Greatway

Shanghai Guangwei Elestris & Tools Co.,Lid.

Smart charger

HFS0548L
HFS0248L

Manual

Contents

Safety standard: en60335-2-29:2004 Q31 / 0117000431c011-2015

EMC standard: en55014-1:2017 / en6100-3-2:2014

Application: the charger is suitable for charging 48V lithium manganese battery, with input of 200 vac-240vac / 50Hz, maximum output voltage of 54.30v. The HFS0248L output current of 0-2.0a and the HFS0548L output current of 0-5.0a.

Chapter 1 Attention

Manganese lithium battery will produce a small amount of explosive gas during normal use, so please read this manual carefully and follow the relevant instructions before use.

1. Please use the special charger provided by our company. It is strictly forbidden to use other chargers to charge the battery; it is strictly forbidden to charge the frozen and non rechargeable batteries;
2. When charging, it is strictly forbidden to place any articles on the charger and play with the charger and battery;
3. It is forbidden to put any liquid or metal tools into the charger, and it is forbidden to plug the power plug with wet hands;
4. Please do not disassemble or refit the charger without authorization. In case of abnormal conditions such as cracking and water intrusion, stop using the charger and send the charger to a qualified or designated maintenance Office for repair in time;
5. It is forbidden to use the charger to charge the battery for a long time without adult's care. When the charger is not working, please pull off the power plug, cut off the input, and bundle the input and output lines to avoid damage;
6. The charger should not be used in unstable, excessive oil smoke and dust and excessive humidity environment; the charger should be kept in good ventilation and heat dissipation conditions, and should not be used in direct sunlight;
7. Please try not to use the power extension cord, improper use may cause fire and electric shock. If you must use the power extension cord, make sure that:

a. The number, size and shape of the pins on the extension cord plug and the charger plug are identical;

b. If the length of the extension line is ≤ 7.5m, its cross-sectional area shall not be less than 1.0mm2; if the length is ≤ 30m, its cross-sectional area shall not be less than 1.5mm2; if the length is ≤ 45m, its cross-sectional area shall not be less than 2.0mm2;

8. Do not use when the charger wire or plug is damaged. Replace the wire or plug immediately before use;

9. It is forbidden to use charger for charging around inflammable and explosive materials;

10. In case of peculiar smell during charging, the charger shall be disconnected in time, and the charger and battery shall be moved to an open area for repair.

Chapter 2 Operation

2.1 charging preparation

a. When charging the battery, please ensure that the area around the battery is well ventilated to ensure that the gas generated during the charging process is discharged in time;

b. If it is necessary to remove the battery from the vehicle for charging, make sure that all equipment in the vehicle are turned off to avoid electric arc, and remove the ground terminal of the battery first;

c. As the battery will produce gas and lose water when it is used, appropriate amount of distilled water can be added to the battery if necessary to supplement the water loss caused by gas evolution. Please operate in strict accordance with the requirements of the battery manual, including whether to remove the battery cover when charging, and the recommended charging rate.

2.2 charging position requirements

a. If the output DC line allows, the charger should be kept away from the battery as far as possible;

b. Do not place the charger directly on the battery being charged. The gas generated by the battery will corrode and damage the charger;

c. Do not place the battery on the charger, its electrolyte will corrode and damage the charger.

2.3 input / output line connection

a. When connecting the battery, make sure that the output of the charger is off, and the plug of the charger is disconnected from the mains power;

b. Connect the clip to the positive and negative electrodes of the battery (red clip connected to positive electrode, black clip to negative pole), and ensure reliable connection.

2.4 precautions for connection / disconnection of input / output lines

When charging the vehicle battery with a charger, please follow the following steps for the connection of input and output lines. In case of carelessness, spark may be generated due to wrong connection sequence, which may lead to battery explosion.

a. Fix the AC power line and DC charging line to avoid being crushed or damaged by other parts of the machine;

b. Check the polarity of the battery column. Determine which electrode of the battery is connected to the chassis. Refer to item "C" if negative ground to chassis (most vehicles); see item "d" if positive ground to chassis;

c. For vehicles with negative ground, connect the charger positive (red) clip to the positive battery, and connect the negative (black) clip to the vehicle chassis or other reliable ground, away from the battery.Do not connect the clip to carburetor, fuel pipe or sheet metal body;

d. For vehicles with positive ground, connect the negative (black) clip of the charger to the negative pole of the battery, and connect the positive (red) clip to the vehicle chassis or other reliable ground, away from the battery.Do not connect the clip to carburetor, fuel pipe or sheet metal body;

e. When disconnecting the charger, turn off the output, disconnect the AC plug, remove the clip from the vehicle chassis, and then remove the clip from the battery terminal.

2.5 battery charging outside the vehicle

When charging the battery outside the vehicle, please follow the steps below. In case of carelessness, spark may be generated due to wrong connection sequence, which may lead to battery explosion.

a. Check the polarity of the battery column;

b. Make sure that the distance between battery and charger is no less than 0.6m;

c. Connect the charger output positive (red) clip to the battery positive pole, and connect the charger output negative (black) clip to the battery negative pole;

d. Plug in the power plug and select the corresponding gear for charging;

e. When disconnecting the charger, please follow the reverse connection steps;

f. Marine (Marine) batteries must be removed and recharged on shore.In order to charge on board, it is necessary to design a marine charger.

2.6 charging duration

a. Check the rated capacity (ampere hours) and recommended charging current of the battery from the battery nameplate. If not, please contact the battery supplier;

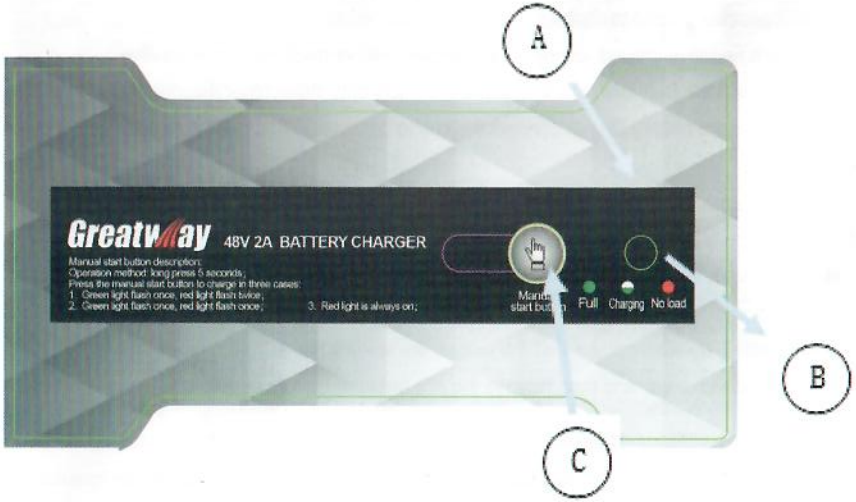
b. The charging current of the battery should not be greater than the set charging current.

c. The charging time (from no-load to full charge) is about: nominal battery capacity (ah) / charging current (a) × 1.25 = charging time (HR)

d. Note: charging time is estimated and varies from battery to battery.

Chapter 3 Control panel

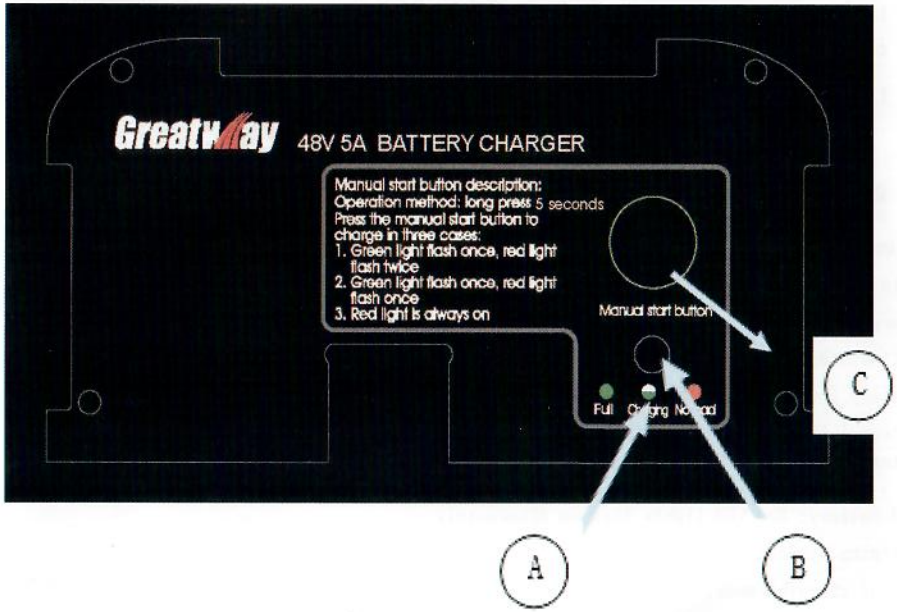
● MODEL HFS0248L



A: Idle and full indicator (green) B: charging and error reporting indicator (red)

C: ON/OFF Key

● MODEL HFS0548L



A: Idle and full indicator (green) B: charging and error reporting indicator (red)

C: ON/OFF Key

3.2charge:

a. For the connection between charger and battery, please refer to Section 2.2 to 2.5 in Chapter II of this description.

b. The charger is connected with AC socket, and the green light is always on;

c. If the battery voltage is too low, press the button for 5S to start the charger;

f. If the charger does not detect a properly connected battery, the red light flashes until the battery is detected.In this state, charging will not be carried out, and the red light is always on when charging starts.

g. When the charging is finished, the green light is always on. Pull the charger from the AC socket.

3.3 indicator light display status

1.Idle state: Red LED is always on

2.Charging state: green LED flashing cycle

3.Full state: green LED is always on

4.Battery low voltage: LED light, red, green cycle flashing

5.External low temperature: LED light, traffic lights on alternately

6.External high temperature: Red LED light "red red red" alternately flashing

7.Bad battery: Red LED lights turn on alternately

8.Charging timeout: Red LED lamp "red red red" flashing

9.Manual charging mode: green LED cycle slow flashing

Chapter 4: Storage, maintenance and transportation

1. The charger shall be stored in a clean, dry and ventilated place. It shall be avoided to be exposed to rain, snow or high humidity environment, contact with corrosive substances and away from fire and heat sources;

2. Working temperature: - 20 ℃～ 40 ℃;

3. Working normally, shell temperature: 0-55 degrees. Be careful when you are working!

3. Storage conditions of charger: ambient temperature 40 ℃～ 85 ℃; relative humidity: 20% ~ 93% RH; storage temperature: 40 ℃～ 85 ℃;

4. Before maintenance or cleaning, make sure that the charger has no input; when cleaning, use a slightly wet cloth to clean the shell and cable, and clean the corrosion on the clamp with water and sodium bicarbonate mixed solution;

5. The cable and other easily damaged parts shall be inspected regularly and replaced timely if necessary;

6. It should be packed into a whole box for transportation. During transportation, violent vibration, impact or extrusion should be prevented to prevent sun and rain;

7. When storing the charger, please disconnect it from the battery.

Chapter 5, troubleshooting

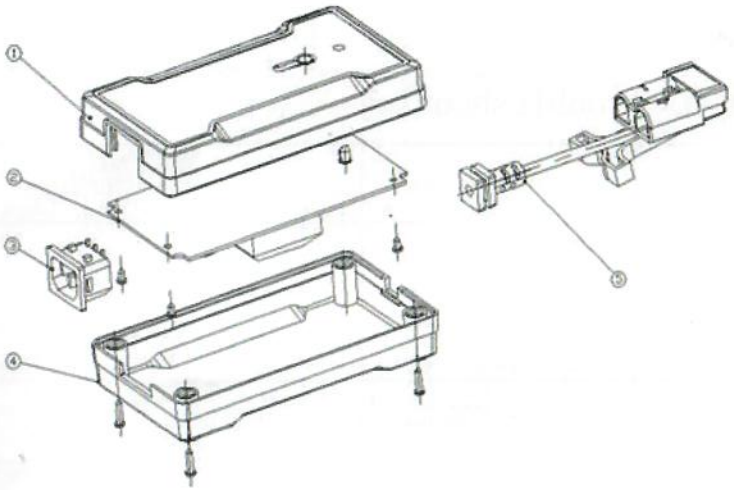
Fault phenomenon	Cause of failure	Troubleshooting
Overtime alarm	When the battery is charged for 13h, if the voltage fails to reach the full cut-off voltage, the alarm will be overtime	Professional technicians test the battery
The battery doesn't charge	Check for AC input power	Make sure the charger is plugged into the AC socket, and the power connection indicator is on
	Wrong connection of battery terminals	Disconnect the charger and check the battery connection; make sure that the battery terminal / pole is well connected to the vehicle base
	Battery voltage too low	If the battery voltage is lower than 30V, the charger cannot start charging normally. Press the "key" for 5S to enter the "manual mode" charging
	Battery voltage too low	If the battery voltage is lower than 30V, the charger cannot start charging normally. Press the "key" for 5S to enter the "manual mode" charging

	The ambient temperature is too low or too high	When the ambient temperature is less than - 5 ℃, the traffic lights flash alternately, and you can press the "key" for 5S to start charging manually; when the ambient temperature is higher than 50 ℃, the charger will interrupt the output and the LED light "red red red" will flash alternately.

If the above problems are not solved after elimination or other problems, please contact the company's after-sales service department or dealers.

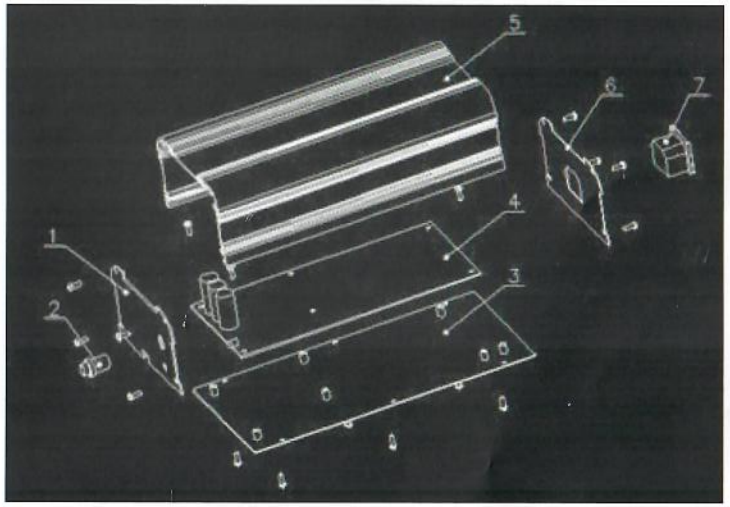
Chapter 6, drawing and accessories

- **HFS0248L**



Serial number	Part name
1	Upper shell
2	PCBA
3	AC input socket
4	Lower shell
5	Output line

- **HFS0548L**



Serial number	Part name
1	front panel
2	Force button
3	floor
4	PCBA
5	Upper shell
6	Rear panel
7	AC input socket

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