NS3000

threephase UPS

- Data Center & Servers
- Telecommunication devices
- Emergency applications (lights/alarms)
- Industrial Application
- Customized power solutions

10-120 kVA threephase/ threephase

GTEC Quality Energy Provider

Authorized distributor:

GREENERGY SOLUTIONS
website: www.greenergysolutions.be
email:info@greenergysolutions.be
tel: +32(0) 484/41.80.66

Smart Energy Solutions

Product Overview

- HIGHER RELIABILITY
- ZERO IMPACT ON MAINS
- FLEXIBLE
- HIGH EFFICIENCY
- SMART BATTERY MANAGEMENT
- SIMPLIFIED MAINTENANCE

THE IDEAL SOLUTION TO GUARANTEE UTILITY STABILITY

The G-TEC NS3000 Series is uninterruptible power supply (UPS) medium size online, the ideal solution to solve utility stability, supply clean and power continuity for very critical loads, where space-constrained room needs a compact, flexible and scalable solution.

HIGHER RELIABILITY
- DSP digital control
- automatic analysis of main charateristic
- double input
- Smart Ventilation System Control

ZERO SOURCE IMPACT
- rectifier with PFC tecnology
- POWER FACTOR 0,99
- current distorsion lower then 3%

FLEXIBILITY
- high tecnology LCD display
- sized for small spaces
- parallel up to 6 units

HIGH EFFICIENCY
- 3 level IGBT technology
- PWM high-frequency modulation
- high efficiency at lower loads
- Ecomode system guarantees efficiency equal to 99%
- lower heat dissipation

SIMPLIFIED MAINTENANCE
- batteries simplified replacement
- easy substitution of the PCB
- easy removal of all the components

The LCD display is user friendly.

Product Range

10 - 30 kVA

60 kVA

90 - 120 kVA

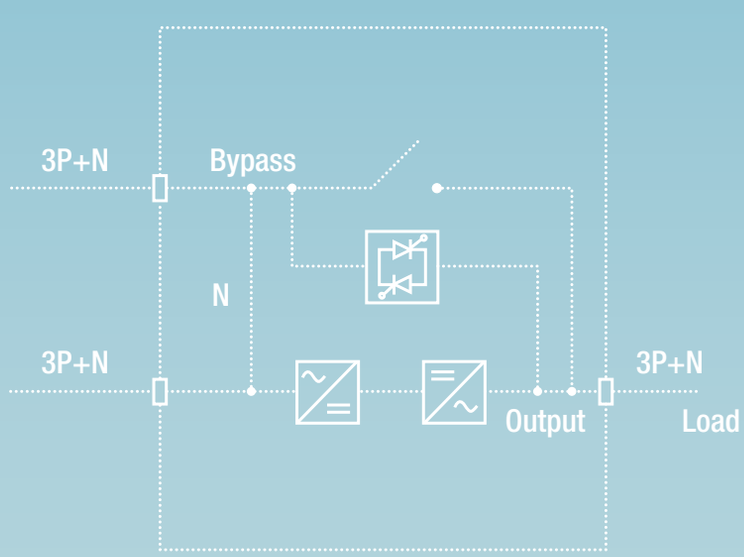
NS3000 Series is available in power capacities 10-30 kVA, 60 kVA, 90 kVA, 120 kVA. Three-phase input and output, with double conversion technology according to the VFI-SS-111 classification, as defined by the IEC EN 62040-3 standard. The system is with digital signal processor (DSP) controlled IGBT rectifier and inverter transformerless, with filters for disturbances suppression.

SMART BATTERY MANAGEMENT

Wider input voltage window and frequency tolerances help to minimize transfer to battery, reducing the number of charging and discharging cycles extending the battery service life and optimising recharging time.

The double-conversion technology protects against the full range of power irregularities, requiring limited transfer to battery. In parallel redundant configuration is possible to connect the units to common battery string to have full battery capacity also in case of one UPS failure. The NS3000 uses a three charging modes to meet the specifications of the most common battery types as sealed VRLA, AGM or wet lead acid, Ni-Cd. Temperature-compensated charging monitors battery temperature and adjusts the charge voltage rate accordingly. The battery management system is able to manage the manual and automatic tests, monitoring battery health and remaining lifetime. The NS3000 UPS is provided with internal switch for disconnecting the internal batteries.

NS3000 - section and structure



Connectivity Devices

OPERATING SYSTEMS SUPPORTED

Windows, Linux, Novell Netware, Mac OS X; IBM OS/2 Warp and Server; HP OPEN VMS; The most widely used UNIX operating systems such as: IBM AIX, HP UNIX, SUN Solaris INTEL and SPARC, SCO Unix and UnixWare, Silicon Graphic IRIX, Compaq Tru64 UNIX and DEC UNIX, BSD UNIX and FreeBSD UNIX, NCR UNIX.

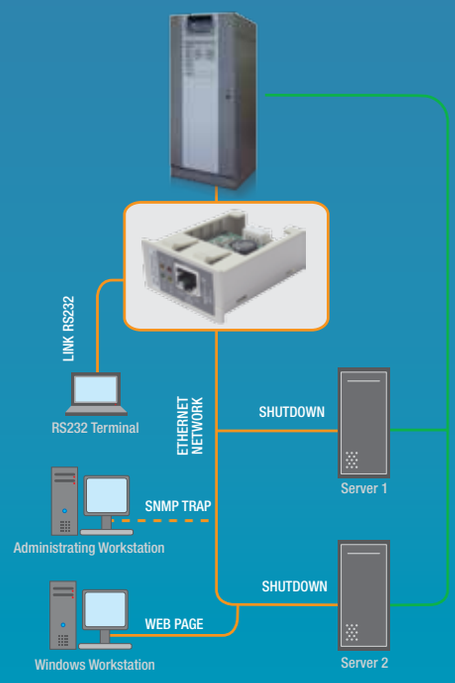
As standard the NS3000 has local monitoring software through serial port, the **UPSilon** provides user-friendly UPS management. The software displays real time information in the form of bar charts and values for critical data such as mains voltage, UPS load and battery charge. It allows remote interrogation of UPS logs and operating parameters to help diagnose alarms and potential fault conditions. When instructed the software performs an automated safe power down of the protected PCs and file sever.

Advanced communication

- NS3000 Series is equipped with a mimic led and graphic display that provides information, measures, states and alarms regarding the unit and load.
- Standard RS232 port and RS485 port with ModBus interface protocol.
- REPO (Remote Emergency Power Off) to power down the UPS through a remote emergency push button.
- **Web/SNMP card** allows UPS management across a LAN using any of the main network communication protocols - TCP/IP, HTTP and network interface via SNMP. In case of alert it can notify users and administrators via email; when prolonged power failure occurs the protected computer systems can be shutdown in a graceful manner.
- **Relay/AS400 card** is an easy interface for input/output dry contacts and AS400 series computer, the common manner for industrial and building management systems.

* Function available with relay PCB

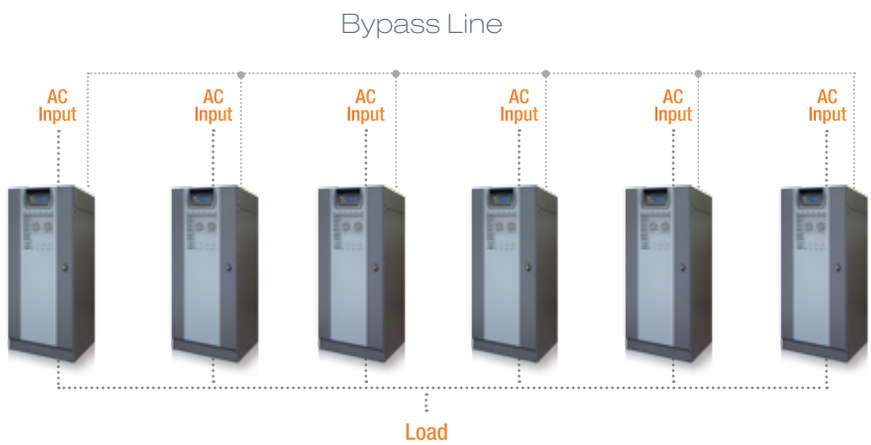
Direct Connection with Ethernet Network



Flexible and Scalable

The flexible technology and control permit to meet the site needs, whenever the loads become critical the logic is able to work in Load Bus Sync with additional external transfer switch or with full UPS power capacity available in Parallel configuration up to 6 units. The scalable logic of NS3000 allows the UPS systems to increase according to load demands and the redundancy parallel configuration N+1 supplies the most critical loads.

The N+1 parallel redundancy assures the supply in case of UPS failure. All the unit must be the same power size and an optional parallel kit should be installed for the accurate equal load sharing. The NS3000 parallel system can work in ECOMODE and with common battery as 1+1 configuration.



Modular concept and customised solutions

CUSTOMISED SOLUTIONS

G-Tec has extensive knowledge in customised solutions for various scopes and environments, such experience has been taken into consideration during the NS3000 development. In fact the unit is designed for quickest repairing, the intervention time is limited at replacement of modular components on site.

Also the two internal battery strings are fully hot-swappable and easily removable.

MODULAR CONCEPT

The modular concept in design helps the product customization encountering the most demanding applications; for example marine UPS due the standard tropicalisation of internal components; preservation against dusty and hard environment using air filters and heavy mechanical IP degree protection.

Benefits in your choice

Significant are the advantages selecting your NS3000 UPS which make it the best choice for your needs, often the benefits become noticeable during the operating life of the system.

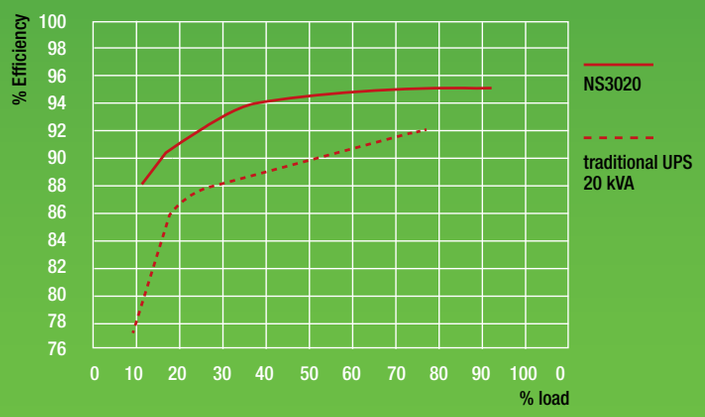
- The compact tower design has small footprint and the wheels assure the easiest installation in limited spaces. The standard UPS cabinet allows the internal housing up to 2 strings of battery achieving the reasonable backup time for the loads eliminating costly and space-consuming external battery cabinets.
- The input **PFC** (Power Factor Correction) technology extremely optimizes the upstream infrastructure without over rating the supply devices (as input transformers, diesel gensets, switches, cables and other) and eliminating the harmonics distortion troubles.
- The unit is suitable also for leading power factor load without derating
- The **HIGH EFFICIENCY** minimizes the amount of battery for equal autonomy time.
- The NS3000 **MTTR** (Mean Time To Repair) is the shortest in the UPS category due the modular concept, it means more availability of system, less cost in intervention and maintenance. NS3000 has optimized the Services procedures and intervention.

Green Technology

COST SAVING IN EFFICENCY

NS3000 has higher efficiency without compromise of reliability or performances, as matter of fact working in VFI – Double Conversion Mode achieves the lowest power consumption already at the very low load rate.

The top efficiency in online mode is provided by the innovative conversion technology at 3-steps level IGBT and an extremely careful in components selection focus to lowest power consumption.



The premium class of NS3000 in power performance comparing with traditional in the market allows a 50% saving in energy usage.

The NS3000 Series is an *UPS 'self-paying'* with energy save and it can lead to a full initial investment recovery within three years.

Technical Specification

Model	NS3010	NS3020	NS3030	NS3060	NS3090	NS30120
Power	10kVA	20kVA	30kVA	60kVA	90kVA	120kVA
MAIN INPUT						
GRID SYSTEM	3 Phases + Neutral + Ground					
RATED VOLTAGE/FREQUENCY	380/400/415VAC (Phase-Phase), 50/60Hz					
VOLTAGE RANGE	-10% ~ +20%, full load			-20% ~ +15%, full load		
	(-10% ~ -40%, power derating between 100% to 60%)			(-10% ~ -40%, power derating between 100% to 60%)		
FREQUENCY RANGE	40-70HZ					
POWER FACTOR	>0.99					
CURRENT THDi	<3% (full Linear Load)					
BYPASS INPUT						
RATED VOLTAGE/FREQUENCY	380/400/415VAC (Phase-Phase), 50/60Hz					
VOLTAGE RANGE	Selectable, default: -20% ~ +15%					
FREQUENCY RANGE	Selectable (±1Hz ~ ±5Hz), Default: ±5Hz					
OUTPUT						
RATED INVERTER VOLTAGE	380/400/415VAC (Phase-Phase), 50/60Hz					
POWER FACTOR	0,9					
VOLTAGE PRECISION	1% (balance load),1.5% (unbalance load)			±1.5%(0-100% linear load)		
VOLTAGE THDu	<1% from 0% to 100% linear load; <5% full non-linear load according to IEC/EN62040-3			<1% from 0% to 100% linear load; <6% full non-linear load according to IEC/EN62040-3		
INVERTER OVERLOAD	105% transfer to bypass after 1hour			-		
	110%, transfer to bypass after 10minutes			110%, transfer to bypass after 60minutes		
	125%, transfer to bypass after 1 minutes			125%, transfer to bypass after 10 minutes		
	150%, transfer to bypass after 5 seconds			150%, transfer to bypass after 1 minute		
	>150%, transfer to bypass after 200ms			>150%, transfer to bypass after 200ms		
FREQUENCY REGULATION	50/60Hz±0.1%					
SYNCHRONIZED RANGE	Settable, ±0.5Hz ~ ±5Hz, default ±3Hz					
SYNCHRONIZED SLEW RATE	Settable, 0.5Hz/S ~ 5Hz/s, default 1Hz/s			Settable, 0.5Hz/S ~ 3Hz/s, default 0.5Hz/s		
CREST FACTOR	3:1					
BATTERY AND CHARGER						
BATTERY RATE VOLTAGE	±240VDC					
BATTERY CONFIGURATION	40(20+20) blocks of 12V (settable from 36 to 44 blocks)					
CHARGER VOLTAGE PRECISION	1%					
CHARGER POWER	max 18% of rated active power			max 20% of rated active power		
EFFICIENCY						
NORMAL OPERATION	>95%					
BATTERY OPERATION	>95%					
SYSTEM						
DISPLAY	LED + LCD + Touch screen					
INTERFACE	Standard: RS232, RS485. Option: Dry Contact; SNMP, AS/400, Parallel kit, Battery Cold start, Dust Filter			Standard: RS232, RS485, USB, Dry Contact; Option: SNMP, AS/400, Parallel kit, Battery Cold start, Dust Filter		
ENVIRONMENTAL						
OPERATION TEMPERATURE	0 ~ 40 °C					
STORAGE TEMPERATURE	-40 ~ 70 °C					
RELATIVE HUMIDITY	0 ~ 95% Non condencing					
NOISE (1 METER)	<55dB			65dB @ 100% load, 62dB @ 45% load		
ALTITUDE	<1000m, Load derated 1% per 100m From 1000 ~ 2000m					
STANDARDS*						
GENERAL SAFETY	IEC62040-1/ EN50091-1-1					
ELECTROMAGNETIC COMPATIBILITY (EMC)	IEC62040-2/EN50091-2					
METHOD OF SPECIFYING THE PERFORMANCE	IEC62040-3/ EN50091-3					
PHYSICAL DATA						
PROTECTION	IP20					
DIMENSION (W*D*H,MM)	540*690*1240(Internal battery)			600*980*950 (external battery)	600*980*1400 (external battery)	
WEIGH(Kg) EMPTY	106	118		176	231	266

*It is recommended to refer to the product manual and settings compliant with legal standards
Note: technical specifications and data could be changed without notification

Authorized distributor:

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website: www.greenergysolutions.be
email:info@greenergysolutions.be
tel: +32(0) 484/41.80.66