

Lakeshore Solar LiFePO4 48V battery systems are intended for off-grid, commercial, communications infrastructure, and residential backup solutions. These systems are scalable from 10kWh to virtually any size by adding additional modules. Each module contains its own battery management system (BMS) and will sync with other modules over the RS485 communications interface.



Single and double rack mount cabinets are included for systems 50kWh and larger. Cabinets are constructed of heavy gauge steel and have integrated bus bar connections for the individual battery modules.

## Specifications

Item	General Parameter	Notes
Rated Capacity	200Ah	Standard discharge after Standard charge (package)
Factory Voltage	49.5-50.5V	Mean Operation Voltage
Voltage at end of Discharge	40.5-42.5V	Discharge Cut-off Voltage
Charging Voltage	53.2-54V	
Internal Impedance	≤50mΩ	Internal resistance measured at AC 1Khz after 50% charge
Standard Charge	Constant Current : 40A	Charge Time: Approximately 6h
Standard Discharge	Constant Current: 40A	
Maximum Continuous Current	100A	
Maximum Continuous Discharge Current	100A	
Operating Temperature Range	Charge: 0 to 45 degrees C Discharge: 20 to 55 degrees C	60±25%R.H. Bare Cell
Storage Temperature Range	Less than 12 months: -10 to 35 degrees C Less than 3 months: -10 to 45 degrees C Less than 7 days: -20 to 65 degrees C	60±25%R.H. at the storage state
Dimensions	442*450*250 mm	Including Case
Weight	86kg	Including Case
Volumetric Specific Energy	183 WH/L	Including Case
Gravimetric Specific Energy	106WH/KG	Including Case
Certificates	Ce/RoHS/Un38.3/MSDS/UL	



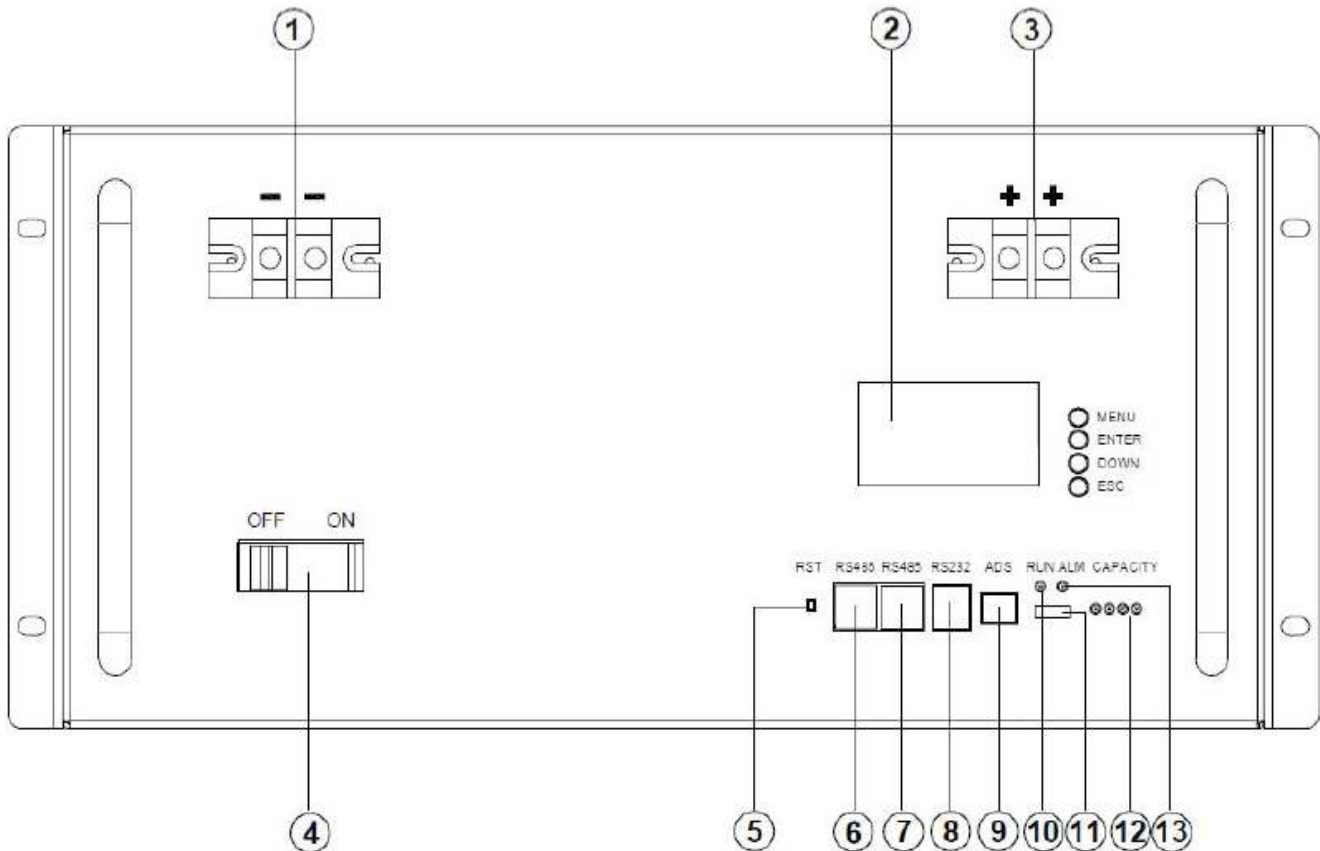
# Battery Management System

The BMS functions include:

- Overcharge detection
- Over discharge detection
- Over current detection
- Short Detection
- Temperature detection
- Balance function
- Communications
- Alarm

Items	Details	Standard
<b>Cell overcharge protection</b>	Overcharge detection voltage	3.70±0.025V
	Overcharge detection delay time	Typical:1.0s
	Overcharge release voltage	3.45±0.02V
<b>Cell over-discharge protection</b>	Over-discharge detection voltage	2.75±0.02V
	Over-discharge detection delay time	Typical:1.0s
	Over-discharge release voltage	3.05±0.02V or charge release
<b>Over-current protection</b>	discharge Over-current protection current1	110±2A
	discharge Over-current detection delay time 1	1S
	discharge Over-current protection current2	130±5A
	discharge Over-current detection delay time2	≤100ms
	Charge OC protection current	110±5A
<b>Short protection</b>	Short protection current	300±10A
	Protection condition	Load short
	Detection delay time	≤800us
	Protection release condition	Charging release
<b>Temperature(T) protection</b>	Charge high T	protection60±3℃
	Charge high T recover	55±3℃
	Discharge high T protection	65±3℃
	Discharge high T recover	60±3℃
	Charge low T protection	-5±2℃
	Charge low T recover	0±2℃
	Discharge low T protection	-20±3℃
Discharge low T recover	-15±3℃	
<b>Balance</b>	Balance threshold voltage	3.45V
<b>Communication</b>	It has RS232 and RS485 standard communication interface, it can real-time monitoring the capacity of battery bank, the voltage, current, environment temperature, and charging/discharging current.	
<b>Alarm</b>	It has over-temperature, over charge, under-voltage, over-current, short circuit alarm function	

# Case Structure of Battery Pack



No.	Description	Functional Description
1	Battery -	Negative terminal
2	LCD	Display screen (Option Function)
3	Battery +	Positive terminal
4	MCB	Output ON/OFF
5	Reset key	On/OFF button
6	RS-485connection port-B RS485 RS485	communication interface
7	RS-485connection port-B RS485 RS485	communication interface
8	RS-232 connection port RS232 RS232	communication interface
9	Display connection address	ADS Dialer
10	Red- trouble-light on	Run indicator light OFF
11	Dry contact	2 paths dry contact
12	Display the battery's capacity	Electricity volume indicator
13	Display state information	ALM alarm indicator light blinking