

48V 50Ah-2U-19 inches LFP Lithium (LiFePo4) Battery Pack

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1 Product Description

High-voltage DC energy storage system is the system using the design of battery modules in series. Through the reliable BMS system and high-performance equalization technology, the whole system has the flexible configuration and high reliability. Products are widely used in high-voltage application, such as distributed energy, power storage, photovoltaic energy storage, data room and etc.

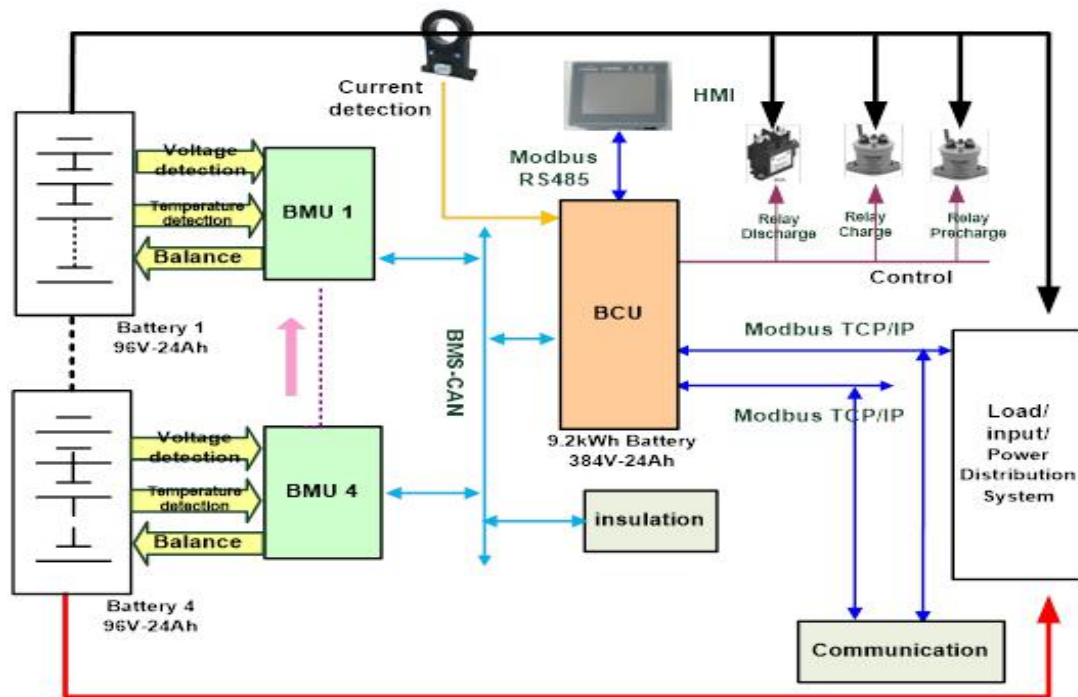
2 Application

Widely used in microgrid energy storage, photovoltaic energy storage, computer data room stand-by power, UPS and etc.

3 Solution Description

The whole high voltage DC battery system is made of BCU (Battery Central Unit) and BMU (Battery Management Unit), which could apply to Residential Energy Storage or Computer Data Room stand-by power. At the same time, this system supports to expand capacity in the same voltage platform through multiple cabinets in parallel, applied to microgrid energy storage, photovoltaic energy storage.

Customized battery management system (BMS) adopts real-time data acquisition, real-time data analysis. It have the monitoring and controlling functions, such as detection, early warning, alarm, automotive power-off function and etc., as to ensure the safe and reliable operation of the system, detection, early warning, alarm and automatic power-off function monitoring and control to ensure safe and reliable operation of the system.



4 Specification

4.1 Battery Module Figure



4.2 Battery Module Specification

No.	Item	Unit	Value	Note
1	Cell Type	-	26650-3.2V/3.2AH	LFP(LiFePo4)
2	Configuration	-	15S16P	
3	Nominal Capacity	Ah	48	0.2C
4	Min Capacity	Ah	48	0.2C
5	Rate Voltage	V	48	
6	Charge Cut-off Voltage	V	54	
7	Discharge Cut-off Voltage	V	37.5	
8	Standard Charge Current	A	9.6	0.2C
9	Max Charge Current	A	48	1C
10	Standard Discharge Current	A	24	0.5C
11	Max Continuous Discharge Current	A	96	2C
12	Casing	-	Metal	
13	Dimension	mm	≤450*150*650 mm	
14	Weight	kg	≤35kg	
15	Temperature	°C	0~+45°C	Charge

	Operating temperature		-20°C~55°C	Discharge
16	BMS Structure BMS	-	2-Tier	
17	MCU BMU	PCS	1	
18	BMU	PCS	1	
19	MCU Power Consumption BMU	w	≤ 2.8w	
20	BMU Power Consumption	w	≤ 1w	
21	Voltage Range	V	0~4.5V	
22	Voltage Accuracy	FS	± (0.3%RD+0.2%FS)	
23	Current Range	A	-100A~100A	
24	Current Accuracy	A	≤±1%	
25	SOC Accuracy SOC	-	≤5%	
26	Temperature Range	°C	-40°C ~ 80°C	-
27	Temperature Accuracy	°C	≤±0.1°C	
28	Current Equalization	mA	50 ± 5	Passive Equalization

29	Charge Control	-	CAN, RS485/RS232, Relay CANbus , RS485/RS232,	
30	Discharge Control	-	Communication, Relay	

4.3 Usage of High DC Battery Rack



4.4 Battery Bank Cabinet Screen Display

Battery Bank Voltage	Cabinet Temperature	Working Status
Electric Current	Charge/Discharge Status	Alarm Log

Unit Battery Module Voltage	Battery Bank Output	Unit Battery Module Default
Load Status	Charging Status	Info Log

4.5 Battery Bank Specification

No	Item	Parameter
1	High Voltage DC Battery Bank	Distributed microgrid energy storage system
2	Battery Bank Capacity	<u>Ah</u>
3	Battery Layout	As per “Electric Circuit”
4	Temperature Sensor Qty	6/BMU
5	Cooling Fan	Optional
6	Heating Controller	Optional
7	Relay Controller Qty	3
8	IP Grade	IP53
9	BMS Supply Voltage BMS	24V/12V
10	Current Sensor Type	Hall Sensor/Diverte
11	Temperature Sensor Type	NTC(M8 connector/port)
12	Temperature Sensor Layout	Evenly Layout
13	Protocol Version	Backlog item

14	Protocol Type	RS485/RS232/CAN

4.6 Electronics Performance

No	Item	Parameter		Note
1	Nominal Voltage	V		
2	Nominal Capacity	typical: Ah		After full charged, discharge at 0.2C till cut-off voltage capacity
3	Charging Cut-off Voltage	V±1V		
5	Charging Current	standard charging 0.2C		
		0.5C fast charging 0.5C		
6	Charging Time	Standard Charging	6Hours	
		Fast Charging	3Hours	
7	Discharging Cut-off voltage	V		
8	Discharging Current	Standard Discharging 0.2C		
		Max. Discharging 2C		
9	Capacity Retention	94%		
13	Working Temperature	Charging	0~45°C	
		Discharging	-20~55°C	

14	Storage Temperature	-5°C-35°C (recommended 25±5°C)	Battery shall remain 40-50% capacity when store the battery
16	Cycle Life	2000	

4.7 BMS

Item	Fault Grade	Threshold Value	Duration time (S)	Solution	Recovery Condition
System Over Voltage	First grade fault				
	Second grade fault				
System Under Voltage	First grade fault				
	Second grade fault				
Cell Over Voltage	First grade fault	3.65V	5	Alarm	/
	Second grade fault	3.7V	5	BMS cut discharging contactor	cell voltage < 3.6V

				BMSCUT OFF CHARGE CONTACTOR	
Cell Under Voltage	First grade fault	2.7V	5	Alarm	/
	Second grade fault	2.5V	5	BMS cut discharging contactor	Cell Voltage>2.7V
Voltage Uneven	First grade Fault	300mV	3	Alarm	
	Second grade fault	400mV	5	BMS cut discharging contactor	Cell Voltage< 300mV
Low Temp.	First grade fault	0°C	5	Alarm	
	Second grade fault	< -5°C	5	warning,reduce charging curren	Lowest Temp. > 0°C
High Discharge Temp.	First grade fault	50°C	5	Alarm	/
	Second grade fault	>55°C	5	BMS cut discharging contactor	Highest Temp. < 45°C,

				BMS cut off & Discharge contactor	
Temp. Uneven	First grade fault	15°C	3	Alarm	/
	Second grade fault	18°C	3	BMS cut discharging contactor	In Case Temp. Different < 15°C
Dicharge Over Current	First grade fault				
	Second grade fault				
Charge Over Current	First grade fault				
	Second grade fault				
High SOC	First grade fault	100%	3	Alarm	SOC < 100%
Low SOC	First grade fault	< 15%	3	Alarm	SOC > 20%,
	Second grade fault	< 5%	3	Alarm	SOC > 10%,

Insulation Fault	First grade fault 一	<500Ω/V	1	Alarm, controller reduces discharge power, BMS reduces charge power	Insulation resistance >500Ω/V
	Second grade fault 二	<100Ω/V	1	Alarm, controller cuts off discharge relay	

4.8 Protocol Standard

TBD

5 Storage and Shipment Requirement

Item		Criteria
Storage temperature	Short period (less than 1 month)	-20℃~55℃
	Medium period (less than 3 month)	-20℃~45℃
	Long period (more than 3 month)	0℃~30℃
Relative Humidity		≤75% RH
State of Charge		40%~60%

Battery pack must be charged every three months when long term storage, please charge the battery pack with standard charging current to keep 40%~60% state of charge.

6 Contact information

If you have any questions regarding the cell, please contact the following address:

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