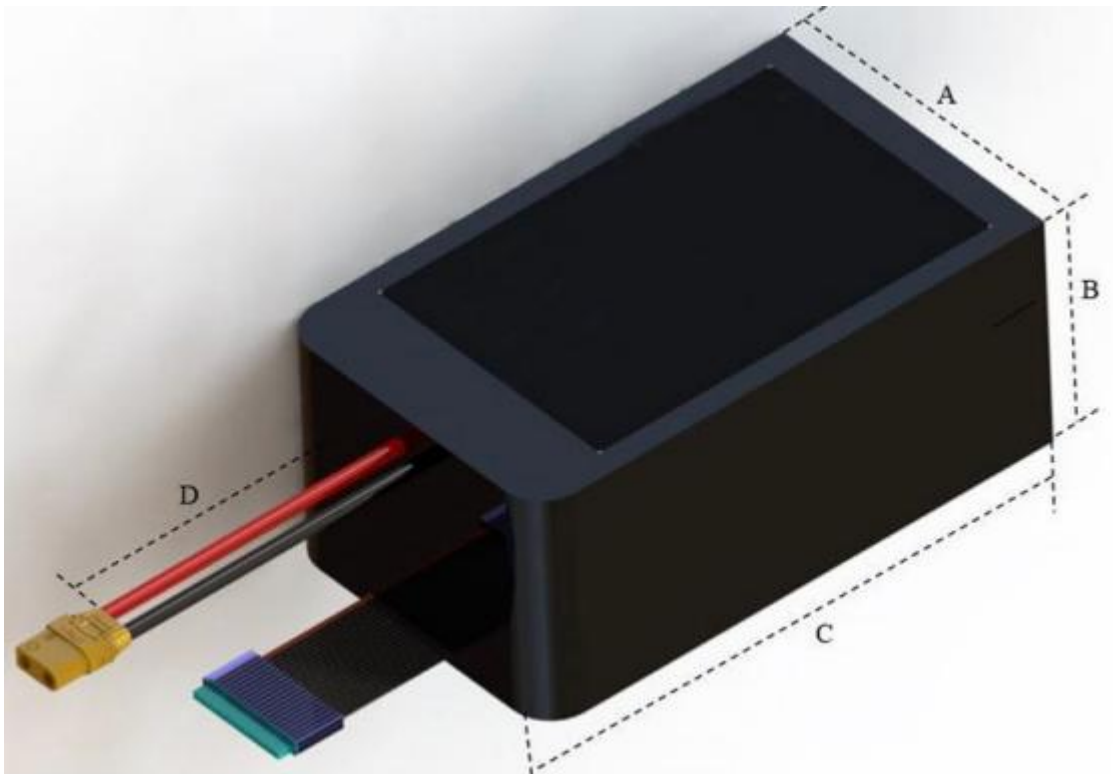


Xingto Battery 12S90AH Specifications

一. Scope of application

This product specification describes the performance indicators of the solid-state lithium-ion battery pack produced by **Zhuoxun Intelligent Technology (Henan) Co., Ltd.** Note: The solid-state lithium-ion battery pack described in this specification refers to a lithium-ion battery with solid-state technology (solid-liquid hybrid).

二. Product size



Code	Name	size($\pm 5\text{mm}$)
A	width	200mm
B	Thickness (max).	146mm
C	length	260mm
D	Long leakage line	$\geq 200\text{mm}$
	Power cord terminals	Optional
	Balance head	Optional

三. Product Specifications

serial number	project		Technical indicators
1	Nominal capacity		90Ah (0.5C)
2	Minimum capacity		89.5Ah (0.5C)
3	Nominal voltage		44.4V
4	Charging voltage		50.4V
5	Termination voltage		30V
6	Charging method	fast	1C (90A) Constant current (CC) Charge to 50.4V, then constant voltage (CV) Charge until the charge current is less than 0.02C (1.80A)
		standard	0.5C (45A) Constant current (CC) Charge to 50.4V, then constant voltage (CV) Charge until the charge current is less than 0.02C (1.80A)
7	Discharge method	pulse	10C (900A、duration≤10S) 5C (450A)
		Magnification	3C (270A)
		standard	0.5C (45A)
8	Operating temperature		Charge: 0°C~45°C Discharge: -10°C~55°C
10	Storage temperature		Short-term storage (1month):-20°C~45°C Long-term storage (6 months) : -10°C~35°C
11	Storage humidity		<75%RH
12	Internal resistance(max)		<18mΩ
13	weight (max)		<13.5Kg
14	Factory voltage		42V~43.8V
15	Outer carton size		310*255*350mm(Please refer to the actual situation)
16	Package weight		<14.5 Kg

四. Electrical performance test

Serial number	project	standard	Test methodology
1	Room temperature Discharge performance	Discharge capacity/nominal capacity× 100%. 0.5C ≥100% 3C ≥95%	At 1 standard atmosphere, the ambient temperature is 20°C±5°C, and the relative humidity is ≤ 75%RH, the battery is charged at 0.5C standard constant current and constant voltage 50.4V, cut-off current of 0.02C, battery at 20°C ±5°C, respectively 0.5C, 3C current discharge until the discharge termination voltage is 30V. Three cycles are allowed, and when one of the criteria is met, the requirements are met.
2	Room temperature charge retention capacity	Remaining capacity ≥ nominal capacity× 90% recovery capacity≥ nominal capacity×95%.	The battery is charged at 0.5C standard constant current and constant voltage at 50.4V, the cut-off current is 0.02C, left open for 28 days, and discharged at 0.5C to 30V, measuring the remaining capacity of the battery; 0.5C/0.5C measures the recovery capacity of the battery. Can be cycled three times when there is once the standard is met, the requirements are met.
3	Cycle life	Capacity≥80% × initial capacity	Perform a 0.5C charge/0.5C discharge cycle, and after 800 cycles, measure the remaining capacity of the battery. Perform a 0.5C charge/3C discharge cycle, and after 500 cycles, measure the remaining capacity of the battery.
4	Low temperature discharge performance	Capacity≥ 80% of nominal capacity ×	After the battery is charged at 0.5C standard constant current and constant voltage, it is left at -20°C for 8h, and discharged to 30V at 0.5C to measure the remaining capacity of the battery.

5	High temperature discharge performance	Capacity \geq 98% nominal capacity \times	After the battery is charged at 0.5C standard constant current and constant voltage, it is left at 55°C for 4h, and discharged to 30V at 0.5C to measure the remaining capacity of the battery.
6	Self-discharge	Capacity \geq Nominal Capacity \times 100% Storage 1 Month \geq 92%	The initial capacity of the battery was measured, after the battery was charged as standard, the initial state before storage was recorded, and after 1 month of storage at room temperature, the final state of the battery was measured, and then the discharge capacity of the battery was recorded 3 times at 0.5C/0.5C.

五. Visual in spection.

It is not allowed to have any cosmetic defects that affect the performance of the battery, such as cracks, cracks, leaks, etc

六. Standard test environment

Unless otherwise specified, all tests in this specification are performed under the following environmental conditions:

Temperature: $20 \pm 5^{\circ}\text{C}$

Humidity: $\leq 75\% \text{RH}$

Atmospheric pressure: 86KPa~106Kpa

七. Wrap

The packaging of the battery shall meet the requirements of moisture-proof and shockproof, and the detailed packaging is as follows:

- A single battery pack is stored using foam and an inner box;
- The outer packaging is a carton, 2 pieces per box.

八. Logotype

1. The following marks shall be displayed on the single battery product

- Product model
- Rated capacity, charging limit voltage
- Polarity symbol +,-
- Product barcode (information includes product model, batch number, production date information)

2. The outer wall of the packing box should have the following signs
- Product name (solid-state lithium-ion battery) product model, specification, packing quantity, packing number, factory date, etc
 - Manufacturer or trademark

九. Storage and other matters

1. Long-term storage

Long-term storage of batteries (more than 3 months) must be placed in a dry and cool place, and the battery should be charged and discharged once every 3 months, and the storage voltage is 42~43.8V (the single voltage is 3.50~3.65V), and the charging and discharging environment requirements are as described in 6.

2. Miscellaneous

Any matters not mentioned in this specification shall be determined by consultation between the two parties.

十. Shelflife and product liability

1. Shelf life: 12 months after the date of manufacture

2. Zhuo Xun Intelligent Technology (Henan) Co., Ltd. is not responsible for the operation caused by the failure to operate in accordance with the provisions of this specification, and the company will notify the purchaser when there are some changes in this specification.

十一. Validity period of the document

This document shall be issued from the date of publication until the date of the next amendment.

十二. Secrecy

This product specification cannot be disclosed to a third party without the permission of Zhuo Xun Intelligent Technology (Henan) Co., Ltd., and it is forbidden to copy or reprint.

十三. Release date

August 8, 2022

十四. Warnings and precautions.

(1) Do not throw the battery into fire or heat;

(2) Do not disassemble the battery;

(3) It is strictly forbidden to immerse the battery in seawater or water, and it should be placed in a cool and dry environment when not in use;

(4) It is forbidden to use the battery next to a hot and high temperature source, such as a fire, a heater, etc;

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- (5) Please use a special charger for lithium-ion batteries when charging;
 - (6) It is strictly forbidden to use batteries by reversing the positive and negative poles;
 - (7) It is strictly forbidden to plug the battery directly into the power outlet;
 - (8) It is forbidden to use metal to directly connect the positive and negative electrodes of the battery for short circuit;
 - (9) It is forbidden to transport or store batteries with metals, such as hairpins, necklaces, etc.;
 - (10) It is forbidden to knock or throw, or step on the battery;
 - (12) It is forbidden to directly weld the battery and pierce the battery with nails or other sharp objects;
 - (13) It is forbidden to use or place the battery at high temperatures (in the scorching sun or in a very hot car), otherwise it may cause the battery to overheat, catch fire or fail function, and shorten its life;
 - (14) It is forbidden to use it in places with strong static electricity and strong magnetic field, otherwise it is easy to damage the battery safety protection device and bring unsafe hidden dangers;
 - (15) If the battery leaks and the electrolyte enters the eyes, please do not rub it, rinse the eyes with clean water, and send it to a doctor immediately;
 - (16) If the battery emits peculiar smell, heat, discoloration, deformation, or any abnormality during use, storage, or charging,
 - (17) Immediately remove the battery from the unit or charger and deactivate it;
 - (18) Waste batteries should be wrapped with insulating paper to prevent fire and explosion;
 - (19) If the battery pole is dirty, wipe it with a dry cloth before use, otherwise it may cause the poor contact function to fail.