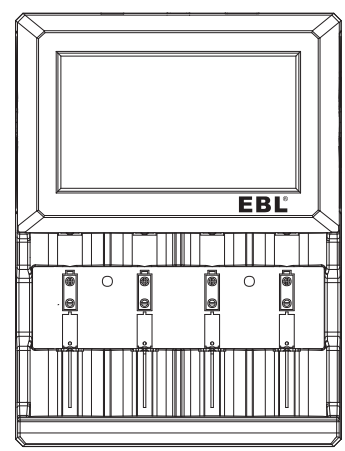


EBL®

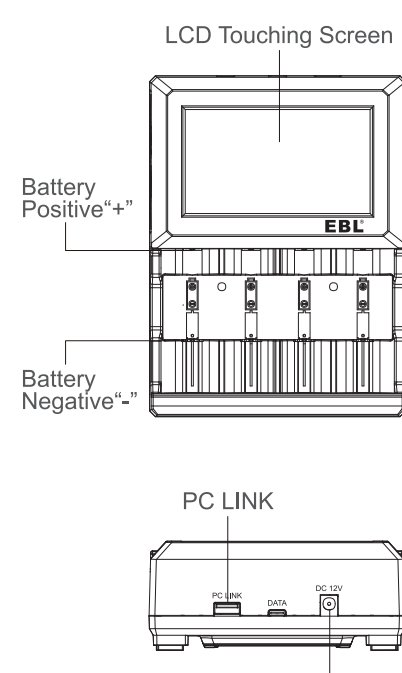
Professional Care on Batteries and Charger!



User Manual

Thanks for purchasing EBL's products!
For your own safety, please read this user manual carefully before using it.

User Manual



Please Note: Do not use DATA Port to do anything, this DATA Port only for manufacture to use.

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INTRODUCTION

The EBL TC-X Pro is a universal intelligent touching color charging and discharging tester, which is compatible with almost all rechargeable batteries on the market. Thus, eliminating the need to own several chargers. The TC-X Pro automatically detects 3.7V Li-Ion, Ni-MH and Ni-Cd batteries and it is also capable of charging LiFePO4 and 3.8V Li-Ion batteries by manual selection. Intelligent circuitry selects the optimal charging mode (CC, CV and dV/dt) for the given battery and each of the TC-X Pro's four microcomputer-controlled charging slots can monitor and charge the battery independently. Furthermore, with the high-resolution color display touch screen in TC-X Pro, user can click the screen to perform various operations, and the charger can clearly display the battery charging, discharging parameters and charging, discharging curves. The charger will automatically stop charging when the battery is full. With PC-side connection technology, user can view various parameters by connecting with a computer and save the charging, discharging parameter records for viewing in the future.

The EBL TC-X Pro: the world's most advanced fully-automatic touching color charging and discharging tester.

FEATURES

- Microcomputer IC controls charging process
- CC/CV/Trickle charging, to make sure the battery is full charged and won't be over charged

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- Microcomputer IC controls charging process
- CC/CV/Trickle charging, to make sure the battery is full charged and won't be over charged
- Four slots work independently and controlled by touching
- Mixed charging mode
- PC connection, viewing and saving all the parameters of the charger
- 4.3-inch 800*480XDR LCD display
- Color LCD instantly shows the charging process, battery voltage, current, time, capacity, charge curve, discharge curve, battery temperature and internal resistance
- Applicable batteries: Li-Ion3.7V, Li-Ion3.8V, LiFePO4, Ni-MH/Cd cylindrical chargeable batteries (Diameter: below 32mm, height: 34-73mm)
- Input: AC100V-240V/ DC12V or DC12V 5A vehicle Input
- Charging, Discharging, Capacity Test and Internal Resistance Test
- With 30 levels if fine-tuned charging current to adjust the maximum 3A charging current, setting the charge current of four batteries 2A and two batteries 3A at the same (for charging batteries with different capacities); discharging current: 0.5A
- Loop mode, batteries will charge and discharge three times
- Reverse connection protection: When the battery is reversed, the corresponding battery icon shows
- Short circuit protection: When the battery is in short circuit, the corresponding battery icon shows
- Activate automatically for Li-Ion batteries with protection board, which are instantaneous short circuit.

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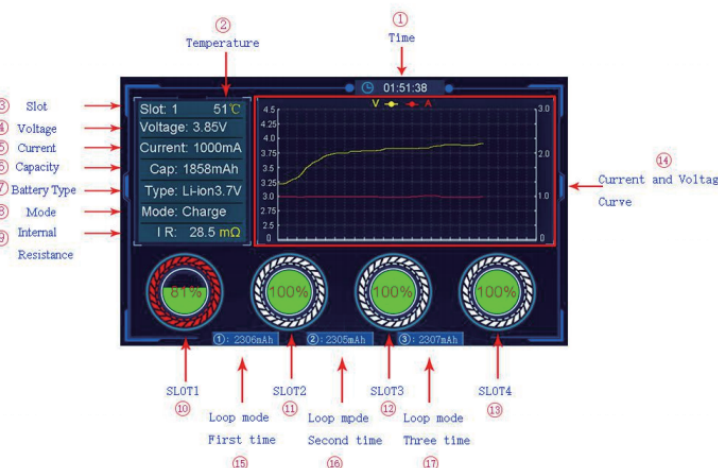
- Intelligent temperature control:
The built-in cooling fan will be automatically open, when the internal temperature of the machine rises to 50 degrees (Celsius) sensed by two temperature sensors. When the temperature drops to 50 degrees (Celsius), it stops automatically to ensure that the charger has a good working condition. Avoid high capacity batteries overheated during the charge and discharge process, causing spontaneous combustion or ignition.
- Durable and smooth stainless steel side rail hardware
- Certified by ROHS, CE and FCC

SPECIFICATIONS

Input: AC 100-240V 50/60Hz, DC 12V 5A
Charging Cut-off Voltage:
4.35V±0.02V / 4.20V±0.02V / 3.65V±0.02V / 1.53V±0.02V
Charging Current:
2000mA±70mA*4 / 3000mA±80mA*2
Discharge Cut-off Voltage: 2.85±0.02V / 2.75±0.02V / 2.0±0.02V / 0.9±0.02V
Discharging Current: 0.5A
Compatible with:
3.7V Li-Ion / 3.8V Li-Ion / LiFePO4: 32670, 26670, 26650, 22650, 21700, 20700,
18650, 18490, 17500, 18350, 14500, 10440, 16340(RCR123)
Ni-MH / Ni-Cd: A, AA, AAA, SC, C, D
Dimensions: 177mm*133mm*56mm
Weight: 450g (Without adaptor)

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MAIN INTERFACE SPECIFICATION



1. Time: Running time of the current slot.
2. Temperature: Temperature information of the current slot.
3. Slot: Displaying the selected slot.
4. Battery voltage: Displaying the battery voltage information.
5. Charging current: Displaying the setting charging current of the battery.
6. Capacity: Displaying the battery capacity information.
7. Battery type: Display the setting type of the battery in the selected slot.(Li-Ion 3.7V, Li-Ion 3.8V, LiFePO4 and Ni-MH/Cd).
8. Mode: Displaying operation mode (Charge, Discharge, Capacity and Loop).
9. Internal Resistance: Displaying the internal resistance of the

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10. SLOT 1: Select the first slot, the battery icon will turn red. When it is not selected, the battery icon is green. If no putting battery, the icon shows NULL. When the slot is selected, click the icon again to enter the settings interface of the slot. As the

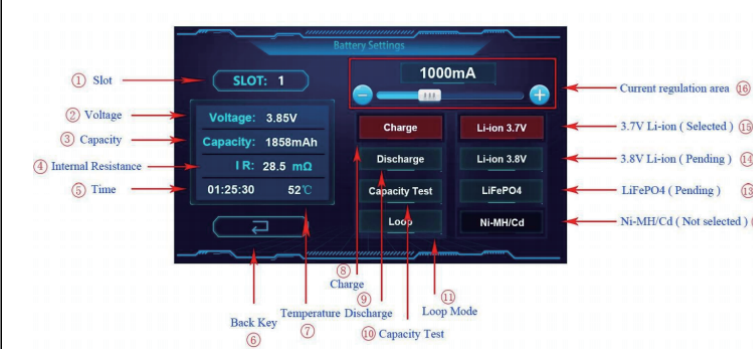


11. SLOT 2: Selecting this icon, the battery icon will be red, and green when not selected. If no putting battery, the icon shows "NULL".
12. SLOT 3: Selecting this icon, the battery icon will be red, and green when not selected. If no putting battery, the icon shows "NULL".
13. SLOT 4: Selecting this icon, the battery icon will be red, and green when not selected. If no putting battery, the icon shows "NULL".
14. Current and voltage curve: Display the voltage and current curve of the

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SETTINGS INTERFACE SPECIFICATION

When connecting multiple batteries, click the battery icon to switch curves. The selected battery icon will turn red, and click the red battery icon again to enter the settings interface. As the following figure shows:



- ① Slot: Displaying the current slot information. (As pictured above: SLOT: 1)
- ② Battery Voltage: Displaying the battery voltage information. (As pictured above: Voltage: 3.85V)
- ③ Capacity: Displaying the battery capacity information. (As pictured above: Capacity: 1858mAh)

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- ④ Internal Resistance: Displaying the internal resistance of the battery in the selected slot. (As pictured above: I.R: 28.5 mΩ)
- ⑤ Time: Display the running time of the battery in the slot. (As pictured above: 01:25:30)
- ⑥ Back key: Clicking the button to return to the main interface (As pictured above: [Back Key])
- ⑦ Temperature: Temperature information of the current slot. (As pictured above: 52°C)
- ⑧ Charging Mode
- ⑨ Discharging Mode
- ⑩ Capacity Test Mode
- ⑪ Loop Mode
- ⑫ It will automatically identify Ni-MH and Li-Ion batteries when the batteries are in the tester.
- ⑬ When Li-Ion batteries are detected, the Li-Ion 3.7V charging program is selected acquiescently, and Ni-MH/Cd option is gray at this time, which cannot be selected.
- ⑭ Putting a 3.8V Li-Ion battery or LiFePO4 battery needs to switch to the corresponding program Li-Ion 3.8V or LiFePO4 manually.
- ⑮ When Ni-MH/Cd battery is detected, the other three battery type options are gray, which cannot be selected.
- ⑯ Current Regulation Area: This area adjusts the charging current, a total of 30 levels, each level is 100mA. (As picture shows)

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Please Note:

1. When selected, the corresponding icon will display a red border.
2. The battery type cannot be selected for Ni-MH batteries. When it is recognized that it is a Ni-MH battery, the other three battery type icons are in gray and cannot be selected.
3. Ni-MH battery charging current can be only selected when the battery is just connected, and the current cannot be changed after selection.
4. Four modes: Charge, Discharge, Capacity and Loop mode.

NOTE:

- a. The selected icon will display a red border.
- b. For Ni-MH batteries, the battery type can't be selected; the other three battery type icons are red that is not optional, when the Ni-MH battery is identified.
- c. Ni-MH batteries' charging current can be only selected when the battery is just inserted; after selecting the current, the current cannot be changed. So the other current icons turn red that is not optional.
- d. The three kinds of the MODE menu (Charge, Discharge and Capacity) can be switched at any state.

OPERATION METHOD

- 1) The AC side of the power adapter plugs into the outlet, and the output side plugs into the charger.
- 2) Connected to the power, the company's logo is displayed on the color screen in the form of the sea, which represents the warm greetings and blessings to the global users.

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After booting, display the following figure:

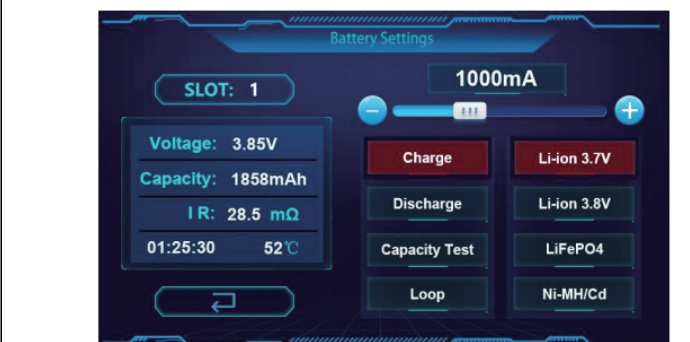


- 3) Access to the battery, if the users click the battery icon to enter the Settings Interface within 8 seconds, the charger will work as the setting parameters. Otherwise, it will automatically enter the default charging mode. As the following figure shows:



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- 4) Switching Battery information: After putting multiple batteries, click the battery icon the users want to check; the battery icon turns red, and all the information at the top of the main interface is the information of the selected slot. As the following figure shows:



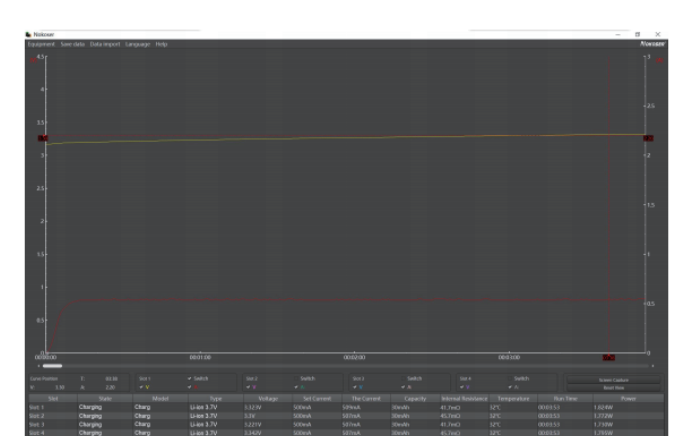
- 5) Change settings: As the following figure shows:



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- If users want to change the setting, there are two ways:
- ① When putting the battery, waiting for 8 seconds, click the battery icon. (Notes: For Ni-MH batteries, charging current must be changed within 8 seconds. If there is no operation within 8 seconds, then it will charge in the default current and the current cannot be changed during charging.)
 - ② During the charging process, select the battery icon which needs to change settings and click the battery icon again to enter the setting interface.

- 6) PC connection: As the following figure shows:



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The user uses the USB data cable equipped with the machine, one end is connected to the PC end, the other end is connected to the charger. Open the software to view and save the data of the four sets of batteries.

How to Download the software:

1. Enter the EBL web link: <http://www.eblmall.com/product/ebl-tc-x-pro-all-function-on-battery-charger>
2. Click Download Software.

BATTERY ACTIVATION

For every installed battery, the TC-X Pro will activate the battery by charging it.

Activate automatically for Li-Ion batteries with protection board, which are instantaneous short circuit. For the unprotected batteries' battery which voltage is above 0.2V, the activation methods are as follows:

- A. Put the batteries in the TC-X Pro. (During the process, it is normal that Li-Ion batteries will be detected as Ni-MH batteries.)
- B. When the voltage is above 2.75V, remove and reinstall the batteries and charge again.

Note: The TC-X Pro is not recommended to use with over-discharged (zero volt) UNPROTECTED Li-Ion batteries.

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IMPORTANT SAFETY INSTRUCTIONS

1. The TC-X Pro is compatible with batteries of varying sizes, therefore when charging certain batteries, manual adjustment of the battery's position within the slot is recommended, as to ensure solid contact is made between both sides of the battery and the charging slot's metal contact points.
2. The TC-X Pro is restricted to charging 3.7V Li-Ion, 3.8V Li-Ion, LiFePO4, Ni-MH/Ni-Cd rechargeable batteries only. Never use the TC-X Pro with other types of batteries as this could result in battery explosion, cracking or leaking, causing property damage or personal injury.
3. The TC-X Pro should be only used indoors or inside a motor vehicle and it cannot be use or store in the water, high humidity, direct sunlight and low or high ambient temperatures.
4. Do not disassemble or modify the charger.
5. Children, under the age of 18, should be supervised by an adult when using the TC-X Pro.
6. The TC-X Pro's safe operating temperature is between 0°C-40°C.
7. Please use the TC-X Pro correctly according to this introduction manual to avoid product damage and personal injury. Any problem arising from improper use of TC-X Pro, our company will not bear any legal responsibility and economic disputes.

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WARRANTY SERVICE

We provide 30 days worry-free money back and one year limited warranty.

The warranty is nullified in any of the following situations.

1. The product(s) is/are broken down, reconstructed and/or modified under unauthorized conditions.
2. The product(s) is/are damaged through improper use.
3. The product(s) is/are damaged by leakage of batteries.

For further details of EBL's warranty service, please feel free to contact us: service@eblmall.com
Website: www.eblmall.com



www.eblmall.com

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