



LEO SERIES

LINE-INTERACTIVE UPS

Uninterruptible Power System



600VA - 2000VA

USER MANUAL

IMPORTANT SAFETY INSTRUCTIONS

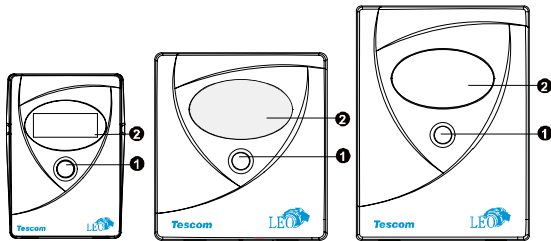
- The utilized voltages by this UPS may be hazardous. Do not attempt to disassemble the unit. The unit contains no user replaceable parts. Only authorized service personnel may perform repairs.
- Internal battery voltage is 12V DC per one battery. Sealed, lead-acid, 6 cells battery.
- Connection to any other type of receptacle other than a two-pole, three-wire grounded receptacle may result in shock hazard as well as violate local electrical codes.
- In the event of an emergency, press the "OFF" button and disconnect the power cord from the AC power supply to properly disable the UPS.
- DO NOT allow liquids or any foreign object to enter the UPS. Do not place beverages or any other liquid-containing vessels on or near the unit.
- This unit intended for installation in a controlled environment (temperature controlled, indoor area free of conductive contaminants). Avoid installing the UPS in location where there is standing or running water, or excessive humidity.
- DO NOT plug the UPS input into its own output.
- DO NOT attach a power strip or surge suppressor to the UPS.
- DO NOT attach non-computer-related items, such as medical equipment, life-support equipment, microwave ovens, or vacuum cleaners to UPS
- To reduce the risk of overheating the UPS, do not cover the UPS cooling vents and avoid exposing the unit to direct sunlight or installing the unit near heat emitting appliances such as space heaters or furnaces.
- Unplug the UPS prior for cleaning and do not use liquid or spray detergent.
- DO NOT dispose of batteries in a fire as they may explode.
- DO NOT open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
 - A battery can present a risk of electrical shock and high short circuit current. The following precautions should be taken when working on batteries :
 - 1) Remove watches, rings, or other metal objects from the hands.
 - 2) Use tools with insulated handles.
 - 3) Wear rubber gloves and boots.
 - 4) Do not lay tools or metal parts on top of batteries. Disconnect charging source prior to connecting or disconnecting battery terminal.
- Servicing of batteries should be performed or supervised by experienced personnel about batteries and the required precautions should be taken. Keep unauthorized personnel away from batteries.
- When replacing batteries, replace with the same number of the sealed lead-acid batteries.
- The socket-outlet shall be installed near the equipment and easily accessible.
- With the installation of the UPS, it should be prevented that the sum of (UPS and) the connected (load) leakage current exceeds 3.5mA.
- This pluggable type A equipment with battery installed by the supplier is operator installable and may be operated by laymen.
- **Attention!!** Hazardous through electric shock. Also with disconnection of this unit from the mains, hazardous voltage still may be accessible through supply from battery. The battery supply should be therefore disconnected from the plus and minus poles of the battery connectors when maintenance or service work inside of the UPS is necessary.

INTRODUCTION

This UPS is specially aimed for use with multi function personal computer. It is equipped with boost & buck AVR to stabilize the wide input voltage range. It also comes with high-efficient switch-mode battery charger. This charger design minimizes power loss to save charging time. The built-in DC start function enables the UPS to be started up without a supply of AC power. The main features of this UPS are listed below:

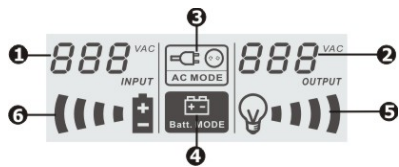
- ✓ Microprocessor control guarantees high reliability
- ✓ Built-in enhanced boost & buck AVR
- ✓ Fast charger
- ✓ DC start function
- ✓ Auto restart during AC recovery
- ✓ Optional Modem and phone-line surge protection
- ✓ Optional RS-232 communication port
- ✓ Compact size, light weight

System Description



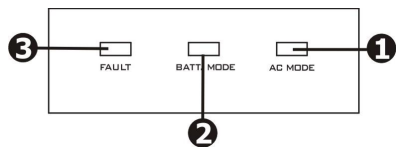
1. Power Switch
2. LCD or LED display

LCD Panel:



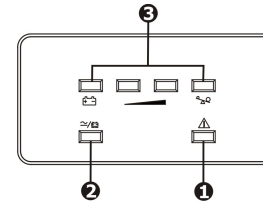
1. Input voltage
2. Output voltage
3. AC mode indicator
4. Battery mode indicator
5. Load level indicator, flashing indicates overload
6. Battery capacity indicator, flashing Indicates low battery

LED Panel:



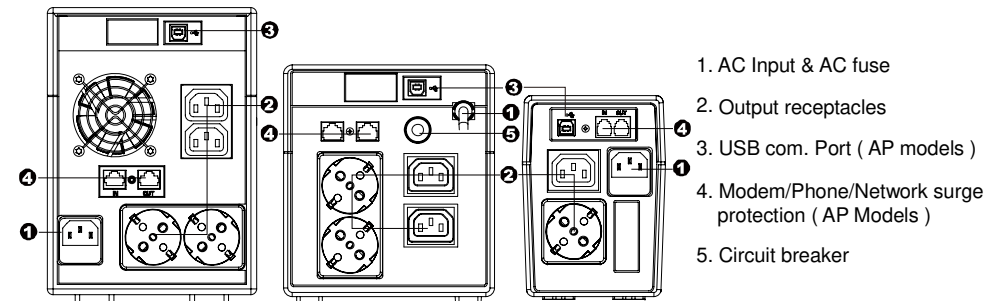
1. AC Mode LED
2. Battery Mode LED
3. Fault LED

For 600/650/800/1000 models



1. Fault LED
2. UPS status LED: AC mode: green lighting
Battery mode: green flashing
3. AC mode: indicating load level
Battery mode: indicating battery capacity

For 1500/2000 models



1. AC Input & AC fuse
2. Output receptacles
3. USB com. Port (AP models)
4. Modem/Phone/Network surge protection (AP Models)
5. Circuit breaker

INSTALLATION & OPERATION

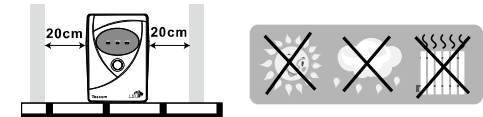
1) INSPECTION

Inspect the UPS upon receipt. Notify the carrier and dealer if there is damage. The package is recyclable; save it for reuse or dispose of it properly.

2) PLACEMENT

Install the UPS in a protected area that is free of excessive dust and has adequate air flow.

Please place the UPS away from other units at least 20 cm to avoid interference. DO NOT operate the UPS where the temperature and humidity is outside the specific limits. (Please check the specs for the limitations.)



3) CHARGING

Plug in the AC input cord to the wall outlet. For the best results, it is suggested to charge the batteries at least 4 hours before initial use. The unit charges its battery while connected to the utility.

4) CONECTION OF EQUIPMENT

Plug in the loads to output receptacles on the rear panel of the UPS. Simply turn on the power switch of UPS unit, then devices connected to the UPS will be protected by UPS unit.

5) CONECTION OF NETWORK

To surge protect a network connection, connect a network cable from the wall jack outlet to the IN jack of the UPS. Then connect a network cable from the OUT jack of the UPS to the network device.

6) CONECTION OF COMMUNICATION

UPS equipped with communication port allows monitoring and controlling from computer screen. Connect one end of a communication cable to your PC and the other to the com port at the rear of the UPS.

ViewPower is an UPS power management software, allowing users to control and monitor UPS straightly from PC monitor. Insert software CD to your hard drive. Follow on screen instructions to complete the software installation.

After computer is restarted, ViewPower is geared and presents as an orange plug icon located in the system tray at the right-bottom corner.

7) TURN ON / OFF

To turn on the UPS, press power switch lightly. To turn off the UPS, please press power switch again.

TROUBLE SHOOTING

Use the table below to solve minor problems. If any abnormal situations occur that are not listed below, please call service technician for assistance.

Problem	Possible Cause	Solutions
No LED lit or LCD display on the front panel.	Low battery.	Charge the UPS at least 6 hours.
	Battery fault.	Replace the battery with the same type of battery.
	The UPS is not turned on.	Press the power switch again to turn on the UPS.
Alarm continuously sounds when the mains is normal.	The UPS is overload.	Remove some load first. Before reconnecting equipment, please verify that the load matches the UPS capacity specified in the specs.
When power fails, back-up time is reduced.	The UPS is overload.	Remove some critical load.
	Battery voltage is too low.	Charge the UPS at least 6 hours.
	Battery is defect. It might be due to operation at high temperature environment, or improper operation to battery.	Replace the battery with the same type of battery.
The mains is normal, but UPS is in battery mode.	Power cord is loose.	Reconnect the power cord properly.

TECHNICAL SPECIFICATIONS

Model	600A/AP	650A/AP	850 A/AP	1000 A/AP	1500 A/AP	2000 A/AP
CAPACITY	600VA / 360W	650VA / 390W	850VA / 480W	1000VA / 600W	1500VA / 900W	2000VA 1200W
INPUT						
Voltage	220/230/240 VAC					
Voltage Range	162-290 VAC					
OUTPUT						
Voltage Regulation	+/-10%					
Transfer Time	Typical 2-6 ms, 10 ms max.					
Waveform	Simulated Sine Wave					
BATTERY						
Type & Number	12V/4.5Ahx1	12V/7Ahx1	12V/9Ahx1	12V/7Ahx2	12 V/9 Ah x 2	
Charging Time	4-6 hours recover to 90% capacity					
PHYSICAL						
Dimension, WxDxH, (mm)	100x287x142			146x350x 160	146x397x205	
Net Weight (kgs)	3.55	4.25	4.90	8.0	11.1	11.5
Environment						
Humidity	0-90 % RH @ 0-40° C (non-condensing)					
Noise Level	Less than 40 dBA					
MANAGEMENT						
USB (Optional)	Supports Windows® 2000/2003/XP/Vista/2008/7, Linux, Unix and MAC					

* Product specifications are subject to change without further notice.

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