

Mini-Z SPEED HOUSE MULTICELL CHARGER evo

USER GUIDE

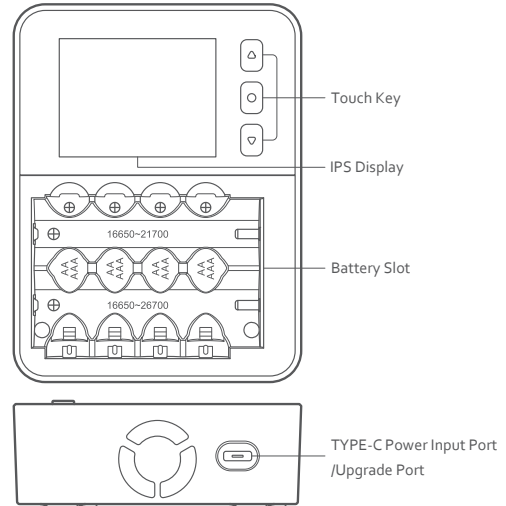


Thank you for purchasing the MULTICELL CHARGER evo.
 The MULTICELL CHARGER evo offers excellent all-round performance and supports most popular rechargeable battery types including NiMH, NiZn, LiIon, LiFe, LiHv.
 The high contrast full colour IPS display features a wide viewing angle which clearly displays detailed option parameters and real-time task progress. Different batteries can be placed into different slots and operate independently of each other, and the charger will automatically identify battery types and choose the appropriate charge settings.

Please read this user manual in detail and follow the instructions carefully before using your new charger.

- Do not charge a non-rechargeable battery or a battery with damaged surface insulation.
- Keep the charger away from humidity and high temperature while charging.
- Ensure the cooling fan is ventilating properly.
- Make sure the charge and discharge settings are correct.
- Incorrect settings may cause dangerous accidents.
- Do not let the children operate the charger.
- Do not leave the charger unattended while charging.

Port / Key



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Specification

Model: MULTICELL CHARGER evo
Max. Input Power: 36W
Support Battery Count: 1 ~ 4 Cylindrical batteries
Support Battery Size: AAA, AA, 10440, 10500, 12500, 13500, 14500, 14650, 16650, 17650, 17670, 18650, 18700, 20650, 20700, 21700, 22650, 26650, 26700
Support Battery Type: NiMH, NiZn, LiIon, LiFe, LiHv
Operating Voltage Range: 5 ~ 12V (Supports QC, PD protocol)
Charging Current Range: 0.1 ~ 3.0A (Horizontal), 0.1 ~ 1.5A (Vertical)
Discharging Current Range: 0.1 ~ 1.5A (Horizontal), 0.1 ~ 1.0A (Vertical)
Operation Modes: Charge, Discharge, Storage, Disposal, Cycle, Activate, Analyse
Display: 320X240 IPS LCD
Beep Sound: Multi-tone
Temperature Sensors: 6
Operating Temperature: 0 ~ 40°C
Reverse Polarity Protection: Vertical physical anti-reverse polarity connection and horizontal anti-reverse polarity connection hardware
Overheating Protection: Supported
Overcapacity Protection: Supported
Dimensions: 120X92X34mm
Weight: About 195g
** The maximum lateral length of the batteries is 70mm*

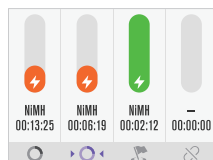
Task Setting

Using this charger, either four AA or AAA batteries or one 16650 ~ 21700 and one 16650 ~ 26700 battery can be charged, discharged, stored, cycled, analyzed, activated and disposal in a variety of combinations.
** Available modes depend on battery types.*

Caution!! All the setting parameters are saved upon powering off. Make sure that parameters are appropriate when using next time.

Automatic Mode

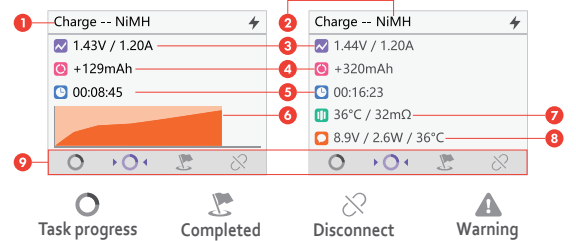
1. Connect a Type-C to the MULTICELL CHARGER evo Power input port.
2. The charger beeps 3 times and start charging in about 5 seconds after installing batteries in the slots correctly.
 Charging status will be displayed in the task setting screen during charging as shown on the right.



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At this time, short press the middle button to change display information as shown below:



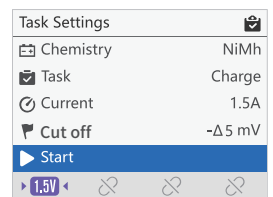
Interface

- | | |
|--------------------------------|-------------------------------|
| 1. Task Status | 6. Voltage Curve |
| 2. Battery Type | 7. Resistance and Temperature |
| 3. Output Voltage and Current | 8. Charger Status |
| 4. Charged/Discharged Capacity | 9. Task Status Preview Bar |
| 5. Task Operation Time | |
- Taskbar icons: Charge, Storage, Cycle, Discharge, Analyse, Activate, Disposal

** The taskbar shows the status of each task visually. You can switch between the detailed task pages by using the up and down arrow buttons.*

Manual Mode

1. Connect the Type-C connector where the power supply is connected to the input terminal of the main unit.
2. After inserting batteries, setting screen will be shown while beeping 3 times. Press up and down arrow buttons to select an item and press the middle button to change settings.



Battery Type	NiMH, NiZn, LiIon, LiFe, LiHv
Task *	Charge, Discharge, Storage, Disposal, Cycle, Activate, Analyse
Charge Setting	0.1 ~ 3.0A (Horizontal slots), 0.1 ~ 1.5A (Vertical slots)

*The task will automatically begin ten seconds after manual modification is completed.
 * Available modes depend on battery types.*

Confirming Battery Types

Usually the battery chemistry type and the rated voltage are marked on the battery sleeve. The charger will attempt to automatically identify the battery type based on the built-in detection algorithm, but please select the battery types manually if the charger chooses incorrectly.

* NiZn and LiHv batteries need to be selected manually.

Default battery types and parameters

	NiMH	NiZn	Lilon	LiHv	LiFe
Rated Voltage	1.20V	1.50V	3.70V	3.80V	3.30V
Full Charge Voltage	1.65V	1.90V	4.20V	4.35V	3.65V
Storage Voltage	✗	✗	3.70V	3.80V	3.20V
Discharge Voltage	0.90V	1.30V	3.10V	3.30V	2.90V

Determining Charging current

Always follow your battery manufacturer's charging instructions, as it is important to know the maximum charging current of the battery. Applying excessive charge current may reduce the lifespan of a battery and/or cause damage.

In addition, excessive currents can cause heating and/or exploding of the battery during the charging process.

Set the charging current to 1C or less. A battery's C-rate is derived from the capacity. For example, 1C current for a 1000mAh battery is 1000mA. Thus, maximum charging current is 1000mA (1.0A).

Charge time will be directly proportional to charging current and due to differences in battery conversion efficiency, the time taken to complete charging might be extended for different battery types and capacities.

Storage Function

Use the storage function if a battery will not be used for a long period.

When selecting storage function, automatic charging will be initiated if the battery voltage is lower than the preset storage voltage; likewise, automatic discharging will be initiated if the battery voltage is higher than the preset storage voltage.

* This function cannot be used for NiMH batteries.

Cycle Function

In this mode the battery will start a cycle of charging and discharging which can be configured up to 30 cycles.

Please note that the battery may be damaged if the number of times is large.

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Analysis Function

The analysis function can be applied to a battery that is under-performing or if you would like to examine performance in general. This function can also be used to identify and match the working capacities of batteries.

Activation Function

Occasionally a NiCd or NiMH battery may become so discharged that it can no longer be recharged under normal conditions, especially if the voltage is extremely low. Battery activation uses a low current to perform an activation cycle which will charge, discharge, then charge the battery. The battery will be activated during this process but will sometimes require up to three cycles. If the battery still cannot be activated, then do not continue and dispose of the battery.

Internal Resistance Measurement Function

The charger is equipped with a function for measuring the internal resistance of individual cells. The internal resistance is measured and calculated after the charging task has been initiated for 10 seconds.

When the charger measures the internal resistance of the battery, it will instantly adjust the charging current, so it is normal for sudden changes to occur in the current during the charging process.

Due to the way the device measures internal resistance, the amount of the charging current can impact the accuracy of the internal resistance measurement.

A battery with large capacity and low internal resistance requires a larger charging current to accurately measure the internal resistance.

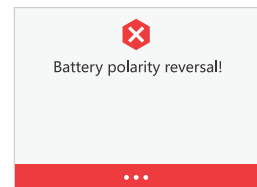
Charging Completion

After beginning a task, progress will be displayed in the task quick preview bar.

"🔋" will be displayed when the task is completed. It is normal for voltage decline to occur once charging completes. As the number of charge cycles increases, the performance of a battery decreases, and voltage decline becomes more obvious. Charging a battery with a larger current will also cause a greater decline in voltage after the charging is complete.

Battery short circuit and reverse polarity protection

When a battery has been inserted with the wrong polarity, the corresponding slots status will be displayed as follows:



* Detailed usage of each function can be obtained from the QR code on the next page. (The explanations are based on AAA NiMH batteries.)

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System Settings

To enter the System Settings screen, remove all batteries from the charger and then long press the middle button.

Volume

There are four options for volume setting: high, medium, low and off.

When set to "off", the operation prompt sound will be turned off, but the error prompt sound will not be turned off.

Theme

Set the background color to bright/dark.

Capacity limit

Set the maximum battery capacity. Charging automatically stops when the charge amount reaches the maximum battery capacity. (Safety function)

Activate Charging

If this option is turned on when the user selects the task type as Charging, the charger will automatically discharge the battery before charging.

This is to eliminate the memory effect of the battery and restore the storage capacity of the battery.

System Settings	
🔊 Volume	Off
🔔 Completion Tone	Single
🌙 Backlight	High
🎨 Theme	Bright
🔋 Capacity limitation	Off
⚡ Activation Charge	Off
🔋 NIMH Voltage	1.55V
⚡ NIMH Capacity	3500mAh
🕒 Cycle display	15S
🛡️ Screensaver	On
🌐 Language	English
🗨️ System info	
🔄 Restore	
⬅️ Back	



<https://rc.kyosho.com/en/multicell-c-evo>

* Please check the Kyosho website for the latest information.
<https://rc.kyosho.com/>

KYOSHO CORPORATION

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