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CHARGER INSTRUCTION MANUAL

Hong Kong XTAR Co., Ltd is a scientific research, production and service integrated enterprise. It is always focusing on LED flashlight, Li-ion charger and battery's research. It has Diving, Tactical, Sport, EDC series LED flashlights and intelligent Li-ion battery chargers, Li-ion batteries and related accessories complete product system.

HONG KONG XTAR CO., LTD



CHARGER INSTRUCTION MANUAL

Summary:

- VP1 charger is a professional lithium ion battery charger which has three optional charging current. It can also display battery voltage (when batteries' voltage $\geq 1.5V$) and corresponding power. You can charge two rechargeable 10440/16340/14500/14650/17670/18500/18650/18700(3.6V or 3.7V) lithium ion battery independently. With the function of charging in three-gradation and OV battery activation, VP1 can give a real-time detection of each battery's state to make sure that these batteries are charging intelligently and securely.
- Our charger adopts high efficiency DC-DC circuit to lower the voltage, and it can greatly reduce energy loss while more reliable, safety and efficiency. In addition, VP1 charger has reverse-polarity protection circuit and short circuit protection in each charging channel, which can prevent short circuit from wrong polarity or misoperation.
- You can choose one of the following three constant charging current to make sure your battery is in the best condition, 0.25A, 0.5A or 1.0A, which can also long the recycling use and make the battery fully charge. Meanwhile, VP1 use soft start function to avoid the damage of battery's instant large current.
- VP1 has a built-in over discharged cell activation function which can activate the over discharge battery, thus it can make repairing and charging synchronously.

Performance:

- *0.25A*: Constant charging current 250mA.
- *0.5A*: Constant charging current 500mA.
- *1.0A*: Constant charging current 1000mA.

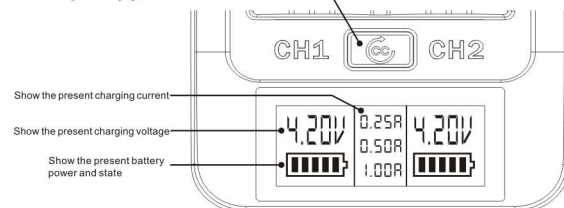
Summary:

Input Power	12.0V DC/1.0A
0.25A CC Current	250 \pm 30mA
0.5A CC Current	500 \pm 50mA
1.0A CC Current	1000 \pm 80mA
Cut-Off Voltage	4.2 \pm 0.05 V
TC of 0.25A	\leq 60 mA
TC of 0.5A	\leq 60 mA
TC of 1.0A	\leq 120 mA
Auto Recharging Threshold Value Voltage	3.9 \pm 0.15V
Detection precision	\pm 0.03V
Operation Temperature	0-40 $^{\circ}$ C
Storage temperature	0-70 $^{\circ}$ C

Usage:

- The charger can charge for 10440/16340/14500/14650 / 17670/18500/18650/18700 rechargeable batteries if the cell's nominal voltage is 3.6 V or 3.7 V. Please make sure the battery's type is correct before charging, and then place the batteries into the channels correctly, otherwise it will be in danger.

- Battery power instructions:
Change the charging current



- The charging state and battery power indication:



- When the battery voltage reach to the next stage, one more bar will be added to the battery icon. No battery icon displayed in the corresponding channel when the charger is in one of the following conditions.
 - No battery placed in the channel;
 - Short circuit;
 - Battery voltage $< 1.5V$;
 - Battery reversed or poorly connected (not charging).
- Properly connected with power source, when batteries are fully charged, the charger will stop charging. But in order to avoid the cell voltage dropping or over discharged when the user forget to

- Use original power adaptor to connect the power supply, and the charger system self-testing begins, all values on the LCD will be on for 1 seconds, then display the default 0.25A charging current gear, and two vertical bar separate channel 1 and channel 2. With no power icon show of the two channels, the VP1 is in standby state.
- Press the current gear switch button to choose the suitable charging current. The default value is 0.25A, and pressing the button switch it can change to 0.50A, 1A in turn, and the LCD will display the corresponding current. Press the button again to get back to 0.25A. Choose the suitable charging current for your batteries:
 - *0.25 A*: suitable for 10440-18700 3.6/3.7V rechargeable lithium ion battery.
 - *0.50 A*: suitable for 17670-18700 3.6/3.7V rechargeable lithium ion battery.
 - *1.00 A*: suitable for 18650, 18700 3.6/3.7V rechargeable lithium ion battery.
- Put cells into the VP1 after choosing corresponding charging current. With power plug in, the LCD displays battery's circuit voltage and power in corresponding channel in about 5 seconds statically. Then, the charging current gradually increase to the maximum charging current and begin to charge the battery, the cell voltage and the corresponding battery power will be dynamically display at the same time. The charging current can be adjusted by changing the current gear.
- When the battery is full, the voltage displays statically in corresponding channel and battery icon is full bars. Charging will stop automatically, please take out the batteries in time.
- Pressing the gear button for about 3 seconds can change the LCD's state when charging. The default state for the LCD is on.

Notice:

- Each channel of VP1 has a built-in short circuit protection on the battery ports, It can only protect the charger when short circuit occurs at the charger's battery ports, but cannot prevent the short circuit caused by batteries themselves.
- When the VP1 is on standby, place the over discharged battery into the channels (battery's voltage $\leq 2.0V$) correctly, and the VP1 will start the cell activation automatically. If the battery voltage is lower than 1.5 V, no battery information will be displayed on the corresponding LCD, but

take out the batteries, when the battery voltage is lower than 3.9 V, the charger will restart charging automatically.

- Voltage range of trickle charging at all gears is 2.0-3.0 V.
- Deviation will exist between the value on the indicator and battery's actual capacity because of the differences of battery type. In addition, when the battery in charging, LCD indicator shows the battery's charging voltage (including the voltage generated by the battery's internal resistance); When the battery out of charging, LCD indicator shows no-load voltage of the battery.
- Net weight: 95G.
- Size: L118*W62*H34mm.

Warranty:

- 15 days free replacement: We will repair or replace a light within 15 days of purchase if it has a manufacturing defect. If the problem calls for a replacement, we will replace the charger with the same model as the one you bought. If the model has been discontinued, you will receive a product with similar or improved performance.
- 24 months free repair. We offer free repair within 24 months of purchase if problems develop with normal use. Limited lifetime warranty. If problems develop after 24 months there will be a charge for parts. The total repair fee will be assessed according to the cost of the replaced materials. If damage to the charger is grave, and XTAR distributor will contact you to decide whether to exchange the parts or not. Freight is paid by distributors or customers.
- We strongly recommend that you log on to the XTAR website to register to become a VIP member. Your warranty period will be extended by half a year automatically after your membership information is approved.

it still in activation state. When the battery voltage over 1.5 V, the charger can display the real-time battery voltage, and when the battery voltage is between 1.5 V and 2.0 V, the battery icon will flash, indicating that the battery is in activating. Because of the difference of the battery quality, discharged times, capacity and discharge degree, its activation time will be different, and some of the over discharged battery cannot be repaired.

- This product has three optional current to choose, users can choose different charging current based on the battery's performance in order to achieve slow charging, medium speed charging or the quick charging. For low capacity's battery, our suggestion is to choose 0.25A gear to charge, it can make the battery saturate and benefits to its service life.
- This product only apply to 3.6 V or 3.7 V rechargeable lithium ion battery. Please do not charge the batteries which are unsuitable, otherwise may lead dangers.
- Please keep this product away from water and dust, and use it in dry environment.
- Disassembly and modification are strictly prohibited.

Website:

Welcome to visit our company website to get more information.

www.xtarlight.com

Thank you for choosing our excellent products, your satisfaction and feedbacks are essential to our progress.

