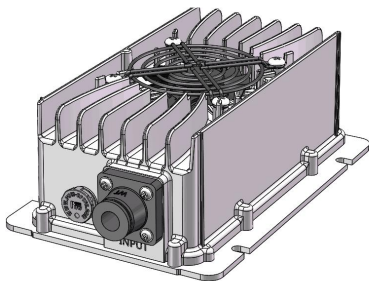


Battery charger

User manual



- Please read this manual carefully before using it.
- The right of interpretation of this manual will be reserved by our company.
- The exterior of the product is subject to material object.
- Additional notice will not be informed if there is technical or software upgrade.

※Waste Recycling Treatment Instruction※

When the end users no longer need this product, we will comply with relevant laws and regulations of the national waste recycling treatment of electrical and electronic products, and hand it over to the local manufacturers with any recycling management qualifications for recycling. The treatment measures should be in line with the comprehensive utilization of relevant national resources, environmental protection, labor safety and the requirements to protect human health.

BSL NEW ENERGY CO., LIMITED

Address:

- **US Warehouse Address :Dallas ,TX ,US**
- **Hong Kong Address: Flat A112, 1/f, Lee Ka Industrial Building, 8 Ng Fong Street,San Po Kong, Kowloon, Hong Kong, China Vat: 74592871**

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VER.: 2023 V2.3

1 Safety Instructions

1 Notice for AC input, charging output and connecting wires .

1) The specification in line with safety standards of three-hole socket should be selected as Charger AC input socket. Choose the larger size fire retardant wire in line fitting safety standards and rules based on the overall line length.

2) The connecting wire from the battery to the charging socket should meet the safety requirements of the charger output current. The nominal diameter of the copper wire should be $\geq (\text{input current}/5) \text{ mm}^2$, otherwise they will affect the charging performance because of the line drop, or even fires can originate due to overheat.

3) AC plug, socket and DC charging plug, socket should be checked at any time whether they contact well or are damaged. If yes, they should be replaced in time, otherwise it may cause the charger to work abnormally, and even fire.

4) AC wire and DC charging cable should be always checked whether they are aging or damaged. They should be replaced if found, otherwise it easily leads to electric shock, fire or other accidents.

5) If the power wire, plug or socket etc have any damaged. To avoid any incident, It must be changed by manufacturers or the maintenance personnel who is approved.

2 The charger as well as all cables, plugs and sockets must be far away from flammable items like clothing, paper, sofa, gasoline and explosive gas, otherwise it may cause fire due to overheat because plugs, sockets, or circuit is aging or contact poorly.

3 Without our permission, it is strictly prohibited for users to change the wiring, function, etc.

4 The input of charger power must be installed over current thermistor. Do not replace any non professional personnel.

5 Do not detach the charger. There is high voltage inside the charger. Non-professionals do not open the shell!

6 Users should remove the dust of the charger shell at least half a year.

2 Instruction

1) Match for charger with AC power grid and the battery pack

Match for chargers and AC power grid: Before using the charger, please make sure AC power grid voltage and its frequency are in the range specified.

Match for the charger and battery pack: There is applied battery specification in "Basic Parameters" label on the charger side. Please confirm whether battery type (flooded lead-acid batteries, sealed maintenance-free batteries, lithium batteries, nickel metal hydride batteries, nickel-cadmium battery, etc.), the battery capacity (AH) and battery pack rated voltage (V) match those on the "Basic Parameters" label. If they do not match, it is likely to cause less charge or over charge and even cause permanent damage to the battery pack, bringing serious economic losses.

2) AC power wire, DC charging cable polarity and precautions

AC input wire is at the rear of the charger. L, N and Earth are marked on input line plug. Please distinguish correctly. L, N, Earth on AC plug should correspond with those of socket outlet. The Earth wire of AC input socket should be connected firmly to the ground, otherwise the shell leaks electricity or electrostatic and easily causes injury.

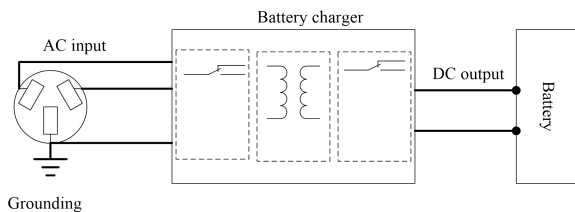
Charging output line is in front of the charger. You can distinguish the positive and negative of the output line by colors. Red or brown line is to connect battery "+" and blue or black to battery" - "(except special requirements of customers). Special connection of charging polarity with batteries polarity depends on special charging plugs, sockets and user special requirements. The polarity of charging socket should be consistent with polarity of charging plug polarity, otherwise it can not charge. Please check before using.

3) Instruction

4) First, please firmly connect charger output plug with battery pack and then firmly connect the AC plug with AC outlet. After the correct connection, Current will be output from the charger, At the same time, charger red light begin to glimmers. The green light turns on after finishing the charging. At this time, please disconnect the plug between the charger and alternating current.



3 Specifications and data

■ Schematic diagram of electrical principle



4 Troubleshooting

1) LED Indicator Status

Indicator label		
Battery Indicator	Red light flashes every one seconds.Battery level<80%; Yellow light flashes every one seconds.Battery level>80%; Green light flashes every one seconds.Battery level 100%	Charging : Red light flicker; Full: Green light is glowing;
Empty load	Green and red light will be alternately flashes	
Fault indication (“_”: pause 1s)	Over voltage,Over current: Red Green Red - - -	
	Ambient temperature is too high or too low※:Red Green Red Green - -	
	Charger overheating: Green Red - - - -	
	Output Under- Voltage: Red Green - - - -	
	Input AC anomaly: Red Green Red Green Red -	
	Integrated fault : Green Red Green - - -	
Full	Green light was glowing	

Notes:1.“※”:The fault of the charger with communication is "communication failure".

2.The status of the indicator in the upper table is the default status of our factory.If the customer specifies the indicator status, the declaration that the indicator status is pasted on the shell of the charger body shall prevail.

2) Common fault and solution

Indicator State “-”show pause	Fault indication	Solution
Red Green	Without load	Check if these happen:the connection of battery and charger is loose, the battery reversed, or the battery voltage is too low.
Red-Green-Red - - -	Over voltage or over current	If the error opens again after restart ,return it to factory repair.
Red Green Red Green - -	The ambient temperature is too high or too low※	Please check if the ambient temperature is too high and if ventilation is good and the position of battery temperature sensor.
Green Red - - - -	Charger overheating	Please check whether ambient temperature is too high and if ventilation is good.
Red Green - - - -	Output Under-Voltage	Please return it to the factory.
Red Green Red Green Red -	Input AC abnormality	Please check the input voltage and the plug poor contact.
Green Red Green- - - -	Anyone of the above-mentioned faults repeats five times, then it appears.	Re-up electricity, match the indicator state to the above-mentioned faults then get the corresponding solution.

Notes: “※”:The charger product with communication needs to check the communication connection line.

5 After Sales Service

Warranty Description

Dear Users:

Thanks for using BSL NEW ENERGY CO., LIMITED supply. Our company will provide you with quality service based on relevant regulations.

Following situations are within the warranty period: Within the warranty period, the damage caused by transportation or product quality. Within the warranty period, in the course of normal use, the damages not caused by misuse or vandalism.

Following situations are out of warranty range: Input wire, output wire or plug is damaged; Input wire or output wire is artificially cut; Open or take apart the charger without permission; The shell or the circuit board is damaged by users; The faulty charger is out of the warranty period.

User Notice

■ Tips

The relevant provisions in this manual must be followed throughout the entire process of operation, maintenance, and the repair of this product. The manufacturer stated that they are not responsible for the results of the operation when the user is in violation of such requirements.

■ Safety Utilization of Electric Power

Our charger belongs to Class I electrical appliance, please beware of safety issues while using it!

A reliable grounded power supply must be applied; the ground wire of the power supply should be buried in the ground, and it should not be connected to utilities such as water pipes; the ground and neutral wires of the power supply should be separated, and the two wires cannot be connected together.

Separate outlets must be applied and the outlets are qualified certified products.

For the safety of you and your family, please improve as soon as possible, if there is a place in your home that does not meet the above requirements.