



**YOUR
GLOBAL
PARTNER**

gutor.com

GUTOR

YOUR GLOBAL PARTNER

Our Company

Gutor is the leading international manufacturer of uninterruptible power supply (UPS) systems for industrial applications. The company's head office is in Wettingen (Switzerland), close to Zurich Airport.

Our global business and service networks span across the globe, with branches in Brazil, China, Germany, India, Japan, Malaysia, Mexico, Russia, Saudi Arabia, the United Arab Emirates, and the U.S.A.

Our focus

Gutor™ UPS systems are designed to deliver secure power in the most demanding industrial environments, such as the energy and chemicals, nuclear power, power and grid, mining, metals and minerals, water and wastewater, transportation and other industrial applications.

These industries all share stringent requirements, such as:

- Robust equipment that can withstand harsh environmental conditions
- High degrees of customization
- Absolute reliability and highest quality

Gutor UPS systems meet strict safety and quality requirements to ensure they deliver best-in-class secure power solutions. They are qualified according to the Institute of Electrical and Electronics Engineers® (IEEE) standard as "Category 1E material", and often undergo seismic and environmental qualifications according to accepted procedures.

“Our focus is to ensure absolute safety for your business.”

Our production facilities

Gutor operates three production facilities to ensure faster delivery to our customers worldwide.

Our first factory is located in Switzerland and features a competency center for nuclear applications. In 2008 we opened a second facility in Kuala Lumpur, Malaysia, which ensures minimal lead times for our customers in Asia and the Middle East. We're proud to deliver first-class solutions from our Malaysian facility to many of our international customers, including BP, Chevron®, Chiyoda, Conoco® Philips, Dow Chemical™, Exxon Mobil™, GASCO®, KNP, KOC, Petro Vietnam, PETRONAS™, Qatar Energy™, Qatargas, Shell™, Sabic™, Saudi Aramco™, Total, and many others.

Since 2007, our Beijing factory has supplied systems for energy and chemicals, power and grid, mining, metals and minerals, chemical applications in China. The factory is also approved to supply nuclear facilities, and in 2011 we shipped our first system to a Chinese nuclear plant.

All Gutor production facilities are ISO 9001 certified. Our facilities can handle large international projects and smaller projects alike, with the same high standard.



INTRODUCING THE GUTOR SECURE POWER SOLUTION

At the center of every project lies a Gutor UPS system recognized worldwide for its reliability, quality, and ability to withstand harsh environments.

The Gutor process does not begin and end with the sale. We provide a holistic secure power solution based on your specific application.

Every step of a Gutor UPS' life cycle is custom-tailored to meet your specific needs — from pre-sales and design through to final testing and after-sales services.



PROTECT YOUR BUSINESS

Energy and chemicals

In the energy and chemicals industry, secure power means more than just keeping business operations running; an interruption in power often endangers the life of workers and has serious environmental consequences.

For over 75 years, our core market has been the energy and chemicals industry, providing us with a deep understanding of your needs. As a result, we have been able to orient our products and organization around your needs. We offer you:

- Secure power solutions and UPS systems tailored to each customer's unique requirements
- Technical consulting on battery sizing, selection, and the overall topology of the electrical system
- A global organization capable of handling large international projects
- Full compliance and expertise in various standards (Including "Shell DEP") and best practices
- A global service team capable of reaching the even most remote locations within a guaranteed response time

Operational areas of expertise:

- Offshore installations
- Pipeline control centers
- Gas collection points
- Production sites
- LNG & GTL sites
- Pumps
- Control equipment
- Fire-extinguishing systems
- Emergency lighting
- HVAC installation, and more

Our extensive experience in the nuclear market includes:

- Over 2,200 systems supplied to nuclear plants
- Systems supplied to over 135 reactors in 22 countries
- Systems supplied to various reactor types, such as ABWR, AP1000, BWR, Candu PHWR, CPR, EPR, PHWR, PWR, and VVER



Nuclear industry

The nuclear industry is a very demanding market where equipment must precisely meet technical specifications, quality assurance, and documentation requirements. The equipment must also meet the highest standards of performance and reliability. For this reason, we have assembled a team of highly skilled and experienced engineers dedicated to delivering customized solutions for our nuclear industry customers. The Gutor nuclear team has provided secure power solutions to nuclear facilities for over 30 years.

Our nuclear team supports you with:

- Helping size systems
- Explaining features, benefits, and options
- Conducting field surveys for the replacement of system equipment
- Providing budgetary estimates and preliminary drawings
- Managing all project aspects, from design reviews through the commissioning of systems

Gutor UPS systems designed for nuclear plants:

PxW — Double conversion UPS
WxW — Inverter system
SDC — DC charger



Power and grid

Secure power solutions are essential in power and grid plants, where power losses can lead to costly interruptions in service and safety concerns. Because we have been supplying the power and grid industry with fully customized products for over 40 years, we have a deep understanding of your needs.

Gutor secure power solutions are offered to coal and gas-fired, hydro-electric, thermal, and geo-thermal power plants.

Gutor solutions for power plants include:

- Inverters
- DC chargers
- Switch-mode power supplies
- UPS
- Batteries
- DC-DC converters
- Stabilizers
- Special distributions

More industries

Our expertise extends to these other industries:

- Transportation
- Mining, metals and minerals
- Water and wastewater
- Other industrial applications

These applications rely on a safe and stable power supply. They also demand a high degree of flexibility, and the ability to operate in harsh environmental conditions. Our solutions ensure that your production processes and safety systems run safely and smoothly.








MEET OUR PRODUCTS AND SOLUTIONS

Gutor stands for high quality and absolute reliability. Our products are the result of over four decades of experience, expertise, and careful attention to quality.

The Gutor product range is designed to support industrial applications. Our experts have deep technical know-how at all levels and strive to design each system to meet your unique needs.

“Our UPS systems are engineered to withstand the toughest environments.”

Gutor Industrial AC & DC UPS System

Gutor UPS Systems	Gutor Inverter Systems	Gutor DC Supply Systems / Battery Chargers	Gutor Modular Series	
 <p>Gutor PXP 5-160 kVA 1&3 phase output</p> <p>Heavy-industrial AC UPS System with PFC Rectifier Technology</p>	 <p>Gutor PxW 5-750 kVA* 1&3 phase output</p> <p>Heavy industrial AC UPS System– Thyristorcontrolled Rectifier with IGBT PWM Inverter</p>	 <p>Gutor WxW 5-750 kVA* 1&3 phase output</p> <p>Heavy-industrial Inverter System with IGBT-PWM Technology</p>	 <p>Gutor SDC 24-220 V 25-2000 A*</p> <p>Heavy-industrial DC UPS System with Thyristorcontrolled Rectifier</p>	 <p>Gutor Modular</p> <p>New generation of Industrial Modular AC & DC UPS for Low Rating</p>
Integration of Auxiliary Products				

* Higher ratings for UPS & DC charger available on request

Well suited for a wide range of industrial applications



Power and Grid



Transportation



Water and Wastewater



Other Industrial Applications



Energy and Chemicals



Mining, Metals and Minerals



Nuclear



GUTOR MODULAR INDUSTRIAL MODULAR AC & DC UPS SYSTEMS

Designed for harsh environments

Critical systems operating in harsh environments need to be protected for maximum uptime. Gutor Modular is an industrial grade UPS built with robust design to withstand high demanding conditions.

- Protects against electrical outage from upstream thanks to its input surge protection and galvanic isolation
- The short circuit capability allows it to be installed close to medium voltage (MV) or low voltage (LV) substation
- Industrial enclosure with unique framework design increases robustness and protection
- Ingress protection can be upgraded up to IP42 - which protects against the intrusion of solid objects greater than 1mm and water spray less than 15 degrees from vertical
- Optional dust filters are available to enhance its dust protection
- Has 20 year design lifespan

Enhanced system availability

To always keep your power on, Gutor Modular enhances your system availability and strives to converge toward an error-free state.

- N+1 or N+x design increases the redundancy of the system
- All power modules can be swapped without interrupting the load. This live swap concept is tested and validated in line to the stringent offer safety review process

Flexible and scalable design

With its agile platform, Gutor Modular provides you the flexibility to scale your system to your exact needs.

- Different system configurations are available
- 1ph+N or 2ph (175-277 VAC) input as standard. Connection with 3ph input is available as an option
- Ready for different battery technologies such as lead acid (valve regulated lead acid and vented lead acid), NiCd and Li-Ion
- VRLA battery can be integrated into one cabinet to achieve footprint optimization
- Integrated output distribution breakers

Gutor Modular integrates all the key functions into one cabinet; reduces your power protection footprint by 73% compared to industry average.

The key benefits of the all-in-one-box design:

- Most compact footprint at only 0.4m²
- Simplifies the installation with preconfigured system before delivery
- Easy maintenance with front access
- No shadow footprint

	Industry average	Gutor modular
Square footprint	1.5m ²	0.4m ²



GUTOR XXW AND SDC – INDUSTRIAL- GRADE UPS & DC SYSTEMS FOR THE HEAVIEST INDUSTRIAL APPLICATIONS

Flexibility

- Wide range of input and output voltage
- The rectifier and inverter components are independently sized
- Strong chargers support various battery types and address long backup time

Robust design

- Transformer base UPS giving full galvanic isolation on double conversion line
- Robust industrial enclosure up to IP42 / NEMA 2*
- Peak spectral acceleration up to 1.0 g*
- Operation temperature up to 55°C (with derating)
- Printed circuit boards are conformal coated
- Tinned copper bars for harsh environment are available as an option
- Higher options available upon request

Reliability

- Over 20,000 systems installed worldwide with excellent quality record
- High Mean Time Between Failures (MTBF)
- Supports output load up to power factor 1
- Long product lifetime with minimal servicing required
- Parallel or redundant capable to increase availability

Smart communication

- Display with 7 languages
- Relay board, 16 fail-safe NO/NC contacts
- A wide communication protocol allows the systems to be seamlessly integrated into your monitoring system
 - Freely programmable alarms and meters
 - Communication via modbus, TCP / IP, IEC 61850, RS485
 - Web interface for remote monitoring
- Cybersecurity according to IEC62443



GUTOR PXP INDUSTRIAL AC UPS WITH PFC RECTIFIER

Reliability

- Gutor PXP is backed by a large installation base with many years of proven field reliability
- Its design allows for decentralized control architecture
- Fans are redundant and individually monitored

Footprint optimization

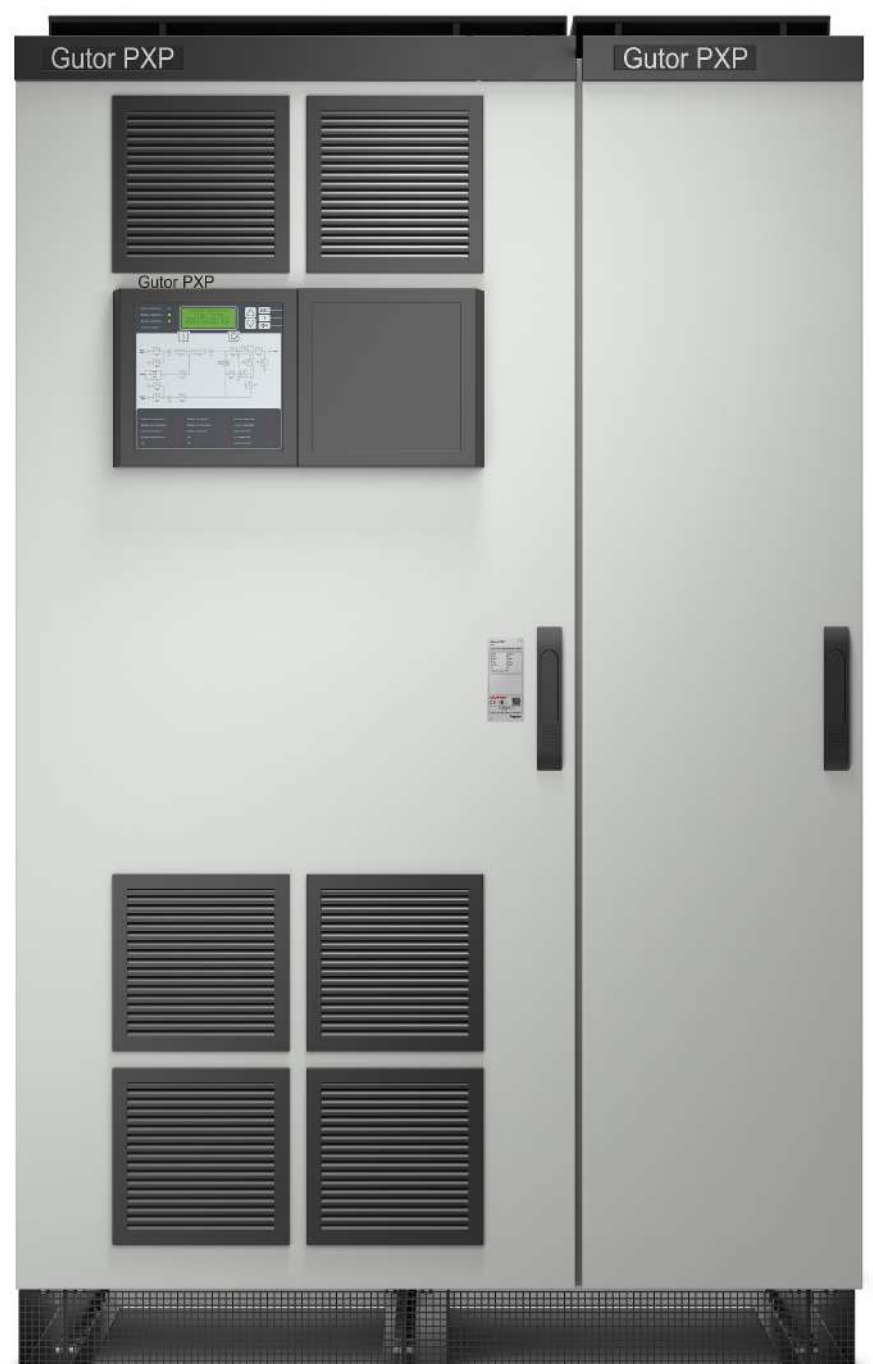
- Input rectifier with PFC eliminates the need for additional harmonic filters
- Galvanic isolation management – transformers are only used when required
- Front access for operation and maintenance reduces shadow footprint

Cost effective

- Up to 94 percent energy efficiency reduces losses and cooling requirements
- Low input THDi eliminates the need for and oversized diesel generator

Easy to monitor

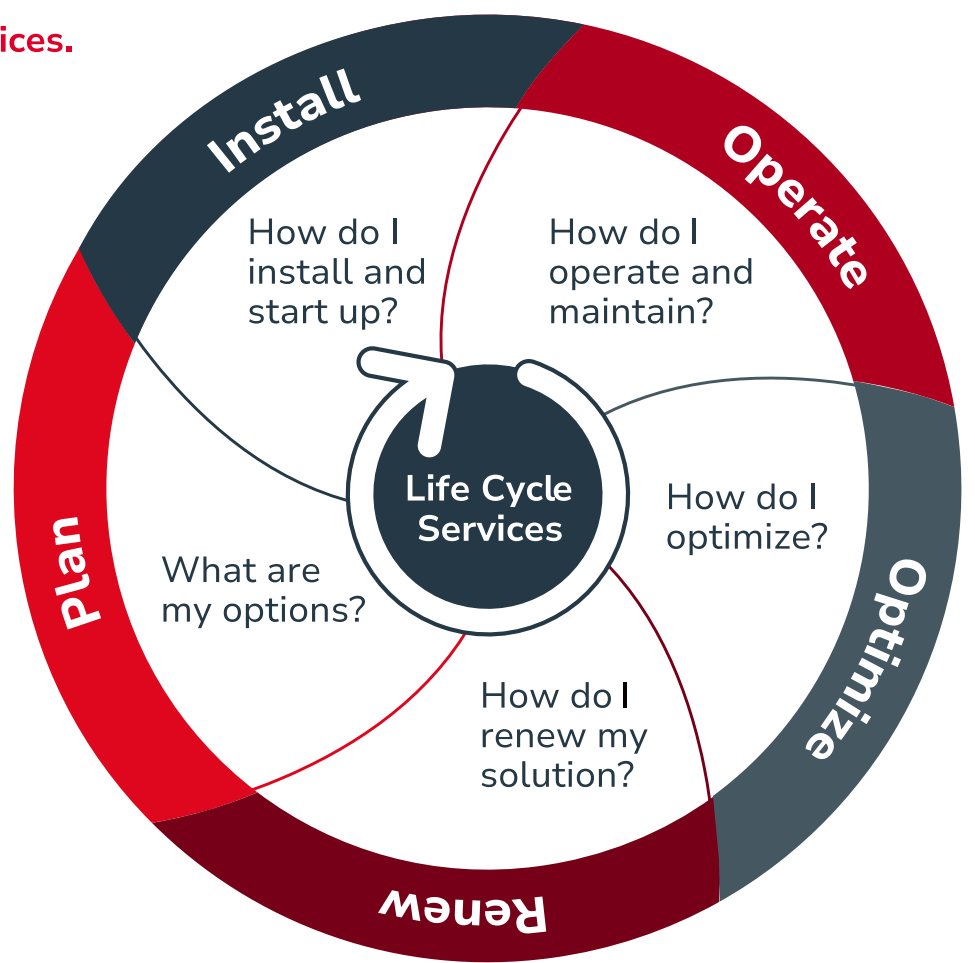
- With a wide communication protocol offer, Gutor PXP can be seamlessly integrated into your monitoring system
 - Freely programmable alarms and meters
 - Communication via ModbusR, TCP/IP, IEC 61850, RS485
 - Web interface for remote monitoring



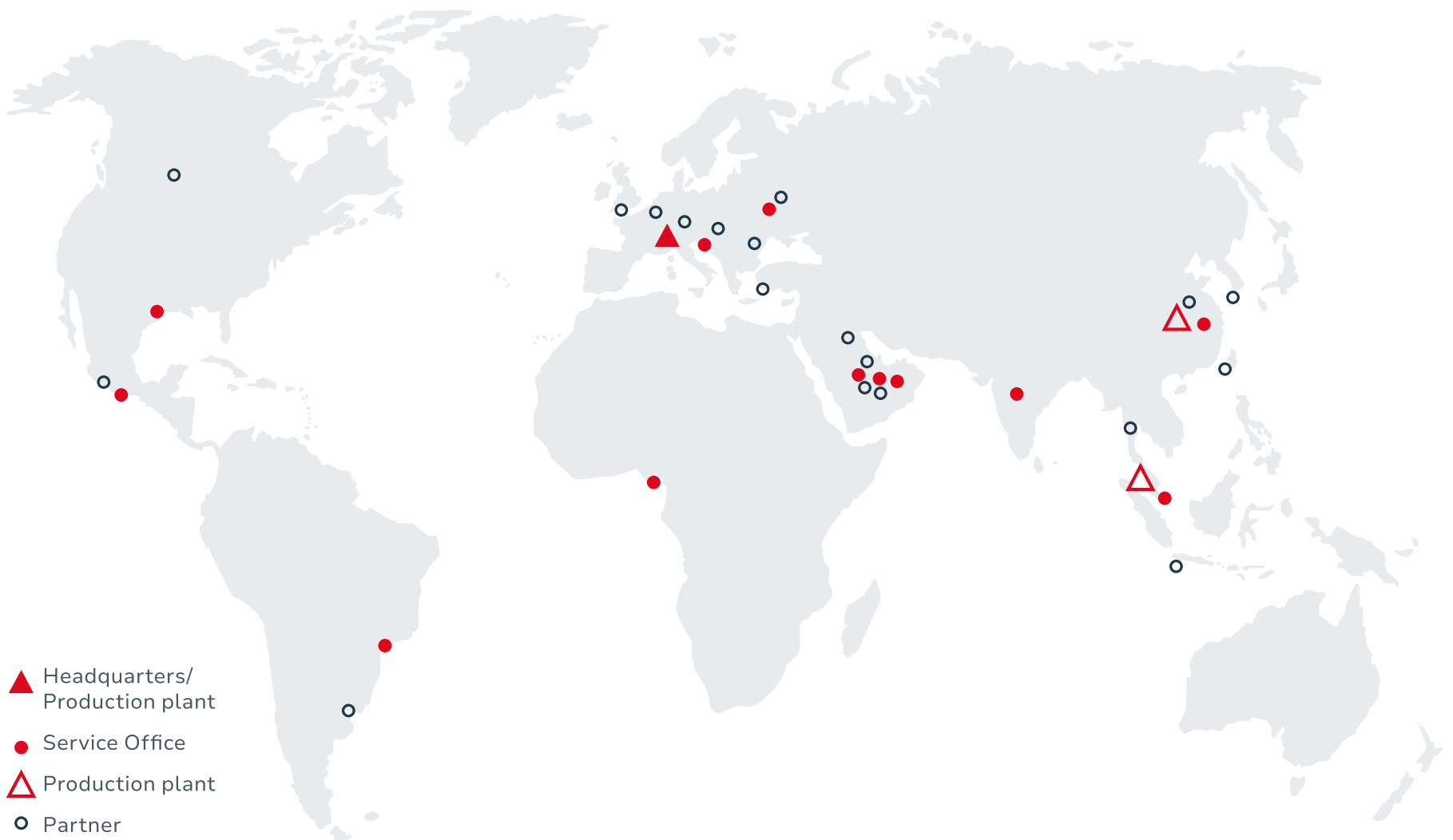
CUSTOMER SERVICES

Enhance peace of mind with comprehensive services.

As one of the world's leading UPS manufacturers, we ensure that our world-class power protection solutions are supported by a world-class services portfolio. Our portfolio consists of customizable services designed to focus on people and asset safety, power reliability, operational efficiency and security, maximizing your business and optimizing plant operations.



“Our worldwide service network ensures professional and comprehensive support starting from day one.”



Service contracts for enhanced peace of mind

In order to get the most availability and performance out of your Gutor UPS, you can bring it under a service contract. This contract ensures continual technical support, preventive maintenance, and repairs for a specified amount of time. We provide three levels of support that fit diverse business needs.

Benefits of having a service contract:

- Lasting peace of mind
- Expert services

- Continual customer support
- Reduced risk of system failure
- Easy organization of maintenance
- Faster access to your site via yearly site passes and security permits
- Prompt service and sales response time
- Special service and training rates
- Professional recommendations made by the OEM
- Up-to-date operational expertise

Services under contract	Remote 24 (ex call off)	Preventative plus	Preventative advanced	Preventative select
Applied manpower and spare part rates for contract and additional works	standard	reduced	reduced	reduced
Technical support and hot line 24h / 7d	✓	✓	✓	✓
On-site response under 72h*	option	✓	✓	✓
Comprehensive preventative maintenance visit		✓	✓	✓
Software update (excluding hardware)		✓	✓	✓
Priority access to the supply chain		✓	✓	✓
Assets management throughout their life cycle, recommendations		✓	✓	✓
Manpower for preventative replacement of SP with limited lifetime**			✓	option
Spare parts with limited lifetime**, excluding battery			✓	option
Manpower for corrective works (all or package of work days)				option
Hardware update		option	option	option
Spare parts for all corrective works (excluding battery)				option
Battery replacement		option	option	option
Load bank for battery discharge test (rent or sale)		option	option	option
Manpower for battery discharge discharge test		option	option	option
Additional preventative visit or inspection visit		option	option	option
"Manpower bundle" : 5, 10, 15, or 20 days of preventative or corrective works***	option			

* When available, upon confirmation. Geographical or specific restrictions may apply. Upgrades 24 hour on-site response time.

** Fans, capacitors, RAM2, PSU, DC CT, systems with easy access conditions

*** Package of work days to use during 1 year contract period. Not refundable or transferable. Subject to availability of FSE.

Gutor customer training

Gutor offers multiple levels of standard, customized and remote training courses to meet customer specific requirements for their systems installed on site to ensure safe operation, confident decision making and better efficiency during corrective maintenance.

Gutor system introduction

- Intro to Gutor UPS and Batteries
- UPS Topologies and Configuration

Gutor system care

- Operational mode of system
- Basic maintenance of UPS and batteries

Level 1: Operators

- Operational modes of Gutor system
- System principles
- Practical exercises for safe operation

Level 1-2: Maintenance

- Operational modes, system principles and function of major components
- How to perform maintenance and troubleshooting
- Replacement of components
- Settings

Level 1-3: Advance maintenance

- Operational modes, system principles and function of major components
- How to perform maintenance and troubleshooting
- Replacement of components
- Settings and calibration
- Maintenance and repair

Remote online training is available up to Level 1-2



Installation supervision and commissioning

These processes ensure the correct installation and functionality of UPS systems and batteries. We do a visual check of your UPS and its batteries, perform a functional check of the UPS, and also complete a battery discharge test.

Why request a Gutor engineer?

- Receive service from a trained and certified specialist with years of experience
- Receive proper documentation and reports
- Secure the continuity of Gutor's warranty

Spare parts

Keeping an up-to-date spare part inventory helps to ensure continuous uptime. Which spare parts do you need?

There are three main categories of spare parts:

- Start-up spares: fuses and parts that should be available during commissioning
- Critical spares: recommended for stock, as they are essential for trouble shooting and repair — these parts would cause a system shutdown upon failure
- Consumables: parts having a limited life span and must be replaced at specific intervals

What are the benefits?

- Minimize downtime
- Ensure lasting peace of mind
- Reduce inventory replenishment

Preventive maintenance

Preventive maintenance ensures safe and reliable operation via visual and functional checks of the system and batteries, as well as the replacement of parts with limited life spans.

Replacement cycles may vary based on environmental and site conditions and industry.

Updates, upgrade modifications and life extension services

Gutor offer variety of upgrades and modifications that is fully customized solutions throughout the UPS life cycle to meet your needs.

Updates and upgrades

- Software update (to latest revision) with latest features
- Controller upgrade (to latest revision) with latest new functions
- Upgrades to latest design rules or industry standards

Modifications

- Add Battery Management System (G.BMS)
- Add connectivity with Network Management Card (NMC)
- Change redundancy concept or system performance
- Increase autonomy time of the UPS solution
- Add Automatic Transfer System (ATS)
- Add active or passive harmonic power filters

Life extension services

- Prolong the UPS life cycle for up to 10 years
- Modernize the system with latest technical features
- Seamless implementation
- ECO friendly

Battery services

When, why and how to replace batteries

Batteries are one of the most critical parts of your secure power solution. The lifetime of batteries varies between 4 and 20 years, depending on the type of the battery, ambient conditions and degree of maintenance. A lack of maintenance leads to a shortened service life. Eventually, the battery bank will no longer be capable of supplying power to the load and must therefore be replaced. Because of this, we offer the following services:

Battery testing

- Discharge test recommended during yearly preventative maintenance

Battery replacement

- Replacement of individual battery cells or strings

Gutor Battery Management System (G.BMS)

- Cost effective
- Reducing manpower and lowering operational costs.
- Extends battery life
- Equalization, a patented balancing voltage process, regulates the voltage of all batteries to the target value for optimum operation within its design life time.
- Reduce battery turnover rate
- The capability in identifying underperforming cells, result in the ability to specify replacements and save resources.
- 24/7 monitoring
- Advanced programmable alarms and a remote monitoring system that gives you access to all measurements via TCP/IP.





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