UNINTERRUPTIBLE POWER SUPPLY

The NS series on line double conversion UPS, meets today's industry standard for energy saving and low reflected harmonic pollution to the Utility. The NS series uses a field proven MPU to substantially reduce the component count. This provides greater reliability, functionally and smaller size than other designs. Using the latest high frequency techniques and quality components reliability is further increased. High system efficiency is achieved in all operation modes saving electricity.

PRINCIPLES OF WORKING

The back up 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.
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. When the fault is over, the Inverter feeds users.

FEATURES

- Double conversion online technology
- Filtered, stabilized and regulated sine wave supply
- Unity Input power factor
- Wide input voltage window and input frequency window, the battery usage is minimized
- Zero transfer time
- Add matching battery cabinets and extend the backup time up to several hours. With its isolation conversion technology plus precision control, the optional charger can be installed in parallel up to 4 units
- Superior overload capability
- High battery reliability (battery test, manual and automatic)
- Optionally LCD display provides real time status and parameter readings
- Smart battery management system monitors the battery charging and discharging status
- Cold Start
- Auto Restart
- Plug & Play design
- RS232 interface standard, dry contacts, USB, RS485 and SNMP as option

CONTROL PANEL

LED display explanations:
By-pass, utility, inverter, battery low, overload, ups fault, load level % and battery level %.

LCD display explanations (optionally):
Bypass, Boost & Buck, battery low, battery bad, fault, input voltage abnormal, overload, load level %, battery level %.

KEYBOARD
ON/OFF, battery test, load level %, battery level %.

INTERFACES

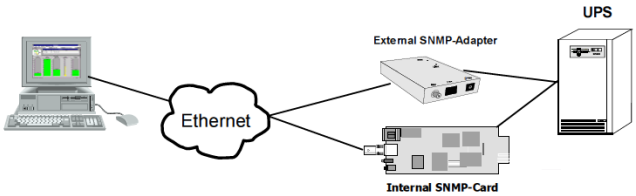
The NS Series UPS also provides one additional customer options communication slot in alternative to the standard RS232.

Standard serial RS 232
The smart port is an intelligent RS232 serial port that allows the UPS to a computer. The connector is a standard D-Type, 9 pin, female.
The software optionally allows the computer to monitor the mains voltage and the UPS status continuously.

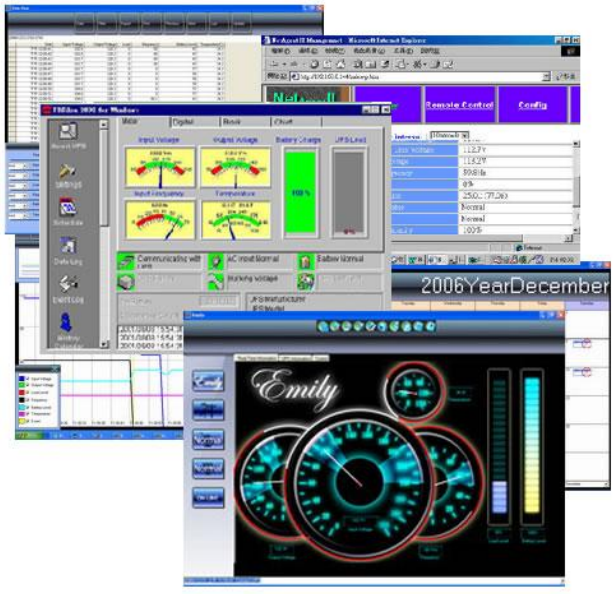
Dry contact card provides isolated contacts for industrial and remote alarm application.

2nd RS232, RS485 and USB port for remote signaling and automatic computer shutdown.

SNMP card for monitoring and integration in network management. The Simple Network Management Protocol (SNMP) is a worldwide-standardized communication-protocol. It is used to monitor any device in the network via simple control language.



The **Emergency Power Off** facility must use a normally NO contact, which closes to operate the emergency stop procedure. The emergency stop port is located at the rear of the UPS SPH module. Through the dry contact interface it is available also a NC contact.
The SR series UPS is provided with monitoring and shutdown software. The monitoring software provides real-time UPS status display via easy-to-read Meter and Gauges, Digital Table, Block Diagram and Graph Chart as well as remote monitoring of the UPS through Intranet or Internet.
The software is compatible with many operating systems such as Windows 98, 2000, XP, Vista and Windows 7 For other applications like Novell, NetWare, Unix, Linux, please contact your local distributor for a proper solution.

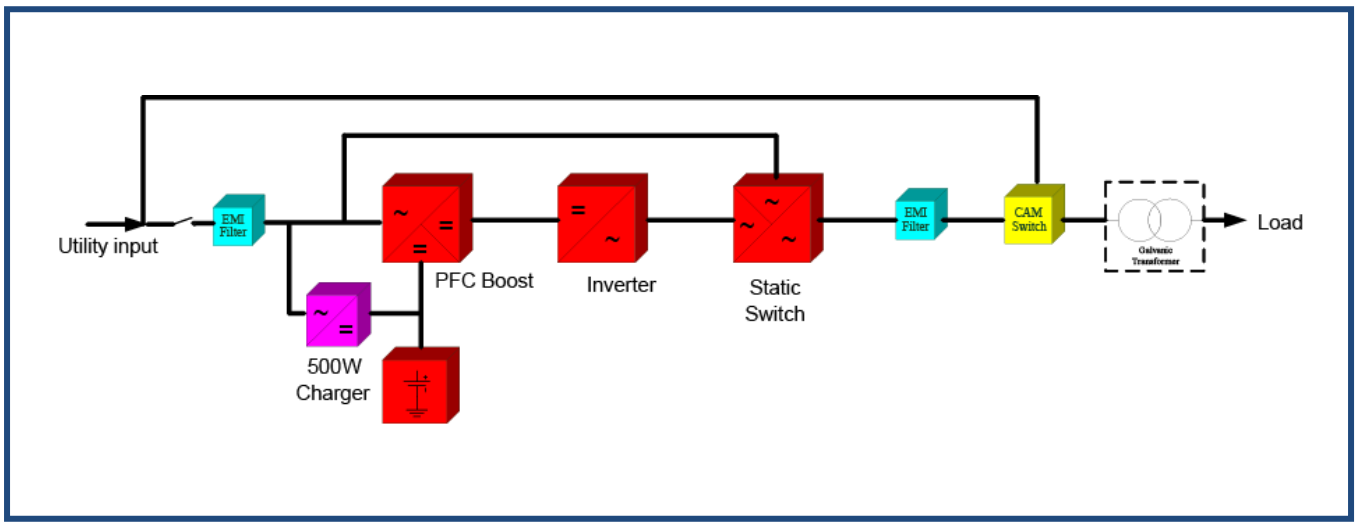


ACCESSORIES

- 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. Beyond to the standard manual by-pass fitted in each UPS, 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.

BLOCK DIAGRAM



Model	NS1000	NS2000	NS3000
Rated power VA/W	1000/700	2000/1400	3000/2100
INPUT			
Nominal voltage	230V ± 25% single phase		
Frequency	50/60Hz ± 5% auto sensing		
Input Power Factor	> 0.98		
OUTPUT			
Voltage	220/230/240V ± 2% single phase, adjustable		
Frequency	50Hz or 60Hz ± 0.5%		
Waveform	Sinusoidal		
Distortion (THD)	< 3%		
Transfer time	0 ms.		
DC start	Yes		
Crest factor	3:1		
Overload	120% for 1 minute, 150% per 10 seconds		
BATTERY			
Type	Sealed Lead Acid maintenance free		
Recharge time	8h at 90%		
Nominal voltage	36Vdc	72Vdc	96Vdc
Standard back up time	10 minutes		
Supplementary charger	Optional 200W/500W chargers for extended backup application		
PROTECTION			
Short circuit	Hold whole System		
Overheat	Switch to bypass		
Noise suppression	Complies EN50091-2		
Spike suppression	Complies EN61000-4-5		
MISCELLANEOUS			
Relative humidity	< 95% without condensing		
Operating temperature	from 0°C to + 40°C		
Noise	< 45 dBA		
Interfaces	RS232 (dry contact, RS485, USB, SNMP and EPO optionally)		
Compatible platforms	Windows 95/98/NT/2000/XP/Vista, Novell Netware, Linux		
Inlet	1 x IEC 10A		
Outlets	3x IEC; 1x Shucko	3x IEC; 2x Shucko	Terminals; 2x Shucko
Dimensions (mm)	147x401x223	130x479x365	190x453x365
Weight (kgs)	15	27	36
STANDARDS			
Safety	EN 62040-1-1		
EMC	EN 62040-2, EN 61000-3-2, EN 61000-3-3, FCC A class		
Marks	CE, UL, cUL		