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1. Outline

1.1 Range of Application

This specification applies to relative features of TC-4H-18650-B charger, including electric, appearance, mechanical characteristics and external environment.

1.2 Updating Record

Edition	Date	Introductions	Approved	Audited
01	Apr.20 th ,2012			

2. Product Features

2.1 Microcomputer IC controls charging process: CC/CV/Trickle charging, to make sure the battery id full charged and won't be over charged; each slot controls independently; Mixed charging mode

2.2 Applicable batteries

Compatibility: various kinds of cylindrical chargeable batteries (Diameter: below 26mm, height: 34-70mm)
Charge 3.7V Li-ion 1.2V Ni-MH/Ni-CD or 3V LiFePO4 1.2V Ni-MH/Ni-CD batteries

2.3 Charging Mode

- A. CC-CV
- B. Adopt negative voltage control technology to improve charge efficiency.
- C. Four sets of led indicators each set containing 3, show independently when charging, making the charging process visible and detecting battery charging status and stopping once completing charge intelligently.
- D. Protect opposite connection and short circuit; 0 Voltage alarms.
- E. Activate automatically for Li-ion battery.
- F. Temperature protection: Stop charging automatically if the temperature of charger or battery gets too high when charging.
- G. Stainless steel rail is more durable and smooth.
- H. Worldwide voltage, suitable for the whole world.
- I. 12V car adapter is available.

3. Environment Condition

Using indoor

Operating Temperature	0°C-35°C	Storage Temperature	0°C-40°C
Operating Humidity	35%-95%	Storage Humidity	45%-85%
Testing Temperature	25°C±10°C	Atmospheric Pressure	70-106Mpa

4. Electric Features

4.1 AC Features

AC 110-240V 50/60Hz
DC 12V

4.2 Output Features

DC 4.2V±0.08V 375mA±80mA *4

DC 3.6V±0.04V 375mA±80mA *4

DC 1.48V±0.02V 375mA±80mA *4

(Slot NO.1 & Slot NO.3 is a set; Slot NO.2 & Slot NO.4 is a set. Put 1 battery in each set, and then each battery's charging current is 750mAh)

4.3 Charging Instruction Mode

LED: Power LED-1 blue LED; Capacity LED-12 yellow LEDs

A. If don't install the batteries and plug in, 3 LED indicators twinkle.

B. 3 LED indicators twinkle orderly to show the charging process:

1LED stops twinkling and fixing that indicates battery charged by a third;

2LEDs stops twinkling and fixing that indicates battery charged by two-thirds;

3LEDs stops twinkling and fixing that indicates charging is complete.

4.4 Charging Control Mode

Ni-MH/Ni-CD

A. Current Control: CC

B. $-\Delta V$: 8mV

C. The total time to protect: 5h (Counting when each battery begins charging)

D. Max Voltage: 1.48V

Li-ion

Current Control: CC-CV

5. Reliability Test

5.1 High Temperature Test

Test temperature: 45°C ±5°C, last time:5 hours (no package)

Retest the appearance, insulation strength, indicating functions and charging features after putting in normal temperature. There are no scratches and other damages; there is no rust in outside metal. It is normal in indicator and electricity functions.

5.2 Low Temperature Test

Test temperature: -10°C ±3°C, last time:8 hours (no package)

Retest the appearance, insulation strength, indicating functions and charging features after putting in normal temperature. There are no scratches and other damages; there is no rust in outside metal. It is normal in indicator and electricity functions.

5.3 Constant Voltage Thermal-Humidity Test

Test temperature: 25°C ±2°C Humidity: 90%~95% last time:8 hours (no package)

Retest the appearance, insulation strength, indicating functions and charging features after putting in normal temperature. There are no scratches and other damages; there is no rust in outside metal. It is normal in indicator and electricity functions.

5.4 Vibrating Test

Frequency: 10~55Hz Amplitude: 0.35mm Circulation times in each direction: 10 times

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Retest the appearance, insulation strength, indicating functions and charging features after putting in normal temperature. There are no scratches and other damages; there is no rust in outside metal. It is normal in indicator and electricity functions.

5.5 Falling Test

Height: 1000mm test-bed thickness: 20mm (hard wood) six side: once per direction

Retest the appearance, insulation strength, indicating functions and charging features after putting in normal temperature. There are no scratches and other damages; there is no rust in outside metal. It is normal in indicator and electricity functions.

6. Appearance Features

6.1 Size

Charger 138mm*96mm*36mm (L*W*H)

AC Line 1000mm

6.2 Weight

Charger 165g

AC Line 40g

6.3 Appearance

No scratch, blot, burrs, fissure and rust

7. Actual Charging Description

7.1 Plug charger in socket; charger begins working after check itself.

7.2 This product can charge 1-4 Ni-MH/ Ni-CD/LiFePo4 or 1-4 Ni-MH/ Ni-CD /Li-ion battery simultaneously.

8. Packaging & Storing

8.1 Packaging

A. Bubble bag

B. Neutral box

8.2 Storing

A. Under the environment temperature during 0°C-40°C;

B. Clean, dry and ventilating indoor;

C. Avoid contacting with corrosive material.

D. Stay away from fire and heat source

9. Using Tips

9.1 Warnings

A. This product charges only for Ni-MH/ Ni-CD battery, LiFePO4 battery and Li-ion battery. If charging other batteries may lead to explode, break the batteries or weep and make personal injury and property loss.

B. Using charger in the wrong way maybe gets an electric shock.

C. Use the battery indoor and do not in the rain or snow.

D. Do not break or assemble the charger.

9.2 The Do's and Don'ts

- A. Do not put heavy stuff in the charger.
- B. Children should be supervised by adults during using the charger.
- C. Use the charger in the temperature of 0°C-35°C
- D. Do not use or store the charger under the direct sunlight, nearby the heated equipment and other high temperature places.