



LN 1000 / LN 2000

LINE INTERACTIVE

UNINTERRUPTIBLE POWER SYSTEM



USER MANUAL

ENGLISH

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1. Introduction

This UPS is a standby uninterruptible power system. It protects computers and peripheral devices such as scanners, monitors, modems, etc. from losing valuable data as a result of power failures. In the event of a utility failure such as a blackout, brownout, or power sag (when the lights in a room dim for a moment), the UPS rapidly transfers your computer equipment to an alternative power source. This allows you adequate time to save files, exit programs, and properly shut down your system.

When the power supply is transferred from utility (AC) power to backup (battery-DC) power, the waveform is altered, with minimal transfer time from a normal sine wave to a step sine wave. According to research, a rough wave transition or an imperfect step sine wave could cause a voltage transient. Eventually, this voltage transient could damage the MOS circuitry within the UPS, and decrease its life. The UPS surpasses the competition in producing the smoothest transition from sine wave to step sine wave.

On the other hand, its multi-function power switch design simplifies outside case. You can easily realize UPS status and load level by simple color-LED display. This highly reliable UPS guarantees your computer a clean and reliable power source.

Major features of LN Series are listed as follows:

- Microprocessor control guarantees high reliability.
- Provide AVR to stabilize wide input voltage.
- Built-in Smart RS-232 Communication Port with Smart Monitoring UPS Software.
- UPS status and load level LEDs for real data display.
- No load auto shut down.
- Auto restart when AC recovery.
- Provide lightning, surge, overload, and short-circuit protection.
- DC start
- Provide moden and telephone

2. Safety – CAUTION!

- This UPS utilizes voltages that may be hazardous. Do not attempt to disassemble the unit. The unit contains no user serviceable parts. Only factory service personnel may perform repairs.
- Internal battery voltage is 24Vdc.
- Connection to any other type of receptacle other than a two-pole, three-wire grounding receptacle may result in a shock hazard as well as violate local electrical codes.
- In the event of an emergency, turn the power switch to the “off” position and disconnect the power cord from the AC power supply to properly disable the UPS
- Do not allow any 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 locations 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 to cleaning and do not use liquid or spray detergent.
- Do not dispose of battery or batteries in a fire. The battery 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 observed when working on batteries :
 - 1) remove watches, rings, or other metal objects from the hand.
 - 2) Use tools with insulated handles.
 - 3) Wear rubber gloves and boots.
 - 4) Do not lay tools or metal parts on the top of batteries.
 - 5) Disconnect charging source prior to connecting or disconnecting batteries terminal.
- Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.
- When replacing batteries, replace with the same number of the sealed lead-acid batteries.

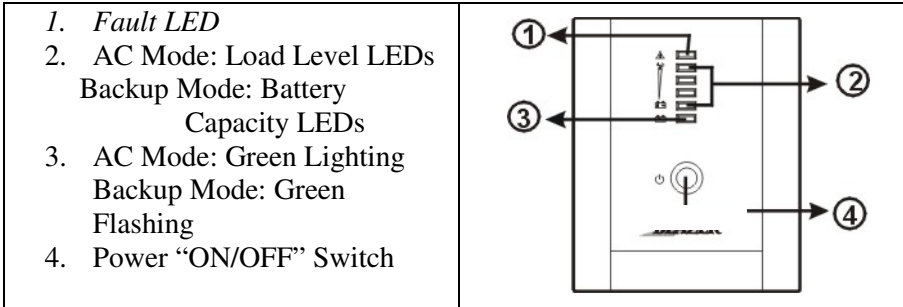
Wichtige Sicherheitshinweise

Bitte lesen Sie diese Hinweis sorgfältig durch.

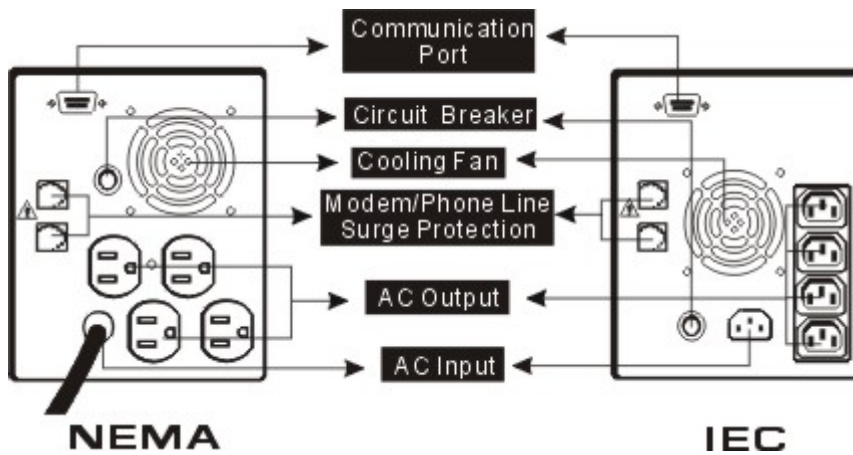
- Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssig- oder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
- Das Gerät ist vor Feuchtigkeit zu schützen.
- Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
- Bei der Installation ist darauf zu achten, dass der Gesamtbleitstrom der USV und der an der USV angeschlossenen Verbraucher den Maximalwert von 3.5mA nicht überschreiten.
- VORSICHT: Explosionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

3. System Description

Front Panel—



Back Panel—



4. Specification

MODEL		LN1000	LN2000
CAPACITY	VA/W	1000VA/600W	2000VA/1200W
INPUT	Voltage	220VAC	
	Voltage Range	165-260VAC	
OUTPUT	Voltage	220VAC	
	Voltage Regulation (Battery Mode)	+/- 10%	
	Frequency	50Hz or 60Hz	
	Frequency Regulation (Battery Mode)	+/- 1 Hz	
	Output Waveform	Modify Sinewave	
BATTERY	Battery Type and Number	12V/7AH x 2pcs	12V/9AH x 2pc
	Back up Time	10 Minutes at computer load	
	Recharge Time	8 Hours to 90% after complete discharge	
TRANSFER TIME		4-6ms (Typical)	
INDICATOR	AC Mode	The 1st green LED lighting The 2nd to 5th green LEDs gradually lighting indicating load level	
	Backup Mode	The 1st green LED flashing The 2nd to 5th green gradually lighting indicating battery capacity	
	Fault	Red LED lighting	
AUDIBLE ALARM	Backup Mode	Sounding every 10 seconds	
	Battery Low	Sounding every second	
	Overload	Sounding every 0.5 seconds	
	Fault	Continuous sounding	
PROTECTION	Full Protection	Discharge, Overcharge, and Overload Protection	
PHYSICAL	Dimension (DxWxH) (mm)	368.3X140.2X180.4	
WEIGHT	Net Weight	13.8kgs	16kgs
ENVIRONMENT	Operating Environment	0- 40°C, 0-90 % Relative Humidity (non-condensing)	
	Noise Level	AC Mode: Less than 40dB Backup Mode: Less than 45dB	
INTERFACE	Smart RS-232	Support Windows 95/98/NT/2000, Novell, and Linux	

5. Installation and Operation

Installing the UPS is as easy as following the steps shown. Be aware of the Power Switch must be kept in the “ON” position, otherwise, the UPS will be disabled and your equipment will not be protected during a power failure.

1. Inspection

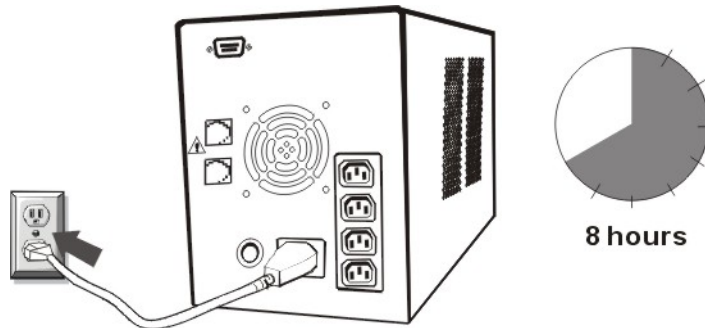
Remove the UPS from its packaging and inspect it for damage that may have occurred during shipping. If any damage is discovered, repack the unit and return it to the place of purchase.

Placement

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 unit away from monitor at least 20cm to avoid interference.

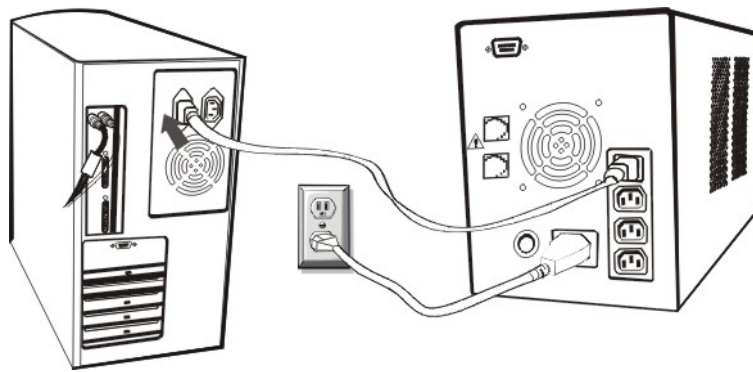
3. Charging

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 8 hours.



4. Computer Connection

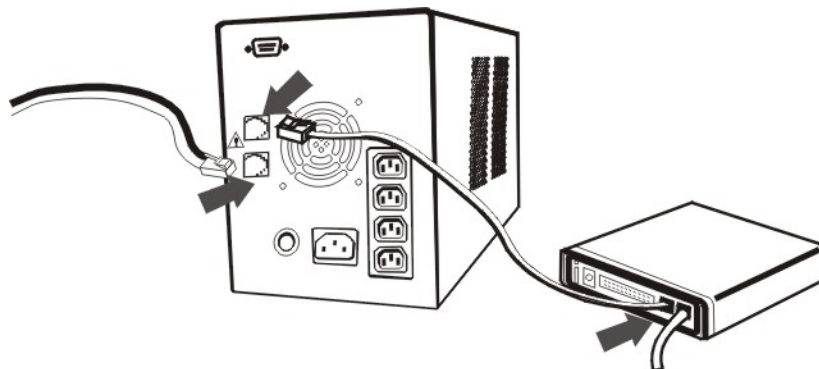
Connect one computer-related device into each of the power receptacles supplied on the back of the UPS (maximum of three devices).



5. Modem/Phoneline Connection

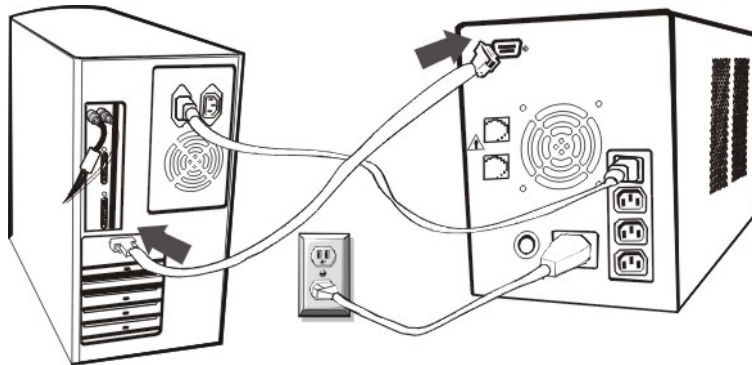
Plug incoming internet line into the “In” socket at the back of the UPS. Use one more Internet line cable and plug one end of the Internet line cable to the “Out” socket at the back of the UPS. Plug the other end to the modem input socket as shown.

**Incoming
Internet line**



6. Serial Cable Connection

To allow for unattended system shutdown for your operating system, connect the serial cable as per diagram below.



7. Turn On/Off

LN Series will be turned on automatically at first plug-in. At this moment, press the power switch lightly to turn off the UPS. To turn on the UPS again, just simply press power switch again. Please **DO NOT** punch it for extended life of the power switch.

8. DC Start Function

DC Start Function enables UPS to be started up when AC utility power is not available and battery is fully charged. Just simply press the power switch to turn on the UPS.

5. Green Power Function

All LN Series are equipped with Green Power function. If no load connects to the UPS, it will automatically shut down in 5 minutes for energy saving while power failure. The UPS will restart while AC recovery.

6. Battery

UPS has a battery that expected trickle life 3-5 years. The battery is stored without charging 3 Months and temperature above 40°C trickle life is shorter than expected. Store the battery after fully charging it otherwise its life may be shortened. Battery must be charge every three months.

Battery discharge time is changed load and charge level.

Caution

1. When replacing batteries, replace with the same number of the sealed lead-acid batteries.
2. The following precautions should be observed when working on batteries :
 1. A battery can present a risk of electrical shock and high short circuit current
 2. Do not short the battery terminals.
 3. Do not charge in a gas tight container.
 4. Do not dispose of battery or batteries in a fire.
 5. Flush with water at once if contact is made with electrolyte (acid)

Store

The Battery gradually loses its capacity due to self discharge during storage. If the battery is used without being charged, its capacity may not be fully utilized.

- The battery is not stored without charging.
- The stored Temperature of battery below 40°C
- The battery is charged every three months.

Hot-Swappable Battery Removal

Follow the Chart 1 to Chart 3 to replace the batteries. Disconnecting all sources of supply before battery replacement.

Remove the front panel



Chart 1

Remove the battery cover

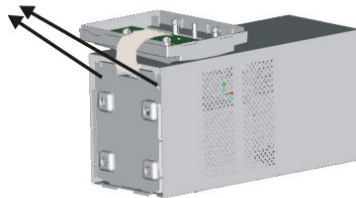
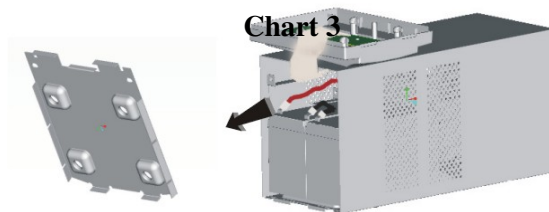


Chart 2

After removing battery cover, gently extract the battery by disconnecting the two wires connecting to the LN. Be sure to replace the same type of batteries and dispose of old batteries properly at an appropriate recycling facility.



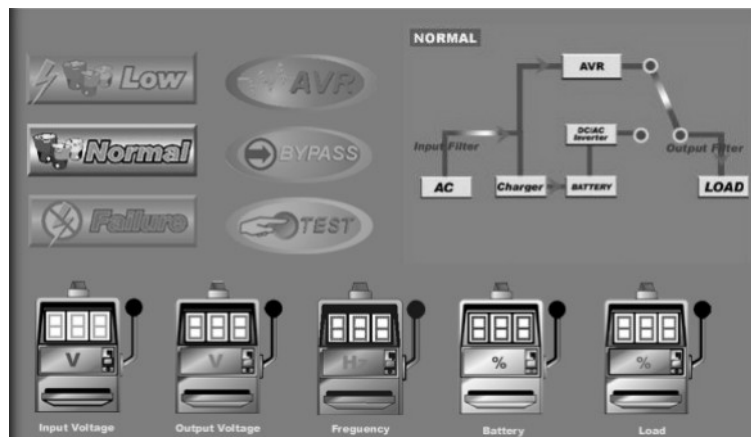
7. Free Software Download

-- Commander Pro

Commander Pro is a unique uninterruptible power supply (UPS) control software that offers you unprecedented convenience for the control of any UPS.

Features:

- Saves files before shutdown occurs
- Scheduled system shutdown
- Graphic display of UPS status
- Warning notification via E-mail
- User-friendly interface
- Multi-language versions



Download Commander Pro from the internet is a simple process:

1. Go to Website <http://www.ups-software-download.com>.
2. Click Commander Pro Icon to enter software download area.
3. Choose operating system you need for your PC and double click to download software automatically.
4. Type in Serial No: 511C1-01220-0100-478DF2A to install the software.

8. Trouble Shooting

Symptom	Possible Cause	Remedy
No LED display on the front panel.	1. Missing battery.	1. Charge battery up to 8 hours.
	2. Battery defect.	2. Replace with the same type of battery.
	3. Power switch is not pressed at least 5 seconds.	3. Press power switch for at least 5 seconds.
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 noncritical 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.
Communication lost between UPS and computer.	1. Software is not installed well.	1. Check the setting of the software .
	2. Cable is not properly connected.	2. Check the RS-232 cable is firmly connected to COM1/COM2 of the computer and confirm the setting again.
Mains normal but green LEDs are on.	1. Circuit breaker is broken.	1. Reset the circuit breaker..
	2. Power cord is loose.	2. Reconnect the power cord properly.

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