

M4AC

Manual V1.0

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ToolkitRC

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ToolkitRC Technology (Shenzhen) Co., Ltd

Introduction

Thank you for purchasing the M4AC 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. M4_{AC} 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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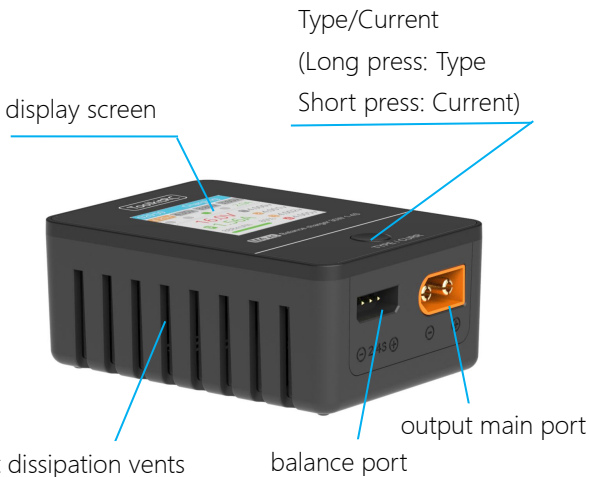
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Product description

The M4_{AC} 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 1-4S batteries.
- Wide voltage input AC 100-240 30W.
- Charging current: Maximum 2.5A @MAX 25W.
- 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.

M4AC Layout



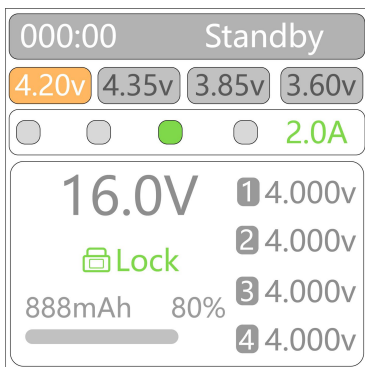
Front



Back

Quick start

- 1, Connect the M4AC 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] key to release the locked state.
- 5, Long press [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.

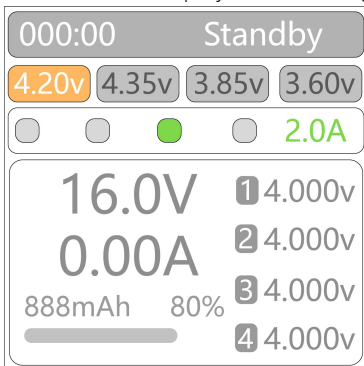


Tips:

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

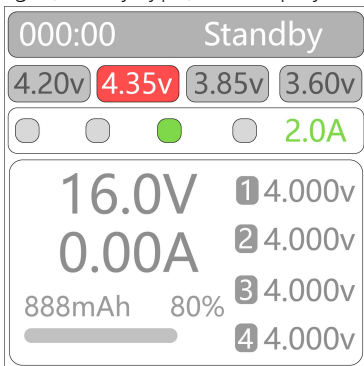
Charging settings

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.

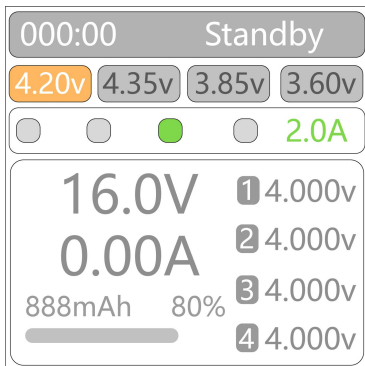
2, LiHV: Often referred to as a high-voltage lithium battery, a battery with a nominal voltage of 3.85V and 4.35V when fully charged.

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, 0.5A, 1.0A, 2.0A, 2.5A. The display is as follows.



Tips:

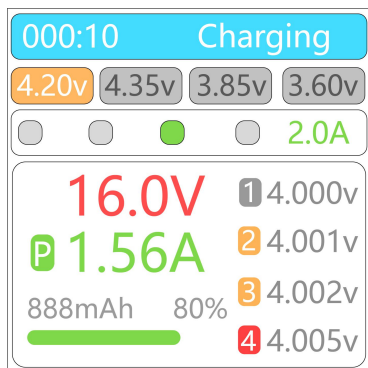
When selecting the current, it is recommended to use a charging rate of 1C-2C. For example: 1000mAh battery, it is recommended to use 1.0A-2.0A for charging, which will effectively improve the cycle life of the battery. Always check the battery manufacturers guidelines and charging instructions before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

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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: This 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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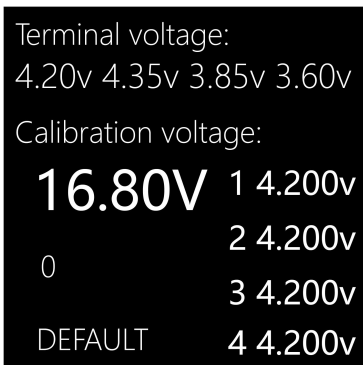
Tips:

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:



The image shows a black background with white text. At the top, it says 'Terminal voltage:' followed by '4.20v 4.35v 3.85v 3.60v'. Below that, it says 'Calibration voltage:'. The main display shows '16.80V' in a large font. To the right of this, there is a list of four items: '1 4.200v', '2 4.200v', '3 4.200v', and '4 4.200v'. To the left of the list, there is a '0' and the word 'DEFAULT'.

```
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 30W |
| | Battery type | LiPo LiHv LiFe LipoStorage 1-4S |
| | Charging power | 0.5-2.5A @ 25W |
| | Balance current | MAX 200mA @2-4S |
| | Charging accuracy | <0.005V |
| Display | LCD | IPS 1.54 inch 240*240 resolution |
| Product | Size | 75mm*54mm*30mm |
| | Weight | 120g |
| Individual packing | Size | 80mm*58mm*58mm |
| | Weight | 180g |