

## OPERATING INSTRUCTIONS

Thanks for choosing Ismart products. Please read this operation instruction carefully before using, and keep it properly.

### 1. Application:

Ismart FT2000 is specially made for the management of charging and discharging Ni-Mh and Ni-Cd rechargeable battery, and for the best function and the longest longevity of the batteries. The battery charger can charge or discharge 1 to 4 pcs AA/AAA rechargeable batteries at the same time or separately. It can repair the rechargeable battery, test the maximum capacity of battery, and test internal resistance and so on.

Every battery has its own display of charging current, battery voltage, charged or discharged capacity (mAh), battery internal resistance, charging and discharging time. For different batteries, you can choose different charging currents from 200mAh to 1500mAh. If you need to charge 4 batteries at the same time, the maximum charging current of each battery is 1000mAh. If you need to charge 2 batteries at the same time, the maximum charging current of each battery is 1500mAh.

The internal high accuracy A/D conversion circuit ensures the management of different rechargeable batteries independently and accurately. This circuit has accurate full charged measurement and security protection function, making sure that rechargeable batteries are fully charged, accurately, efficiently and safely.

The battery charger can monitor the temperature of each battery and the charging part through the high accuracy mental surface sensing unit. When the battery temperature is over 60°C, the charger will stop charging and goes into overheating protection. It can restart charging when the temperature drops into the safety range. All battery charging will stop, while the temperature of internal control panel is over 75°C. It will work again after the temperature drops. It is normal that charging time will prolong in the hot summer because of the temperature protection.

The changer has backlight function, it will light for 10 seconds after pressing any button, and then switch off automatically.

These products meet the requirement of EMS. CE conformity test had been verified. And can provide the relevant data sheet upon request.

Do not open and refit the charger without permission, because it may cause serious safety and compatibility problems, if not permitted, you will not enjoy warranty service.

## 2. Packing list

FT2000 battery charger 1PC

12 V power adapter 1PC

Operations instruction 1PC

## 3. Safety instruction

Although we have designed the function of judging and handling short circuit, battery reverse and others, we do not assure the liability for personal property and safety, and stop the warranty service for abnormal use as follow:

- The product cannot be exposed to extra mechanical strain or strong vibrations.
- The product should be not used in complex environment, such as high -intensity electromagnetic , electrostatic , extreme temperatures and direct exposure to sunlight and humidity.
- Must follow the special instructions of the rechargeable battery.
- The product should not be connected immediately after it has been brought from cold to hot. Condensed water might destroy the product .wait until the product adapts to the new ambient temperature before usage.
- The charger should use in the well ventilated environment. When the temperature is over 30℃, it will frequently stop charging for overheating. If you need to complete charging quickly, please use it in the well ventilated environment, or use fan for cooling, and reduce the charging current at the same time.
- Put batteries in the right direction. Non-rechargeable batteries, rechargeable alkaline batteries, lead acid batteries and lithium batteries cannot be charged with this product, otherwise may lead to explosion.
- Batteries should be removed from the device if it is not used for a long time to avoid damage through leaking. Leaking or damaged batteries might cause acid which will burn skin. Therefore, use suitable protective gloves to handle corrupted batteries.
- Keep away from children and pets.
- Cannot take apart the batteries without permission, or throw into fire.

## 4. Battery

- After plugging into the charger, the LCD screen will display for 2 seconds. LCD will show 'NULL', if there is no battery.
- Filter non-rechargeable batteries. The smart charger will determine automatically whether it is rechargeable battery or not. If non-rechargeable battery is put into charger, it will start testing, after that will show ERR and stop charging.
- Filter bad battery. Put battery into charger slot, charger will test the battery voltage; if the voltage is less than the minimum voltage of Ni-Mh and Bi-Cd battery or no output voltage, it will continuously display ERR.

## 5. Button instruction

- 1\2\3\4, slot setting.

- MODE, function mode switching.
- CURRENT, select button, choose the charging or discharging current, and timer function.
- DISPLAY, display mode for voltage, current, capacity, work time and internal resistance.

#### 6. Detailed operation procedures

##### (a) Four ports set and operate at the same time:

- After putting in batteries, long press any keys (1\2\3\4) for 1.5 seconds, it toggles to the function select, the characters in the display area begins to flicker.
- There are six function modes to select. Such as charge, discharge, charge refresh, charge test, repair, and timer. You can toggle to six function modes by pressing MODE key.
- After function setting, you can press 1/2/3/ 4 to save the settings. If it stays for 5 seconds without pressing button, it will save and exit automatically.
- The function will change to the current function mode if four ports are in the different mode.

##### (b) Single port setting

- After putting in one battery, you can press any buttons (1, 2, 3 or 4), the characters in the display area of corresponding port begins to flicker. For example, if you press 1, the characters in 1 will begin to flicker. There are six function modes to select. Such as charge, discharge, charge refresh, charge test, repair, and timer. You can toggle to six function modes by pressing MODE key.
- After function setting, you can press 1/2/3/ 4 to save the settings. If it stays for 5 seconds without pressing button, it will save and exit automatically.

#### 7. Detailed mode setting

##### ●CHARGE

The default charging current is 500mA. It can provide four types of charging current 200mA, 500mA, 700mA, 1000mA, 1500 mA for four ports charging, and five types of charging current 200mA, 500mA, 700mA, 1000mA, 1500 mA for single port charging. The charger goes into CHARGE mode by single port or four ports setting. When CHARGE displays, press CURRENT button to charge and choose charging current. After selecting the proper current, press MODE button then cannot switch mode, save the setting by press 1/2/3 /4 or staying 5 seconds without pressing any button. If batteries are fully charged, the charger will display FULL.

##### ●DISCHARGE

The default discharging current is 350mA. . It can provide four types of discharging current 100mA, 250mA, 350mA and 500mA. The charger goes into DISCHARGE mode by setting single port or the four ports. No matter what characters the four ports display, just press CURRENT button to choose discharging current. After selecting the proper current, press

MODE button then cannot switch mode, save the setting by press 1/2/3 /4 or staying 5 seconds without pressing any button. If batteries are fully discharged, the charger will display END.

#### ●CHARGE REFRESH

Refresh function is typically used to eliminate battery memory effect. First put into the batteries, then get into CHARGE REFRESH mode, press CURRENT to select discharging current. After selecting the proper current, press MODE button then cannot switch mode, save the setting by press 1/2/3 /4 or staying 5 seconds without pressing any button. When the voltage is less than 0.9v, the charger begins to charge automatically. Charging current can adjust automatically to the selected parameter of discharging current. After finishing charging, the charger will display END.

#### ●CHARGE TEST

First put into the batteries, then get into CHARGE TEST mode, press CURRENT to select charging current. After selecting the proper current, press MODE button then cannot switch mode, save the setting by press 1/2/3 /4 or staying 5 seconds without pressing any button. When the voltage is less than 0.9v, the charger begins to charge again. The display area will show the capacity of batteries at present.

#### ●CHARGE TIMER

The charger goes into CHARGE TIMER mode by setting single port or the four ports. No matter what characters the four ports display, just press 1/2/3/4, display area shows the timer. After selecting the proper current, press MODE button then cannot switch mode, save the setting by press 1/2/3 /4 or staying 5 seconds without pressing any button. The regular time is one hour. It will increase one hour by pressing CURRENT button every time. If you want to adjust the current, you can press DISPLAY button to current display, and the press CURRENT button to select the right current you need. After selecting time or current, you can press 1/2/3/ 4 to save and exit. Or it can save and exit automatically without any operation for 5 seconds. The parameter of timer will be cleared after putting out batteries.

#### ●Repair

(a) The charger goes into REPAIR mode by setting single port or the four ports. Repair function is for the battery not shorted, nickel-cadmium and nickel-metal hydride batteries cannot be charged. Factors as follow: ①severe over-discharge ;②long-term storage;③battery self-discharged fast . Except for the battery damage badly, the charger can repair and active battery to a certain degree.

(b) When the charger is in the normal operation, after setting single port or the four ports, press MODE button, the charger gets into REPAIR function. You can press 1/2/3/ 4 to save and exit. Or it can save and exit automatically without any operation for 5 seconds. The charger will

automatically detect the battery situation, first with small ammeter repeated charge-discharge (0.1C) and then with a large current charge and discharge (2C ~ 5C). ("C" indicates the battery capacity). If still cannot be repaired, it means that the batteries are completely unrepairable. The battery capacity cannot be kept very well if the battery self-discharging too seriously, on this condition, we recommended that using the battery when charged at once.

#### 8. Overheating protection

The charging or discharging process will stop immediately if batteries temperature or control panel temperature is over specified temperature. Once the temperature drops below 40°C, the charger will continue working.

#### 9. Maintenance

For normal use, this product does not require special maintenance, but need to keep the body clean, and make sure the vents are not blocked. When cleaning, the device must be removed from power. Only need to use dry and soft cloth to clear the housing. Do not use abrasive or solvents.

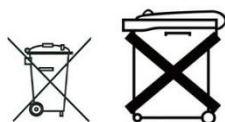
#### 10. Disposal

To protect our environment, please use natural resource properly. Pleases hand in the device that no longer in use to the revenant organization to deal with.

The crossed-out wheeled bin indicates the product needs to be disposed specially, it is not municipal waste.



Waste electrical and electronic equipment should be put into the collection point. Do not mix them with house refuse.



#### 11. Technical parameters

Work voltage	10V~16V DC	
Power Adapter	Input	100~240V, 50/60Hz
	Output	12V DC
Charging current range	200~1500mA	
Discharging current range	100~500mA	
Max. charging capacity	9999mA	
Operating temperature	0~40°C	