low Capacity	
Temp Diff		°C	Cell Num			Other Error	
Voltage(V)		PCB Temp		Ambient Temp		Float Stopped	
Cell01		Cell02		Temp01		Temp02	
Cell03		Cell04		Temp03		Temp04	
Cell05		Cell06		Cell07		Cell08	
Cell09		Cell10		Cell11		Cell12	
Cell13		Cell14		Cell15		Cell16	

8. The "Com State" will now change from "Offline" to "Online". The system will now monitor the battery's values in real time.

The screenshot shows the 'Monitor Status' window in BMS_TOOLS V1.0. The 'Com State' is now 'Online'. The 'Stop Monitoring' button is visible. The 'Com State' is highlighted in green.

Model Information		Error Status		Warn Status		Protect Status	
Com State	Online	Voltage Error		Pack OV		Pack OV	
Model	LFP-51.2V100Ah-V1.0	Temperature Error		Cell OV		Cell OV	
Version	Z02T15	Current Error		Pack UV		Pack UV	
SN	2023-10-13	Cell Unbalance		Cell UV		Cell UV	
Battery Information		Temperature Information(°C)		Charge OC		Discharge OC	
Status	Standby	Heater	Heat off	Discharge OC		Temp Anmaly	
SOC	99	%	SOH		100	%	MOS OT
Voltage	53.86	V	Current	0.00	A	Capacity	100
AH	Remain C	99	AH			Max C-C	5
Max Vol	3.370	V	Min Vol	3.365	V	Vol Diff	0.005
Max Temp	35	°C	Min Temp	35	°C	Temp Diff	0
Cell Num	16	Temperature Information(°C)		Charge UT		Discharge UT	
Voltage(V)		PCB Temp		Ambient Temp		Low Capacity	
Cell01	3.367	Cell02	3.369	Temp01	35	Temp02	35
Cell03	3.368	Cell04	3.366	Temp03	35	Temp04	34
Cell05	3.366	Cell06	3.366	Cell07	3.365	Cell08	3.367
Cell09	3.365	Cell10	3.367	Cell11	3.366	Cell12	3.366
Cell13	3.366	Cell14	3.370	Cell15	3.366	Cell16	3.368

If unable to successfully complete the BMS Tools setup, scan the QR code for a detailed video walkthrough

SCAN FOR VIDEO WALKTHROUGH

