GE
Critical Power

LP Series UPS

Uninterruptible Power Supply
3 - 40 kVA

GE imagination at work

UPS technology for the digital world

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, GE's portfolio covers 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.

The power of GE

GE is a diversified technology and services company dedicated to creating products that make life better from aircraft engines and power generation to financial services, medical imaging, television programming and plastics. GE operates in more than 100 countries and employs more than 307,000 people worldwide (2014).

The company traces its beginnings to Thomas A. Edison, who established Edison Electric Light Company in 1878. In 1892, a merger of Edison General Electric Company and Thomson-Houston Electric Company created General Electric Company. GE is the only company listed in the Dow Jones Industrial Index today that was also included in the original index in 1896.

GE is proud of its impressive track record for introducing leading edge products, accomplishing growth, having strategic customer relationships and a global presence as broad and expansive as its portfolio of products. GE is committed to maintaining a leadership position in all four of its company-wide initiatives (Six Sigma, Globalization, e-Business/Digitization and Services) to achieve maximum results, whilst embracing the values that are at the heart of the business - imagine, solve, build and lead.

UPS Product Technology

GE is a leader in the field of critical power protection. It's UPS Product Technology business designs, manufactures and delivers premium power quality products and related software products that ensure organisations all over the world enjoy a safe and managed power supply.

Protect your critical power application with a GE UPS – ranging from 400VA to 4.8MVA. Using state of the art technology GE has developed different UPS with high reliability and maximum application flexibility.

With a GE power solution in place, your mission-critical equipment is protected from any fluctuation in your power source, enabling you to concentrate on your core activities. Leave your critical power needs with GE, a reliable power quality supplier for more than 100 years.

The GE LP Series provides critical power protection for many different 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 ultilising GE´s unique Redundant Parallel Architecture™ (RPA™) 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.

Applications

- Computer and data centers
- 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

Complete range

- **LP 11 Series**
  Single phase input / single phase output
  3, 5, 6, 8, 10 kVA
  (5-10 kVA also available with 3 phase input)

- **LP 31 Series**
  Three phase input / single phase output
  8, 10, 15, 20 kVA

- **LP 33 Series**
  Three phase input / three phase output
  10, 20, 30, 40 kVA

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

Full functionality

- Multi-language LCD, easy to use
- Excellent overload behaviour, withstands toughest conditions
- Cold start function (start-up without mains present)
- Manual bypass integrated in UPS
- Equipped with RS232 serial port
- Fits well in office environment
- Frequency converter

Superior battery management

- Automatic battery test, prevents "surprises"
- Battery calibration test, enables tracking of battery aging
- Temperature compensation, prevents overcharging
- Load dependent end-of-discharge voltage and no load shutdown prevents deep discharge of batteries

- *No surprises*
- *Prevents damage*
- *Extends life time of batteries*

Applications

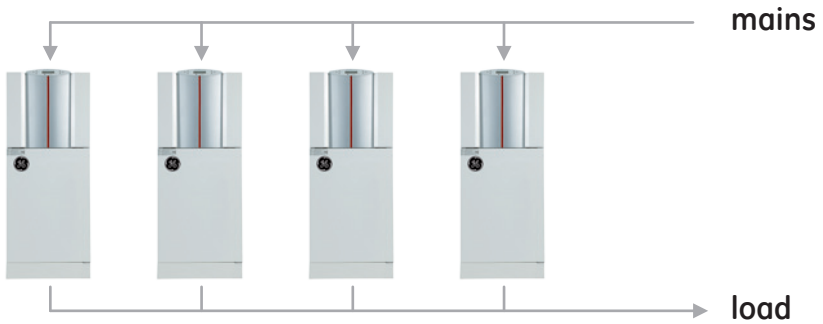
- Computer and data centres
- Call centres
- Manufacturing and process control units
- Medical equipment and healthcare facilities
- Transportation infrastructure
- Security systems
- Financial institutions
- Fixed and mobile voice and data transmission

Options

- SNMP plug in card for integration into networks
- Potential free alarm contacts
- Matching battery packs for extended back up times
- Redundant Parallel Architecture™

RPA™ Redundant Parallel Architecture™

GE provides a unique technology called Redundant Parallel Architecture (RPA) that can parallel Uninterruptible Power Supply (UPS) modules with true redundancy. With RPA, there is no need for external electronics or switches to control the UPS modules in the parallel system. One of the UPS modules in the system arbitrarily takes a leadership role, while the other UPS modules have access to all control parameters. If one UPS fails to operate, the load is automatically redistributed among the others. If the lead UPS fails to operate then a different UPS automatically takes on the leadership role. The RPA systems are designed to have no single points of failure, ensuring the highest level of power protection for critical loads.



Many other so-called redundant UPS offerings have one critical shortfall, in that they have critical components that are not redundant. RPA technology provides complete redundancy of all critical components and there are no single points of failure. RPA technology allows UPS system expansion not only to increase capacity but also to improve the reliability of the power provided to critical loads. For mission critical applications, RPA technology provides true redundancy for the highest reliability.

- **RPA Configuration** provides complete redundancy of all critical components and allows paralleling of up to four units for increased load capacity. It ensures excellent dynamic behaviour based on output voltage load sharing. This provides the highest reliability and availability for mission-critical applications
- **Modular design** allows for system upgrades to meet future power needs without any interruption to the critical load or transfer to bypass
- **Easy to install and maintain**
- **Scaleable design** allows for **efficient use of capital**
- **Peer-to-Peer architecture** where any UPS can be the “logic leader” ensuring **no single points of failure**

Data protection software and connectivity solutions

GE's UPS come standard with two software packages: UPSMAN and RCCMD.
UPSMAN is a complete protection software providing a graphical interface for monitoring the UPS. It communicates with the UPS via the standard RS232 interface or via an optional SNMP plug-in card. If the UPS is not able to supply the required power the software enables the computer on which it is installed to shutdown gracefully in order to avoid data corruption. UPSMAN can also act as a "master computer" which can send remote shutdown commands to multiple remote computers/servers in case of a UPS failure. These remote computers/servers, centrally controlled by a computer running UPSMAN, need to run on their turn the light software package named RCCMD.

UPSMAN - Description

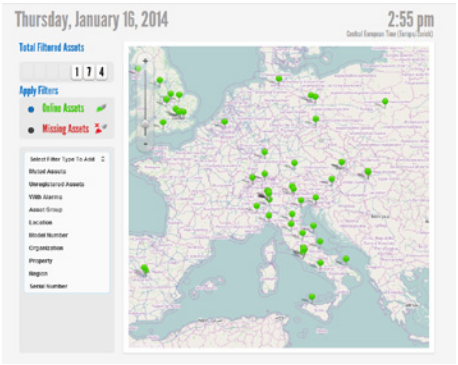
- Data Protection Software
- Supports RS232 & SNMP communication
- Free software license
- Written in native language
- Supports most popular OS, including virtualization

RCCMD - Description

- Light background protection software
- Native solution for more than 35 OS
- React on shutdown commands

As an alternative for the solution above, with a "master computer" controlling multiple remote computers in a network, the UPS can be equipped with an SNMP card. This card sends the required remote shutdown commands directly to the remote network computers, which again all run the software RCCMD.

GE's iUPSGuard is a remote monitoring solution for UPS, providing status monitoring and alarm notification that supports all GE UPS product lines, anytime, anywhere. iUPSGuard provides current and detailed information about UPS operation, including its configuration, internal alarms, automatic reporting and operating conditions over the web.



- Highly secure and efficient data transmission
- SSL encrypted unidirectional communication
- Firewall friendly – no changes required to firewall settings or proxy servers providing easy deployment and addressing compliance objectives
- Supports various communications including IP and GPRS

Technical specifications

Model	LP 3-11	LP 5-11/ LP 5-31T	LP 6-11/ LP 6-31T	LP 8-11/ LP 8-31T	LP 10-11/ LP 10-31T	LP 8-31	LP 10-31	LP 15-31	LP 20-31	LP 10-33	LP 20-33	LP 30-33	LP 40-33
Rating (kVA / kW)	3/2.4	5/4	6/4.8	8/6.4	10/8	8/6.4	10/8	15/12	20/16	10/10	20/20	30/30	40/32
Battery (V/Ah)	144/7	240/7	240/7	240/12	240/12	2x240/7	2x240/7	2x240/14	2x240/14	2x240/7	2x240/14	2x240/21	2x240/21
Typical backup time 50 / 100% load (min.)	25/10	25/10	20/8	29/11	22/8	35/14	25/10	30/13	25/10	26/10	26/10	26/10	26/10
Enclosure	A	A/B*	A/B*	C/D*	C/D*	E	E	E	E	F	F	G	G
Net weight incl. batt. (kg)	85	110/180*	115/185*	165/270*	170/275*	240	240	345	350	247	327	520	520
Input voltage (Vac)	172-285	172-285/ 340-470*	172-285/ 340-470*	172-285/ 340-470*	172-285/ 340-470*	300-470	300-470	300-470	300-470	324-478	324-478	324-478	324-478
Input power factor	.99	.99	.99	.99	.99	.95	.95	.95	.95	.98	.98	.98	.98
Input frequency (Hz)	40-70	40-70	40-70	40-70	40-70	45-65	45-65	45-65	45-65	45-65	45-65	45-65	45-65
Output voltage (Vac)	220/230/240 (user selectable)									380/400/415 (user selectable)			
Output voltage regulation	+/- 1%												
Output frequency (Hz)	50/60												
Environment	IP20 (IEC 60529)												
Humidity	95% non-condensing												
Ambient operating temperature	0 - 40 °C (32 - 104 °F)												
Audible noise	40-55 dB(A) load and temperature dependent												
Standards safety	EN 50091-1; EN 60950; IEC 950												
Protection degree	IP20												
Standards EMC	EN 50091-2 / IEC 62040-2												
ECO mode	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SBM**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Boost charging	✓	✓	✓	✓	✓								
Potential free contacts	optional	optional	optional	optional	optional	✓	✓	✓	✓	✓	✓	✓	✓
RS232	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
RPA (optional)	✓	✓	✓	✓	✓					✓	✓	✓	✓
Plug-in SNMP card (optional)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Battery extension (optional)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Backfeed protection	optional	optional/ ✓*	optional/ ✓*	-/✓*	-/✓*	✓	✓	✓	✓	✓	✓	✓	✓
Separate bypass input						✓	✓	✓	✓	optional	optional	optional	optional
UPSMAN + RCCMD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
iUPSGuard (optional)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Specifications subject to change without prior notice

enclosures (hxwxd, mm)

A: 537 x 313 x 590
B: 855 x 313 x 590
C: 680 x 313 x 720
D: 995 x 313 x 720
E: 1190 x 410 x 890
F: 1310 x 500 x 780
G: 1310 x 660 x 780

LPX-11 = Single phase in/single phase out
LPX-31 = Three phase in/single phase out
LPX-33 = Three phase in/three phase out
X = kVA rating
T = Transformer

* = LP-11/ LP-31T respectively
** = Superior Battery Management

Certified Quality System ISO 9001

CE

GE
Industrial Solutions

GE Industrial Solutions is a first class global supplier of low and medium voltage products including wiring devices, residential and industrial electrical distribution components, automation products, enclosures, switchboards and uninterruptible power supplies. Demand for the company's products comes from wholesalers, installers, panelboard builders, contractors, OEMs and utilities worldwide.

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