

SPECIFICATION

MODEL		OA EXTRA 525	OA EXTRA 750	OA EXTRA 1000	OA EXTRA 1500
CAPACITY	Power factor = 0.6	525 VA (315W)	750 VA (450W)	1000 VA (600W)	1500 VA (900 W)
SYSTEM	UPS system	Digital Line Interactive UPS			
	Control system	Microprocessor 8 bit			
	Stabilizer function	Buck / Boost			
LOAD APPLICATION	The number of PC*	1 set + printer**	2 sets + printer**	3 sets + printer**	4 set + printer**
INPUT	Input Voltage	220 Vac ± 25% (230 Vac option)			
	Nominal Input (single phase)	220 Vac (230Vac option)			
	Frequency	50Hz ± 6% (60Hz ± 6%) (auto sensing) (50Hz ± 10% option)			
OUTPUT	Voltage stabilizer mode (sine wave)	220 Vac ± 10% (230 Vac option)			
	Voltage backup mode for 1 PC (modify sine wave)	220 Vac ± 5% (230 Vac option)			
	Frequency (backup mode)	50Hz ± 0.1% (60Hz ± 0.1%) (auto sensing)			
PROTECTION	Transfer time	5 ms. (in-phase transfer)			
	Output short circuit	Auto cut - off with audio & visual alarm			
	Overload protection	Fuse protection	Circuit breaker		
	Surge energy dissipation	STD. UL1449 : 160 Joules (IC = 6500A)			
	Power dissipation	1,600,000 W within 100 microsec.			
	Acoustic noise	Less than 40 dBA at 1 metre			
BATTERY	Type	Sealed lead acid (maintenance free)			
	Capacity	12 V 7 Ah (12 V High Rate option)	12 V High Rate	2 x 12 V 7 Ah	2 x 12 V High Rate
	Backup time	15 - 40 min. (depend on load)			
	Continuous recharging time to 80%	3 - 8 hours			
OUTPUT OUTLET	Number of backup outlet	3			6
	Number of surge protection outlet	1			1
FEATURE	Power Watcher			yes	
	Noload shutdown option switch			yes	
	Backup test switch			yes	
	DC start			yes	
	Communication interface			Level communication (DB-9)	
	Easy-Mon software	UPS status, Backup time remaining, Schedule shutdown computer and UPS			
	Restart voltage checking system			yes	
	Surge protection for telephone line			yes	
	Surge protection for LAN line			option	
	Surge protection for laser printer			yes	
	Operating with generator			yes	
	User replaceable battery			yes	
	ENVIRONMENT	Temperature	0 - 45°C		
Humidity		0 - 95% (non - condensing)			
PHYSICAL DIMENSIONS	W x H x D (cm.)	10 x 16.5 x 30	10 x 16.5 x 30	12.5 x 21 x 36	12.5 x 21x 36
WEIGHT	Approximate in kg.	8	8.5	14	17
CONFORMANCE	Design regulation	EN 50091-2, EN 50022 (B), EN 61000-4-2, (4), (6), IP 21			

*PC = Pentium 4 , 1.8GHz with 15" monitor respectively., **Printer = Bubble jet or Dot matrix printer.
Continuous product development is our commitment. In that manner, the above specifications may be changed without prior notice.



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USER'S GUIDE

LEONICS®

MICROPROCESSOR CONTROL UPS LINE INTERACTIVE UPS WITH STABILIZER



SAFETY INSTRUCTIONS

Please read carefully and follow this OA EXTRA series UPS guide.

Important: Please keep this user's guide for reference in order to use the UPS properly and safety. This user's guide contains instructions for installation, operation and specifications.

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 LEONICS local distributors, LEONICS Service Center, send e-mail to support@leonics.com or visit www.leonics.com.

Caution

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

1.1 Electrical Safety

- 1.1.1 Do not work alone where there are electrically hazardous conditions.
- 1.1.2 Contact with live conductors will cause burns and dangerous electric shock.
- 1.1.3 Only qualified electricians allow to install and wiring this unit and the system.
- 1.1.4 Periodically check your cable, terminal and power source to make sure that they are in good condition.
- 1.1.5 To reduce risk from electric shock if you can not find the electrical ground (⊕) of the building, unplug the UPS from the AC source before plug in your load at the rear side of the UPS. Then, plug in the UPS to AC source.
- 1.1.6 Do not touch any metal parts or any electrical connection when UPS is operating.
- 1.1.7 Use ONLY one hand when plugging and unplugging the load in order to avoid electric shock from touching two surfaces with different potential.
- 1.1.8 It is recommended to connect the UPS to a three wire AC source (two live wires and ground) which connects to a protected circuit such as employs a fuse or circuit breaker.

1.2 CAUTION! Safety guide for installation and operation

- 1.2.1 Before installing or using this unit, read all instructions, caution markings on the UPS and all connected load, and all sections of this user guide.
- 1.2.2 Install this unit in a temperature and humidity controlled indoor 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.
- 1.2.3 This unit has ventilation grills. Ensure that sufficient ventilation is provided. DO NOT block the ventilation grills.

- 1.2.4 Use insulated tools to reduce your risk of electric shock.
- 1.2.5 Remove all jewelry or other metal objects such as rings, necklace, bracelets and watches when installing this product.
- 1.2.6 Properly wiring the cables as shown in the wiring diagram.
- 1.2.7 Before connecting the communication interface signal cable, Turn off the UPS by pressing the front panel button until the Utility Line OK/Fail (~) and Overload Alarm (⚠) lamps are lit at the same time and the alarm sounds once. Then, release the button.
- 1.2.8 Turn on the UPS before turn on the load to prevent surge from the loads.
- 1.2.9 DO NOT connect utility power to the UPS OUTPUT. This may cause the UPS damaged.
- 1.2.10 When heavy rain, avoid using electronic equipments including UPS to prevent it from lightning.
- 1.2.11 Use soft cloth to clean the UPS when it is turned OFF. DO NOT clean it with solvent.
- 1.2.12 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 effect to the safety system of those instruments.

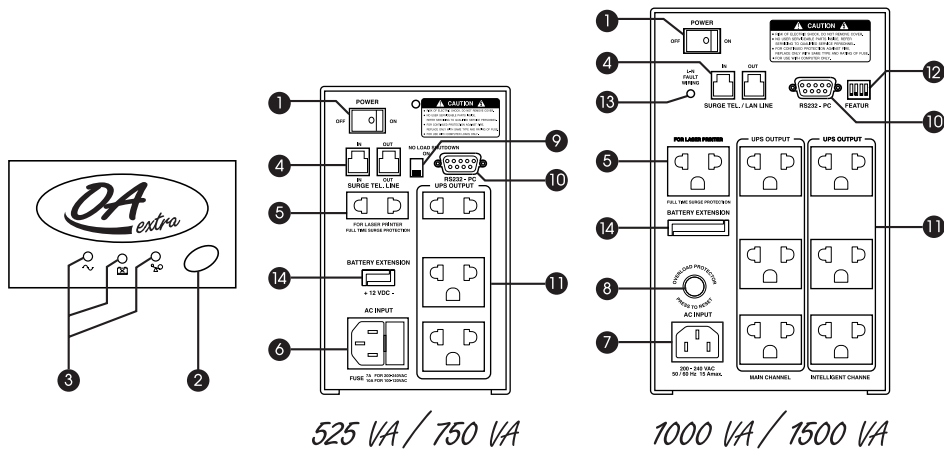
1.3 Warning! Battery Safety

- 1.3.1 Although the UPS is not connected to any power source, its outlets may be energized because it has a battery inside.
- 1.3.2 The UPS has hazardous voltages inside, do not disassemble any parts of UPS except for the battery. Users are allowed to replace battery by turning off power switch at the rear side of the UPS, then unplug the AC input cable. Users are not allowed to repair, recondition or disassemble the UPS. This must be done by Leonics qualified technicians only.

This product contains sealed lead acid battery and must be recycled properly. For recycling please return it to a LEONICS local distributor or LEONICS Service Center or contact your local recycling center for proper disposal information.

- 1.3.3 Do not dispose of batteries in a fire. They may be exploded.
- 1.3.4 Do not disassemble batteries. They contains poisonous electrolyte which is harmful to your skin and eyes.
- 1.3.5 Replace batteries with the same type and rating and follow the proper battery replacement procedure.
- 1.3.6 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.
- 1.3.7 If user has to keep the UPS or does not use if for long time, recharge the battery every 3 months in order to preserve the battery. To recharge the battery, connect it to the AC utility and turn on the UPS for 8 hours.

FRONT AND REAR PANEL



- 1 **POWER switch** : Switch ON-OFF
- 2 **TEST button** : For testing the UPS and battery. (See testing description in table 1)
- 3 **Indicator Lights** : Show operation status; Line (⤵), Low Battery (⚡) and Overload (⚠), as show in table 1

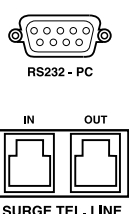
TABLE 1

(Green)	(Yellow)	(Red)	ALARMS	UPS STATUS
When startup				
Lit	-	-	-	Normal
On for 2 sec. Off 1 sec.	-	-	Beep every 4 second	Blackout or abnormal power mode, UPS provides power backup.
On for 2 sec. Off 1 sec.	Blink every sec.	-	Beep along with the indicator lights blink.	Battery level is low.
Lit (normal) Blink (blackout)	-	Blink every 0.5 sec.	Beep along with the red lamp blink.	UPS overload
Off	-	Lit	Long beep	UPS overload and UPS will be shutdown automatically
Blink every 0.5 sec.	-	-	Beep along with the indicator lights blink.	Computer sends command to shutdown UPS within 2 minutes.
After press Test button				
Blink 2-3 times	-	-	Beep 1 time	Battery normal.
-	-	On for 2 sec.	Long beep (2 sec.)	Battery level is very low.

- 4 **Surge Protection for Telephone Line**: A port for fax/modem line surge protection. Its function is to protect load against voltage spikes coming from telephone or LAN line (option).
- 5 **Full Time Surge Protection Output for Laser Printer**: Outlet that connects surge protection circuit for laser printer. (This output does not supply backup power when a blackout occurs).
- 6 **Input Power Receptacle with Fuse Socket**: Input power socket for plug in the input power cord. It is the power socket with built-in fuse holder and spare fuse holder socket (available on 525VA and 750VA model).
- 7 **Input Power Receptacle**: Input power socket for plug in the input power cord (available on 1000VA and 1500VA model).
- 8 **Magnetic Breaker**: The resettable circuit breaker that protects UPS from overload or short circuit current (available on 1000VA and 1500 VA model)
- 9 **No Load Shutdown Switch**: Allows you to select whether the UPS will shutdown itself when power line fail if there is no load or not (no load are defined as loads the are less than 60 W of UPS capacity) (available on 525VA and 750VA model).
- 10 **RS-232 Port**: The communication port for connecting the UPS to computer. The signal from the UPS will send information to the computer through this port by RS-232 cable and display data through the Easy-Mon X Monitoring and Management Software.
- 11 **UPS Output**: Outlet for connecting UPS backup power to a computer or peripherals such as a monitor, modem, printer or fax machine.
- 12 **Dip Switch**: The switch for setting no load shutdown system (available on 1000 VA and 1500 VA model). The switch no.1 use for enable/disable no load shutdown system.
- 13 **Fault Wiring Indicator**: The indicator light that verifies the wiring of the utility line which connects to the UPS. A red light means either the wiring of line or neutral are crossed or there is no electric ground. No light means the wiring is correct or there is no ground at the wall outlet (to allow this feature work properly the wall outlet need to have ground line) (available on 1000 VA and 1500 VA model).
- 14 **Battery Extension Port (option)**: The port for connecting with an external battery unit to increase the duration of UPS back up time.

INSTALLATION

1. Connect RS-232 cable from computer serial communication port to the RS232-PC port at the rear side of the UPS.
2. Connect telephone line (or LAN line (option)) into the sockets as shown.
IN - Connect telephone line (LAN line (option)) into UPS.
OUT - Connect telephone line (LAN line (option)) into to fax machine, modem ,LAN card input socket.



Note : To gain proper benefit from telephone / LAN line surge protection, your electricity system should have an electric ground. If there is no electric ground wire, there can be data transferring problems and loss of protection of the connecting devices.

3. Set the no load shutdown switch / dip switch if you want the UPS to shutdown automatically in backup mode when load consumption is less than 60W of full rated power in order to save energy and prolong battery life. (No load shutdown switch is set at "OFF" from the factory.)
In case of using with PABX that consumes very low power , you should set this switch to "OFF" position.
4. Plug the UPS power cord into the wall outlet (AC Line).
5. Plug the load power cords such as computer, printer, modem, etc. into the UPS output sockets.

Note : Loads connecting to the UPS must not exceed the UPS capacity. See the operation status of the UPS in Table 1. If the UPS is overloaded, disconnect non-essential load.

6. Plug the laser printer power cord into the laser printer outlet for surge protection. (This outlet does not supply backup power when there is a blackout.)
7. Switch the UPS ON and then switch on all connected loads.
8. Testing Operation
After the battery is fully charged, you can test operation by switching the UPS on. When the green lamp (⤵) is lit, turn on the computer and peripherals. Test the UPS operation by unplugging the UPS power cord to simulate a blackout event, the UPS should automatically supply backup power.
In this simulated blackout situation, the UPS alarm intervally, the green lamp blinks together with alarm sound. If the UPS supplies backup power to your computer, plug the UPS to the main socket. The UPS should stop alarming and the green lamp (⤵) lit. This shows that the computer can operate both in blackout and normal power conditions.
9. Battery capacity can be tested when the UPS is plugged into the mains by pressing TEST button. It tests the battery capacity during operation showing the alarms as in table 1.
10. After finishing your work with the computer, shutdown computer and switch the UPS OFF to keep sufficient battery power is available when there is a blackout.
11. For battery replacement, unscrew the fasteners at the bottom of front panel to slide and pull it out from the cabinet. And unscrew the battery strip away from battery for removing the old battery. Then replace new battery and reconnect the cable. Verify to correct polarity. Finally, Put the battery strip and front panel back in its position, respectively.

TROUBLESHOOTING

SYMPTOMS	POSSIBLE CAUSES	SOLUTIONS
Power switch is on. Green lamp (⤵) blink, but AC source is normal.	UPS power cord is not plugged into the input socket properly.	Plug in firmly.
	There is no power in the UPS main power cord.	Plug the UPS into another main socket. If the UPS still not operate, please send it to LEONICS Service Center.
	Fuse at the rear side has blown (available on 525 VA and 750 VA model).	Change fuse.
Green lamp (⤵) is lit and red lamp (⚠) blink with alarm beep sound every 0.5 second.	Circuit breaker at the rear side has tripped (available on 1000 VA and 1500 VA model).	Reset breaker, If the UPS does not operate, please send it to LEONICS Service Center.
	Loads which are connected to the UPS are exceed the UPS rated capacity. UPS is overloaded.	Reduce loads until the red lamp off and no alarm sound.
Red lamp (⚠) is lit and alarms long beep sound.	UPS is overloaded for long time.	Shutdown UPS and reduce loads.
Blackout occurs, yellow lamp (⚡) blink and alarms long beep sound.	Battery is very low and UPS will be shutdown automatically.	When AC source recovers, turn on UPS for 8 hours to charge the battery.
UPS does not supply backup power or the backup time is too short.	Loads which are connected to the UPS are exceed the UPS rated capacity. UPS is overloaded.	Reduce loads
	Battery is very low.	Turn on UPS for 8 hours to charge battery and then test backup power. If the symptom still exists, please send the UPS to LEONICS local distributor or LEONICS Service Center.