

User's Manual

Line interactive UPS LCD

650VA/850VA

1200VA/1500VA/2200VA



Uninterruptible Power System

IMPORTANT SAFETY INSTRUCTION - Read before installing

Safety of persons:

- The UPS has its own internal power source (the battery). Consequently, the power outlets may be energized even if the UPS is disconnected from the AC-power source.
- Dangerous voltage levels are present within the UPS. It should be opened exclusively by qualified service personnel.
- Before touching the utility input of UPS when on battery mode, please make sure the power of upstream is really disconnected by multimeter.
- The UPS must be properly earthed. Measurements are required to ensure that the total leakage current of the UPS and the protected equipment does not exceed 3.5mA by checking their characteristics.
- The battery supplied with the UPS contains small amounts of toxic materials. To avoid accidents, the directives listed below must be observed:
 - Servicing of batteries should be performed or supervised by personnel knowledgeable about batteries and required precautions.
 - When replacing batteries, replace with the same type and number of batteries or battery packs.

CAUTION: Do not dispose of batteries in a fire. The batteries may explode. Dispose of used batteries according to the instructions.

CAUTION: Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

Product safety:

- The UPS connection instructions and operation described in the manual must be followed in the indicated order.
- UPS must be connected to a nearby wall outlet that is easily accessible. The UPS can be disconnected from the AC-power source by removing the power cord.
- Check that the indications on the rating plate correspond to your AC-power system and to the actual electrical consumption of all the equipment to be connected to the UPS.
- Never install the UPS near liquids in an excessively damp environment.
- Never let a foreign body penetrate inside the UPS.
- Never block the ventilation grates of the UPS.
- Never expose the UPS to direct sunlight or source of heat.
- If the UPS must be stored prior to installation, storage must be in a dry place.
- The admissible storage temperature range is -10°C to +40°C.
- This UPS can be used in TN power system.
- UPS enclosure IP rating IP20.
- Output short-circuit current max RMS & delay time: 16.6A & 4 cycles; The max peak value: 36A
- UPS meets standard: IEC/EN 62040-1 , IEC/EN 62040-2 , IEC/EN 62040-3

Special precautions:

- Once installed and connected to the AC power source for the first time, the battery will start to charge. Full charging to obtain the rated battery backup time requires at least 8 hours.
- Before and after the installation, if the UPS remains de-energized for a long period, the UPS must be energized for a period of 24 hours, at least once every 6 months (for a normal storage temperature less than 25°C). This charges the battery, thus avoiding possible irreversible damage.
- During the replacement of the battery module, it is imperative to use the same type and number of element previously mounted in the UPS, in order to maintain an identical level of performance and safety. In case of doubt, don't hesitate to contact our after-sales department.

CAUTION – A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries:

- a. Remove watches, rings, or other metal objects.
- b. Use tools with insulated handles.
- c. Wear rubber gloves and boots.
- d. Do not lay tools or metal parts on top of batteries.
- e. Disconnect charging source prior to connecting or disconnecting battery terminals.
- f. Determine if battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance.

1. Introduction

This UPS is an intelligent and compact line interactive UPS (Uninterruptable Power Supply) which is designed to protect your personal computer or sensitive electronic equipments from all forms of power interference, including complete power failures. It is equipped with many features that allow any attached equipment to operate longer and more reliability.

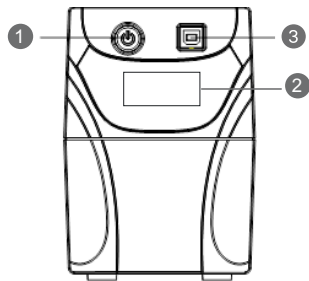
2. Description of Features

- **Easy to use and install utilized microprocessor control to maximize the reliability and efficiency**
- **Equipped with built-in boost and buck AVR function**
If the quality of the incoming mains is poor, the AVR boosts a low incoming voltage or reduces a high one. The load receives a voltage within the normal range.
- **DC Cold start function**
To start the UPS when AC utility power is not available, simply press the power switch.
- **USB-HID Power Device communication**
HID USB interface enables integration with built-in power management and auto shutdown features of Windows and Mac OS and Linux.
- **Auto restart while AC recovery.**
- **Provides AC Overload protection**
- **RJ11/RJ45 (in/out) LAN/Modem/Phone line protection**

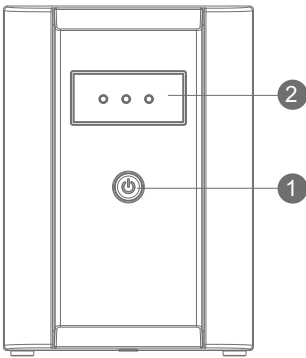
3. Product Overview

Front Panel

- ① ON/OFF button
- ② LCD display
- ③ USB port

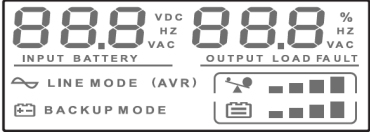
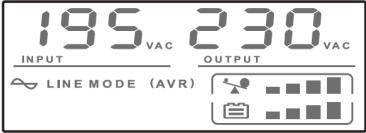


650/850VA



1200/1500/2200V

I: Display

When LCD starts to work, it will display all information for 3 seconds.  The initial display shows: INPUT BATTERY (88.8 VDC, 88.8 HZ, 88.8 VAC), OUTPUT LOAD FAULT (88.8 HZ, 88.8 VAC), LINE MODE (AVR) with a sine wave icon, and BACKUP MODE with a battery icon. The output load fault section shows a bar graph with 5 bars.	When in normal mode, it will display as below.  The normal mode display shows: INPUT (230 VAC), OUTPUT (230 VAC), LINE MODE with a sine wave icon, and a battery icon with a bar graph showing 5 bars.
When in AVR mode, it will display as below. And the mark  will flicker every 1second.  The AVR mode display shows: INPUT (195 VAC), OUTPUT (230 VAC), LINE MODE (AVR) with a sine wave icon, and a battery icon with a bar graph showing 5 bars.	When in battery mode, it will display as below. And the mark  will flicker every 1second.  The battery mode display shows: INPUT (000 VAC), OUTPUT (230 VAC), a battery icon, and a bar graph showing 5 bars. Note: If I/P-V<40V, input voltage will display “000”
When in off charging mode, it will display as below.  The off charging mode display shows: INPUT (230 VAC), OUTPUT (000 VAC), and a battery icon with a bar graph showing 5 bars. Note: the output voltage always is displayed as “000” in off charging mode.	When in fault mode, it will display as below. “FAULT” character and “0” character only.  The fault mode display shows: FAULT and 0.

II: Load level definition:

Load level	Load bar Indication
	0%~25%
	25%~50%
	50%~75%
	75%~100%

III: Battery capacity definition:

1B model battery definition:

Indicator	Battery charge status
	<20%
	<40%
	<60%
	<80%
	≥80%

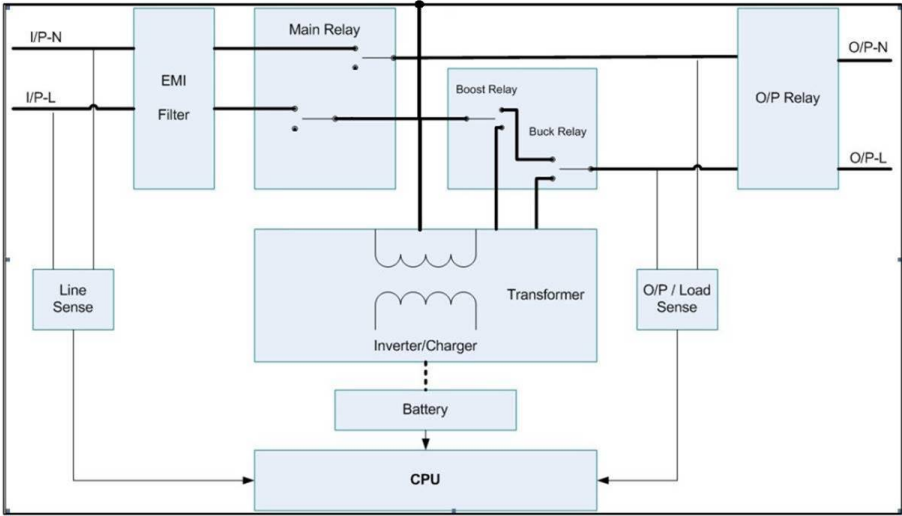
V: When over load, the mark will flicker every 1second.



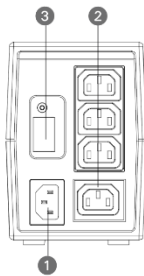
VI: When battery low, the mark will flicker every 1second.



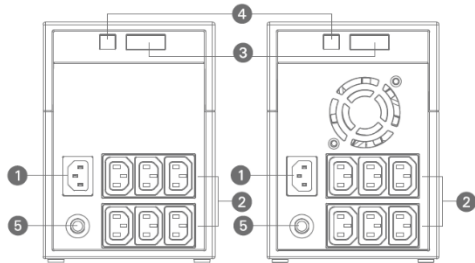
Functional block diagram



Back Panel:



650/850VA



1200/1500/2200VA

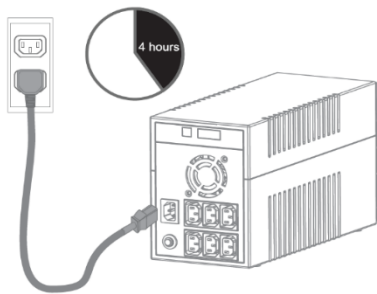
- ① AC Input
- ② Output receptacles
- ③ RJ11 Modem/phone line protection(650/850VA)
RJ45 LAN/Modem/phone line protection(1200/1500/2200VA)
- ④ USB port
- ⑤ Breaker

4. Installation and Initial Startup

Remove the UPS from its packaging and inspect it for damage that may have occurred during shipping. If any damage is discovered, repack the unit and return it to the place of purchase.

I. Charging

This unit is shipped from the factory with its internal battery fully charged, however, some charge may be lost during shipping and the battery should be recharged prior to use. Plug the unit into an appropriate power supply and allow the UPS to charge fully by leaving it plugged in for at least 4 hours with no load (no electrical devices such as computers, monitors, etc.) connected.



II: Placement & Storage Conditions

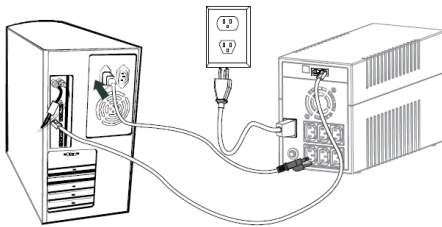
Install the UPS unit in any protected environment that provides adequate airflow around the unit, and is free from excessive dust, corrosive fumes and conductive contaminants. Do not operate your UPS in an environment where the ambient temperature or humidity is high. On the other hand, place the UPS away from the monitor at least 20cm to avoid interference.



III: Connect the Loads

Plug the UPS into a 2-pole, 3-wire grounded receptacle. Then connect one computer-related device into each of the power receptacles supplied on the back of the UPS.

Note: Do not attach a power strip or surge suppressor to the UPS.



IV: Connect LAN cable, Modem or Phone line for Surge Protection

Connect for example a single modem or phone line into surge-protected "IN" outlet on the back panel of the UPS unit. Connect from "OUT" outlet to the computer with another phone line cable.

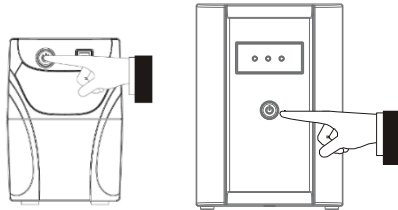
V: Connect USB Cable

To monitor the UPS status, such as unattended UPS shutdown and start-up, by using bundled software, please connect the UPS and PC with USB cable

Note: NEVER connect a laser printer or scanner to the UPS unit, because in-rush current generated by motor's devices may cause the damage of the unit.

VI: Turn On/Off the Unit

Turn on the UPS unit by pressing the power switch, turn off the UPS unit by pressing again the power switch.



Note:

Before stopping the commercial power to the unit, turn OFF the power switch of the unit.

The unit enters Battery Mode when commercial power is stopped. If you frequently use the unit in Battery Mode, the battery life may be significantly shortened.

5. Software Installation on your PC

- 1) Go to the website: <http://www.ups-software-download.com>
- 2) Choose the operation system you need and follow the instruction described on the website to download the software.
- 3) When downloading all required files from the internet, enter the serial No: 511C1-01220-0100-478DF2A to install the software.

6. Trouble Shooting

Symptom	Possible Cause	Remedy
No LCD display on the front panel.	1. Battery weak.	1. Charge battery up to 8 hours.
	2. Battery defect.	2. Replace with the same type of battery.
	3. Power switch is not pressed.	3. Press the power switch again.
Alarm buzzer beeps continuously when AC supply is normal.	Overload of the UPS.	Verify that the load matches the UPS capability specified in the specs.
When power failure, back-up time is shorten.	1. Overload of the UPS.	1. Remove some non-critical load.
	2. Battery voltage is too low.	2. Charge battery 8 hours or more.
	3. Battery defect due to high temperature operation environment, or improper operation to battery.	3. Replace with the same type of battery.
Mains normal but LCD is flashing.	Power cord is loose.	Reconnect the power cord properly.

If any abnormal situations occur that are not listed above, please call service people immediately.

7.WEEE



The crossed-out wheeled bin symbol indicates that waste electrical and electronic equipment should not be discarded together with unseparated household waste but must be collected separately. The product should be handed in for recycling in accordance with the local environmental regulations for waste disposal.

By separating waste electrical and electronic equipment, you will help reduce the volume of waste sent for incineration or land-fills and minimize any potential negative impact on human health and environment.

8. Specifications

MODEL	650VA	850VA	1200VA	1500VA	2200VA
CAPACITY	650VA/360W	850VA/480W	1200VA/600W	1500VA/900W	2200VA/1200W
INPUT					
Voltage	230 VAC				
Voltage Range	170~280VAC				
OUTPUT					
Nominal Voltage	230Vac				
Voltage Regulation	+/-10% (Battery mode)				
Frequency Range	50/60Hz				
Frequency Regulation	±1Hz (Battery mode)				
Transfer Time	Typical 2-6ms		Typical 4-8ms		
Waveform	Stepped Sine Wave				
BATTERY					
Type (Lead-acid)	12V/7Ah*1	12V/9Ah*1	12V/7Ah*2	12V/7Ah* 2	12V/9Ah*2
Charging Time	4 hours to 90% after complete discharge				
Backup Time (es 100W)	16 min	20 min	40 min	40 min	50 min
SURGE SUPPRESSION					
RJ11 and RJ45 protection	RJ11		RJ45		
INDICATOR					
LCD	LCD display				
AUDIBLE ALARM					
Backup Mode	Sounding every 10 seconds				
Low Battery	Sounding every 1second				
Overload	Sounding every 0.5 second				
Fault	Continuously sounding				
PROTECTION					
Full protection	Discharge, overcharge and overload protection				
PHYSICAL					
Dimension (D*W*H)	290mm*100mm*143mm		364mm*139mm*195 mm		
Net weight	4.4kg	5.2kg	7.85kg	9.4kg	10.4kg
ENVIRONMENT					
Operating environment	0° to 40° C				
Noise Level (Less than)	40dB				45dB

***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.

