



UNINTERRUPTIBLE POWER SUPPLY



The NS LCD series on line double conversion UPS with full time Digital Signal Processor control technology supplies your critical device with stable, regulated, transient-free and pure-sine-wave AC power. High-efficiency PWM sine-wave topology yields excellent overall performance. User-friendly plug-and-play design allows hassle-free installation.

### PRINCIPLES OF WORKING

The backup series is composed by: Rectifier, Inverter, Static Switch, manual by-pass and Battery.

The Rectifier-Inverter line normally feeds the users, and the Battery is kept charged by the Rectifier. The wide input voltage tolerance of 110-300 V allows under-voltage or over-voltage correction without unnecessary battery drain and helps extend battery life.

If a black out occurs, the Battery supplies power energy to users always through the Inverter. When the blackout is over, the Rectifier provides for Battery charge.

If a short circuit or an overload occurs to the users, the Static By-pass switches the load over the emergency line, provides visible and audible alarms, and cuts the output supply automatically until the short circuit situation is resolved manually.

### FEATURES

- Double conversion online technology.
- 0.9 output Power Factor.
- Filtered, stabilized sine wave supply.
- Active Harmonic Current Control.
- Wide Input Voltage Range.
- Zero transfer time.
- DC-start function.
- Automatic inverter restart after a black out even with battery off.
- Add matching battery cabinets.
- LCD display showing status and input/output measurements, backup runtime estimation included.
- Smart battery management system to extend batteries' life.
- Remote On Off control, as option.
- EPO Emergency Power OFF.
- RS 232 & USB standard,
- dry contacts, RS485 and SNMP as option.

### CONTROL PANEL



#### LED

Mains, bypass, inverter, battery mode, battery low, overload, fault.

#### LCD backlit

Voltage, Frequency, Load level, Battery level, Output current, Estimated autonomy.

#### KEYBOARD

ON/OFF, battery mode, by-pass mode, shift display of UPS electrical values.

**INTERFACES**



Each UPS of NS LCD series is provided with a RS232 and USB port communication as standard configuration. These communication interfaces can be used with the software supplied free of charge on request. In addition to the standard equipment, the NS LCD series can use such accessories as an alternative:

- SNMP network interface with dedicated software and multi-client free of charge.
- RS 485 interface;
- Dry contacts for remote alarms programmable with jumpers (B version) or via software (C version).

**ACCESSORIES**

- Additional battery cabinets to upgrade the backup time till several hours even after the first installation. On request the add battery cabinet can be provided with an external independent battery charger to guarantee a fast recharge.
- External Bypass Switch Box Series. the external maintenance bypass and power output distribution switch allows you to manually transfer the connected equipment to utility power via a maintenance bypass switch and vice versa. It is available till 400 A and it is suitable for single UPS and for a system composed till no. 4 UPS in parallel

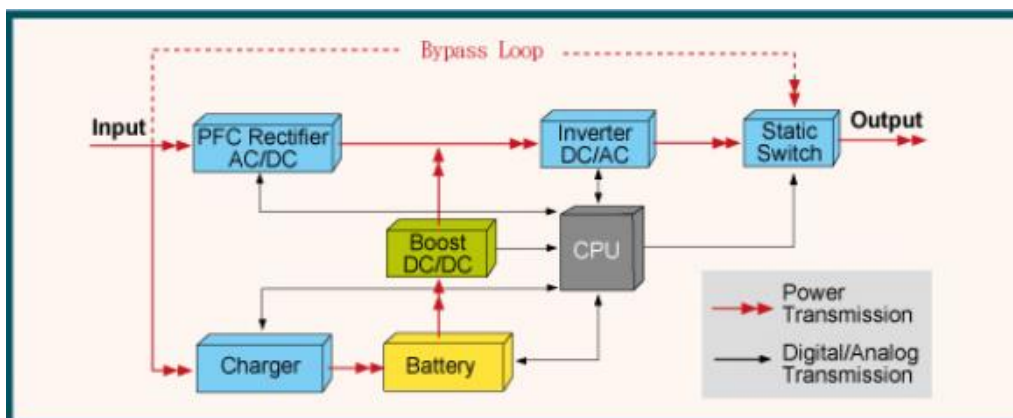


**BACK PANEL**

- Slot for optional communication cards.
- Emergency Power Off (EPO)
- Remote ON/OFF (ROO) as option
- USB port
- RS232 port
- Fan
- External battery connector
- AC power connection socket
- Utility input circuit breaker
- Output circuit breaker for two outlets (3k)
- AC outlets (Program Relay as option)
- External Battery Ground



**BLOCK DIAGRAM**



Model	NS1000-10LCD A	NS2000-10LCD A	NS3000-10LCD A
Rated power	1000VA/900W	2000VA/1800W	3000VA/2700W

INPUT			
Input voltage	230Vac (110~300Vac*) 1Ph+N		
Frequency	45-65Hz auto sensing		
Input Power Factor	≥ 0.99 100% linear load		

OUTPUT			
Voltage	220/230/240V ± 1% single phase, adjustable		
Frequency	50Hz or 60Hz ± ±1Hz or ±3Hz (adjustable)		
Waveform	Sinusoidal		
Output Voltage Distortion	<3% @ 100% Linear load <7% @ 100% non-linear load		
Trasfer time	Zero		
DC start	Yes		
Crest Factor	3:1		
Overload	<105%continuous 106-120% for 30 seconds transfer to bypass. 121-150% for 10 seconds transfer to bypass. >150% Immediately transfer to bypass. Buzzer continuously alarms.		

BATTERY			
Type	VRLA		
Recharge time	4hrs at 90%		
Battery voltage	36Vdc	72Vdc	72Vdc
Capacity and number	3x 12V 7Ah	6x 12V 7Ah	6x 12V 9Ah
Accessory battery charger	200W/500W for extended backup time		

MISCELLANEOUS			
Protections	Overload, Over temperature, Short circuit, Discharge, overcharge		
Efficiency	Up to 92% in online mode / up to 97% in eco mode		
LCD measures	Voltage, Frequency, Load level, Battery level, Output current, Estimated autonomy		
UPS Self-Diagnostics	manual and automatic		
Audible or Visual Alarm	Line Failure, Battery Low, Transfer to Bypass, System Fault		
Operation Humidity	20%~95% (Without condensing)		
Operation Temperature	from 0°C to + 40°C		
Noise Level	≤50dBA at 1 meter		
Interface	USB & RS232 standard (dry contacts, RS485, SNMP as option)		
Compatible Platforms	Microsoft Windows series, Linux, Mac, etc		
Inlet	1 x IEC 10A		
Outlets	3 x IEC-320-C13 (10A)	6 x IEC-320-C13 (10A)	6 x IEC-320-C13 (10A)
Dimensions (mm)	154x383x211	192x470x250	192x451x320
Weight (kgs)	12	22	30

STANDARDS	
Safety	EN 62040-1
EMC	EN62040-2 (C2)
Marks	CE

\*range according to applied load 110/140/160-300Vac 0-25%/ 25-50% / 50-100%.

ELIT Srl reserves his right to do modifications to his products without notice.