

LiFePO4 Battery Specification

Model: TB48100

/ SHENZHEN TOPBAND BATTERY CO.,LTD

Web: : www.topband.com.cn

1. / General Information

TB48100

This specification defines the performance of rechargeable LiFePO4 battery pack **TB48100** 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°C)

NO	Items	Characteristics	
2.1	Normal capacity	100Ah	
2.2	Nominal energy	5.12KWh	
2.3	Nominal voltage	51.2V (LFP-16S)	
2.4	Internal resistance	$\leq 50m\Omega$ @1kHz AC	
2.5	Normal charge voltage	$58.4 \pm 0.2V$	
2.6	Float charge voltage(for Standby use)	$55.2 \pm 0.2V$	
2.7	Allowed MAX charge current	40A	
2.8	Recommended charge current	$\leq 40A$	
2.9	Allowed MAX discharge current	200A	
2.11	Peak discharge current/time	/	
2.12	Different port for charging and discharging	/	
2.13	End of discharge voltage	35.2V	
2.14	IP rating	IP65	
2.15	communication mode	/	
2.16	Dimension	W 580 ± 3mm	
		H 198 ± 3mm	
		D 412.4 ± 3mm	
2.17	Weight (No accessories)	≤ 60 Kg	
2.18	Operation temperature	Charge	0~45°C
		Discharge	-20~60°C
2.19	Self-discharge rate	Residual capacity	$\leq 3\%/\text{Month}$ (); $\leq 15\%/\text{year}$ ()
		Recover capacity	$\leq 1.5\%/\text{Month}$ (; $\leq 8\%/\text{year}$ ()
2.20	Storage environment	$\leq 1\text{month}$ ()	-20~+60°C、5~75%RH
		$\geq 3\text{month}$ ()	-10~+45°C、5~75%RH
		Recommend environment	15~35°C、5~75%RH

3. Electrical Characteristics & Test Condition

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

Normal charge: Charge battery under CC(0.33C)/CV(58.4V) 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	100 Ah	After Normal charge, discharge @0.33C current to the end of discharge voltage.
3.2	Internal Impedance	≤50mΩ	@50% SOC @1kHz AC internal resistance test instrument.
3.3	Short circuit protection	Auto cutoff load when short circuit	Connect the positive and negative of this battery pack through a lead with 0.1Ω resistance.
3.4	Cycle life @DOD100%	≥2000 ≥2000 cycles	After Normal charge, discharge @0.2C current to the end of discharge voltage. Repeat above process until discharge capacity reduce to 80% of initial value.
3.5	Discharge temperature characteristic @0.2C	-20°C(6h) \geq 60% 0°C(6h) \geq 80% 25°C(4h) \geq 100% 55°C(4h) \geq 95%	<div style="display: flex; align-items: center; justify-content: space-between;"> <div style="flex: 1;"> $\frac{\text{Capacity @specified temperature}}{\text{Capacity @ 25°C}}$ </div> <div style="flex: 1;"> $\frac{\text{the percentage accord with criterion}}$ </div> </div>
3.6	Capacity retention rate	remain capacity ≥96%	After normal charge, store the battery @25±5°C for 28days, then discharge capacity @0.2C, the retention capacity accord with criterion.

4. Circuit Protection

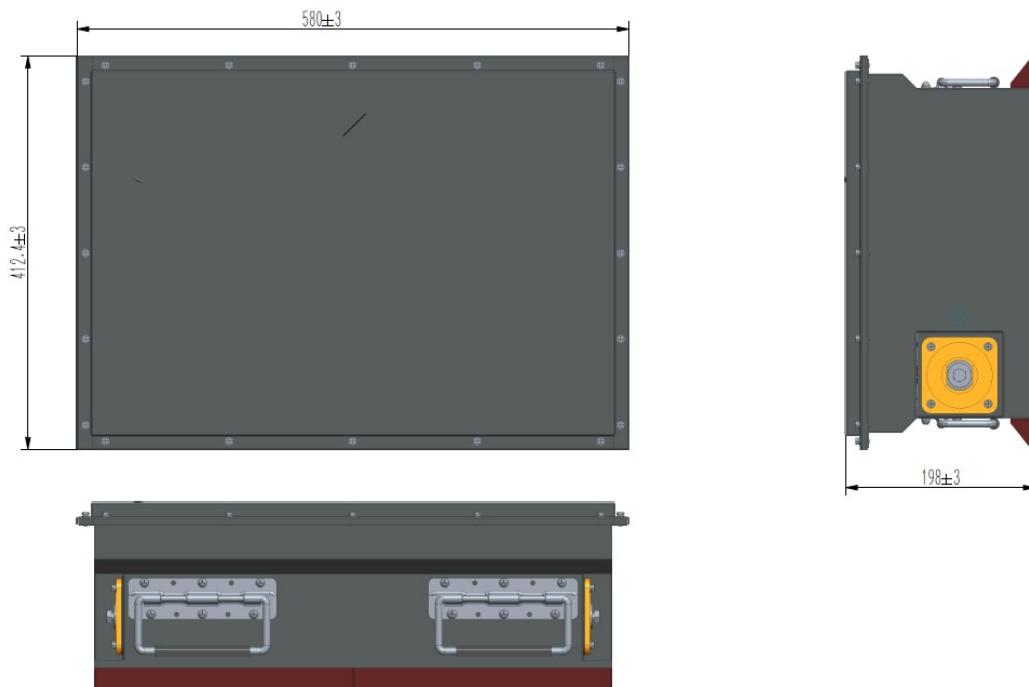
The batteries are supplied with a LiFePO4 Battery Management System (BMS) that can monitor and optimized each single prismatic cell during charge & discharge, to protect the battery pack overcharge, over discharge, short circuit. Overall, the BMS helps to ensure safe and accurate running.

No	Item	Content	Criterion
4.1	Over charge	Over-charge protection Alarm for each cell	/
		Over-charge protection for each cell	3.75 ± 0.05 V
		Over-charge protection delay time	1 ± 0.5 S
		Over-charge release for each cell	3.55 ± 0.05 V
		Over-charge release method	under the over-voltage recover value
4.2	Over discharge	Over-discharge protection alarm for each cell	/
		Over-discharge protection each cell	2.20 ± 0.1 V
		Over-discharge protection delay time	1 ± 0.5 S
		Over-discharge release for each cell	2.70 ± 0.1 V
		Over-discharge release method	recovery through charging
4.3	Over current	Charge over current protection alarm	/
		Charge over current protection	50 ± 5 A
		Charge over current protection delay time	1 ± 0.5 S
		Charge over current release method	Cut load or charge about 30s later
		Discharge over current protection alarm	/
		Discharge over current protection1	220 ± 10 A
		Discharge over current protection delay time1	1 ± 0.5 S
		Discharge over current release1	Cut load or charge about 30s later
		Discharge over current release2	Cut load or charge about 30s later
		Short circuit protection	Available
4.4		Short circuit protection release	Cut load or charge about 30s later

Temperatur e	Charge over temperature protection	Protect@55±2°C
	Charge under temperature protection	Protect@-7±2°C
	Discharge over temperature protection	Protect@75±2°C
	Discharge under temperature protection	/

5. User guide

5.1 Product dimension



6. Transport & Store

The battery need to do a full charge&discharge cycle every 6 months if out of use

No fall down, not stack over 6 layers, and keep upwards.

7. Warning & Tps

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 connect the positive and negative when use the battery;
- * Never short connect the positive and negative of battery with metal;
- * Never over impact , 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.