



Touch +
Screen



ES 51.2V 100Ah-4U

LITHIUM-ION BATTERY PRODUCT SPECIFICATION

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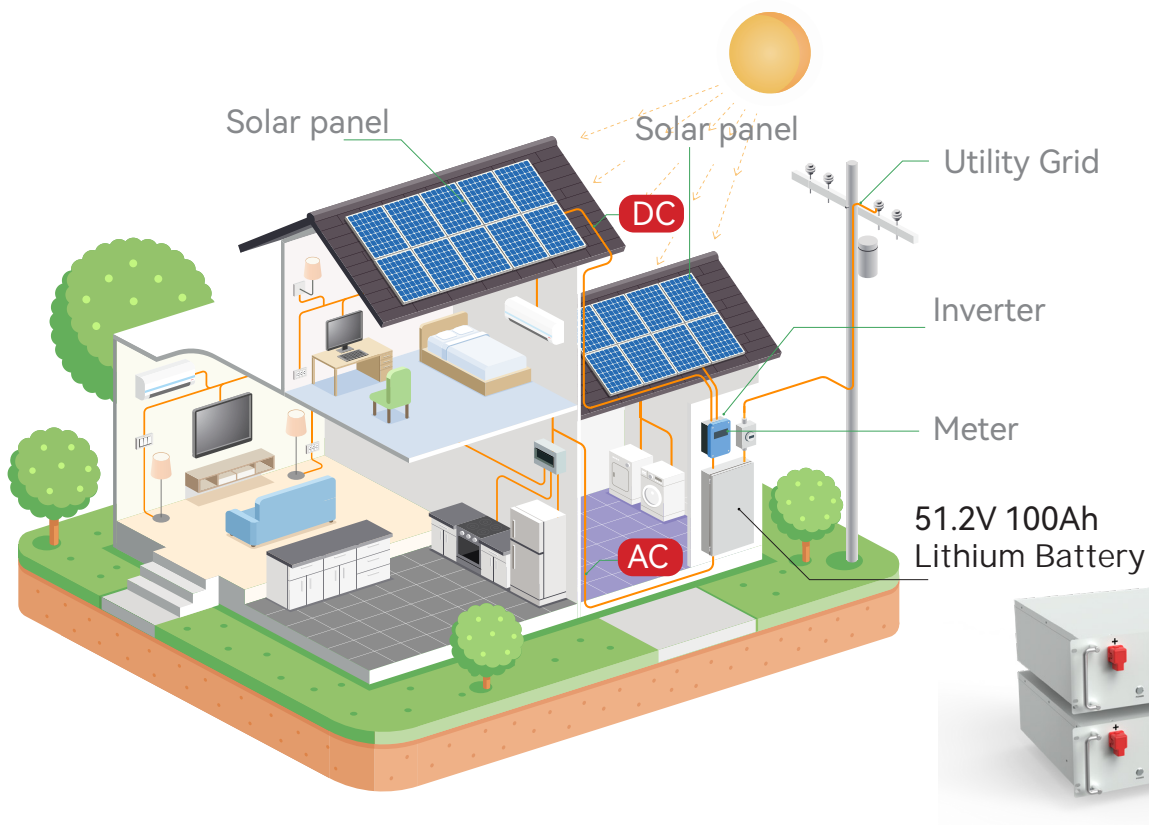
1. Advantages

The battery module consists of single LFP cells, wire, BMS and container.

- Packed with high performance LFP single cell, long life, safety and wide temperature range
- High energy density, small size, light weight, no pollution
- Packing with single cell container, fire retardant wire and laser welding, stable and safe
- Built-in BMS, with battery voltage, current, temperature and health management
- LED indicate the battery SOC and operating status
- LCD Screen display the battery voltage, current, temp.,SOC detail information
- Support communicate with solar inverter bu CAN or RS485
- Update software by RS485 port
- Flexible customization of dimensions
- More than 5 years design life
- Stable performance, maintenance-free

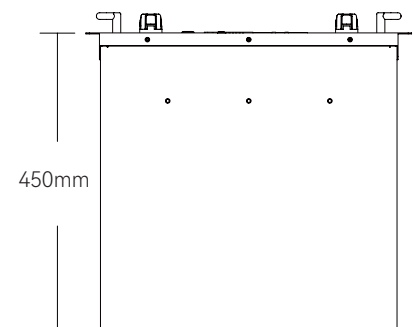
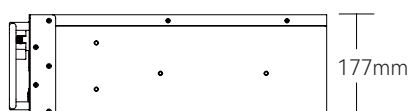
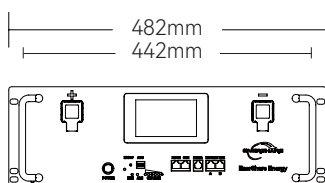


2. Application Drawing



3. Battery module specification

NO.	Item	Specification	Notes	
1	Typical Capacity	100Ah	0.2C charge and discharge for cut-off voltage	
	Minimum Capacity	98Ah		
2	Initial Impedance	Pack $\leq 80m\Omega$	After standard charge, AC1KHz test	
3	Weight	Approx: $\sim 45kG$		
4	Nominal voltage	51.2V		
5	Charge limit voltage	58.4V		
6	Discharge cut-off voltage	43.2V		
7	Standard charge current	20A	0°C~45°C	
8	Maximum charge current	100A	10°C~45°C	
9	Standard discharge current	40A	-10°C~60°C	
10	Maximum discharge current	100A	10°C~60°C	
11	Unit voltage	45V-52V	40%-60%	
12	Operating temperature	0°C~45°C	Charging	
		-10°C~50°C	Discharging	
	Storage temperature	-10°C~ +45°C	less than 1 month	Recommended storage temperature: 25°C, at the shipment state
		-10°C~ +35°C	less than 6 months	
13	Recoverable capacity	Constant current 0.2C charge to 58.4V, then constant voltage 58.4V charge to current declines to 0.01C, rest for 10min, constant current 0.2C discharge to 43.2V, rest for 10min. Repeat above steps 3 times, recording the maximum capacity		
14	Cycle Performance	Under the temperature of $23\pm 2^{\circ}C$, charge the battery with 0.2C, when the voltage reaches up to 58.4V charge with constant voltage until the charge current $\leq 0.02C$, then stop charging, then rest for 0.5h, then discharge with 0.2C to 43.2V. Cycle with the above mode, when the continuous discharge time <3H stop cycling. The cycle life is required ≥ 6000 times.		
15	Storage Humidity	$\leq 75\% RH$		
16	Appearance	Without distortion and leakage		
17	Standard testing condition	Temperature: $25\pm 2^{\circ}C$ Humidity : $\leq 75\%RH$ Atmospheric Pressure: 86-106 Kpa		



4. BMS specification

BMS provides complete management and protection for the battery.

- Voltage warning and protection for module and each single cell.
- Current warning and protection, and the maximum operating current can be customized.
- Temperature warning and protection, 4 sensors for battery pack and 1 sensor for BMS.
- Battery module SOC and SOH calculation, display the accurate battery status.
- Communicate with inverter or PC monitor, report the battery data.
- Pre-charge/discharge logic, make sure safety use in whole process.
- Switch-off mode, sleep mode, and operating mode, different mode for different condition.

BMS parameters.

Item	Details	Condition
Cell overcharge protection	Overcharge detection voltage	3.65±0.020V
	Overcharge detection delay time	Typical:1.0s
	Overcharge release voltage	3.50±0.020V
Cell over-discharge protection	Over-discharge detection voltage	2.5±0.02V
	Over-discharge detection delay time	Typical:1.0s
	Over-discharge release voltage	2.9±0.02V or charge release
Over-current	Charge over current, protect current.	120A
	protection	10S
	discharge Over-current protection current	120A
	discharge Over-current detection delay time	10S
Short protection Short protection	Short protection current	360A
	Protection condition	External short circuit
	Protection release condition	Charging release
Temperature(T)	Charge high T protection	65°C
	Charge high T recover	50°C
	Discharge high T protection	65°C
	Discharge high T recover	50°C
	Charge low T protection	-10°C
	Charge low T recover	0°C
	Discharge low T protection	-10°C
	Discharge cryogenic recovery	0°C
Communication	RS485 standard communication interface, it can real-time monitoring the capacity of battery bank, the voltage, current, environment temperature, and charging/discharging current.	
Alarm	It has over-temperature, over charge, under-voltage, over-current, short circuit alarm Function.	