

LiFePo4 Battery Specification

Model: TB-BL12100F-SC-M110E



SHENZHEN TOPBAND BATTERY CO.,LTD

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Modified Record

Revision	Date	Modified Content	Principle
V00	2018-5-11	Design	王士圆

1. General Information

This specification defines the performance of rechargeable LiFePO4 battery pack TB-BL12100F-SC-M110E manufactured by SHENZHEN TOPBAND BATTERY CO.,LTD, 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	100Ah
2.2	Nominal energy	1.28KWh
2.3	Nominal voltage	12.8V
2.4	Internal resistance	≤25mΩ @1kHz AC
2.5	Normal charge voltage	14.6±0.2V
2.6	Float charge voltage(for Standby use)	13.8±0.8V
2.7	Allowed MAX charge current	100A
2.8	Recommended charge current	≤50A
2.9	Allowed MAX discharge current	100A
2.10	End of discharge voltage	9.2~11.2V
2.11	Peak discharge current	Withstand the 350A/3.0s
2.12	Dimension	Length 318 ±3 mm
		Width 165 ±3 mm
		Height 215 ±3 mm
2.13	Weight (No accessories)	13.0±0.5Kg
2.14	Operation temperature	Charge 0~45℃
		Discharge -20~60℃
2.15	Self-discharge rate	Residual capacity ≤3%/Month; ≤15%/ year
		Recover capacity ≤1.5%/Month; ≤8%/ year
2.16	Storage environment	≤1month -20~+60℃、5~75%RH
		≤3month -10~+45℃、5~75%RH
		Recommend environment 15~35℃、5~75%RH

3. Electrical Characteristics & Test Condition

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

Normal charge: Charge battery under CC(0.33C)/CV(14.6V) mode until over charge protection or the charge current reduce to 0.05C, and then rest for 1h.

NO	Items	Criterion	Condition	
3.1	Normal Capacity	100Ah	After Normal charge, discharge @0.33C current to the end of discharge voltage.	
3.2	Internal Impedance	≤25mΩ	@50% SOC @1kHz AC internal resistance test instrument.	
3.3	Short circuit protection	prohibit short circuit	prohibit short circuit	
3.4	Cycle life @DOD80%	≥4000 cycles	After Normal charge, discharge @0.33C current to the end of discharge voltage. Repeat above process until discharge capacity reduce to 80% of initial value.	
3.5	Discharge temperature characteristic @0.33C	-20℃(6h)	≥70%	$\frac{\text{Capacity @specified temperature}}{\text{Capacity @ 25℃}}$
		0℃(6h)	≥80%	
		25℃(4h)	≥100%	
		55℃(4h)	≥95%	
3.6	Capacity retention rate	remain capacity ≥96%	After normal charge, store the battery @25±5℃ for 28days, then discharge capacity @0.33C, the retention capacity accord with criterion.	
3.7	Communication	Bluetooth	Bluetooth APP:TBEnergy	

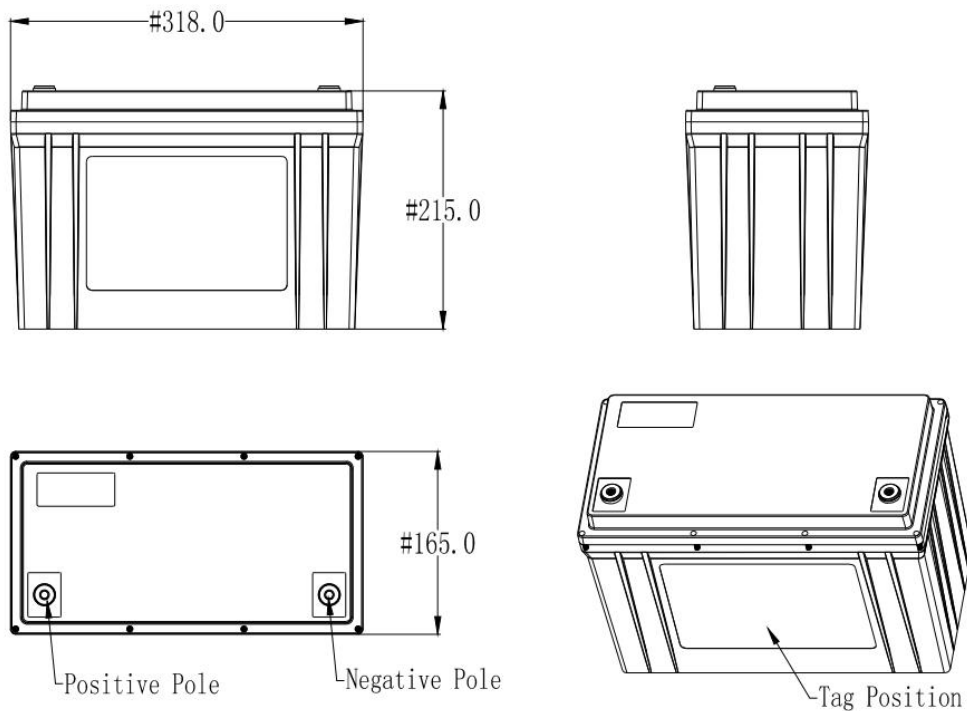
4.Circuit Protection

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

No	Item	Content	Criterion
4.1	Over charge	Over-charge protection for each cell	3.75±0.03V
		Over-charge release for each cell	3.60±0.03V
		Over-charge release method	Under the release voltage
4.2	Over discharge	Over-discharge protection each cell	2.50±0.04V
		Over-discharge release for each cell	2.80±0.04V
		Over-discharge release method	Charging
4.3	Over current	Charge over current protection	150A±20A, delay time 1±0.2s
		Charge over current release	release after 30s
		Discharge over current protection	Level 1: 100-120A, delay time 25-35s

			Level 2: $360 \pm 60A$, delay time 0.5-2s
		Discharge over current release	Charge $>1A$ or auto release after 1min
		Short circuit protection	Do not allow short-circuit
4.4	Temperature	Charge over temperature protection	Protect@ $55 \pm 3^{\circ}C$; Release@ $50 \pm 5^{\circ}C$;
		Charge under temperature protection	Protect@ $-5 \pm 3^{\circ}C$; Release@ $0 \pm 3^{\circ}C$
		Discharge over temperature protection	Protect@ $65 \pm 3^{\circ}C$; Release@ $60 \pm 3^{\circ}C$;
		Discharge under temperature protection	Protect@ $-20 \pm 3^{\circ}C$; Release@ $-15 \pm 3^{\circ}C$

5. Structure Dimension



6 Transport & Store

The battery need to be discharged & charged a full cycle 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 operation instructions before use. Improper operation may cause overheat, fire, rupture, damage or capacity deterioration of the battery. SHENZHEN TOPBAND BATTERY CO.,LTD Describes is not responsible for any accidents caused by the action without following our 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 (≤ 15 day).
- * Please use the matched or suggested charger for this battery.
- * If battery emit peculiar smell, heating, distortion or appear any abnormality, please stop using.
- * If the battery leaks and get into the eyes or skin, do not wipe, instead, rinse it with clean water and look for medical help immediately.
- * Please far away from children or pets.