



Operation Guide – Charger “FLAME”

Features

- ✚ High speed sample rate negative delta voltage and zero delta voltage auto-detect cut off circuit with MOSFET control for peak detection. Pulsation charge method to prevent overcharge and overheat.
- ✚ Charge Ni-MH battery by Zero delta voltage technology without using thermo-detection probe.
- ✚ Auto-detect switching mode charge for Ni-CD and Ni-MH battery.
- ✚ Front panel with “MODE” buttons and dial log to switch between: CHARGE, DISCHARGE, 1 CYCLE and 3 CYCLE
- ✚ “DIAL LOG” to switch between charge current (0.5A, 2A, ..., 7A)
- ✚ 7 LEDs indicator for charge current (0.5A, 2A, ...7A)
- ✚ 5 LEDs indicator for SLOW CHARGE, FAST CHARGE, DISCHARGE, 1 CYCLE and 3 CYCLES
- ✚ 1 Superbright LED indicator for POWER
- ✚ 8-bits 8MHz CPU with 8KB ROM, 1KB RAM, 8 channel 10bit ADC and 8-bit PWM current control.
- ✚ Auto-detect the number of cells of the battery.
- ✚ Reverse polarity protection system
- ✚ Charge battery pack with combination 1~8 cells
- ✚ Auto detect system for power input 110~220V AC or 12V DC
- ✚ Build in 5A discharge device for single or cycling discharge.
- ✚ 6 cm Cooling fan to enhance the performance.

Specification

- ✚ Input Voltage : DC 10V ~ 16V
- ✚ Battery Voltage Range : 1.2V to 9.6V with come with AC adaptor (SPS155V6A-T)
- ✚ Charging Current : 0.5A to 7.0A
- ✚ Discharging Current : 5A

Operation Set up

1. Select charge current with refer our attached table.
2. Slow charging starts automatically when a battery is connected to the charger
3. Select different operation mode with refer the following table:

<i>MODE</i>	<i>SELECT</i>	<i>SOUND</i>	<i>DISPLAY</i>	<i>FUNCTION</i>
Slow Charge	Connect to battery	once	SLOW blinking	Slow charge with consistent current output
Fast Charge	Push TWO time	twice	FAST blinking	FAST charging w/peak detect. When the battery is fully chged, chgr will auto switch to SLOW chg
Discharge	Push THREE times	three	DISCHG blinking	DISCHG w/auto cut-off detect. When the battery is fully dischged, chgr will auto switch to SLOW chg
Discharge + Fast charge	Push FOUR times	forth	CYCLE on + Function blinking	DISCHG battery and fully FAST chg, chgr will auto switch from FAST chg to SLOW chg
Discharge + Fast charge (3 Cycles)	Push FIVE times	fifth	3 CYCLE on + Function blinking	DISCHG battery and fully FAST chg, chgr will auto switch from FAST chg to SLOW chg.
Standby (Slow Charge)	Push ONE time when other function working	once	SLOW blinking	Repect fully DISCHG and FAST chg battery pack 3 times, chgr will auto switch from FAST chg to SLOW chg.

4. Tone Acknowledge for key press
5. Tone Acknowledge for finished any procedure
6. Tone Acknowledge for any error (as shown in the following table)

Error Message Note Table	
Tone	Message
2 long + 2 short	Normal Discharge Finished
2 long + 3 short	Abnormal Discharge Finished
3 long + 1 short (repeat)	Input Voltage Error
1 long + 2 short	(Ni-Cd) Charge Finished
1 long + 3 short	(Ni-MH) 0 delta-V Charge Finished
3 long + 2 short	Disconnect while charge
1 short	Case 1 : Initialize ; Case 2 : Self reset or after power failure, note that mode will auto forced to 1 ; Case 3 : Disconnect while discharge

Charge Current Setting

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Battery Type	Battery Model	Charge Current
Ni-CD	Capacity less than 500mAh	Less than 0.5A
	N-500AR	Less than 0.5A
	KR-600AE	Less than 2A
	KR-1100AAU	Less than 2A
	KR-1500AUL	Less than 2A
	KR-1700AU	Less than 2A
	KR-1300SC	Less than 3A
	KR-1500SC	Less than 3A
	N-1700SCR	Less than 4A
	N-1900SCR	Less than 4A
Ni-MH	RC-1700	Less than 5A
	RC-2400	Less than 5A
	HR-3U (AA 1700 ~ 2500mAh)	Less than 0.5A
	HR-4U (AAA 700 ~ 800mAh)	Less than 0.5A
	RC-3000	Less than 5A
	RC-3000HV	Less than 5A
RC-3300HV	Less than 5A	
RC-3600HV	Less than 5A	

GP

Battery Type	Battery Model	Charge Current
Ni-CD	GP-160SCKR	Less than 2A
	GP-240SCKR	Less than 3A
Ni-MH	AA (1300 ~2250mAh)	Less than 0.5A
	AAA (600 ~850mAh)	Less than 0.5A
	GP110AFHR	Less than 2A
	GP200AFHR	Less than 2A
	GP220SCHR	Less than 3A
	GP300SCHR	Less than 5A
	GP330SCHR	Less than 5A
GP370SCHR	Less than 5A	

Racer Tips

If you wish to optimize the performance of your battery pack, you need to discharge it first. Because this is the best way to minimize the memory effect of rechargeable battery. Memory effect will cause power loss, less capacity and false peak.

There are two ways to get the batteries on fully discharged status:

1. Place a 30 or 33 ohm, 10 to 20W resistors in series on the battery pack. The resistor discharges the battery and cool down in about 30 minutes. The next charging must start after 24 hours.
2. Place a 1 ohm 5W resistor in series on each individual cell. This discharge method let each cell discharge individually and assuring a full matched discharge.

Important Note

1. **DO NOT** operates the charger when your hand is wet.
2. **DO NOT** leave the charger in direct sunshine.
3. **DO NOT** place flammable, chemical and container under pressure around the charger while operating.
4. **DO NOT** leave the charger unattended while charging.
5. **DO NOT** attempt to open the charger.
6. **DO NOT** attempt to charge a battery when it is warm
7. **DO NOT** short circuit the charger.
8. **DO NOT** unplug the charger or battery when the charger status is fast charge, discharge and cycling.
9. **KEEP AWAY** from children.
10. **MUST** wear sole while using the charger.
11. **MUST** use in a well ventilated area and temperature below 30°C
12. **MUST** use fused and circuit protection power supply.
13. **MUST** refer the battery pack specification before use.
14. Battery Option Limited will not liable for any lost revenue, indirect consequential, incidental, punitive damage or all other lost or damages.



FLAME Charger is powered by Battery Option Limited

**ROOM 2205, 22/F., CHEUNG TAT CENTRE,
18 CHEUNG LEE STREET, CHAI WAN, HONG KONG.**

TEL : (852)3528-0168 FAX : (852)2866-8598

Web Site : <http://www.batteryoption.com>

Email : general@batteryoption.com