

# USER'S GUIDE

## **LEONICS®**

## **VIPER**

MICROPROCESSOR CONTROL and  
LINE INTERACTIVE UPS WITH STABILIZER

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## SAFETY INSTRUCTIONS

Please read carefully and follow this user's guide carefully and completely.

**Important:** Please keep this user's guide for reference in order to use the UPS properly and safety. This user's guide consists of safety instructions, introduction, front and rear panel, installation, operation and troubleshooting.

For product safety, please check this product annually by our service qualified personnel or if there are any symptom of problems which are not mentioned in this guide or any queries, please contact your LEONICS distributors, LEONICS service center, send e-mail to marketing@lpsups.com or visit our website at www.leonics.com

For your convenience and quick reference for our service, please fill the requested informations in the blanks below:

UPS Model: \_\_\_\_\_  
Serial Number: \_\_\_\_\_  
Purchased Date: \_\_\_\_\_  
Purchased From: \_\_\_\_\_

### 1.1 Warning, Caution and Note

To reduce risk of electrical shock hazards, and to make sure the inverter is safety installed, special symbols of Warning, Caution and Note are used in this guide to highlight potential safety hazards and important safety information as follow:

**Warning:** Indicates a potentially hazardous situation or safety information important for human safety. Violation of warnings may result in death or serious injury and damage to the unit or other equipment.

**Caution:** Indicates a potentially hazardous situation or the information important for the protection of property. Violation of caution may result in minor or moderate injury and damage to the unit or other equipment.

**Note:** Indicates useful additional information that helps you make better use of product and system.

### 1.2 Electrical Safety

**Warning:** Risk of electric shock, **DO NOT** remove cover. No user serviceable parts inside, please refer servicing to qualified service personnel.

**Warning:** **DO NOT** work alone where there are electrically hazardous conditions.

**Warning:** Contact with live conductors will cause burns and dangerous electric shock. **DO NOT** touch any terminal or internal parts of the unit while the unit is operating.

- Only qualified electricians allow to install and wiring this unit and system.
- Periodically check your cable, outlets, terminal blocks and power source to make sure that they are in good condition.
- To reduce risk from electric shock, if you cannot find the electrical ground (⊕) of the building, unplug UPS from AC power source before connect loads to the UPS. Then, plug in the UPS to AC power source.
- Use **ONLY** one hand when plugging or unplugging the loads in order to avoid electric shock from touching two surfaces with different potential.
- It is recommended to connect the UPS to a three wires AC power source (two live wires and an electrical ground) which connects to a protected circuit such as employs a fuse or circuit breaker.

### 1.3 Safety instruction for installation and operation

**Caution:** Before installing or using this unit, read all instructions and caution markings on the UPS and all connected loads, and all sections of this user guide.

**Caution:** Install this unit in a temperature and humidity controlled area with adequate air flow and away from chemical particles or flammable substances. Avoid installing the unit near radio transmission station, heat dissipation equipment and direct sunlight.

**Caution:** **DO NOT** block the ventilation grills and **DO NOT** put any objects on the top of the unit. Ensure that sufficient ventilation is provided.

**Caution:** This UPS is not intended for use with life rescue equipment! A failure of the UPS might cause the life rescue equipment to fail and endanger human lives.

- The distance of minimum 30 cm. between the wall and the unit is necessary for adequate ventilation and easy access for installation, operation and maintenance.
- Use insulated tools to reduce your risk of electric shock.
- Remove all jewelry or other metal objects such as rings, necklace, bracelets and watches when installing this product.
- Verify correct terminal block connections to prevent the damage occurs.
- Before connecting the communication interface signal cable, turn off the UPS and disconnect the UPS from AC power source.
- Turn on the UPS before turn on all connected loads to prevent surge damage.
- **DO NOT** connect the AC power source into the UPS OUTPUT. This may cause the UPS damaged.
- During a heavy rain storm, avoid using electrical appliances including the UPS to prevent damage from lightning strike.
- **DO NOT** clean the UPS with benzene, thinner or any solvent, use only soft cloth to clean the UPS after it has been turned off.

### 1.4 Battery Safety

- ⚠ **Warning:** Even the UPS is disconnected from AC power source, the UPS OUTPUT outlets may have hazardous voltage because of battery may continue supply power.
- ⚠ **Warning:** **DO NOT** dispose of battery in a fire. They may be exploded.
- ⚠ **Caution:** **DO NOT** disassemble battery. They contains poisonous electrolyte which is harmful to your skin and eyes.
- ⚠ **Caution:** The UPS contains sealed lead acid battery and must be recycled properly. For recycling, please return it to a LEONICS distributor or LEONICS service center or contact your local recycling center for proper disposal information.

- Replace battery with the same type and rating.
- When replacing a battery, use tools with insulated handles and remove any watch, rings or other metal objects that you wear in order to avoid electric shock.
- If you have to storage UPS for long period of time, be sure that battery is fully charged and it need to be recharged every three months to preserve the condition of the internal battery. Only connect the UPS to utility line and turn on, then leave the UPS connected to AC power source for at least 8 hours.

## INTRODUCTION

### 2.1 General

VIPER UPS is a compact and light weight uninterruptible power supply for office automation equipment (computers and peripherals such as monitors, modem, printers, fax machines, etc). Its major function is to eliminate any power problems such as a blackout, brown out, sag, surge, spike, etc. that might cause malfunctions of the connected loads. It also provide automatic voltage regulator (AVR), surge suppressor and backup power system.

The LED and alarm indication indicates the operating status both in normal operation and power failure, low battery power alarm. UPS can be started when there is no utility power to supply backup power the connected loads in an emergency.

### 2.2 Features

- Surge protection for telephone line: Protect electrical appliances or data from surges coming from telephone line.
- Surge protection for laser printer: Surge protection outlet for prevent the laser printer from surges (This outlet does not supply backup power when power fails).
- Automatic restart: After the utility line turns back to normal, UPS will restart itself automatically.
- Automatic UPS and Battery Test: When startup the UPS, it will start testing itself and battery automatically.
- AC/DC start: UPS can be started by AC power from utility line or DC power from battery.

### 2.3 Optional

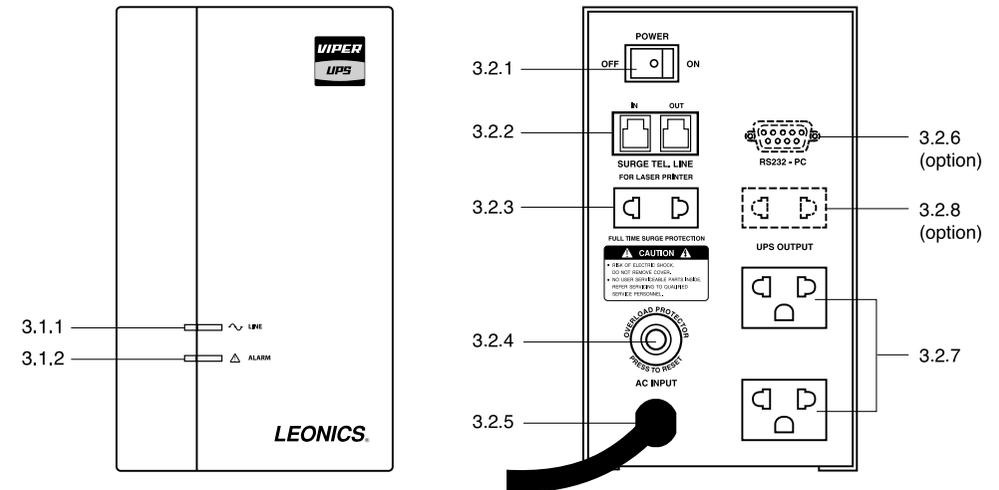
The optional for VIPER UPS has an alphabet suffix in the model number as follow.

- "H" suffix in the model number (Hot swappable battery): User can replace new battery even when the UPS is running.
- "S" suffix in the model number (Easy-Mon X Software): This optional model will provide RS-232 communication port at the rear side of UPS for connecting to the computer in order to display the electricity status and UPS operation via Easy-Mon X software.

### 2.4 Special optional

- Additional UPS output: The special extra Europe CEE-7 sockets which can plug more electrical appliances.

## FRONT AND REAR PANEL



### 3.1 Front panel

- 3.1.1 LINE (⎓): Indicates that UPS is operating under normal condition.
- 3.1.2 ALARM (⚠): Indicates that UPS is operating under power fails or there is fault. The following tables show the meaning of LED and alarm indication.

LINE (green)	ALARM (red)	Audible alarm	UPS status
<b>After starting-up or automatic restart, UPS will performs self-test</b>			
Blink once	-	-	Battery is in good condition.
-	Lit for 2 seconds	alarm sound for 2 seconds	Battery power is very low
<b>When UPS is operating</b>			
Lit	-	-	UPS is operating normally.
Blink	-	-	UPS received shutdown command from computer and it will shutdown in 2 seconds (option)
-	Slow blink (Lit 1 second/ Off 3 seconds)	Alarm sound every 3 seconds	Blackout or power fails. UPS is supplying backup power from battery.
-	Fast blink (Lit 0.5 second/ Off 0.5 seconds)	Alarm sound every 0.5 seconds	Battery backup power is running out.
-	Lit	Alarm sound continuously	UPS output shorts circuit. UPS will automatically shutdown.

### 3.2 Rear panel

- 3.2.1 **POWER switch:** The switch to turn on and off the UPS.
- 3.2.2 **SURGE PROTECTION FOR TELEPHONE LINE/LAN LINE (option):** The ports to plug in telephone or LAN jacks before fax machine, modem, telephone or computer in order to protect them from signal surge.
- 3.2.3 **SURGE PROTECTION OUTPUT FOR LASER PRINTER:** The socket which connects to surge protection circuit for laser printer. (This socket does not supply backup power when power fails)
- 3.2.4 **Magnetic Breaker:** Resettable breaker for protecting UPS from over load or short circuit.
- 3.2.5 **AC INPUT power cord:** The input power cord to connect to utility line.
- 3.2.6 **RS-232 port (option):** The optional communication port for connecting RS-232 signal cable to computer and monitor via Easy-Mon X software. The standard model does not provide this communication port. It is available only "S" suffix model.
- 3.2.7 **UPS OUTPUT:** The sockets which are connected to the UPS backup power system for connecting to electrical appliances such as computer, monitor, modem, printer, fax machine, etc.
- 3.2.8 **Additional UPS Output (option):** The special optional extra Europe CEE-7 socket which is connected to UPS backup power system. These special optional socket is not supplied with standard product.

## INSTALLATION AND OPERATION

**⚠ Caution:** The warranty will be voided, if this product has been improper installation, not following the installation instruction that mentioned in this user's guide.

### 4.1 Preparation

- 4.1.1 Before you install the UPS, give it a through visual examination to ensure it has not been subjected to shipping damage. If it is not in perfect condition, please contact your local distributor or service center or e-mail to marketing@lpsups.com.
- 4.1.2 Check the rating of your AC power source and all connected loads to suit with the UPS rating.
- 4.1.3 **Transportation**  
Transport the UPS with its packaging until it arrive the installation location to avoid shipping damages.
- 4.1.4 **Location**  
Install the UPS at least 30 cm free space from wall for adequate ventilation and easy access for installation, operation and maintenance.

### 4.2 Installation and operation

- 4.2.1 For the optional "S" suffix model, connect a RS-232 signal cable from computer to the RS-232 port at the rear side of UPS for monitoring the operating status via Easy-Mon X software.

**⚠ Caution:** Before connecting the signal cable, turn off the POWER switch and disconnect the AC INPUT power cord from the utility line.

- 4.2.2 Connect a signal cable to telephone line (or LAN line (option)).  
 IN : Connect telephone line (or LAN line (option)) to the UPS  
 OUT : Connect telephone line (or LAN line (option)) from the UPS to the input socket of the telephone, fax machine, modem or LAN card (option).  
  
**⚠ Note:** To achieve maximum performance of surge protection, UPS must be connected to grounded electrical system to work properly. Connecting to non-grounded electrical system, it will not be able to properly protect your electrical equipment from transient voltage surge suppression.
- 4.2.3 Plug in the electrical appliances such as computer, monitor, modem, fax machine, etc. to the UPS OUTPUT outlets at the rear side of the UPS.
- 4.2.4 Plug in the laser printer to the "FOR LASER PRINTER" outlet which is connected to surge protection system. (This socket does not supply backup power when power fails)
- 4.2.5 Plug in the AC INPUT power cord to the utility line.
- 4.2.6 Turn on the POWER switch of the UPS and then turn on all connected loads.
- 4.2.7 Test the UPS after the battery is charged by turn on POWER switch and wait until the LINE indicator is lit. Then, turn on all connected loads. To simulate blackout situation, unplug AC INPUT power cord from utility line, UPS will supply backup power to loads automatically.

The ALARM indicator blinks slowly and alarm sounds simultaneously. Then, plug the AC INPUT power cord back to utility line. The ALARM indicator is off, no alarm sound and the LINE indicator is lit. Notice that all connected loads are still operating during test. For more confidence, repeat the test for 3-4 times.

- 4.2.8 After finished work with the computer, shut it down and turn off the UPS to keep sufficient battery power is available when there is blackout.
- 4.2.9 If you have to storage UPS for long period of time, be sure that battery is fully charged and it need to be recharged every three months to preserve the condition of the internal battery. Only connect the UPS to utility line and turn on, then leave the UPS connected to utility line for at least 8 hours.

### TROUBLESHOOTING

Symptoms	Possible causes	Solutions
Turn on POWER switch, LINE indicator extinguished and alarm sounds, but UPS operates normally.	AC INPUT power cord is not properly plugged in to the utility line.	Properly plug in the AC INPUT power cord.
	There is no power supply to AC input power cord.	Move the UPS to another wall outlet. If the problem persists, please contact us.
	Magnetic breaker is tripped.	Reset breaker at the rear side of the UPS.
ALARM indicator blinks and alarm sounds simultaneously. Magnetic breaker does not trip.	AC input power cord is not properly plugged in to the utility line.	Properly plug in the AC INPUT power cord.
	Main circuit breaker of AC power source is tripped.	Reduce loads which are connected to the same wall outlet or move the UPS to another wall outlet.
ALARM indicator is lit and alarm sound continuously. UPS does not supply backup power and magnetic breaker tripped.	UPS is overloaded or short circuit.	<ol style="list-style-type: none"> <li>1. Turn off the UPS and reduce some loads until the total consumption of all connected loads are less than UPS power rating.</li> <li>2. Reset breaker at the rear side of the UPS.</li> </ol>

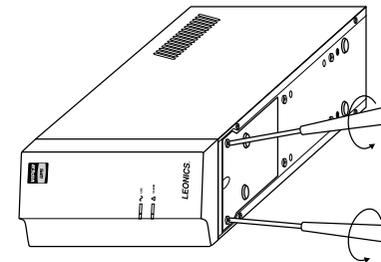
Symptoms	Possible causes	Solutions
When a blackout occur, the ALARM indicator is lit and alarm sound continuously. Magnetic breaker is normal, but UPS does not supply backup power.	UPS is overloaded.	Turn off the UPS and reduce some loads until the total consumption of all connected loads are less than UPS power rating.
	Battery power is running out.	Once the utility line turns back to normal, turn on the UPS for at least 8 hours to recharge its battery.
UPS supplies backup power very short time.	UPS is overloaded.	Reduce some loads until the total power consumption of all connected loads are less than UPS power rating.
	Battery is deteriorating.	Turn on the UPS for at least 8 hours to recharge its battery, then test. if the symptom persists, it need to replace the new battery. Please contact service personnel.

### BATTERY REPLACEMENT

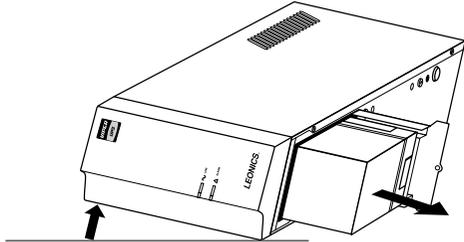
Battery replacement is only provided in "H" suffix model. For the standard product, it has not the hot swappable battery function.

**⚠ Caution:** The battery may be replaced without having to turn off the UPS due to the hot swappable battery feature. For your safety, we recommend to turn off all connected loads and UPS before battery replacement.

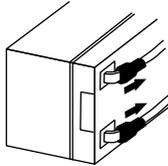
6.1 Lay down the UPS and unscrew 2 fasteners as shown.



6.2 Open the battery cover. Then, tilt the UPS to let the battery come out.



6.3 Disconnect the black and red wires from the battery terminals respectively. Then pull out the battery and replace the new one.



6.4 Reconnect the black (-) and red (+) wire to the battery terminals respectively.

**Caution:** Replace battery with the same number and type as originally installed battery.

6.5 Replace and screw the battery cover in place and continue using the UPS normally.

### STORAGE

If you have to storage UPS for long period of time, be sure that battery is fully charged and it need to be recharged every three months to preserve the condition of the internal battery.

- 7.1 Plug the AC INPUT power cord to utility line.
- 7.2 Turn on the POWER switch and leave the UPS connected to the utility line for at least 8 hours.
- 7.3 Test the UPS by following the section 4.2.7
- 7.4 Turn off the UPS and disconnect UPS from utility line. Then, keep it in dry and cool place.
- 7.5 Recharge battery every 3 months and battery must be fully charged to prolong battery life.

### SOFTWARE INSTALLATION

Easy-Mon X software is compatible to "S" suffix model only. The standard product can not works with this software.

- 8.1 Turn off computer and UPS by pressing the POWER switch at the rear side of the UPS. Then, unplug the AC INPUT power cord from utility line.
- 8.2 Connect the RS-232 cable from computer to RS-232 port at the rear side of the UPS.
- 8.3 Plug in the AC INPUT power cord to utility line, then turn on the computer.
- 8.4 Insert the Easy-Mon X software CD into CD-ROM drive.
- 8.5 Leonics presentation will automatic show on computer monitor. Press the "ESC" button on keyboard to exit the Macromedia flash presentation, then the Easy-Mon X CD window will display on screen.



- 8.6 Install Easy-Mon X Package by select the operating system of your computer. Then, click "Select" button and follow instruction on screen.
- 8.7 When Easy-Mon X is completely installed, Open the "Easy-Mon X Setup". Then, click "Auto Detect UPS" button to search for UPS and communication port automatically.
- 8.8 Once the location of UPS communication port has been found. Open the "Easy-Mon X Spy" program to monitor power data and operating status of the UPS.

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