Specification of Battery Charger

ES120W

14.6V/5A

14.6V / 5A LiFePO4 BATTERY CHARGER

General

ES120W 135×90×50mm 14.6vdc/5A Battery Charger ES120W 135×90×50mm can work normally under 14.6vdc/5A and with reverse polarity protection.

Main product specification

Max.output power	Input voltage	Output voltage	Combined regulation	Output current	Combined regulation
120W	220	14.6V+/-0.2Vdc	+/-0.2V	5A	+/-0.2A

Environmental condition

No.	Item	Technical specification	Remark
1	Humidity	5~95%	With package
2	Altitude	≤3000m	Work normally

Electrical characteristics

4.1

Input characteristic

No.	Item	Technical specification	Remark
1	Rated input voltage	220Vac	100/220Vac Selection
2	Input voltage range	90 ~ 140Vac	
3	AC input voltage frequency	50～60 Hz	

4.2

Output characteristic or charge stage

No.	Item	Technical specification	Remark
1	CC(constant current)	≤14.6vdc/5A	
2	CV(constant voltage)	14.6vdc/5A ↓	
3	Float stage		0.2A CC
4	Power efficiency	≥80%	=230Vac, Vin=230Vac,rated load

4.3

Protection characteristics

No.	Item	Technical specification	Remark
1	Over voltage protection	Yes	
2	Software over voltage protection	The charger software limits the maximum output voltage to a level suitable for the connected battery system.	
3	Thermal protection	Yes	
4	Current limiting protection	Yes	At CC mode
5	Short circuit protection	Short circuit protection should be automatically recovery after remove the condition.	
6	Reverse polarity protection	When output wires are reversely connected to the battery the charger will not operate and will work normally when DC wires are correctly connected.	

4.4

Charging indicator

No.	Item	Status	Remark
1	Power on	LED1: Red	
2	Charging	LED2: Red	
3	Fully charged	LED2: Green	
4	Charging Voltage Display	No	
5	Charging Current Display	No	

Safety & EMC

No.	Item		Standard (or test condition)	Remark
1	Electric strength test	Input-output	1500Vac/10mA/1min	No breakdown
2	Isolation resistance	Input-ground	≥10Mohm@500Vdc	
		Output-ground	≥10Mohm@500Vdc	
3	Leakage current		＜3.5mA	Vin=264Vac
4	LVD		EN60335-1:2002+EN60335-2-29:2002	

Remark: Discrimination A- Function OK under technical requirement range;

Discrimination R- Physical damage or failure of equipment are not allowed, but damage of protection device (fuse) caused by interference signal of outside is allowed, and the whole equipment can work normally after replacement of protection device and reset of running parameter

Environmental testing requirements

No.	Item	Technical specification	Remark
1	High temperature ambient operating	+40℃	Features OK
2	Low temperature ambient operating	-10℃	Features OK
3	High temperature storage	+70℃	Work normally after recovery under normal temperature for 2 hours
4	Low temperature storage	-40℃	Work normally after recovery under normal temperature for 2 hours
5	Random vibration	20Hz to 2000Hz 3Grms 20hours per axis	
6	Repetitive shock	40g peak 3 orthogonal axes, 3+ and 3- in each axis, 11ms pulse width	
7	Thermal shock	-35℃ to 75℃, ＜3min transition, 2.5hours dwell, 200cycle	
8	Drop test	BS EN60068-2-32:1993 TEST ED: free fall appendix B	

Mechanical characteristic:

Shell material: Aluminum

Outline dimension: L*W*H=135×90×50mm

Input socket: meets IEC standard

AC wires: 1.5m length

DC wire: 0.85m length

Net Weight: 0.8kg

8. Package, transportation & storage

8.1 Package:

Attention:

The charger has several protections.

It will not fully charge a battery discharged below the voltage threshold appropriate for a given type of battery pack. It will also not attempt to load a charged pack. For example, a 10S Li-Ion battery with a maximum charge voltage of 42V will not be able to be recharged if the battery voltage does not drop below 39.5V (+/-3%) The charger in this case may show a charging error.

For some chargers, the charging of a battery with too low or no voltage will proceed in the following mode: after connecting the battery, the charger with low current tries to "raise" the battery to the correct voltage for a certain time. If the package reaches the correct voltage threshold, the normal charging process is started. However, if the minimum voltage is not reached at this stage, the charger will show a charging error.

A variation of this situation is when we connect the charger to the power and do not connect the battery pack at the right time. The charger then starts the process of checking the possibility of charging and because there is no connected battery pack, after exceeding the time of testing the possibility of starting the process, the charger will stop the process and show an error. In such a case, disconnect the charger from the power, wait a few minutes, reconnect the charger to the power and connect the battery pack to charge in a short time.

Noise caused by the fan and high-frequency sounds of the inverter are normal and are not grounds for complaint.

There is product name, model, name of manufacturer, safety approval, serial number, User Manual and packing list in the package box.

8.2 Transportation：

Suit for transportation by truck, the products should be shielded by tent from sunshine, and loaded and unloaded carefully.

8.3 Storage：

Products should be stored in package box when it is not used. And warehouse temperature should be -40~70℃, and relative humidity is 5~95%. In the warehouse, there should not be harmful gas, inflammable, explosive products, and corrosive chemical products, and strong mechanical vibration, shock and strong magnetic field affection. The package box should be above ground at least 20cm height, and 50cm away from wall, thermal source, and vent. Under this requirement, product has 2 years of storage period, and should be rechecked when over 2 years.

9. Reliability requirements

MTBF ≥10K；

MTBF (standard, environmental temperature, load requirement) ≥10K hours;

testing condition: 25℃,full load, testing proved value.

10.

Charging Curve