LiFePO4 Battery Specification

Model: TB-BL12200F-SC-S108A_HEAT_00

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1. General Information

This specification defines the performance of rechargeable LiFePO4 battery pack **TB-BL12200F-SC-S108A_HEAT_00** manufactured by SHENZHEN TOPBAND BATTERY CO.,LTD, it describes the type, performance, technical characteristics, warning and caution of the battery pack.

2. Battery Specification（@ 25±5℃）

NO	Items	Characteristics
2.1	Normal capacity	200 Ah
2.2	Nominal energy	2.56 KWh
2.3	Nominal voltage	12.8 V
2.4	Shipment voltage	≥12.8V
2.5	Internal resistance	≤30mΩ @1kHz AC
2.6	Battery series parallel application	Supports up to four groups in series
2.7	Normal charge voltage	14.4~14.8V
2.8	Float charge voltage	13.6~14V
2.9	Allowed MAX charge current	150A
2.10	Normal Charge current	100A
2.11	Normal discharge current	100A
2.12	Allowed MAX discharge current	150A /30min
2.13	Pulse discharge current	400A/3S
2.14	End of discharge voltage	10V
2.15	Size	L 485.0±2 mm
		W 170.5±3 mm
		H 240.0±3 mm
2.16	Weight	24.2±0.9Kg
2.18	Operation temperature	Charge：0~45℃
		Discharge：-20～60℃
		Recommended temperature：15℃~35℃
2.19	Self-discharge rate	Residual capacity：≤3%/Month; ≤15%/ year
		Recover capacity：≤1.5%/Month; ≤8%/ year
2.20	Storage environment	Less than 1 month：-20～+35℃、45～75%RH
		Less than 3 month：-10～+35℃、45～75%RH
		Recommend environment：15～35℃、45～75%RH

3. Electrical Characteristics & Test Condition

Testing Conditions: Ambient Temperature: 25±5℃, Humidity:45%~75%.

Normal charge：Charge battery under CC(0.33C)/CV(12.8V) mode until over charge protection or the charge current reduce to 0.02C, and then rest for 1h.

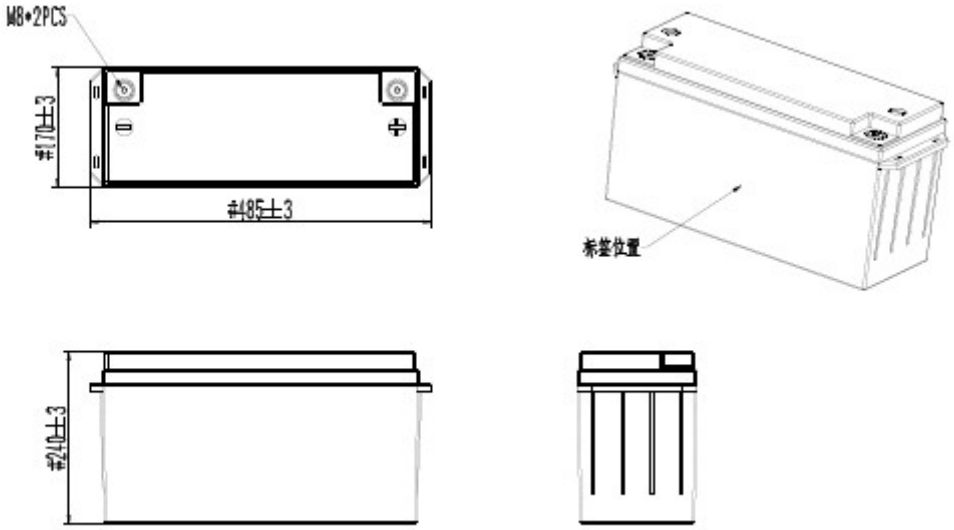
NO	Items	Criterion		Condition
3.1	Normal Capacity	200Ah		After Normal charge, discharge @0.33C current to the end of discharge voltage.
3.2	Internal Impedance	≤30mΩ		@50% SOC @1kHz AC internal resistance test instrument.
3.3	Cycle life	≥2000 cycles		After Normal charge，discharge @0.33C current with 80%DOD, Repeat above process until discharge capacity reduce to 80% of initial value.
3.4	Discharge temperature characteristic @0.2C	-20℃(6h)	≥70%	$\frac{\text{Capacity @specified temperature}}{\text{Capacity @ 25℃}}$ the percentage accord with criterion
		0℃(6h)	≥80%	
		25℃(4h)	≥100%	
		55℃(4h)	≥95%	
3.5	Capacity retention rate	remain capacity ≥80% Recovery capacity ≥90%		After normal charge, store the battery @25±5℃ for 28days, then discharge capacity @0.2C，the retention capacity accord with criterion.
3.6	Modbus RUT	Bluetooth		By installing mobile APP, users can read battery voltage, current, temperature, SOC and other battery system information.
3.7	Charge heating	Low temperature charging heating		Heating film, the charging current of -20°C~0°C first heats the battery, and the charger normally charges the battery when the temperature reaches above 0°C

4. Circuit Protection

The batteries are supplied with a LiFePO4 Battery Management System (BMS)that can monitor and optimized each single prismatic cell during charge & discharge, to protect the battery pack from overcharge, over discharge, short circuit. Overall, the BMS helps to ensure safe and accurate running.

No	Item	Content	Criterion
4.1	Over charge	Single series overcharge protection voltage	3.75±0.05V
		Single series of overcharge recovery voltages	3.60±0.05V
		Over-charge release method	under the over-voltage recover value or discharge
4.2	Over discharge	Single series over discharge protection voltage	2.5±0.05V
		Single series overshoot recovery voltage	2.8±0.05V
		Over-discharge release method	Charge recovering
4.3	Over current	Discharge over current protection1	170A~180A
		Discharge over current protection delay time1	22~28S
		Discharge over current protection2	380~420A
		Discharge over current protection delay time2	2.5~4.5S
		Discharge over current release2	Recover in 60s after charging or removing the load
4.4	Short circuit	No short circuit test	1000A/500us
4.5	Temperature	Charge over temperature protection	Protect@65±5 ℃; Release@50±5 ℃;
		Discharge over temperature protection	Protect@65±5 ℃; Release@50±5 ℃;
		MOS protect temperature	Protect@103±10℃;Release@75±10℃;

5.Quick User guide



6.Transport & Store

- The battery need to be charged every 6 months if out of use.
- No fall down, no pile up over 6 layers, and keep face up.

7.Warning & Tips.

Please read and follow the handling instructions before use. Improper use may cause heat, fire, rupture, damage or capacity deterioration of the battery. SHENZHEN TOPBAND BATTERY CO.,LTD Describes is not responsible for any accidents caused by the usage without following our handling instructions.

Warning

- Battery must be far away from heat source, high voltage, and no exposed in sunshine for long time;
- Never throw the battery into water or fire;
- Never reverse two electrodes when use the battery;
- Never connect the positive and negative of battery with metal;
- Never knock, throw or trample the battery;
- Never disassemble the battery without manufacturer's permission and guidance.
- Never use mixed with other type of battery;

Tips

Keep the battery against high temperature. Otherwise it will cause battery heat, get into fire or lose some function and reduce the life.

- When battery run out of power, please charge your battery timely (≤2day).
- Please use the matched or suggested charger for this battery.
- If battery emit peculiar smell, heating, distortion or appear any abnormity, please stop using.
- If the battery leaks and get into the eyes or skin, do not wipe, instead, rinse it with clean water and see doctor immediately.
- Please far away from children or pets.
- It is strictly prohibited any series between the battery packs. Any requirements on serials connection, please contact TOPBAND for details.