Digital Energy Uninterruptible Power Supplies (UPS)

Product Overview
For more than a century, GE has led the way with innovative technologies and groundbreaking quality initiatives – literally helping to power the world. Along the way, through the development and delivery of state-of-the-art products and uncompromising service, GE has also built a legacy as a leading supplier of critical power solutions.

To bridge the gap between the traditional utility grid and the needs of today’s business, GE offers a complete portfolio of critical power products and services, from desktop Uninterruptible Power Supply (UPS) units to engineered power systems, and from basic UPS and battery maintenance to comprehensive service contracts covering every aspect of your power quality and delivery system.

At GE, our goal is simple – to never let power quality stand in the way of our customers’ success. That’s why GE is committed to continue developing and delivering

**UPS technology for the digital world**
UPS topologies
a brief overview

Passive Standby

The passive standby system channels the incoming mains power, via a filter, directly to the load. As soon as the incoming power is outside tolerance, the UPS switches to battery operation.

GE's solution: none

Line-Interactive

The line-interactive system channels the incoming mains power, via an AVR - Automatic Voltage Regulator, directly to the load. Compared to off-line, the system can handle much larger voltage variations before switching to battery operation.

GE's solutions: ML Series, Match

On-Line - double conversion
VFI - Voltage and Frequency Independent

Input and output are completely separated: the output converter (DC to AC, or AC to AC) continuously supplies the critical load with a completely new, regulated and clean sine wave output. No switching takes place when the incoming mains power gets outside tolerances. A bypass switch automatically transfers the load to the mains when the output converter is unable to supply the load (e.g. due to overload or overtemperature).

GE's solutions: VH Series, GT Series, LP Series, SitePro, SG-CE Series
GE Digital Energy's VH Series of UPS is a true VFI (Voltage & Frequency Independent) on-line double conversion, intelligent and high-performance UPS designed for all mission-critical applications. The UPS range is designed with a unique failsafe bypass providing maximum security and reliability for the user.

The VH Series range of UPS has been designed also for maximum site flexibility. With an attractively designed modern common tower and/or 19-inch rackmountable design, the UPS can adapt as network configurations adapt.

For communication, the VH Series is provided with USB and contact interface as standard; an easy to install option card is available with RS232, USB and relay. A web-enabled SNMP card is available as an option.

features & benefits
- Voltage and frequency independent (VFI) double conversion technology eliminates power reliability problems
- Unique failsafe internal bypass for continued operation even in the event of UPS failure
- Tower and/or 2U rack design for all ratings; all support elements included
- Simple battery replacement without disruption to supported load
- Versatile communication with USB and contact interface, RS232, relays and SNMP
- Wide input voltage window minimising battery usage
- Excellent short circuit protection
- GE's unique Superior Battery Management enhancing battery performance and lifetime
- Easy plug-in connection of battery packs for extended run-time
- Remote monitoring and control for unmanned or isolated sites
- Can be used as a 50/60Hz frequency converter
- Phase neutral reversal protection
- High overload capability
- Precise output frequency regulation
- High efficiency

applications
- Mission-critical servers
- Telecommunication equipment
- Local area networks
- Internet servers
- Network components
- Process and telecom industry equipment
GT Series
1-phase
6-10 kVA

With the GE Digital Energy's GT Series, your mission-critical equipment is protected from any fluctuation in your power source, enabling you to concentrate on your core activities. The GT Series is a true VFI (Voltage & Frequency Independent) on-line double conversion, transformerless, intelligent and high performance installable UPS.

This UPS provides critical power protection to suit a wide range of IT Networks, Telecom and other applications. The GT Series is easy to install and service, and is designed for maximum site flexibility. With an attractively designed modern common tower and/or 19inch rack mount cabinet,

the UPS can adapt as network configurations adapt. Both the power and redundancy of the system can be expanded by adding units (N+2) to create a parallel system. For communication, the GT Series is equipped with RS232 and contact interface as standard, a web-enabled SNMP card is available as an option. Operation in remote or unmanned sites is simple to coordinate with the standard remote monitoring functionality. No load shutdown, automatic frequency detection, settable minimum start-up runtime and extended runtime availability with optional battery packs are additional features of the GT Series UPS.

features & benefits

- On-line double conversion technology assuring ultimate Power Quality
- (Remote controlled) programmable computer shutdown
- Combined tower/rack for maximum flexibility
- Wide input voltage window to minimize battery operation
- Small footprint & low weight, ideal for IT applications or sites with limited available space
- Hot swappable batteries for easy battery replacement without dropping the load
- Simple installation of paralleling cable for expanded power and redundancy of the system
- Backfeed protection as standard providing optimal safety for installation
- Frequency converter (50Hz – 60Hz) also in parallel operation
- All components for Rack, Tower & Parallel installation are included with the UPS

applications

- Computer and data centres
- Call centres
- Telecommunications equipment
- Security systems
- Financial institutions
- Fixed and mobile voice and data transmission
LP 11/31T/31 Series
1-phase
3-20 kVA

The GE Digital Energy's LP Series provide critical power protection for many applications.

The LP Series is easy to install and service, optimised for the office environment. The robust design is also suitable for more traditional, industrial applications.

Both the power and reliability of the system can easily be expanded by adding units, creating a redundant system which has no single points of failure. This is achieved by utilising GE's unique Redundant Parallel Architecture™ (RPATM) technology.

Designed as a true VFI (Voltage and Frequency Independent) UPS, the LP Series is an on-line double conversion, intelligent and heavy duty UPS. The VFI concept ensures the highest level of protection, even under the toughest conditions.

LP Series - features & benefits
- Low input current distortion and high input power factor eliminates need for costly filters or oversized generator
- Small footprint and wheels
- Advanced technology enabling silent operation
- High output power factor allows for optimal sizing of UPS
- Low output voltage distortion
- Superior Battery Management
- ECO mode enables automatic energy savings under stable power conditions

applications
- Computer and data centres
- Call centres
- Manufacturing and process control units
- Medical equipment and healthcare facilities
- Transportation infrastructure
- Security systems
- Financial institutions
- Fixed and mobile voice and data transmission

LP 33 Series
3-phase
10-120 kVA

The GE Digital Energy's LP 33 Series is a highly reliable transformerless 3-phase UPS system providing power protection for a wide range of critical applications from medical to datacenters and telecommunication.

The 40-120 product range is available as two versions:
- Active IGBT Rectifier with a THDi of <9%.
- Active IGBT Rectifier Clean Input Module with a THDi of <4.5% (<3.5% @ 75% load).

The LP Series UPS offers reliability at its best. The UPS is equipped with a redundant power supply ensuring instantaneous transfer to bypass in the event of a breakdown of the power electronics. To further increase system reliability, 2 or more units can be connected in parallel. In this way a redundant fault-tolerant system is created with maximum power availability and reliability. The decentralized bypass offers maximum flexibility to the end-user for future expansion of the system.

LP 33 Series - features & benefits
- GE's clean input Active IGBT technology provides low input harmonics feedback distortion constant for all load levels from 20% to 100% load. This allows the user to save in the sizing of upfront UPS equipment: generator sets, cabling and circuit breakers. It also reduces the disturbance on nearby equipment without the need of additional filters.
- Input/Output terminals are easily accessible from the front, as are all other serviceable parts.
- EMC class A filters are installed as standard (at no additional cost) in the UPS, ensuring the reduction of interference with other equipment supported in the application (telecom, broadcasting...).
- The low footprint of the LP33 Series is best in class and provides the user with more space for other equipment.
- The output dynamic stiffness characteristic of the unit is particularly suitable in healthcare application where no voltage distortion with non linear load and no voltage variation with load steps are required.
SG Series 10-40 kW UPS is Here!
With High Efficiency and Clean Input Technology

GE Critical Power’s new SG Series* 10-40 kW PurePulse* Uninterruptible Power Supply (UPS) with IGBT rectifier provides mission critical facilities with highly reliable, efficient, uninterruptible power in a compact size.

**Key Features & Benefits**

- Clean input performance keeps your supply network clean (<3% THD, 0.99 input PF)
- Enhanced output performance with unity (1.0) Output Power Factor
- High efficiency in double conversion operation
- Front access for all service and maintenance reducing operational footprint
- Excellent dynamic response preventing the need for oversizing in case of pulsating loads
- Inverter zig-zag isolation transformer provides better short circuit capability and load galvanic separation
- Maintenance bypass integrated in UPS cabinet, no need for external switches

For more information on the SG series, please visit: www.gecriticalpower.com

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**SG Series 10-600 kVA UPS**

**Delivering Best-in-Class Efficiency with eBoost Technology**

GE’s SG Series is one of the most efficient and reliable Three Phase UPS Systems, providing best-in-class output performance and critical power protection for your data center needs. The SG Series UPS solutions are designed and optimized to provide high efficiency at part load conditions. The SG Series UPS assures low input current harmonic distortion and best-in-class output voltage regulation and dynamic response. This helps customers save operational costs while implementing environmentally-friendly solutions.

**Low total cost of ownership**
- High efficiency in double conversion up to 94% and eBoost mode operation up to 99%.
- eBoost operation minimizes efficiency losses providing annual power & cooling savings up to $300k for 5MW data center
- PurePulse IGBT rectifier keeps your supply network clean and provides advantages by reducing size of circuit breaker, cables and generator.

**Easier Installation and Configuration Flexibility**
- True front access for operation and maintenance, reduces mean time to repair (MTTR)
- Smaller size reduced installation and operational footprint
- Redundant Parallel Architecture for reliability, redundancy & scalability
- Parallel up to 6 UPS Modules

**High Performance and Availability**
- Enhanced output performance to protect and supply modern IT load with lagging-leading power factor (0.9) without derating
- Excellent dynamic performance and low output voltage distortion
- Inverter zig-zag isolation transformer provides better short circuit capability and load galvanic separation

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**Key Features**

- Output power factor: 1.0 (10-40 kVA), 0.9 (60-600 kVA)
- True front access design
- Smaller footprint
- Inverter Zig-Zag isolation transformer
- Extremely low output voltage distortion
- Superior battery management
- Intelligent Energy Management integrated (IEMi)

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Connectivity Solutions
GE Data Protection

Power Diagnostics
With GE's Power Diagnostics it is possible to combine the remote monitoring and diagnostic core product IRIS web and dedicated services in a comprehensive solution to minimize risk and maintenance costs. 24x7 UPS monitoring, regular operational status reports, immediate alerting for alarms and critical events via SMS, e-mail, fax are just some of the characteristics of the RM&D solution. In particular the system is scalable and can be easily adapted to various configurations, while remaining safe through a multi-level security system.

Features

Data transmission
- Data download from GE UPS and 3rd party UPS, via IRIS communication, to GE power diagnostic centre
- Data collection of status values, settings and alarm & event logs
- Alarms and other critical events will be submitted automatically on event, all other values on a regular base (standard weekly) on a regular base or immediately on your request.

Data analysis
- Analysis of available data downloaded from UPS
- Analysis of critical situations, identifying critical trends
- Validating importance and priorities
- Generating status reports
- Preparing maintenance recommendation based on data analysis

Emergency information
- Informing customer about critical situation and faults
- Data are transmitted automatically from UPS to GE power diagnostic centre

E-Dispatching, intervention
- Send emergency information to local service organisation
- Co-ordination with client to inform that people arrive onsite
- Local service teams will be activated and sent to client site

IRIS offers various communication possibilities: analogue modem, GPRS or SNMP communication, flexible for every requirement.

Analogue/ISDN modem
- Efficient solution without GPRS functionality using InterLink 2.0 analogue
- Can be connected to the UPS during normal UPS operation without any risk
- Less installation time due to an integrated modem

GPRS
- The best and most efficient solution using InterLink 2.0 GPRS
- Can be connected to the UPS during normal UPS operation without any risk
- Ready to work after connection to UPS and mounting of antenna and power supply
- Best solution where only a small number of UPS are installed on the same site

SNMP gateway server
- Efficient solution for several UPS on the same site or connected with the same Intranet over SNMP
- Using existing customer Intranet and requires an internet connection
- SNMP gateway server will be installed locally to communicate with SNMP cards of UPS
- Secure communication over VPN
GE offers a comprehensive portfolio of power quality services including:

on site & emergency services
- 24x7 emergency hotline
- Installation, commissioning, start-up
- Repair, upgrade, retrofits
- Assessment, inspection, testing

service agreements
- Maintenance & service contracts
- Extended warranty
- Guaranteed response / intervention times
- Preventive and planned maintenance
- Resident technical services

spare parts and repairs
- Spare parts and repair services for optimum operating safety and reliability
- Replacement / return
- Web based parts supply
- UPS rental

support and remote services
- On-line technical assistance
- Remote monitoring & diagnostics
- Software upgrades
- Training
- Privileged access to online information

online support
- Online requests via “Support Central”
- As a registered “Support Central” user, your personal data are automatically entered in the input fields
- Requests are directly forwarded to the responsible support team

Whether you are a large corporation with multiple sites or a small business owner with a single location, GE will enable you to have a constant supply of clean and reliable power to keep your business up and running.

service coverage
GE has local offices in a number of countries around the globe and also a network of selected business partners, whose salespeople and service engineers combine expertise in our solutions with an in-depth knowledge of local market conditions.

GE's business partners, located in more than 80 countries around the world, use all that expertise and knowledge to adapt GE’s products and services precisely to their customers' needs.