Specification Approval Sheet

Name: **1-4 cells LI-PO/LI-FE Balance charger**

Model: JMC002-11

SPECS: **I/P:DC10-16V**

O/P:4.2V,8.4V,12.6V,16.8V/1A

O/P:3.6V,7.2V,10.8V,14.4V/1A

Approved By	Checkup	Make

Customer Confirmation	Signature	Date
	Company Name：	
	Stamp：	

CONTENT

1 Features

1. Universal AC input,suitable for car adapter and most of the comman power supply.
2. Built-in selectable balance charging circuit, balance each cell of the battery rapidly .no need long-time wait.
3. Reverse polarity protection can prompt the reverse connect and prevent charger and batteies from being damaged when user connect reversely for a long-time
4. Automatical operation of trickle charge, constant current charge and constant voltage charge.
5. Over-voltage and under-voltage protection.it will stop charge and prompt when the voltage is not normal.
6. Automatic detection helps distinguish good and bad batteries.
7. over-heat protection.
8. Automatical detection.
9. Color LED indicates charging status.
10. Suitable for li-ion and life-po4 batteries.

2 Electrical characteristics

2.1 Input Characteristics

2.1.1 DC input voltage

input voltage: DC 10-16V

2.1.2 input power

input power≥22.5W

2.2 Output Characteristics

2.2.1 Output No-load Voltage

output no-load voltage:<0.2V

2.2.2 Rated charging current: (normal charging)

rated charging current:1000mA±100mA

2.2.3 Trickle charging current

trickle charging current:200mA±50mA

2.2.4 Charging Mode

Constant current and voltage charging

2.2.5 -△V Detection Precision

-△V detection precision: LIPO 4.20V±0.02V LIFE 3.60V±0.02V

2.2.6 Short Circuit Protection

when there is short circuit ,the charger has no output charging current.

2.2.7 Reverse Polarity Protection

If the batteries are reversed connected,the charge will not work.(structurally reverse protection)

2.2.8 Reverse Leakage Current

When there is no DC input,the reverse leakage current:≤10mA（to hold the capacity of the charged batteries.）

2.2.9 Suitable battery

1000-6600mAh 1-4S LIPO/LIFE Battery Packs

3 LED Indication Status and Usage method

3.1 **LED indication**

Normal Input ,no batteies	power indicator---solid green	status indicator---off
Reverse Input,no batteies	power indicator---solid red	status indicator---off
Normal Input ,normal charge	power indicator---solid green	status indicator---solid red
Normal Input ,full charged	power indicator---solid green	status indicator---solid green
Abnormal input, no batteies	power indicator---solid green	status indicator---slowly green flash
Normal Input ,abnormal batteries	power indicator---solid green	status indicator---slowly red flash
Normal Input ,reverse batteries	power indicator---solid green	status indicator---alternative flash
Normal Input ,failed self-detection	power indicator---solid green	status indicator---rapid red flash

3.2 **Usage method and function description**

3.2.1 Use the power supply DC10-16V, ≥22.5W

Normal power supply voltage,power indicator green,status indicator off.(can charge);

Reverse power supply voltage,power indicator red,status indicator off(can't charge);

Abnormal power supply voltage,<10v or >16v,power indicator solid green,status indicator green flash(can't charge)

3.2.2 Please make sure of the type of the batteries before insert the batteries.please make sure of the current if can be selected.the two parameters can't change after connecting the batteries for safety concerns.

3.2.3 Connect suitable battery packs to charge

Connect suitable battery packs according your selection.(LIFE/LIPO).

The charger can automaticly identify the cells of the battery packs and automaticly charge for the battery packs.

Automatical operation of trickle charge, constant current charge and constant

voltage charge when charging .it will turn to trickle charge when the voltage of one of the batteries<2.7V,the current will be around 200mA to prevent the battery from being damaged ;when the voltage >2.7V,the constant current charing will turn to fast charing.

At the later charging stage,the charger will balance the battery which has a great voltage difference and turn to fast charging status.

The status indicator is solid red when it's charging.

The status indicator is solid green when the it's full charged.

3.2.4 Automatic detection of the bad battery.

When the voltage of one of the batteries is lower than 1.8V,the charger will take this battery as a bad one and stop charging for safety . the status indicator is flash.

3.2.5 Automatic detection of reverse batteries

When the batteries is reversed connected ,the charge will automatic detect and prompt.the status indicator is alternative flash bewteen the red and green light.

3.2.6 Over-heat protection

The charge can monitor the temperature of the mail components .if the internal temperature is over-high by some abnormal reasons,the charging current will be half-short when the temperature reach to 75° ;it will stop charge when the temperature reach to 100° in case of being damaged.

3.2.7Automatic data detection

The charger can monitor and correct the charging data to avoid the parameter errors caused by the data errors.

4 Environmental Requirements

4.1 Operating Temperature

0~+40℃

4.2 Operating Humidity

≤90% (Non-condensing)

4.3 Storage Temperature

-20~+80℃

4.4 Storage Humidity

RH≤85%

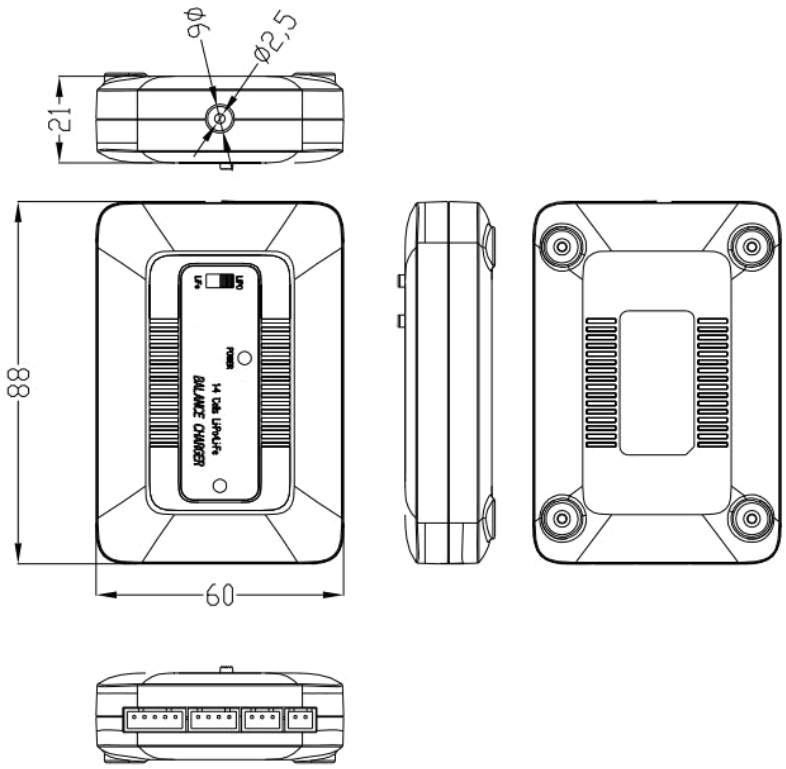
4.5 Atmospheric Pressure

70~106KPa

5 Mechanical Requirements

5.1 Structural Drawing

There will be some difference when the parameter is not the same.



6 Reliability

1.) **High Temperature Test:** Place the unpacked product into the test chamber and leave it at the temperature of 65℃±2℃ for 5 hours, then take it out and cool down to room temperature. Then check its appearance, dielectric strength, indication and electrical performances. Any damages or malfunctions are unaccepted.

2.) **Low Temperature Test:** Place the unpacked product into the test chamber and leave it at the temperature of －20℃±3℃ for 8 hours, and then take it out and let it recover back to room temperature. Then check its appearance, dielectric strength, indication and electrical performances. Any damages or malfunctions are unaccepted.

3.) **Constant Temperature and Moisture Test:** Place the unpacked product into the test chamber and leave it at the temperature of 40℃±2℃ and humidity of 90%～95% for 48 hours and then take it out. Then check its appearance, dielectric strength, indication and electrical performances. Any damages or malfunctions are unaccepted.

4.) **Vibration Test:** Test the charger at the frequency of 10～55Hz and amplitude of 0.35mm for 10 sweep cycles from each direction. Then check its appearance, dielectric strength, indication and electrical performances. Any damages or malfunctions are unaccepted.

5.) **Drop Test:** Free fall from the height of 1m onto a 20mm thick hard wood surface from 6 different corners of the charger. Check its appearance, dielectric strength, indication and electrical performances. Any damages, malfunctions or abnormal sound inside the charger are unaccepted.

6.) **Certification Requirement:** there is no certification requirement temporarily.

7 Appearance Requirement

Charger surface should be smooth without any scratches, burr or other mechanical damages. Silk print should be clear and intact. No rust should be on the exposed metal parts.

8 Volume & Weight

8.1 Volume

80×60×21mm(W×H×T)

8.2 Weight

50g

9 Sampling Standard

The default QA inspection is based on MIL-STD-105E standard and strictly implemented. Special procedure can be arranged upon customer's request.

10 Package

Blister card package

11 Cautions

1. DO NOT use it to charge inapplicable batteries
2. DO NOT operate the charger when the temperature is higher than 40℃. We recommend you operate when the temperature is lower than 35℃. Batteries may get warm during charging;
3. Keep it away from heat and combustion source during charging.
4. DO NOT use charger and batteries in any acidic, alkaline or corrosive environment.

5. DO NOT expose charger to rain, snow, water, gas, oil, etc.
6. DO NOT disassemble charger or battery.
7. DO NOT let children use charger without adult supervision.