



4-Independent Channel Charger/Conditioner Model NC-50FC/NC-60FC

Introduction

Thank you for purchasing NC-50FC/NC-60FC 4-channel smart charger. This charger is specially designed based on the character of the high capacity Ni-MH battery as well as the traditional Ni-Cd battery. An innovative “**Sleep and Wake-up Mode**” function has been designed for the NC-50FC/NC-60FC charger. Basically NC-50FC and NC-60FC have the same function except NC-60FC has an additional 9V charging. There are many more functions in these chargers. Please read this instruction carefully before starting to use this product.

Features:

- The intelligent CPU controlled fast charger/conditioner can provide **four independent charging channels** for four AA/AAA batteries to be charged and discharged in any AA or AAA combination at any state of charge.
- AA and AAA have different charging current to ensure proper charging current using on different size batteries.
- The left two channels and the right two channels can be at different charge or discharge modes. For example, the channel 1 can have a 2200mAh AA at charging, the channel 2 can have a 700mAh AAA at charging, the channel 3 can have a 800mAh AAA at discharging, and the channel 4 can have a 2200mAh AA at discharging.
- A built-in discharging function is for the reconditioning of Ni-MH battery and to eliminate the memory effect of Ni-Cd battery. When discharge is completed, then charger will be auto switched to charge mode. Push button can change charge/discharge state of the batteries.
- Music will be ON after fully charged and can be switched OFF when press any button.
- “Di” beeps when installing each battery into the charger.
- With **-ΔV, Vmax, Tmax, and timer cut off technologies**, the overcharging of the batteries can be avoided to extend the life of your battery.
- **Two temperature sensors** to protect your battery charging from overheating.
- This smart brain NC-50FC/NC-60FC has a **Three Steps Pulse Charging Algorithm** for achieving true cool and fully charging. The first step is primary charging, the charger use higher current to charge battery until reaching to the cut off criteria at 85%-90% charged condition. At this stage, the battery’s charging capability become less efficient. The charger will change to a 1.5hours of 250mA supplement charging step. At end, the batteries will be turn to a 12 hours trickle charging step.
- An innovative “**Sleep and Wake-up Mode**” function can keep the batteries at a full charge condition during trickle charging without damaging the batteries. Trickle charging is for maintaining the battery capacity from self discharging. However, long time trickle charging will damage the Ni-MH batteries. NC-50FC has trickle charge for 12 hours then followed by a 6 days sleeping period. During this 6 days charger sleeping time, there are no trickle charge current flowing into the batteries. The charger will be waked up after the sleeping time over and “juiced” the batteries with a trickle charge for 12 hours. The sleep and wake-up mode will be repeated indefinitely. Therefore, the battery can be fully charged in the charger indefinitely.
- **Dead/shorted battery test**: if one of the battery voltages is less than 0.2V, the LED light yellow and the “di” sound alarm signal will be turned ON, then the charger stop working. After removing the dead/shorted battery, the alarm will be stopped and the charger returns to the original operation state.
- “**Non-rechargeable battery inspection**”: when user installs non-rechargeable alkaline battery or dry cell into the charger, the red LED will be flashed for 4 times and the charger stop function. After remove the wrong battery, then the charger will be restarted.
- With a special charger terminal contact design, the reverse polarity of the battery is physically prohibited. In case the terminal of the battery has a reverse contact, after three seconds, the charger alarm will be ON with “di” sound. The charger will stop function. The alarm will be stopped after remove the battery from the charger and the charger will then return to the normal operation condition.

Instructions:

1. Plug-in an AC adapter into the charger, then a 5 second initialization process will be started.
2. Music will be ON during the 5 second initialization period.
3. Music can be OFF by press any button during the initial 5 seconds. The charger music function will be disabled in the later operation till the power plug is unplugged and plugged.

4. When no battery is installed but the power is connected into the charger, the LED remains OFF and with red flashing every eight second.
5. Install the battery onto the charger. The LED will be ON in red to indicate the charging is automatically in process.
6. Once the LED turns green, it indicates that the battery has completed the primary charging and turns to the supplement charging mode.
7. User can push the button I or II to switch the charge or discharge modes for the batteries installed in the compartment I or II.
8. The LED blinking in yellow color indicated the charger is at the discharging mode.
9. The charger will automatically switch to charging mode when the discharge is completed. The LED will change from yellow blinking to red indicating the charging mode is ON.

Specifications:

- Input: 12V DC/800 to 1000mA
- Primary Charging Current AA: 1000mA \pm 5% at pulse mode
AAA: 430mA \pm 5% at pulse mode
- Supplement Charging Current AA: 250mA \pm 5% at pulse mode (1.5hr)
AAA: 110mA \pm 5% at pulse mode (1.5hr)
- Charging Cut Off Mode: - Δ V, Vmax, Tmax, timer
- Discharging Current: 200~380mA (Ending voltage is 1 V)
- Trickle current AA: 20~30mA AAA: ~20mA
- Sleeping period: 6 days
- Wake-up charging: trickle charging for 12 hours
- 9V charge: 14mA for 14hrs

Cautions:

- Avoid any mechanical shock.
- Keep the contacts clean.
- It is normal for both charger and battery to get warm when in use.
- Please put this charger at a place out of reach by children
- Do not expose this charger to rain or moisture
- Do not use in a confined space
- Keep away from inflammable materials
- Do not open the charger

LED Indicator

YELLOW	Charger Alarm light
RED	Charging in process
YELLOW blinking	Discharging in process
LEFT/RIGHT GREEN	The batteries in the left/right two channels are completely charged
LEFT/RIGHT RED blinking	The first battery in the left/right two channels is completely charged
LEFT/RIGHT GREEN blinking	The second battery in the left/right two channels is completely charged

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