MM-SIC

SILENT CHARGER

Ni-MH Ni-Cd Li-Po Discharge

OPERATION MANUAL ENGLISH

CE

Much more

1.Silent Charger

The Silent Charger(referred to as the SC)is a state of the art microprocessor based charger/discharger system for rechargeable batteries for R/C use. With the technology developed by our team of R&D, factory team drivers and world champions, Muchmore introduces the next generation of charger for all R/C drivers. The SC is switching type and can fully charge Ni-MH and Ni-Cd 1 to 14 cells at a digitally presettable amperage up to a maximum 6.0amps using peak detection and temperature limit methods. The SC can charge Litheum battery up to 5 cells. The following features give the SC superior benefits to the other chargers:

■Orange back lit LCD with 16x2 characters ■An IC controlled cooling fan
■Multi protection system ■3-3 charge discharge memories
■Minimized setup procedure ■Automatic saved charge-discharge profile
■Capability of charging high voltage batteries by new switching type charge
■Temperature probe(Thermo sensor)

TECHNICAL DATA

Dimensions	124x114x47mm
Weight	520g
Number of cells(Ni-MH/Ni-Cd)	1~14cells (1.2~16.8V)
Number of cells(Li-Po)	1~5cells (3.7/7.4/11.1/14.8/18.5V)
Max charge current	0.1~ 6A
Max discharge current	0.1~ 6A
Dicharge cuttoff voltage	Automatically selected
Input voltage	9~15V
Charging mode	Ni-MH, Ni-Cd, Li-Po
Discharging mode	Ni-MH, Ni-Cd, Li-Po
Trickle charge rate(after charge)	0.1A(Ni-Cd mode)
Voltage threshold/Delta peak	3mV/cell(Ni-MH), 6mV/cell(Ni-Cd)
Max charge watts	120watts
Max dishcharge watts	40watts
Temperature probe	Magnetic sensor(35~65deg.C)
Keys	4
Cooling	IC controlled single fan

⚠WARNING

To reduce the risk of injury, use only rechargeable Ni-CD or Ni-MH or Litheum/Lithium-Ion, Litheum/Lithium Polymer batteries with the SC. Do not leave the SC unattended. The remote possibility of a failure could cause an extreme overcharge. This could cause the battery to rupture. Always make sure all the batteries in the pack are in the same state of discharge before charging a pack. Otherwise, any cells that are partially charged before charging will get extremely hot and may be damaged or vent battery acids. To prevent this, make sure the temperature probe(thermo sensor) from the SC is always attached to the battery's surface. Check your battery pack occasionally for overheating. If cells are too hot to touch or swollen, there is something wrong and the pack must be disconnected from the charger immediately. Muchmore Racing(or their associated distributors) shall not be liable for any property damage or personal injury which may result from the failure to follow these instructions or other improper use of this product. Avoid any contact of your SC with water or other liquids.

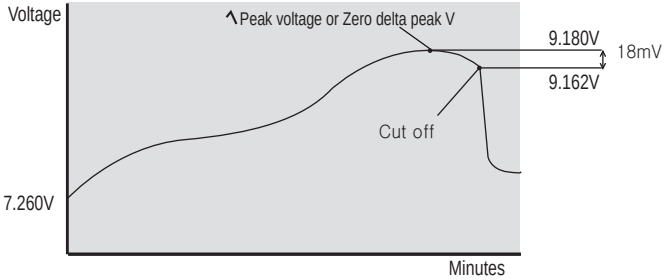
Never charge any Litheum/Lithium-Ion/Lithium Polymer battery unattended. Please refer to the cell manufacturers instructions for charging information. Do not connect the SC's temp probe to the Cell Master charger or any other products. Never operate on carpets, cloths, pit towel or other materials. Never cover the cooling fans or holes on the SC. Disconnect the SC from power supply when not in use. Only charge serially switched battery packs containing 1~14cells of NiMH or Ni-Cd, 1~5cells of Litheum/Lithium. Never charge parallel switched cells. Never connect the SC directly to an AC(110/230V) power source. For best performance, we recommend the Power Master 2(24A power supply #MM-CTXP3) or Power master mini(#MM-CTXPM).

New charger may produce a slight odor/odour in the first few hours of service due to materials curing inside the device-this is normal.

2.What's Delta peak?

- "Delta peak" is short hand for "The peak charge is detected by measuring the Delta Voltage". "Delta" is a mathematical term which means "The change in". So what is delta peak charging? As Ni-MH or Ni-Cd battery is charged, its voltage increases. This increase in voltage is technically called a positive delta V (or voltage). Positive because the voltage is rising. It is a basic characteristic of these cells that when they are fully charged the voltage levels off and even goes down very slightly. These conditions are known as Zero delta V and negative delta V. The SC looks for this change and terminates the charge when it sees it.

- e.g. 6cell Ni-MH charge



The SC determines the number of cells and the delta peak V cut off value automatically according to the battery's output voltage. The delta peak V value will be set to 3mV per cell in Charge Ni-MH mode, 6mV in Ni-Cd.

3.Li-Po charge/dishcarge data

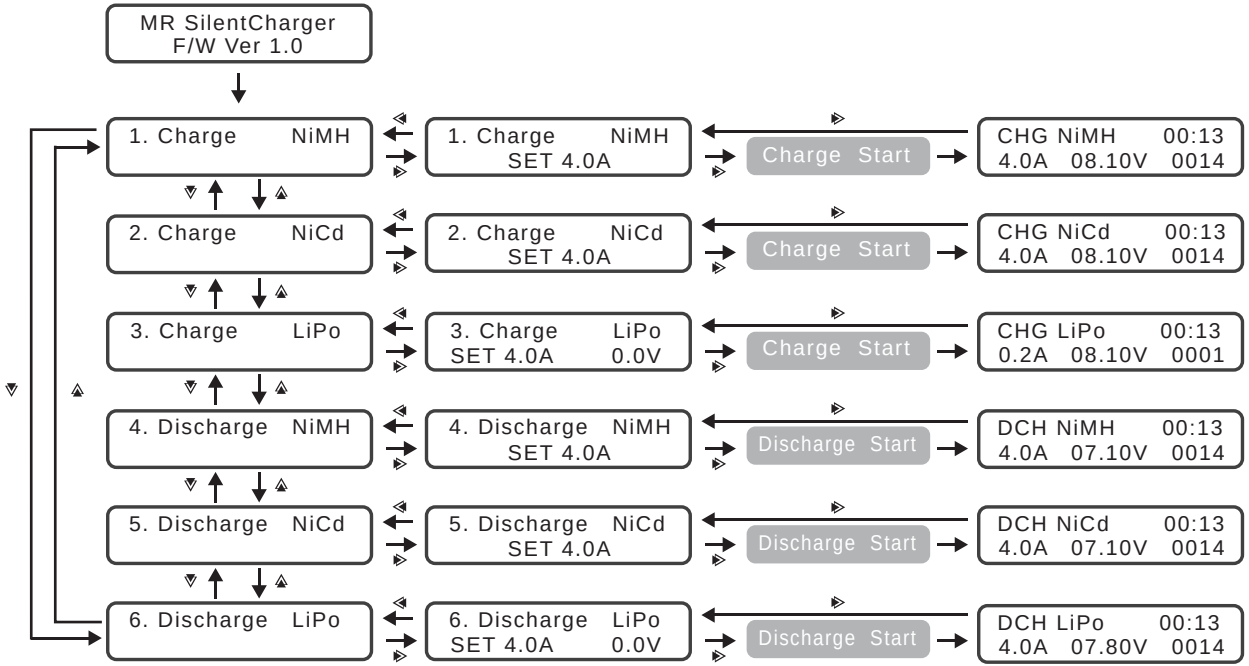
Cells(Voltage)	Charge cut off voltage	Discharge cut off voltage
1cell(3.7V)	4.2V	2.8V
2cell(7.4V)	8.4V	5.6V
3cell(11.1V)	12.6V	8.4V
4cell(14.8V)	16.8V	11.2V
5cell(18.5V)	21V	14V

4.State indicator

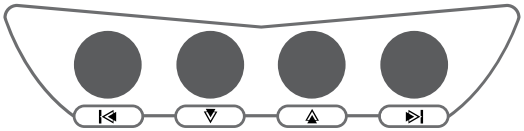
A laser state indicator LED is equiped on the SC which allows you to monitor the SC's state.

On : Charging
Blinking once a second :Discharging

4.Program structure



Key functions

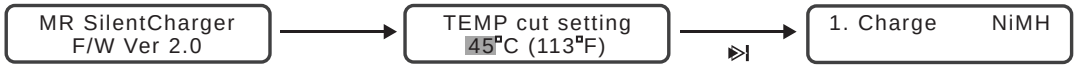


Backward
Downward Decrement
Upward Increment
Forward Charge/Discharge start/stop

5.TEMP setting

:Cursor blinks

1.Turn off the power of the SC,
2.Push and hold down ⏮ button and turn on the SC.
3.You'll see the following screens.



Determine temperature terminating of charge with ▼ ▲ keys.
Make sure TEMP probe always keeps good contact on the battery's surface. We recommend, in summer set to 42-48deg.C, in winter, 40-42deg.C which works fine but will defend on your location.

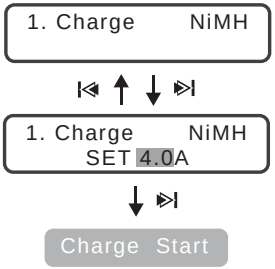
NOTE: C stands for Celsius.
F stands for Fahrenheit.

NOTE: If the temperature is closed to the setting value during charge modes/Li-Po discharge mode,
mark will appear with beep alarm.
If the temperature gets to the setting value, charge will be terminated with warning message "Charge temp cut Hit forward key"

6.Charge NiMH

:Cursor blinks

NOTE: Delta peak voltage setup value will be 3mV per cell in this mode.



Charging current(Ampere)
For battery's safety and life time, always charge less than 4A for Sub-C type, 1.5A for AA, AAA type batteries.
Set value 0.1~6.0A
NOTE: The higher charge current you set, the hotter battery after charge is done. Heat shortens Ni-MH batteries' life.

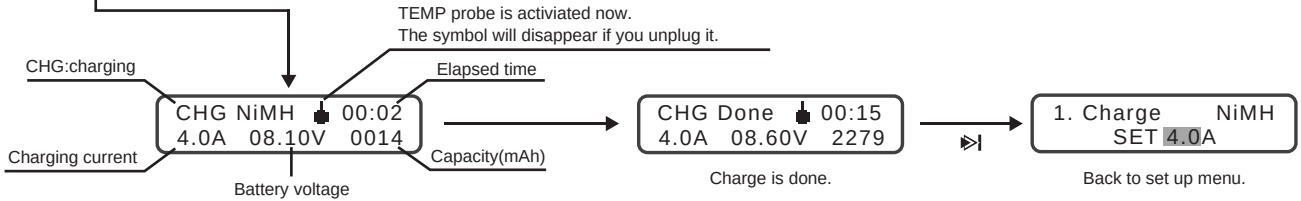
If you push ⏭ button long, the SC will discharge the battery first then charge. Discharging current will be same as charging current where you set to.

KEY OPERATION

⏮ Backward

▼ ▲ Set values

⏭ Forward
Charge start/stop
+1second : Discharge-Charge



7.Charge NiCd

:Cursor blinks

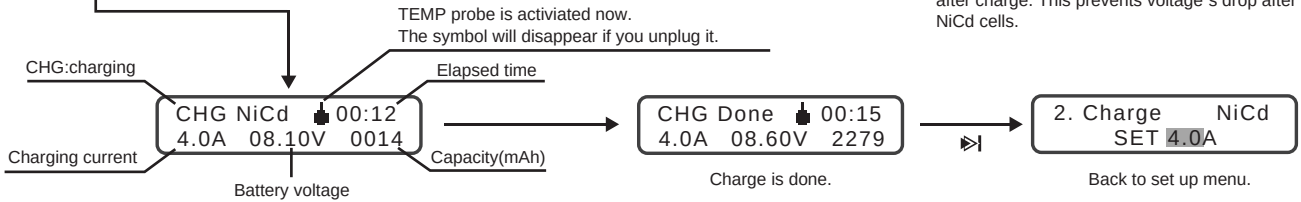
NOTE: Delta peak voltage setup value will be 6mV per cell in this mode.

Charging current(Ampere)
For battery's safety and life time, always charge less than 4A for Sub-C type, 1.5A for AA, AAA type batteries.
Set value 0.1~6.0A
NOTE: The higher charge current you set, the hotter battery is after charging is done.
If you push ⏭ button long, the SC will discharge the battery first then charge. Discharging current will be same as charging current where you set to.

KEY OPERATION

- ⏮ Backward
- ▼ ▲ Set values
- ⏭ Forward
  Charge start/stop
  +1second : Discharge-Charge

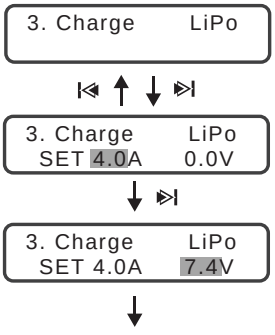
NOTE: The SC will charge your battery at a very low rate(0.1A) after charge. This prevents voltage's drop after charge for NiCd cells.



8.Error messages

Input Volt Too Low Set more than 9V	Adjust power supply's output voltage more than 9.0V.
Input Volt Too High Set less than 15V	Adjust power supply's output voltage less than 15.0V.
Check clips	Check output alligator clips if there's poor contact between clips and battery or between each cell.
Battery Reverse! check polarity	Check if the polarity is right between clips and battery. Red is +(positive), Black is -(negative).
Delta Fail Charge stop	The SC failed to read Negative delta peak. Try to charge the battery after discharge again.
Charge temp cut Hit forward key	Charge is terminated by temperature. Press ⏭ key to check charge data.
LiPo sense fail Cell NO.is wrong	The voltage of Li-Po battery and user's setup value is different. Check cell number and battery's condition if it is discharged too much.
Check cell NO.or discharge first	
Out of order Call for service	Current is overflowed or the unit might be damaged. If the unit is out of order, please contact your LHS or official Muchmore distributor.

9.Charge LiPo



NOTE: 1C charge means put same current as the battery's own full capacity.
e.g. For 200mAh battery, charge at 0.2A

:Cursor blinks

Charging current(Ampere)
For battery's safety and life time, always refer to the cell manufacturers instructions for charging current information.
Set value 0.1~6.0A

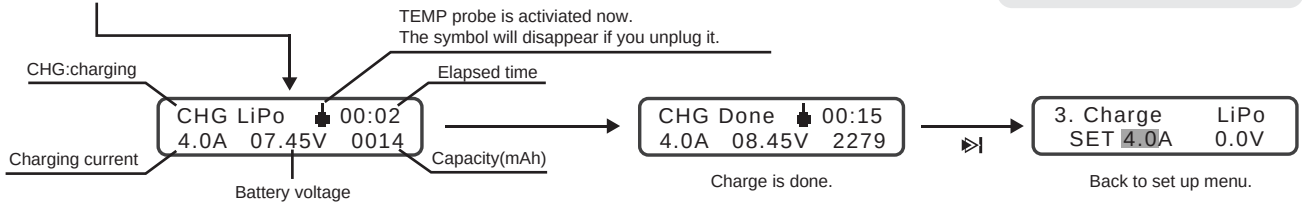
Battery voltage
The SC will read the battery's voltage and determine number of cells automatically. If the battery is discharged excessively, the SC may read the voltage wrong. In this case, charge the battery at 1C in Charge Ni-MH mode for 10seconds. The voltage wil be recovered and it will be able to start Charge the Li-Po battery in this mode.

KEY OPERATION

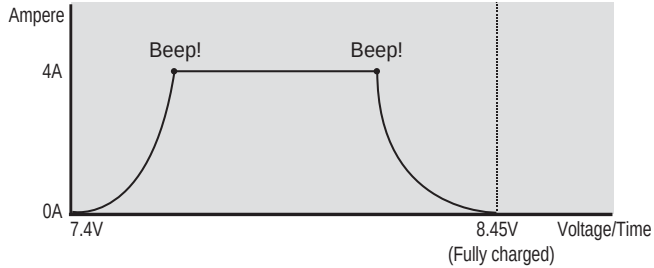
- Backward
- Set values
- Forward
  Charge start/stop

cell number ***VS*** voltage

1cell : 3.7V
2cell : 7.4V
3cell : 11.1V
4cell : 14.8V
5cell : 18.5V

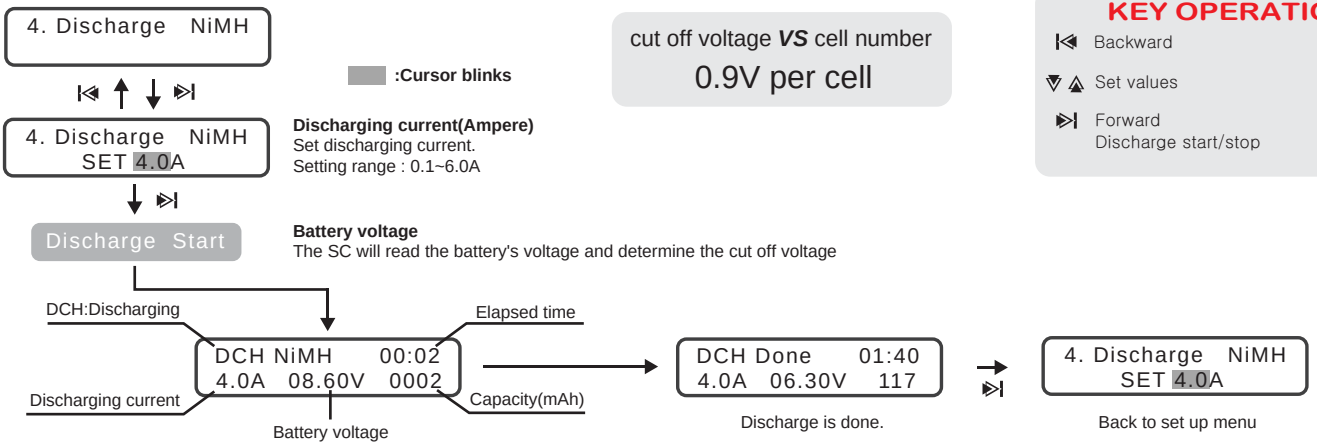


- e.g. 2cell(7.4V) Li-Po charge



NOTE: Charging time will depend on the battery's capacity/voltage.

10.Discharge NiMH



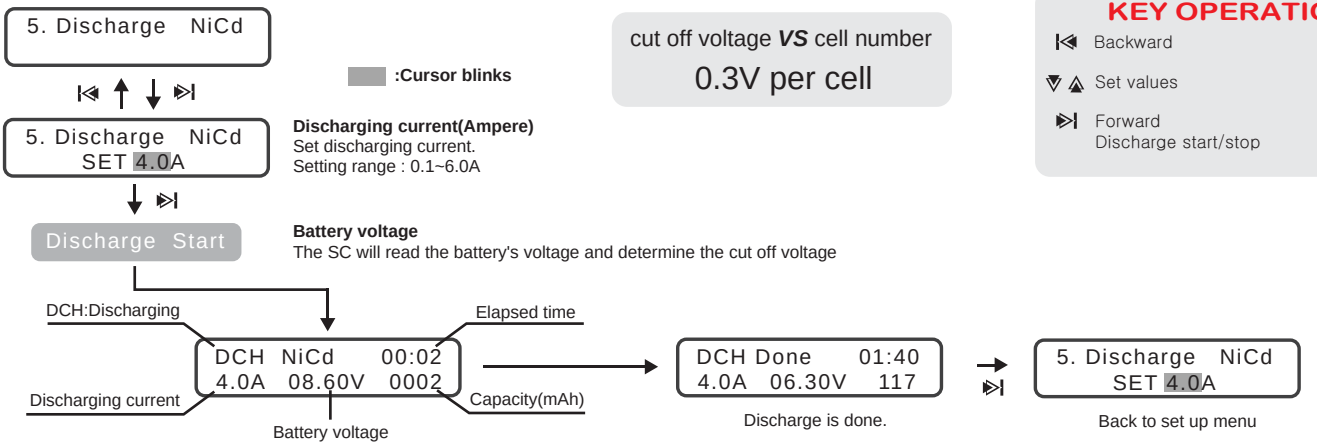
cut off voltage ***VS*** cell number

0.9V per cell

KEY OPERATION

- Backward
- Set values
- Forward
  Discharge start/stop

11.Discharge NiCd



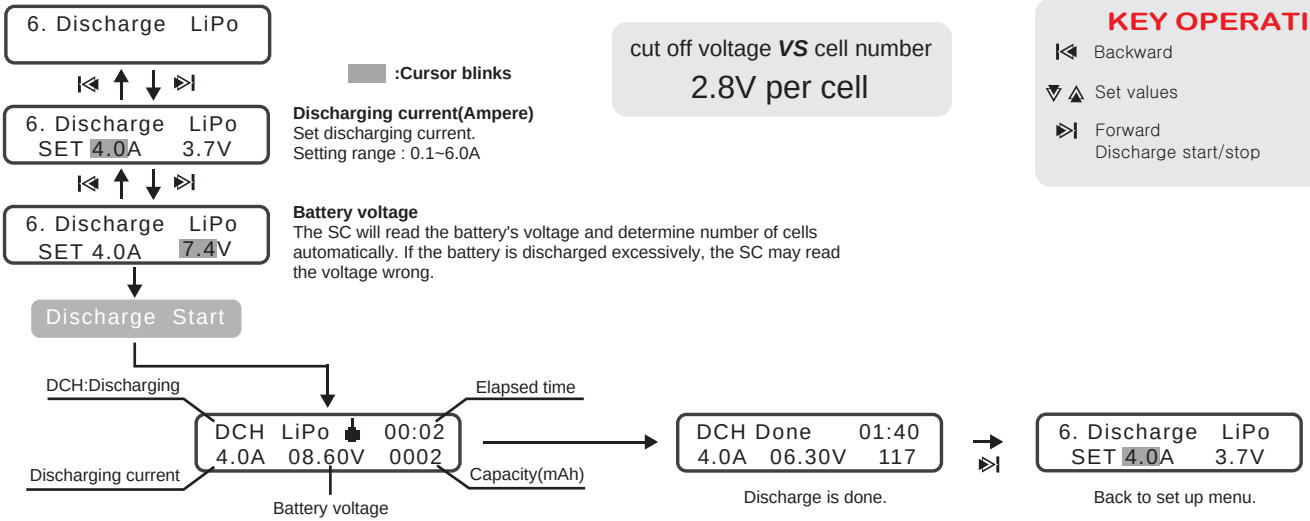
cut off voltage ***VS*** cell number

0.3V per cell

KEY OPERATION

- Backward
- Set values
- Forward
  Discharge start/stop

12.Discharge LiPo



13.Warranty

MUCHMORE RACING warrants their Silent charger to be free from defects in material and workmanship for a period of 120 days from the date of purchase. This warranty applies only to the original purchaser. MUCHMORE RACING (or their associated distributors) will repair or replace without charge, or refund the purchase price of any product which fails during the warranty period by reason of defect in material or workmanship found upon examination by MUCHMORE RACING to have been the cause of failure. This warranty does not cover any failures attributable to abuse, mishandling, failure to follow operating instruction, alteration or accident. To make a claim under this warranty, the purchaser must return the product to MUCHMORE RACING (or the relevant Countries associated distributors) at the address shown below, properly packed and with shipping charges prepaid. All claims must be made within thirty (30) days from the product failure and, in any event, within thirty (30) days of the expiration of the 120 day warranty. All claims must be accompanied by a sales slip or other written proof of date of purchase. The maximum repair costs for any failure caused by the purchaser are 50% of retail price (original purchase price). Since we cannot supervise the proper use of our products, we can not accept any liability for direct or indirect damage of any type arising from their use or occurring to the property of the user and/or third parties. Therefore, any use of this product shall take place at the user's own risk. The warranty claim may not exceed the value of this product in any case. By putting this product into operation you accept the above conditions and assume full responsibility for use of this product.

14.CONTACT

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