



## Lithium Ion Charger Series User Guide

For Use With These Lithium Ion *IntelliCHARGER* Models:

***Li1215*** ▪ ***Li1615*** ▪ ***Li1225*** ▪ ***Li1625***

**Microprocessor Controlled Lithium 12V/16V Automatic Battery Chargers**

The Li Charger series is a group of advanced battery chargers designed specifically for high performance 12V or 16V lithium ion batteries. These chargers combine the reliability of a High Frequency MOSFET rectified assembly with an advanced microprocessor control board to create a battery charger that can rapidly and safely recharge 12V and 16V lithium ion batteries in several sizes.

### **Voltage Monitoring**

The battery's terminal voltage is measured every five minutes by the on-board microprocessors and this information is analyzed in addition to the elapsed time to dynamically control the battery charger for optimum charging performance.

### **Automatic Computer Analysis/Auto Shutdown**

The microprocessors will analyze the battery when connected. If the battery's voltage is below 4V the charger may not recognize the battery is connected and will not begin charging. Likewise, if the battery will not come up to the correct voltage in a ten-hour period the microprocessor control board will automatically shut the charger off.

### **UL Approved Battery Cables**

Six feet of durable battery cables are provided that are resistant to cuts and abrasion. The copper plated battery clamps are compact and custom designed easy connections. All clamp connections are soldered for maximum current flow.

### **Internal Cooling Fan**

A cooling fan automatically operates during charging to keep the circuit and other internal components at a constant safe temperature.

## ▪ **Important Safety Instructions**

The Li Charger series generates a low DC voltage and high DC current to the battery being charged. Operating the charger incorrectly or misusing it may damage the charger or create hazardous conditions for the user.

### **WARNING: EXPLOSION HAZARD**

- The Li Charger series is designed to charge 12V and 16V lithium ion batteries. Do not attempt to use with batteries with voltages not matching the chargers specified voltage.
- Do not use this product where there are flammable fumes or gases.
- Do not use this product in an enclosure containing lead-acid batteries. These batteries vent explosive hydrogen gas, which can be ignited by sparks from electrical connections.
- Never attempt to charge a frozen battery.
- Do not connect DC clamps to the carburetor, fuel lines, or sheet metal body parts.

## ▪ Important Safety Instructions(con't)

### WARNING: SHOCK HAZARD. KEEP AWAY FROM CHILDREN.

- Do not expose charger to water or rain or temperatures over 104 °F (40 °C).
- Do not open the charger. There are no user serviceable parts inside the unit. For service, see the Warranty Policy in the back of this guide.

### WARNING: HEATED SURFACE - Ensure at least 2" (5 cm) air space is maintained on all sides of the charger.

• An extension cord should not be used unless absolutely necessary. Use of an undersized extension cord will adversely affect the output of the product and could prove to be dangerous. If an extension cord must be used, make sure that pins on the plug of the extension cord are the same number, size and shape as those of the plug on the charger. We recommend a minimum of a 16AWG cord for lengths up to 50' and a minimum of a 14AWG cord for lengths up to 100'. We do not recommend cords over 100'. Do not use this product with an ungrounded extension cord.

- Be sure AC and DC cords are not pinched or otherwise damaged by hoods, doors, or other moving engine components.
- Observe battery polarity.

**\*IMPORTANT\*** If this charger is to be used with a portable generator, it should be equipped with automatic voltage regulation to ensure consistent output of the product.

## ▪ Specifications

ELECTRICAL SPECIFICATIONS	12V	16V
Absorption Voltage	14.4VDC	18.25VDC
Maximum Output Voltage	14.4VDC	18.25VDC
Current	15A +/- 0.5A or 25A +/- 0.5A	
Wattage	15A = 210W or 252W at full load or 25A = 350W or 420W at full load	
Efficiency	>87% at full load	

### 12/16V, 15A MODELS

#### Physical Specifications

Dimensions (W x H x D): 8.5" x 2.625" x 3.5" (215.9mm x 66.7mm x 88.9mm)

Weight: 3.3 lbs (1.5 kg)

AC Input Connections: 5.0' (1.5 m) AWG 16

DC Output Connections: 4.0' (1.5 m) AWG 10

#### AC Input Specifications

AC Input Voltage: 100-120 VAC, 47-63 Hz

AC Input Current: 8A RMS fuse protected

### 12/16V, 25A MODELS

#### Physical Specifications

Dimensions (W x H x D): 9.125" x 2.875" x 4.75" (231.8mm x 73mm x 120.7mm)

Weight: 5 lbs (2.27 kg)

AC Input Connections: 5.0' (1.5 m) AWG 16

DC Output Connections: 4.0' (1.5 m) AWG 8

#### AC Input Specifications

AC Input Voltage: 100-120 VAC, 47-63 Hz

AC Input Current: 10A RMS fuse protected

### 15A/25A PROTECTION

Battery Reverse: YES

Short Circuit: YES

Overload: YES

Speed controlled cooling fan by charge stage

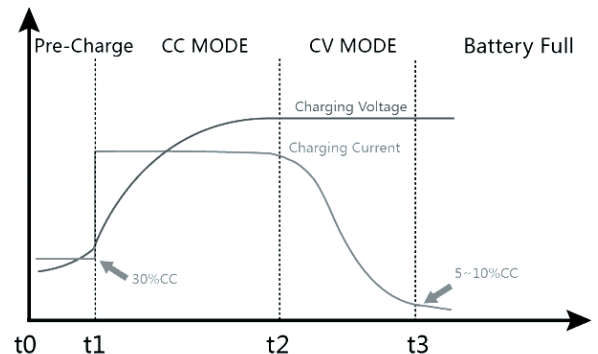


Figure 2. Charging characteristic curve.

XS Power Li chargers have a "soft start" feature that senses when the battery is deeply discharged and ramps current up slowly to protect the battery from overheating during re-charge, and greatly extend battery life.

**IMPORTANT: SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.**

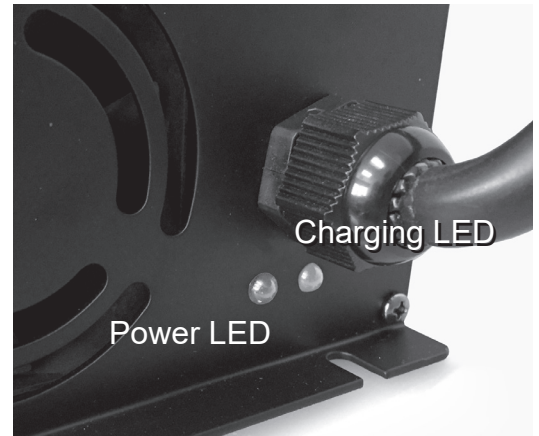
## ▪ Back Power Switch and Front LED Indicators

1) **Power LED Indicator:** Illuminates red when power cord is plugged in and power switch on back of unit is turned on.

2) **Charging LED Indicator:** Illuminates green when powered on and red when charging. When charging is complete the charging LED Indicator will illuminate green. If the Charging LED Indicator remains red after a 1 hour period, switch the charger OFF and remove the battery connections. Insure the battery polarity is correct, and if so, replace the battery.

3) **Power Switch:** (on back) Power is ON when switched to “I” and OFF when switched to “O”.

4) **Fuse holder:** 15A MODELS ONLY, contain a 25A output fuse in case of overload.



## ▪ LED Status Indicators

POWER LED	CHARGING LED	POWER LED	CHARGING LED	POWER LED	CHARGING LED	POWER LED	CHARGING LED
STATUS: POWER OFF		STATUS: POWER ON		STATUS: CHARGING		STATUS: CHARGING COMPLETE	

\*The LED Status Indicator will illuminate RED/RED indicating the battery is charging. The LED indicators will illuminate RED/GREEN indicating the battery is fully charged.

## ▪ Operation

The Li Charger series has been designed to provide fully automatic recharging of most 12V and 16V lithium ion batteries. If possible, disconnect all loads from the battery by removing battery cables, opening a disconnect switch, or switching loads off.

### To charge your 12V or 16V battery:

- 1) With the charger's power switch in the OFF position plug the charger into a grounded wall receptacle.
- 2) Connect the red positive (+) clip of the charger cables to the positive (+) terminal of the vehicle battery.
- 3) Connect the black negative (-) clip of the charger cables to a solid chassis ground. If this is not possible, connect it to the negative (-) battery terminal.
- 4) Flip the power switch on the back panel to ON. The Power LED will illuminate red and the Charging LED Indicator on the front panel will illuminate red as well, beginning the charging sequence. \*Note that the charger will automatically restart the charging sequence if the charge current rises above a factory preset threshold.
- 9) When complete, the Charging LED Indicator will turn green, flip the power switch to OFF.
- 10) Remove the black negative (-) clip and the red positive (+) clip from the vehicle's battery terminals.

## ▪ Troubleshooting

### **WARNING: Electric shock hazard**

Do not disassemble any of the HF chargers. The chargers do not contain any internal user-serviceable parts and attempting to service the unit yourself could result in electrical shock or burn.

- **Power LED does not come on when the power switch is flipped to ON:**

- Check fuse.

- Check cord and input power.

- **Charge LED will not illuminate:**

- The battery is not connected.

- The battery is below 4.0V.

- **Charging LED remains orange and never turns green:**

- This happens when the battery cannot be completely charged in a 10-hour period at the selected charge rate. Ensure the battery polarity is correct. If the error persists, replace the battery.

## ▪ Limited Warranty

We take great pride in our quality, value and performance and believe that this product should offer you trouble free operation throughout its lifetime providing you take care to follow the simple instructions in the product documentation. If you experience any problems with your product, please read the warranty details listed below carefully.

XS Power provides a one year warranty from the date of purchase, to the original purchaser. This warranty covers manufacturing defects in material and workmanship only. XS Power does not cover damage or failure caused by abuse, misuse, faulty installation, improper maintenance, or any attempted repairs not carried out by XS Power. There will be no obligations or liability on the part of XS Power for consequential damages arising from the use of the product or any indirect damages with respect to loss of property, revenue, or costs for removal, installation, or reinstallation.

For warranty service, the product must be reported to XS Power to receive a unique RGA number (return goods authorization) and at that time you will be advised of where to send the faulty product. All shipping charges for returns should be prepaid. If the requested repairs or service are within the terms of this warranty then the item will be returned to you on completion without any charge. The unit must be in its original packaging with any original accessories. XS Power will not be responsible or accept any liabilities for any loss or damage to additional items which are sent with returned product.

If the product is not covered under the terms of this warranty. XS Power will advise you of the costs to carry out any repairs necessary and the unit will be shipped to you on receipt of payment for the work including the return freight charges. Please allow 2 to 4 weeks for return of your product. Under normal circumstance we try to ensure we carry out warranty repairs within 5 working days. We cannot be held responsible for delays in shipping.

## Product Disclaimer

THIS LIMITED WARRANTY IS THE SOLE AND EXCLUSIVE WARRANTY PROVIDED BY XS POWER IN CONNECTION WITH YOUR XS POWER PRODUCT AND IS, WHERE PERMITTED BY LAW, IN LIEU OF ALL OTHER WARRANTIES, CONDITIONS, GUARANTEES, REPRESENTATIONS, OBLIGATIONS AND LIABILITIES, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE IN CONNECTION WITH THE PRODUCT, HOWEVER ARISING (WHETHER BY CONTRACT, NEGLIGENCE, PRINCIPLES OF MANUFACTURER'S LIABILITY, OPERATION OF LAW, CONDUCT, STATEMENT OR OTHERWISE), INCLUDING WITHOUT RESTRICTION ANY IMPLIED WARRANTY OR CONDITION OF QUALITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE TO THE EXTENT REQUIRED UNDER APPLICABLE LAW TO APPLY TO THE PRODUCT SHALL BE LIMITED IN DURATION TO THE PERIOD STIPULATED UNDER THIS LIMITED WARRANTY.

IN NO EVENT WILL XS POWER BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES, COSTS OR EXPENSES HOWEVER ARISING WHETHER IN CONTRACT INCLUDING WITHOUT RESTRICTION ANY ECONOMIC LOSSES OF ANY KIND, ANY LOSS OR DAMAGE TO PROPERTY, ANY PERSONAL INJURY, ANY DAMAGE OR INJURY ARISING FROM OR AS A RESULT OF MISUSE OR ABUSE, OR THE INCORRECT OPERATION OF THE PRODUCT.

## Exclusions

If this product is a consumer product, federal law does not allow an exclusion of implied warranties. To the extent you are entitled to implied warranties under federal law, to the extent permitted by applicable law they are limited to the duration of this Limited Warranty. Some states and provinces do not allow limitations or exclusions on implied warranties or on the duration of an implied warranty or on the limitation or exclusion of incidental or consequential damages, so the above limitation(s) or exclusion(s) may not apply to you. This Limited Warranty gives you specific legal rights. You may have other rights which may vary from state to state or province to province.

## ▪ Contact XS Power

**Toll-Free: (888)4XSPower**

**Phone: (865)688-5953**

**Email: [info@xspowerbatteries.com](mailto:info@xspowerbatteries.com)**

**Website: [4xspower.com](http://4xspower.com)**