



12.8V 400Ah

PRODUCT SPECIFICATION

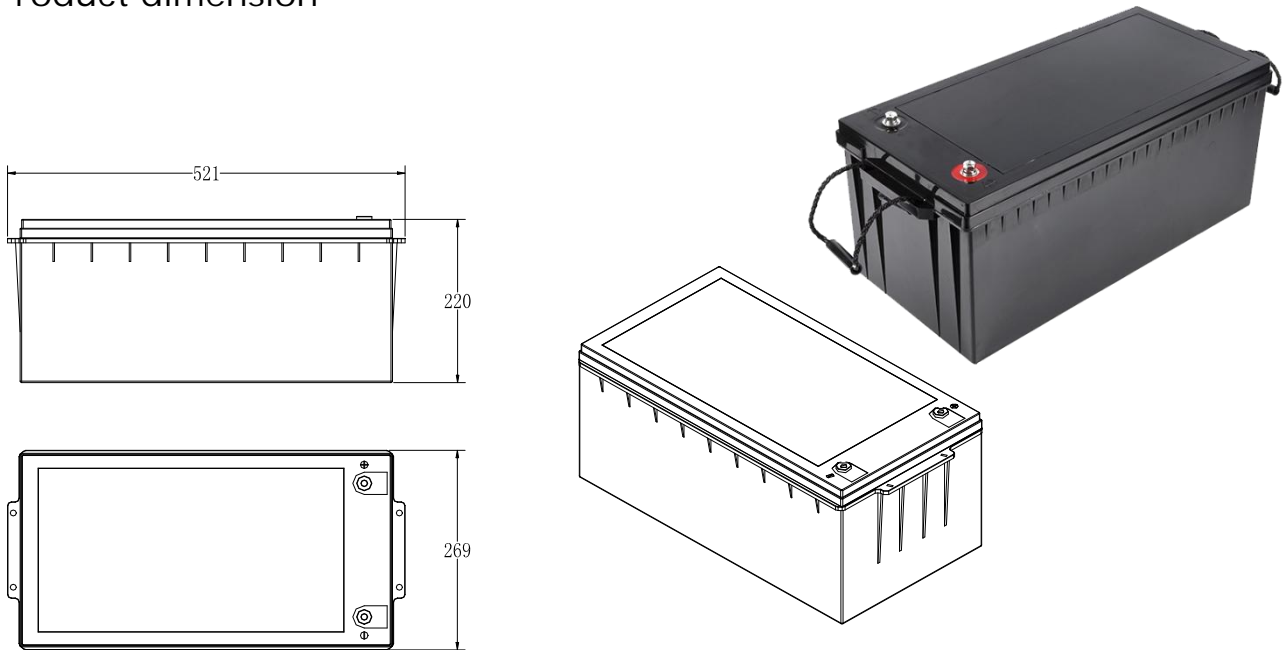
Enershare Tech Company Limited

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1.General Information

The specification shall be applied to Li-ionre charge able battery pack Of 54173210-4S2P-12.8V400Ah which is manufactured by Enershare Tech Company Limited.

2.Product dimension



单位 Unit: mm

备注：① 外壳默认为黑色普通 ABS 塑胶，可根据客户要求定制；

② 正极端子胶为暗红色，负极端子胶为黑色或蓝色；

③ 正负极端子为 M8, 配 M8 组合螺丝。（默认不配连接线，连接线可根据客户要求定制）

3.Battery Specification (@25±5℃)

NO.	Items	Characteristics
3.1	Nominal capacity	400Ah
3.2	Mix. capacity	390Ah
3.3	Nominal energy	5120Wh
3.3	Combination structure of battery	54173210-4S2P
3.4	Nominal voltage	12.8V
3.5	End of discharge voltage	10.8V

3.6	Standard charge voltage	14.6±0.2V	
3.7	Float charge voltage	13.8V	
3.8	Standard charge current	40A	
3.9	Recommended charge current	≤100A	
3.10	Allowed Max. charge current	100A	
3.11	Standard charge current	80A	
3.12	Recommended charge current	≤150A	
3.13	Allowed Max. charge current	150A	
3.14	Peak current	300A,10Sec	
3.15	Internal Resistance	≤30mΩ	
3.16	Weight	Approx. 41.0kg±5%	
3.17	Ex-factory capacity	Approx.50% SOC	
3.18	Operation temperature	Discharge	-20℃~60℃
		Charge	0℃~45℃
3.19	Storage environment	≤1Month	-20~+60℃、5~75%RH
		≤6Month	-10~+45℃、5~75%RH
		Recommend environment	15~+35℃、5~75%RH

4. Electrical Characteristics & Test Condition

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

Normal charge: Charge battery under CC(0.2C)/cV(14.4v) mode until the charge current reduce to 0.02c, and then rest for 1h.

No.	Items	Standard	Test condition
4.1	Normal capacity	≥400Ah	After Normal charge, discharge @0.2C current to the end of discharge voltage.
4.2	Internal Impedance	≤30mΩ	@50% SOC @1kHz AC internal resistance test Instrument.
4.3	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.
4.4	Discharge temperature Characteristic	-20℃/25℃≥45%	Battery shall be charged according to standard charge, discharged at 0.5C to 10.8 V. Battery shall be stored for 4 hours at the test temperature prior to discharging and then shall be discharged at the test temperature, The percentage shall be calculated using discharging capacity compared to the minimum capacity.
		-10℃/25℃≥70%	
		0℃/25℃≥85%	
		25℃/25℃≥100%	
		55℃/25℃≥95%	

4.5	Discharge performance in normal temperature	Discharge capacity 0.2C ≥100% 1C ≥95% 2C ≥85%	When the battery is in the environment of 25 °C ± 2 °C, after standard charging, rest for 10min, and then discharge to 10.8v with 0.2C, 1C, 2C. Calculate the ratio of discharge capacity to rated capacity at each multiple.
4.6	Capacity retention rate	Capacity retention ≥90% Capacity recovery ≥95%	Measure the initial state and capacity of the battery, after standard charge, then rest for 28 days, measure the final state of the battery; discharge at 0.2C to 10.8 V, measure the remaining capacity of the battery. After standard charging, the battery is discharged at 0.2C to 10.8 V to measure its recovery capacity. It can be cycled three times.
4.7	Cycle life @DOD100%	≥2000 cycles	After Normal charge, discharge @0.5C current to the end of discharge voltage. Repeat above process until discharge capacity reduce to 70% of initial value.

5. Circuit Protection

The batteries are supplied with a LiFePO4 Battery Management System (PCB) that can monitor and optimize 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	Parameter
5.1	Over charge	Over-charge protection for each cell	3.65±0.05V
		Over-charge protection for battery	14.6±0.20V
		Over-charge protection delay time	0.5-2S
		Over-charge release method	Cell voltage ≤3.50±0.05V and battery voltage ≤14.0±0.20V or Discharge current ≥2A
5.2	Over charge current	Charge over current protection 1	Charge current 140±20A
		Charge over current protection delay time	300~800mS
		Charge over current release	Cut load, Auto Recovery or discharge current >2A

5.3	Over discharge	Over-discharge protection for each cell	2.3V±0.10V
		Over-discharge protection for battery	10.8±0.30V
		Over-discharge protection delay time	0.5-1.5S
		Over-discharge release method	Cell voltage≥2.70±0.05V and battery voltage ≥11.2±0.20V or charge current >2A
5.4	Over discharge current	Discharge over current protection	Discharge current 350±30A
		Discharge over current protection delay time	50~150mS
		Discharge over current release	Cut load,Auto Recovery or charge current>2A
5.5	Temperature	Charging high temperature protection	50±5℃
		Charge Over-temperature release method	40~45℃
		Charging low temperature protection	0±5℃
		Discharge over temperature protection	70±5℃
		Discharge Over-temperature release method	50~60℃
		Discharge low temperature protection	-20±5℃
		PCB temperature protection	90±5℃
		PCB Over-temperature release method	90±5℃
		Temperature protection delay time	<10S
5.6	Cell balance	Balance Start Voltage	3.525±0.025V
		Balance current	36±10mA
5.7	Short circuit protection	Short Circuit Protection Current	1400±200A
		Protection condition	Load short circuit
		Protection delay	450~800uS
		Short circuit protection release	Cut load,Auto Recovery

Note: Protection board manufacturer specification information

6. Battery usages pecification

- When the battery is used alone, it can be used directly.
- When the battery needs to be used in parallel or in series, each battery shall be fully charged according to the standard charging method before parallel or in series.
- The maximum series number of batteries shall not exceed two, and the parallel number shall not exceed four.

7. Transport & Store

When long-time storage, the battery SOC is 30% ~ 50% , if high-SOC storage will accelerate the battery capacity degradation.

The battery need to be charged every 6 months if out of use.

No fall down, no pile up over 10 layers, and keep face up.

8. 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.

Enershare Tech Company Limited 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;

Attention

- 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 doctor immediately.
- Please far away from children or pets.

9. Warranty

Subject to the warranty agreement.