BREEZE PLUS

LX40

OPERATING INSTRUCTIONS

Please keep for future reference

Thank you for purchasing this Breeze Plus LX40 charger. We are sure you will be pleased with its performance and features. In order to ensure that you obtain the maximum benefit from its operation, please read the instructions carefully.

SPECIFICATIONS

Input Voltage	11~15V DC 100~240V AC
Battery Type & Cells	Lithium Polymer (Li-Po): 3.7v type ONLY 1~3 Cell - Auto Cell Detection 4 Cell - Manual selection
Charge Rate	Automatic 1~2 Cell packs 3.0 Amp max 3 Cell packs 2.4 Amp max 4 Cell packs 1.8 Amp max
Charge Termination	Constant current / Constant voltage

FEATURES

- Designed specifically to charge 1~4 cell Lithium Polymer (Li-Po) batteries
- Reverse polarity protection on both DC input and output
- Charge Only Mode
- Display Type Blue LED: 1~3 Cell - Auto selection
Red LED : 4 Cell - Manual selection
- Microprocessor controlled charging system
- System Protection
  - No battery connected
  - Reverse polarity of output
  - Wrong cell quantity selected
  - Voltage error
  - Input voltage error
  - Circuitry problem
- Output connection JST connector and 2mm adaptor lead

INPUT POWER

12V DC
Connect the input leads to the 12v supply, by connecting the charger's red alligator clip to the positive (+) terminal on the power source and the black alligator clip to the negative (-) terminal.

OR

100~240V AC
Connect the mains lead to the Fusion Breeze Plus LX40, then connect the AC plug to a regular AC100~240V wall socket.

NOTE:
If AC Power is being used for input power,
DO NOT try to connect the 12V DC power as well !

CHARGING LITHIUM POLYMER BATTERIES WITH THE BREEZE PLUS LX40

The Breeze Plus LX40 charger is capable of charging Lithium Polymer batteries of between 1 and 4 cells (3.7 to 14.8v). The charger uses a constant current/constant voltage charge regime to ensure a safe full charge of Lithium Polymer batteries.

When fast charging, constant current is supplied to the battery being charged until the voltage per cell reaches around 4.0 volts. At this point the charger changes from constant current to constant voltage. The constant voltage allows the battery to dictate how much current the charger should supply to safely fully charge the battery. When the current drops below approximately 100mA the charger stops charging as the battery is fully charged.

IMPORTANT

For the first 5 minutes of every charge the battery receives only a very low current from the Breeze L40 charger, whilst the charger senses the voltage of the battery and decides the safe initial fast charge current to use.

If a fully charged battery is connected to the charger, it cannot be overcharged, as the charger will recognize that it is already fully charged.

If a battery pack of 1~3 cells is connected to the charger, but the charger is accidentally set to charge 4 cells by holding the START/STOP button for over 2 seconds, the charger will detect the error and will not over charge the battery pack. In this situation, the charge will terminate after 5 minutes, with the charger emitting a warning error sound and both LED's will flash 4 times every three seconds. Press the START/STOP button to cancel the warnings and to return to the STANDBY MODE.

OPERATION

STANDBY

When the charger is connected to the power supply,
the BLUE LED will flash once every 3 seconds.

CHARGING

1~3 Li-Po cells

To charge packs of 1~3 Li-Po cells, press and immediately release the START/STOP button. The charger will commence charging the battery and the BLUE LED will light up constantly.

4 Li-Po cells

To charge packs of 4 Li-Po cells, press and hold the START/STOP button for approximately 2 seconds. The charger will commence charging the battery and the RED LED will light up constantly.

To stop charging, press the START/STOP button, charging will cease and the charger will revert to STANDBY MODE.

CHARGE COMPLETE

1~3 Li-Po cells

When the 1 ~ 3 cell pack automatic charge is complete, the BLUE LED will flash continuously twice per second and the charger will beep for a period of 15 seconds to indicate the charge process is complete.

4 Li-Po cells

When the 4 cell pack charge is complete, the RED LED will flash continuously twice per second, and the charger will beep for a period of 15 seconds to indicate the charge process is complete.

Press the START/STOP button to revert to STANDBY MODE.

SAFETY PRECAUTIONS

- Place the charger on a firm, level surface for charging.
- **DO NOT** cover the charger.
- Take great care over battery polarity, and observe the battery manufacturer's recommendations.
- Charge **ONLY** rechargeable Li-Po packs
- Connect the input leads to the 12v supply first, **THEN** connect the battery to be charged.
- **ALWAYS** disconnect all batteries when **NOT** charging, as they may discharge themselves if left connected.
- **DO NOT** allow the input crocodile clips to touch each other when the battery being charged is connected as this may cause a short circuit.
- Avoid short circuits.
- If Li-Po packs are severely overcharged they may become very **HOT**. For this reason it is always best to place the pack on an insulated heat resistant surface for charging.
- The charger must **ONLY** be used in completely dry conditions.
- **DO NOT** disassemble the charger.
- The Breeze Plus LX40 charger should be allowed to cool for around 10 minutes following two consecutive fast charges.
- **NEVER** leave the charger unattended whilst charging.
- **DO NOT** fast charge batteries immediately after use while they are still warm. Allow to cool to ambient temperature before charging.
- This charger is not suitable for children under 14 years of age without adult supervision.
- **ALWAYS** remove battery pack from device (car, aircraft, helicopter etc.) before charging.

LITHIUM POLYMER BATTERY SAFETY WARNINGS

Ensure that the charger and battery are placed on a non-flammable surface whilst charging, and ideally charge outdoors wherever possible. **NEVER** charge a Lithium Polymer battery inside a vehicle whatever the circumstances.

ALWAYS ensure that the charger is correctly set for the battery being charged, checking both voltage and capacity. Be particularly careful if using a series/parallel battery pack, or if using packs of different specifications with the same charger.

DO NOT leave Lithium Polymer batteries unattended whilst they are charging. Monitoring the batteries during charging is very important.

ALWAYS monitor the temperature of the battery being charged every few minutes, if the battery becomes hot to the touch, disconnect it from the charger immediately and allow to cool. Do not recommence charging until the battery and charger have been checked for compatibility, and the charger settings have been confirmed as being correct.

In the unlikely event of the Lithium Polymer battery catching fire **DO NOT** use water to attempt to put the fire out, instead use sand or a fire extinguisher designed for electrical fires.

When used correctly Lithium Polymer battery packs are as safe as any other type of rechargeable battery pack. However they do require different charge regimes to the longer established Nickel Cadmium and Nickel Metal Hydride technologies and **have the potential of catching fire if severely mistreated.**

If Lithium Polymer battery packs are short-circuited or severely overcharged elemental Lithium may be deposited internally, and if the battery pouch is damaged this can escape from inside the battery. If this occurs a fire may be caused, as elemental **Lithium is highly reactive when exposed to water or moisture**, producing flammable hydrogen gas and corrosive fumes. Elemental Lithium is not produced unless the battery pack is severely mistreated, so in normal usage there is no likelihood of explosion or fire.

LITHIUM POLYMER BATTERIES

Lithium Polymer battery packs must **NEVER** be discharged below 3 volts per cell as this will result in damage to the cells. If the voltage is allowed to drop below 3 volts per cell the battery voltage may seem to recover following a charge, but the battery may not then give its full nominal capacity and a reduction in performance is likely – allowing the voltage to drop below 3 volts per cell will invalidate all warranty claims.

NEVER charge Lithium Polymer battery packs at greater than 4.2 volts per cell, as this will cause irreversible damage to the cells and will invalidate all warranty claims.

DO NOT attempt to charge Lithium Polymer battery packs whilst the input 12v battery is being charged, as the voltage supplied to the Lithium Polymer charger may be too high.

If disposing of Lithium Polymer battery packs ensure that the pack is fully discharged by using a light bulb, electric motor or similar to completely discharge the pack.

DO NOT allow any Lithium Polymer battery pack to short-circuit as this is likely to result in a minor explosion and consequent fire.

BEFORE charging any Lithium Polymer battery packs they should be closely inspected for any damage, such as punctures in the sleeving or if the battery has swollen or expanded in size. If any such damage is detected **DO NOT** charge, even if the battery otherwise appears to be brand new.

Before commencing charging **ALWAYS** double check the settings on the charger to ensure it is set correctly for the battery pack to be charged. Using the wrong settings is likely to result in damage to the battery pack being charged and could result in the battery catching fire.

ERROR MESSAGES

If there is an error BOTH Red & Blue LEDs will flash simultaneously at 3 second intervals, at the same time the charger beeps at 0.5 second intervals.

The number of flashes at 3 second intervals indicates the error.

When input voltage is under 10.5v or exceeds 15.0v.	
When a battery is connected to the output from the charger with its connections reversed.	
When the battery to be charged is not connected correctly to the charger's output.	
When the number of cells in the battery being charged has been set incorrectly.	
When there is a voltage error.	
When there are circuitry problems.	

When the START/STOP button is pressed, the error display is cancelled, and the charger reverts to the STANDBY MODE.

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