SPECIFICATION

MODEL		OA-650	OA-750	OA-1100	OA-1600
POWER RATING		650 VA/390W	750VA/450W	1100VA / 605W	1600VA / 960W
SYSTEM	UPS system	Line interactive UPS with Stabilizer			
	Control system	Microprocessor 8 bit			
	Stabilizer function	Buck / Boost			
LOAD APPLICATION	The number of PC[1]	1 set+printer[2]	2 sets+printer[2]	3 sets+printer[2]	4 sets+printer[2]
INPUT	Input voltage	220 Vac ± 20%			
	Frequency	50 Hz ± 10%			
OUTPUT	Voltage battery mode	220 Vac			
	Voltage AC mode	220 Vac ± 10%			
PROTECTION	Over voltage	Mains to UPS backup 220 Vac + 20%			
	Under voltage	Mains to UPS backup 220 Vac - 20%			
	Transfer time	2 - 6 msec. typical, 10 msec. maximum			
	Overload (AC mode)	yes			
	Overload (DC mode)	yes			
	Overload shortcircuit	software detection			
	Surge energy dissipation	125 Joules / 2 ms. x 3			
	Power dissipation	1,000,000 W within 100 microsec.			
	Acoustic noise	Less than 40 dBA at 1 metre			
BATTERY	Type	Sealed lead acid (maintenance free)			
	Capacity	1 x 12 V 7 Ah	1 x 12 V High Rate	2 x 12 V 7 Ah	2 x 12 V High Rate
	Backup time	15 - 40 min. (depending on connected load)			
	Continuous recharging time	4 to 6 hours (90% after full discharged)			
OUTPUT OUTLET	Number of backup outlet	3		5	6
	Number of surge protection outlet (not backup)	1		1	2
FEATURE	AC/DC start	yes			
	Communication interface	USB port			
	Monitoring and Management Software	Easy-Mon V software[3]			
	Surge protection for telephone line	yes			
	Surge protection for LAN line	no		option	
	Surge protection for laser printer	yes			
INDICATOR	LCD display	AC mode, Battery mode, Load level, Battery level, Input voltage, Output voltage, Overload, Fault, and Low battery			
AUDIBLE ALARM (BUZZER)	Battery mode	Audible beep every 10 seconds			
	Low battery	Audible beep every second			
	Overload	Audible beep every 0.5 seconds			
	Battery replacement	Audible beep every 2 seconds (Battery test function on Easy-Mon V software)			
	Fault	Continuous beep			
ENVIRONMENT	Temperature	0 - 40°C			
	Humidity	0 - 90% (non-condensing)			
DIMENSION	W x H x D (mm.)	100 x142 x 287	100 x 142 x328	146 x 160 x 350	146 x 205 x 397
WEIGHT	Approximate in kg.	4.45	4.81	8.0	11.5

[1] Pentium 4, 1.8 GHz chip computer with monitor 15", [2] Bubble jet or dot matrix printer, [3] Easy-Mon V Software compatible with Windows 98/2000/2003/XP/Vista X/2008/Windows 7, Redhat Linux 8/Redhat enterprise AS3/Suse Linux 10/Ubuntu 6.10/Fedora 5, Solaris 10, Mac OS X/10.3/10.4/10.5.

Continuous product development is our commitment. In that manner, the above specifications may be changed without prior notice.

USER'S GUIDE

LEONICS®

OA·650
OA·750
OA·1100
OA·1600

TIS 1291-2545

A5043   ISO 9001   MASCI   ISO 14001 EMS 01007/045   LEONICS CO.,LTD.

MICROPROCESSOR CONTROL AND LINE INTERACTIVE UPS WITH STABILIZER

SAFETY INSTRUCTIONS

Please read carefully and follow this UPS guide and keep this user's guide for reference in order to use the UPS properly and safety. This user's guide contains instructions for installation, preservation, operation and specification.

For product safety, please check this product annually by our service qualified personnel or if there are any symptoms of problems which are not mentioned in this guide or an queries, please contact your local distributors or service center.

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

1. Electrical Safety

1.1 Do not work alone under hazardous condition.

1.2 Contact with live conductors will cause burns and dangerous electric shock.

1.3 Periodically check your cables, outlets and power source to make sure that they are in good condition.

1.4 To reduce the risk of electric shock if you cannot find the electrical ground (⏚) of building, unplug UPS from AC source before plug in your loads at the rear side of the UPS. Then, plug in the UPS to AC source.

1.5 Do not touch any metal parts or any electrical connections when UPS is operating.

1.6 Use ONLY one hand when plugging and unplugging the load in order to avoid electric shock from touching surfaces with different potential.

1.7 It is recommended to connect UPS to a three wire AC source (two live wires and ground) which connect to a protected circuit such as fuse or circuit breaker.

2. CAUTION! Safety instructions for installation and operation

2.1 Before installing or using this UPS, read all instructions, caution making on UPS and all connected loads, and all sections of this user's guide.

2.2 Install UPS in a temperature and humidity controlled indoor area with sufficient ventilation and away from dust, chemical particles or flammable substances. Avoid installing UPS in areas near radio transmission station, heat dissipation equipment or direct sunlight.

2.3 UPS has ventilation grills on the sides. Ensure that sufficient ventilation is provided, do not block the ventilation grills. The distance of minimum 30 cm between wall and unit is necessary.

2.4 Use insulated tools to reduce the risk of electric shock.

2.5 Remove all ornaments or other metal objects such as rings, necklaces, bracelets and watches before installing.

2.6 Before connecting the communication interface signal cable to computer, turn off UPS and disconnect it from AC source.

2.7 Turn on UPS before turning on connected loads to prevent surge from the loads.

2.8 Do not connect AC source input to UPS output. This may cause UPS damage.

2.9 When heavy rain, avoid using electronic equipments including UPS to prevent them from lightning.

2.10 Do not clean UPS with benzene, thinner or any solvent, use only soft cloth to clean UPS after it has been turned off.

2.11 Do not use the UPS with life recovery instruments. The failure of UPS may cause life recovery instruments failure or effect to their performance or the safety system of those instruments.

3. Warning! Battery Safety

3.1 Although UPS is disconnected to any power source, UPS outlets may be energized because there is a battery inside the UPS.

3.2 The UPS has hazardous voltage inside, do not dissemble any parts of UPS. Battery replacement must be done by Leonics qualified technicians only.

3.3 The batteries inside UPS can be recycled. It contains lead which is harmful to your health and environment. If it cannot be disposed of properly, please return it to local distributors or Leonics Service Center.

3.4 Do not dispose batteries with fire, they will be exploded.

3.5 Do not disassemble batteries. They contain poisonous electrolyte which is harmful to your skin and eyes.

3.6 Replace batteries with the same type and rating.

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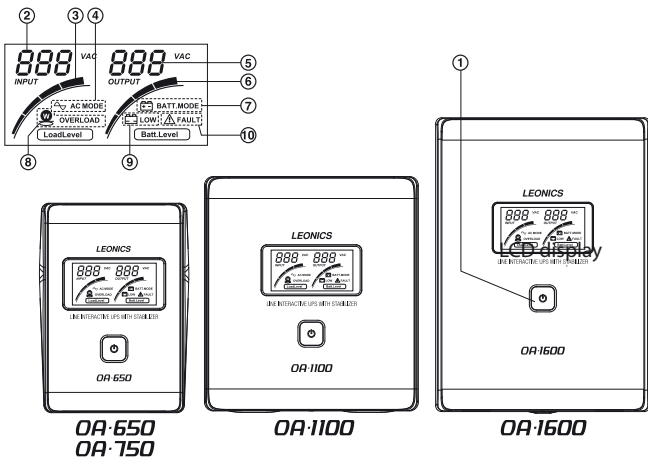
① **Power button:** The button to turn on and turn off UPS.
② **Input voltage indicator:** Indicates input voltage.
③ **Load level indicator:** Each bar represents 25% of full load capacity starting from the smallest bar to the largest bar.
④ **AC mode indicator:** Indicates UPS is operating in AC mode.
⑤ **Output voltage indicator:** Indicates output voltage.
⑥ **Battery level indicator:** Each bar represents 25% of battery backup power starting from the smallest bar to the largest bar.
⑦ **Battery mode indicator:** Indicates UPS is operating in battery mode.
⑧ **Overload indicator:** The ⓦ symbol will blink when UPS is overloaded.
⑨ **Low battery indicator:** The symbol will blink when battery power is very low.
⑩ **Fault indicator:** The ⚠ symbol will blink when UPS malfunction.

Table shows symbols on LCD display and UPS status.

Symbol on LCD screen	Alarm Sound	UPS Status
Show ⌁ AC MODE	-	Normal operation
Show 🔋 BATT.MODE	Beep every 10 sec.	Blackout or power failure, UPS is supplying backup power.
🔋 blink	Beep every 2 sec.	Battery deteriorate and need to be replaced. (When testing battery through Easy-Mon V software.)
🔋 blink	Beep every 1 sec.	Battery backup is low.
ⓦ blink	Beep every 0.5 sec.	UPS is overloaded
⚠ blink	Long beep.	UPS malfunction

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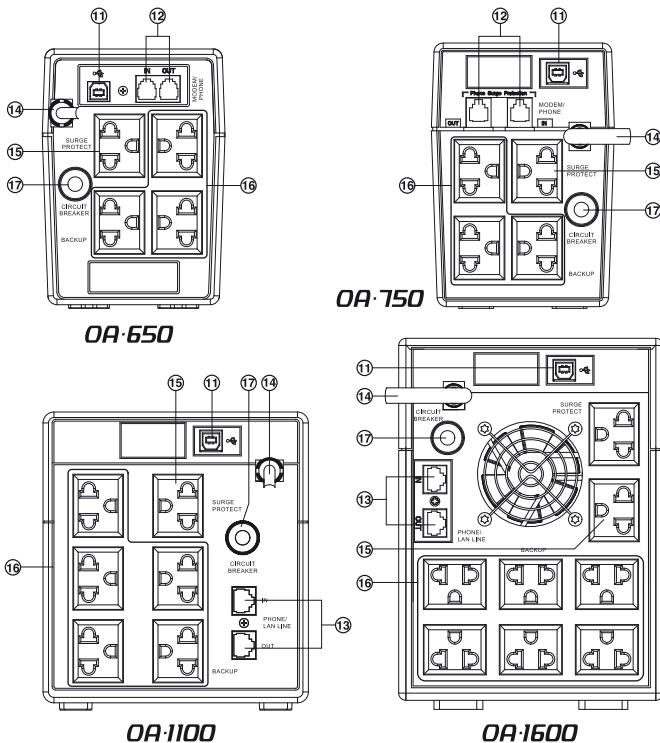
⑪ **USB port:** The communication port for connecting the UPS to PC and display data on Easy-Mon V software (free download at www.leonics.com).
⑫ **MODEM/PHONE LINE:** The ports for connecting phone line to protect fax machine, phone, modem or computer against voltage spikes coming from telephone line.
⑬ **PHONE/LAN LINE:** The ports for connecting phone or LAN line (option) to protect fax machine, phone, modem or computer against voltage spikes coming from telephone line or LAN line (option).
⑭ **AC INPUT:** A power cord for connecting to the wall outlet.

⑮ **SURGE PROTECT:** An output outlet for connecting to laser printer which provide surge protection only (This outlet does not supply backup power when blackout).
⑯ **BACKUP:** Output outlets for connecting to a computer or peripherals such as monitor, modem, printer or fax machine.
⑰ **CIRCUIT BREAKER:** The resetable circuit breaker protects against damage due to overload or short circuit.

INITIAL STARTUP

Before initial use, the UPS should be charged battery at least 6 hours by plug in the AC INPUT power cord into the wall outlet.

INSTALLATION AND OPERATION

1. Turn off UPS and all connected loads.
2. Connect USB cable from computer to USB port of the UPS.
3. Connect telephone cable plug into the MODEM/PHONE LINE or PHONE/ LAN LINE socket at the rear panel of the UPS.
   IN : Connect telephone line into the UPS
   OUT : Connect telephone line or LAN line (optional for OA-1100 and OA-1600 model) to fax machine, modem or telephone, etc.
4. Plug the input power cord of computer and peripherals into the BACKUP outlets at the rear panel of the UPS.
5. Plug the AC INPUT power cord into the wall outlet. The LCD screen is lit and shows the input voltage and battery power.
6. Turn on the UPS by pressing the 🔘 button and wait for alarm stop sounding. Then, turn on the computer and peripherals.
7. Testing Operation
   After battery is fully charged at least 6 hours, you can test operation by turning on the UPS follow the start-up procedure. Then, turn on computer and peripherals. Test UPS operation by unplugging the UPS power cord to simulate a blackout event, UPS will automatically supply battery backup power. The LCD display will show 🔋 BATT.MODE with alarm sound every 10 seconds. That means UPS supplies backup power to computer and peripherals. Then, plug the UPS power cord into the wall outlet as before, the alarm will stop sounding and the LCD display will show ⌁ AC MODE and computer and peripherals can operate both in blackout and normal power conditions.
8. When finished working with computer, shut down computer and turn off the UPS by pressing the 🔘 button at the front panel to make sure that the sufficient battery power is available when blackout occur.

STORAGE AND PRESERVATION

Before store the UPS for a long period of time, be sure that the battery is fully charged by turning on the UPS for 4 - 6 hours. Then, turn off the UPS and unplug the UPS power cord and store the UPS in the dry and cool place. It need to be recharged every 3 months to preserve the battery condition.

If the UPS have to store the UPS in above 25˚C or 80˚F area, It need to be recharged every 2 months.

BATTERY REPLACEMENT

Typical battery life is 3 - 6 years at operating temperature below 25˚C and 2 - 3 years at below 35˚C, depending on operating condition. After that battery will deteriorate and finally it can not store energy. It need to replace new battery every 2 - 3 years by qualified technician only. Please return UPS to local distributor or service center.

TROUBLESHOOTING

Symptoms	Possible Causes	Solutions
LCD screen is not lit.	Battery power is very low.	Recharge battery at least 6 hours.
	Battery deteriorates.	Please return the UPS to local distributor or service center for battery replacement.
	UPS is not turned on.	Press the Power button at the front panel of the UPS.
AC source is normal but ⓦ on LCD screen blinks and UPS alarm beep sound every 0.5 second.	UPS is overloaded.	Reduce loads to 75 - 80% to keep the remaining power for instantaneous power consumption of some loads.
Backup time is too short.	UPS is overloaded.	Reduce connected loads.
	Battery is running out of power.	Recharge battery at least 6 hours.
	Battery deteriorates.	Please return the UPS to local distributor or service center for battery replacement.
AC source is normal, but UPS operate in battery mode and 🔋 BATT.MODE blinks.	Power does not available at the wall outlet or the UPS power cord is not plugged into wall outlet properly.	1. Plug in the UPS power cord firmly and check the wall outlet. 2. Reset circuit breaker at the rear panel.