

User Manual for Lithium Ion Standby UPS

LS-Series
350VA and 600VA Models

Reference Sales Model: LSxxxx

Version 1
April 2022



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PRODUCTS**

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INTRODUCTION

User Manual for Lithium Ion UPS

This document is the User Manual for CPI 350VA - 600VA Lithium Ion Standby Uninterruptible Power Supplies (UPS) (Sales Models LS350A, LS350B, LS600A, LS600B).

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PACKAGE CONTENTS

You should be receiving the following items inside the package:

UPS Unit

User Manual

Local Monitoring Software CD

PRODUCT INTRODUCTION

Thank you for selecting this Uninterruptible Power Supply (UPS). It provides you with protection for connected equipment. Please read this manual before installing the LS Series UPS as it provides important information that should be followed during installation and maintenance of the UPS and batteries, allowing you to correctly set up your system for the maximum safety and performance. Included is information on customer support and service, if it is required. If you experience a problem with the UPS, please refer to the Troubleshooting section in this manual to correct the problem. If the problem is not corrected, please collect information so that the Technical Support personnel can more effectively assist you.

PRODUCT OVERVIEW

The advanced design of the UPS combines the benefits of lithium powered UPS and advanced surge suppression technology. Slim form factor, wall mounting, and easy access receptacles make this UPS ideal for use with wall-mounted racks and cabinets or for mounting behind thin display screens used in hotels, restaurants, hospitals, campuses, airports and other commercial areas.

While the compact design is appealing to the digital signage industry, it is also excellent for providing protection to kiosks, gaming machines, computers, point-of-sale equipment, and small printers.



LS350B



LS600B

INSTALLATION & INITIAL STARTUP

Note: Before installation, inspect the unit and packaging to make sure that nothing inside has been damaged.

Connect UPS to Utility and Charging

Before the initial use of the UPS, plug the UPS input cord into a wall outlet and turn the UPS on by pressing the Power switch on the back of the UPS. For best results, the batteries in the UPS should be charged for at least 8 hours before use. The UPS charges its battery while it is connected to AC utility power and powered on.

Connecting the Loads

Plug the loads to be supported by the UPS into the output receptacles on the front of the UPS. Simply turn the power switch on the UPS on and the devices connected to the UPS will be protected by the UPS unit.

Turn UPS ON/OFF

To turn the UPS unit on, press the power button on the UPS and hold for three seconds. To turn the UPS unit off, press the power button and hold for one second.

Connecting Local Monitoring Software (optional)

If it is desired to use the Local Monitoring Software, and if your UPS is equipped with USB communications, connect a USB cable from your computer to the UPS, and install the software from the CD.

INDICATORS & ALARM CONDITIONS

Condition	Visual Indicator	Alarm
AC mode	LED illuminated	No Audible Alarm
Battery mode	LED flashes every 10 seconds	Audible Alarm sounds every 10 seconds
Low battery mode	LED flashes every 1 second	Audible Alarm sounds every 1 second
Fault	LED is illuminated	Audible Alarm is continuous
Alarm for over temperature protection	LED flashes every 0.5 seconds	No Audible Alarm

IMPORTANT SAFETY INSTRUCTIONS: (Save these instructions)

– This manual contains important instructions for the LS350A, LS350B, LS600A and LS600B that should be followed during installation and maintenance of the UPS

CAUTION! (UPS having Internal Batteries): Risk of electrical shock – Hazardous live parts inside this unit are energized from the battery supply even when the input AC power is disconnected.

CAUTION! (No User serviceable Parts): Risk of electrical shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

CAUTION! (Non-isolated Battery supply): Risk of electric shock, battery circuit is not isolated from AC input, hazardous voltage may exist between battery terminals and ground. Test before touching.

WARNING! Unit intended for installation in a controlled environment.

CAUTION! Do not dispose of batteries in a fire, the battery may explode.

CAUTION! Do not open or mutilate the battery, released electrolyte is harmful to the skin and eyes.

CAUTION: A battery can present a risk of electrical shock and high short-circuit current. Contact with any part of a grounded battery can result in electrical shock. The following precautions should be observed

- When working on batteries:
- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear rubber gloves and boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect charging source and load prior to installing or maintaining the battery.
- Remove battery grounds during installation and maintenance to reduce likelihood of shock.
- Remove the connection from ground if any part of the battery is determined to be grounded.

EN 62040-2,C2:

WARNING: This is a category C2 UPS product. In a residential environment, this product may cause radio interference, in which case the user may be required to take additional measures.

FCC Notice: Class A

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To reduce the risk of electric shock, disconnect the UPS from the main supply before installing a computer inter-face signal cable. Reconnect the power cord only after signaling interconnections have been made.

Servicing of batteries should be performed or supervised by personnel with knowledge of batteries and the required precautions. Keep unauthorized personnel away from batteries.

The instructions contained within this safety manual are deemed important and should be closely followed at all times during installation and follow-up maintenance of the UPS and batteries.



CAUTION: The unit has a dangerous amount of voltage. If the UPS indicator is on, the unit's outlets may have a dangerous amount of voltage even when not plugged into the wall outlet because the battery may continue to supply power.

Care should be taken to undertake installation indoors, free from electrically-conductive particles which are under temperature and humidity control, in order to reduce the risk of electric shock.

It is best to disconnect the device using the power supply cord. Ensure that the equipment is placed in a position near the outlet where easily accessible.

The socket-outlet shall be installed near the equipment and shall be easily accessible

CAUTION RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

All servicing on this equipment must be carried out by qualified service personnel.

Before conducting any maintenance, repair, or shipment, first ensure that everything is turned off completely and disconnected.

Consignes de sécurité importantes: (Conservez ces instructions)

– **Ce manuel contient des instructions importantes pour les LS350A, LS350B, LS600A and LS600B qui doivent être suivies pendant l'installation et la maintenance de l'onduleur**

MISE EN GARDE! (UPS avec batteries internes): Risque de choc électrique - Les pièces sous tension dangereuses à l'intérieur de cet appareil sont alimentées par l'alimentation de la batterie même lorsque l'alimentation CA d'entrée est déconnectée.

MISE EN GARDE! (Aucune pièce réparable par l'utilisateur): Risque de choc électrique, ne retirez pas le couvercle. Aucune pièce réparable par l'utilisateur à l'intérieur. Confiez l'entretien à un technicien qualifié.

MISE EN GARDE! (Alimentation par batterie non isolée): Risque de choc électrique, le circuit de la batterie n'est pas isolé de l'entrée CA, une tension dangereuse peut exister entre les bornes de la batterie et la masse. Testez avant de toucher.

ATTENTION! Unité destinée à être installée dans un environnement contrôlé.

MISE EN GARDE! Ne jetez pas les batteries au feu, la batterie pourrait exploser.

MISE EN GARDE! Ne pas ouvrir ou mutiler la batterie, l'électrolyte libéré est nocif pour la peau et les yeux.

ATTENTION: Une batterie peut présenter un risque de choc électrique et de courant de court-circuit élevé. Contact avec tout une partie d'une batterie mise à la terre peut provoquer un choc électrique. Les précautions suivantes doivent être observées

lorsque vous travaillez sur des batteries:

- Retirez les montres, bagues ou autres objets métalliques.
- Utilisez des outils avec des poignées isolées.
- Portez des gants et des bottes en caoutchouc.
- Ne posez pas d'outils ou de pièces métalliques sur les batteries.
- Débranchez la source de charge et la charge avant d'installer ou d'entretenir la batterie.
- Retirez les masses de la batterie pendant l'installation et l'entretien pour réduire la probabilité de choc.
- Retirez la connexion de la terre si une partie de la batterie est déterminée comme étant mise à la terre.

AVERTISSEMENT: Il s'agit d'un produit UPS de catégorie C2. Dans un environnement résidentiel, ce produit peut provoquer des interférences radio, dans ce cas, l'utilisateur peut être amené à prendre des mesures supplémentaires.

AVERTISSEMENT: Les changements ou modifications non expressément approuvés par la partie responsable de la conformité annuler le droit de l'utilisateur à utiliser l'équipement.



ATTENTION: l'appareil a une tension dangereuse. Si le voyant de l'onduleur est allumé, les prises de l'unité peuvent présenter une tension dangereuse même si elles ne sont pas branchées sur la prise murale, car la batterie risque de continuer à s'alimenter.

Il convient de veiller à effectuer une installation à l'intérieur, exempte de particules électroconductrices sous contrôle de la température et de l'humidité, afin de réduire les risques d'électrocution.

Il est préférable de déconnecter le périphérique à l'aide du cordon d'alimentation. Assurez-vous que l'équipement est placé près de la prise de courant et facilement accessible. La prise de courant doit être installée à proximité de l'équipement et doit être facilement accessible.

ATTENTION RISQUE D'EXPLOSION SI LA PILE EST REMPLACÉE PAR UN TYPE INCORRECT. JETER LES PILES USÉES SELON LES INSTRUCTIONS

Tous les travaux d'entretien de cet équipement doivent être effectués par du personnel qualifié.

Avant de procéder à tout entretien, réparation ou expédition, assurez-vous que tout est complètement éteint et débranché.

TROUBLESHOOTING

Condition	Visual Indicator	Alarm
No LED display on the front UPS panel	Low battery	Charge the UPS at least 8 hours
	Battery fault	Replace the battery with the same type of battery
	The UPS is not turned on	Press the Power Switch on the front of the UPS
Alarm continuously sounds when the AC input is normal	The UPS is overloaded	Remove some of the load from the output of the UPS
	UPS fault	Call CPI Technical Support
Alarm continuously sounds when the AC input is normal	Battery defect	Replace the battery with the same type of battery
	Charging circuit is damaged	Remove some of the load from the output of the UPS
When power fails, backup time is shorter than expected	The UPS is overload	Remove some of the load from the output of the UPS
	Battery Defect	Replace the battery with the same type of battery
	Battery voltage is too low	Charge the UPS at least 8 hours Battery defect Replace the battery with the same type of battery
The AC input is normal but the blue LED is flashing	Power cord is loose	Reconnect the input power cord properly

SPECIFICATIONS

Model Number		LS350A	LS350B	LS600A	LS600B
CAPACITY	Power rating	350VA (200W)	350VA (200W)	600VA (360W)	600VA (360W)
INPUT	Voltage	120VAC	200 - 240VAC	120VAC	200 - 240VAC
	Frequency	50/60Hz			
OUTPUT	Voltage	120VAC	200 - 240VAC	120VAC	200 - 240VAC
	Waveform	Sine wave (normal), simulated sine wave (battery mode)			
	Frequency	50/60Hz			
	Surge suppression	312 joules			
	Transfer time	2-6 ms (typical)			
BATTERY	Battery type	Lithium Iron Phosphate (LiFePo4)			
	Battery quantity and size	(8) LiFePO4 18650 cells, 2400mAh		(16) LiFePO4 18650 cells, 4400mAh	
PHYSICAL	Dimensions (W x D x H)	6.9 x 8.5 x 1.25 in* (175 x 216 x 32 mm)		7.3 x 10.8 x 1.6 in (185 x 275 x 40 mm)	
	Weight	3.4 lbs (1.5 kg)		4.9 lbs (2.2 kg)	
	Line cord	Detachable 5-15P to C13	C14 inlet	Detachable 5-15P to C13	C14 inlet
	Receptacles	(3) 5-15R	(2) IEC C13	(3) 5-15R	(2) IEC C13
ENVIRONMENT	Temperature	32-104°F (0-40°C)			
	Humidity	0-90%			
	Altitude	11,500 ft above sea level			
COMMUNICATIONS INTERFACE	Standard communications	USB Interface including cable and software		RS-232 Interface including cable and software	
	Web/SNMP card option	N/A		N/A	
	Environmental monitoring device	N/A		N/A	
APPROVALS	UL-1778, cTUVus, FCC, RoHS and TAA compliance	CE, RoHS and TAA compliance	UL-1778, cTUVus, FCC, RoHS and TAA compliance	CE, RoHS and TAA compliance	
WARRANTY	6 years electronics, 6 years battery warranty (USA & Canada)**				
INCLUDED IN BOX	Software CD, user manual, 5-15P to C13 line cord (120VAC units only)				

*Wall mount brackets add 0.6" (15 mm) to each side

**Warranty outside of USA & Canada is three years.

OBTAINING SERVICE

If the UPS requires Service:

1. Use the TROUBLESHOOTING section in this manual to eliminate obvious causes.
2. Verify there are no circuit breakers tripped.
3. Call CPI Technical Support at 800-834-4969. Technical support inquiries can also be made at techsupport@chatsworth.com. Please have the following information available BEFORE calling the Technical Support Department:
 - Ship to address
 - The serial number of the unit.
 - Where and when the unit was purchased.
 - All of the model information about your UPS.
 - Any information on the failure, including LED's that may or may not be illuminated.
 - A description of the protected equipment, including model numbers if possible.
4. Technical Support will ask you for the above information and, if possible, help solve your problem over the phone. In the event that the unit requires factory service, the technician will issue you a Return Material Authorization number (RMA).

RETURNS AND REPAIRS

No products or part thereof shall be returned to CPI unless the customer first obtains a Return Material Authorization (RMA) Number from a CPI customer service representative. This number must appear clearly and prominently on all shipping containers. Containers without the labels will not be accepted.

If you are returning the UPS to CPI for service, please follow these procedures:

1. Pack the UPS in its original packaging. If the original packaging is no longer available, ask the Technical Support Technician about obtaining a replacement set of packaging material. It is important to pack the UPS properly in order to avoid damage in transit.
***Never use Styrofoam beads for a packing material.**
2. Mark the RMA number on the outside of all packages. CPI cannot accept any package without the RMA number noted on the outside of the boxes.
3. Return the UPS by an insured, prepaid carrier to the address provided by the Technician.
4. Refer to the Warranty statements in this manual for additional details on items covered.

RMA expires 30 Days after issuance!

Standard Limited Warranty – CPI-Branded Hardware Products

Chatsworth Products, Inc. (CPI) warrants all CPI-branded hardware products (LS-Series Uninterruptible Power Supplies) to be free from defects in material and/or workmanship (CPI's Standard Limited Warranty) for a period of six (6) years (USA & Canada) and three (3) years (outside USA & Canada) following the date of purchase (the Original Warranty Period).

The customer must contact CPI in writing or by oral communication confirmed in writing within the Original Warranty Period to report a product that the customer claims is defective. CPI reserves the sole and absolute right to determine whether or not the product or any part thereof is defective. In the event a product (or any part thereof) is determined by CPI to be defective (an Accepted Claim), CPI will provide a re-manufactured or replacement product or part (the Replacement Product) at no cost to the customer and issue a Return Material Authorization (RMA) number.

In the case of an Accepted Claim, the customer shall be responsible for shipping back the defective product to CPI under the provided RMA number within 30 days. Any exceptions to this return policy must be authorized by CPI in writing in advance. Freight charges for the return shipment of the defective product for an Accepted Claim shall be borne by the customer, unless the defect is reported by the customer to CPI in writing within the first 30 days following the customer's receipt of the original product. Any Replacement Product that has been provided under an Accepted Claim will be subject to CPI's Standard Limited Warranty for the remaining Warranty Period applicable to the original product or 90 days following the date of replacement, whichever occurs later.

CPI's Standard Limited Warranty and Extended Limited Warranty do not extend to CPI-branded hardware products that have been subjected to abuse, misuse, neglect, accident, improper use, or improper installation, operation, repair and maintenance (except to the extent provided by CPI authorized personnel), nor to products that have been altered or modified in any way by anyone other than CPI authorized personnel, in which case CPI's Standard Limited Warranty or Extended Limited Warranty shall be null and void. In no event will CPI be liable for consequential damages, for loss, damage or expense directly or indirectly arising from the use of any of its branded products, for any inability to use materials or from any other cause.

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