

M450

Manual V1.0

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ToolkitRC Technology (Shenzhen) Co., Ltd

Introduction

Thank you for purchasing the M450 balance charger, please read this manual carefully before use.

Key Points



Tips



Important



Information

Further information

To ensure you have the best experience with this product please scan the QR code below to stay up to date with news, information and firmware updates for your charger. Or visit www.toolkitrc.com.



WeChat QR Code

Applications

Video teaching

Product purchase



Safety

1. M450 allows input voltage of AC100-240V, do not change or modify the power cable and ensure the charger is only connected to a suitable AC power outlet.
2. Do not use this product in the environment of heat, humidity, flammable liquids or explosive gas.
3. Please do not use this charger without supervision. Never leave charging batteries unattended.
4. When not using this product, please unplug the input power.
5. When using the charging function, please set a current that matches the battery. Do not set an excessive current for charging to avoid damage to the battery. Check the guidelines of your battery's manufacturer for correct charging instructions.

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Product description

The M450 is an AC balance charger. Small in size, yet high in power density. Featuring an IPS wide viewing angle display and charging accuracy as low as 5mV.

- Charge and balance management of LiPo, LiHV, LiFe & Lion 2-4S batteries.
- Wide voltage input AC 100-240 55W.
- Charging current: Maximum 5.0A @MAX 50W.
- Lithium battery cut-off voltage can be set (TVC function).
- Battery voltage can be manually calibrated.
- Charging accuracy: <0.005V.
- Balance current: 200mA.
- 1.54 inch, IPS full viewing angle display.
- High resolution 240*240 pixels.

*To charge 1S batteries, you need to purchase the following adapter charging cable as below:



M450 Layout



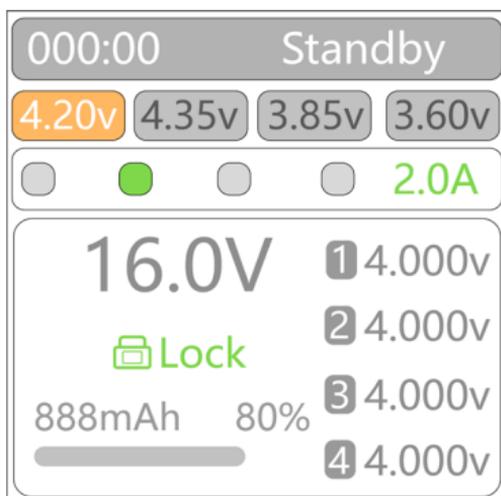
Front



Back

Quick start

- 1, Connect the M450 to a suitable 100-240V AC to power outlet.
- 2, The display shows the boot logo and stays for 2 seconds.
- 3, After booting up, the screen enters the main interface as shown below:



- 4, Short press [Type/Current] to unlock the screen.
- 5, Press and hold [Type/Current] key to select the cut-off voltage to be charged.
- 6, Short press [Type/Current] key to select the current to be charged.
- 7, When the output main port and the balance port voltage match, it will automatically start charging.

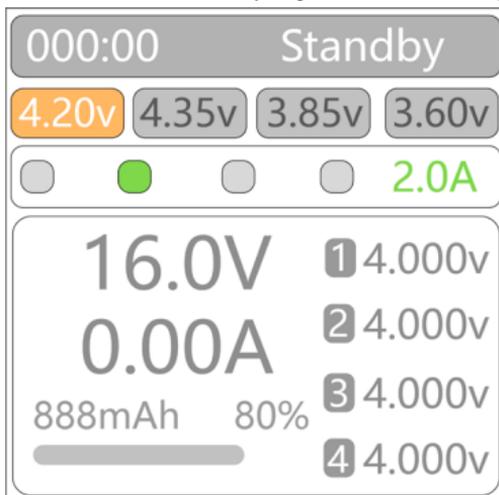


Tips:

Every time you turn on the charger, need to short press the button once to unlock. This safety feature is to prevent incorrect selection of battery type and current.

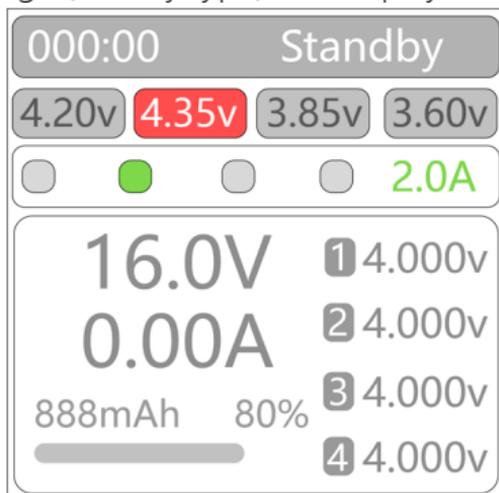
Charging settings

After the power is turned connected and the charger unlocked, the screen will display the following.



1, Battery type setting

Long press [Type/Current] key to select battery cut-off voltage (battery type), the display is as follows.



Different cut-off voltages correspond to different battery types. The following table:

4.20V	Lipo
4.35V	LiHv
3.85V	Lipo-Storage
3.60V	LiFe



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Important:

1, Choosing the wrong battery type to charge may damage the battery, the charger, and cause fire hazards. Please choose carefully.

2, Please do not use this product to charge the battery that is not marked with the battery type.



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Vocabulary explanation:

1, Lipo: Often referred to as a lithium polymer battery, a battery with a nominal voltage of 3.70V and 4.20V when fully charged.

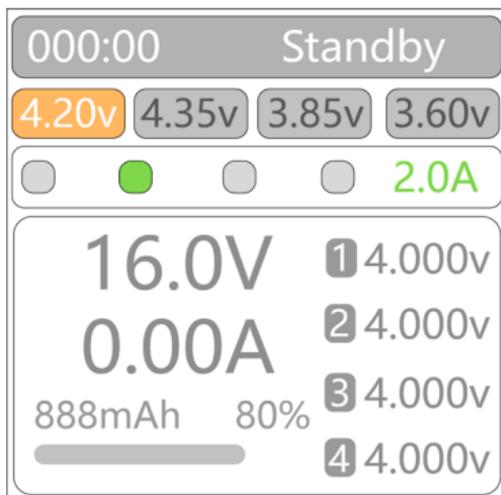
2, LiHV: Often referred to as a high-voltage lithium battery, a battery with a nominal voltage of 3.85V and 4.35V when fully charged.

3, LiFe: Often referred to as an iron-lithium battery, a battery with a nominal voltage of 3.30V and 3.60V when fully charged.

4, Lion: Often called a lithium-ion battery, a battery with a nominal voltage of 3.60V and 4.10V when fully charged.

2, Current setting

Short press [Type/Current] key to select the charging current, the current can be selected from 4 levels of values, 1.0A, 2.0A, 3.0A, 5.0A. The display is as follows.



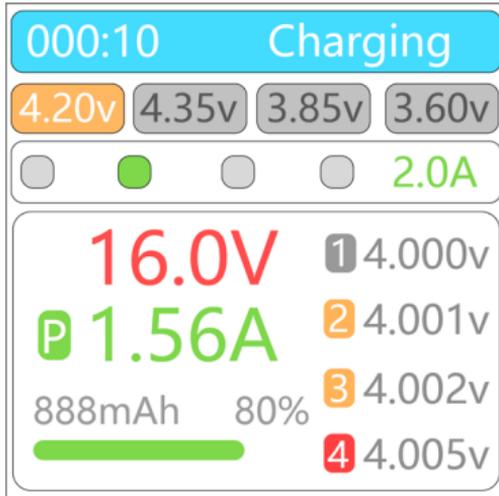
Tips:

When selecting the current, it is recommended to use a charging rate of 1C-2C. For example: 1000mAh battery, it is recommended to use 1.0A-2.0A for charging, which will effectively improve the cycle life of the battery. Always check the battery manufacturers guidelines and charging instructions before charging.

Start charging

After setting the battery voltage and current, connect the battery. After the charger detects that the voltage between the main port and the balance port matches, it will automatically start charging.

Display as follows:



Display content description:

000:10: Charging time.

Charging: Charger working status.

4.20v: The selected rechargeable battery type.

4.35v **3.85v** **3.60v**: Other types of rechargeable batteries.

16.0V: Current rechargeable battery voltage.

1.56A: Current charging current.

P: Current limit sign.

P: Power current limit, **T**: High temperature current limit, **F**: The battery or one of the

cells is full.

888mAh: Accumulated capacity that has been charged.

1 4.000V: The first battery voltage, this cell is not balancing

2 4.001V: The second battery voltage, this cell is slowly balancing

3 4.002V: The third battery voltage, this cell is slowly balancing

4 4.005V: The fourth battery voltage, this cell is quickly balancing

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Tips:

When charging a 1S battery, the battery voltage needs to be provided to the balance port at the same time, so that the charger can recognize and start charging.

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Terminal voltage setting and manual calibration

Before connecting to the power supply, press and hold [Type/Current] key to enter the calibration mode, as shown below:

```
Terminal voltage:
4.20v 4.35v 3.85v 3.60v
Calibration voltage:
16.80V 1 4.200v
          2 4.200v
0         3 4.200v
DEFAULT  4 4.200v
```

Terminal volte: The terminal voltage after the battery is fully charged. Each battery allows to modify the voltage range of plus or minus 10mV.

Calibration voltage: Battery calibration voltage, if the cell voltage readings appear to be incorrect, use a high-quality voltage meter to measure the actual voltage, and then set this value to be the same as the meter. To achieve voltage calibration.

DEFAULT: Restore to factory default.

Specification

Charging	Input	AC 100-240V @MAX 55W
	Battery type	LiPo LiHv LiFe LipoStorage 2-4S
	Charging power	1.0-5.0A @ 50W
	Balance current	MAX 200mA @2-4S
	Charging accuracy	<0.005V
Display	LCD	IPS 1.54 inch 240*240 resolution
Product	Size	109mm*79mm*42mm
	Weight	230g
Individual packing	Size	110mm*80mm*65mm
	Weight	310g