



**COMPLETE
RANGE
OF
POWER
BACK-UP,
PROTECTION &
CONTROL
PRODUCTS,
SOLUTIONS &
SERVICES**



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INTRODUCTION

We are a leading provider of power protection products and service solutions including UPS, Battery Chargers, Inverters, UPDs, Static Var Generators, Static Stabilizers, Servo Stabilizers, Battery Banks and other Power conditioning equipment, software & accessories. In addition to products & services, our expertise also includes power quality monitoring and audits, VRLA battery maintenance, online battery monitoring.

Being a young & dynamic company established 2003, we have developed an enviable reputation based on our passion for quality & innovation for power protection technology, service excellence, complete customer satisfaction and confidence unmatched within the industry. Our customer base is quite vast & diverse which includes sector like Metals & mining, Telecommunications, IT, Defence, Mass transportation, Government, Power Generation, Power transmission & distribution, Oil & Gas, Public Health, Education, Healthcare, and other Manufacturing Industries etc.

All our products are designed based on the latest cutting-edge power electronic technologies and many of them are innovative in their own field of applications. Our products are fully digital, intelligent, and ruggedized industrial design to withstand adverse industrial environment.

ACTIVE IGBT RECTIFIER BASED INDUSTRIAL UPS SYSTEMS

SUPER + AR-31 SERIES: 5 KVA – 160 KVA
SUPER + AR-33 SERIES: 5 KVA – 500 KVA

Super+ series is a true online double conversion UPS system designed and manufactured to IEC standards based on the latest power electronic techniques using active front end IGBT based rectifier as an optimal and cost effective solution for the most demanding industrial applications. Designed for longer life, these systems feature PWM converter & inverter technology, DSP based digital controls, input/output galvanic isolation, parallel & hot standby redundancy options, rugged overload and fault clearing capabilities. For critical industrial applications, super+ series ensures increased reliability & security and provides excellent graphically generated large LCD man-machine user interface for monitoring the system status & parameters.



Salient Features

- IEC 62040 compliant
- Rugged industrial design
- Extremely high AC-AC efficiency
- True front access
- Digital control using DSPs
- Space vector PWM technology
- IGBT based active rectifier
- Near unity input PF
- < 5% input current harmonics
- Both end galvanic isolation
- Redundant fans
- Back feed protection
- Large graphic LCD display
- Fully rated static switch
- Manual bypass switch
- Bypass line SCVS+IT
- RS485, LAN or modbus / profibus
- True redundancy options
- Potential free contacts
- Custom built to highest standards





INDUSTRIAL BATTERY CHARGERS

DCPS SERIES

ENGINEERED FOR RELIABILITY MANUFACTURED FOR EASY MAINTENANCE

IGBT OR THYRISTOR BASED BATTERY CHARGERS AND DC CONVERTERS

The three phase AC input range of thyristor controlled battery chargers are designed for use with vented or valve regulated lead acid and nickel cadmium batteries. For applications where the load is permanently connected to the battery, the constant voltage, current limited DC output is used to simultaneously supply the DC load and recharge the battery.



Salient Features

- 24V, 30V, 48V, 110V, 220V or others on request
- Up to 1500 Amps capacity
- Dual, Standby, and parallel or any other custom schemes available
- Range of customized alarm, annunciators, and indications
- Industrially rugged designs
- IP-42 class panel protection
- RS 485 connectivity
- Modbus/Profibus/CAN communication protocol
- Digital Metering with touch screen options
- Customizable for variety of configurations
- Suitable for all types of batteries
- IGBT based active rectifier option available



STATIC FREQUENCY CONVERTERS

1 KVA – 500 KVA

Static Frequency Converters (SFC) convert supply frequency to a frequency that the desired load accepts for proper functioning. Typical applications are 50 to 60Hz or 83.3 conversion and 50 to 400Hz conversion, although conversion can be done to any frequency.

Designed based on the digital double conversion technology employing PWM power electronic technique using IGBTs. A rectifier converts the input frequency to DC and an inverter converts the DC to the required output voltage & frequency. A battery bank can be connected to the DC to achieve availability of power during short or long-term supply disruptions or severe disturbances. Static DSP based technology achieves high current capacity, storage efficiency and reliability with lower mean time to repair and running costs than traditional rotary technology.

We can also deliver aircraft Ground Power Unit (GPU) consisting of these SFCs which are practically a mobile unit that powers, or starts, aircraft, whilst on the ground. Ground Power Units usually provide either 28V DC or 115V, 400Hz AC, although certain aircraft will require a more specialized power derivative. Please also refer to our DC rectifier catalog for 28V DC rectifier supply units.



Salient features

- Static IGBT based Digital PWM Technology
- Conforms to IEC 62040-1-2-3
 - 3 phase input & 3 or 1 phase output
 - 60Hz, 83.8 Hz, 400 Hz or nay other
- DSP based user friendly diagnostics and controls
- High efficiency
- Multiple output voltage options available
- Low input harmonic distortion
- Input unity power factor
- IP-42 enclosure protection for harsh site conditions
- Indoor or outdoor enclosures
- Battery backup options available

DC RECTIFIERS FOR AVIATION INDUSTRY

1 KVA – 500 KVA

DC Rectifiers are designed to give continuous high quality DC power for helicopters, aircraft servicing in workshops, on the ramp or in the field, diagnostic work, pre-flight checks, charging onboard battery or for continuous powering of equipment during operations without draining onboard aircraft batteries.

We can also deliver aircraft Ground Power Unit (GPU) consisting of these DC rectifiers which are practically a mobile unit that powers, or starts, aircraft, whilst on the ground. Ground power units usually provide either 28V DC or 115V 400Hz AC, although certain aircraft will require a more specialized power derivative. Please also refer to our SFC catalog for 400Hz, AC supply units.



Salient features

- Static IGBT based Digital PWM Technology
- Conforms to IEC 62040-1-2-3
- DSP based user friendly diagnostics and controls
- High efficiency
- Multiple output voltage options available
- Low input harmonic distortion
- Input unity power factor
- IP-42 enclosure protection for harsh site conditions
- Indoor or outdoor enclosures

K-RATED TRANSFORMERS

1 KVA – 20 KVA, SINGLE PHASE
1 KVA – 500 KVA, THREE PHASE

Our K-Factor transformers are designed to reduce the heating effects of harmonic currents created by nonlinear loads that are present in today's industrial, commercial social or household infrastructures.



Salient Features

- Energy efficient
- Conductors sized to withstand the selected K-rated loads
- Available up to K-30 rated transformers
- Rated temperature rise conforming to class- B
- Shielded for quality power
- Designed to operate at the rated temperature
- Engineered Core and coil to manage the zero-sequence flux caused by triplen harmonics
- Withstand 100% rated current without overheating the windings or saturating the core
- Quiet operation.

STATIC VAR GENERATORS (SVG)

30, 50, 75, 100 KVAR MODULES

AN INNOVATIVE WAY TO POWER FACTOR CORRECTION

Automatic power factor correction equipment is applied in industry to ensure the electrical distribution system is utilized to its best capacity. Normally, such power factor correction is done by way of monitoring load PF and switching capacitor banks. But it is well known that such capacitor based automatic power factor correction are slow to react to load PF changes resulting into either over or under compensation. Also, due to today's harmonic rich environments, capacitors suffer from overloads, system resonance, capacitor leaks, contactor failures, reduced life expectancy and real fire risk.

LIVELINE SVG is an entirely new approach to power factor correction. The SVG utilizes a high speed three level inverter that reacts to changes in reactive power, exchanging corrective reactive power into the system. Full correction is made in 3/4 of a cycle. This rapid response provides stable accurate real-time power factor correction without the drawbacks of traditional capacitor-based systems. The SVG can continuously adjust reactive power dynamically and bi-directionally (leading or lagging). There is no chance of system resonance and even under low voltage conditions SVG will provide



Salient Features

- 100% solid state with latest generation IGBTs
- Latest inverter technology provides efficiency of greater than 97%
- Always unity power factor
- No under or over-compensation issues
- Individual phase correction
- Both capacitive and inductive compensation
- Full correction in < 10 msec or half cycle
- Output provides a better-quality wave form with a lower harmonic content than traditional systems.
- Capacitor free. No degradation of failures due to capacitors
- Low risk – no swollen or leaking capacitors. It reduces risk of fire.
- No contactors to replace
- RS-485, CAN and RJ45 network port
- Modbus protocol supported
- Modular structure and expandable

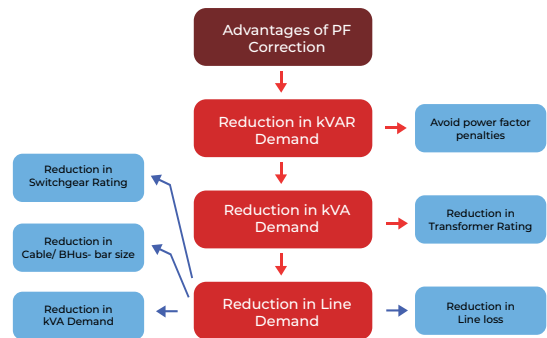
AUTOMATIC POWER FACTOR CORRECTION (APFC) PANEL

UPTO 1500 KVAR

DC Rectifiers are designed to give continuous high quality DC power for helicopters, aircraft servicing in workshops, on the ramp or in the field, diagnostic work, pre-flight checks, charging onboard battery or for continuous powering of equipment during operations without draining onboard aircraft batteries.

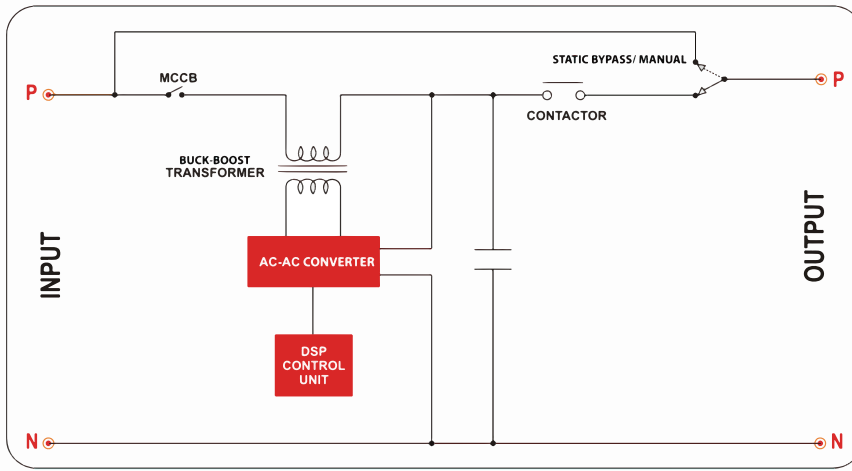
We can also deliver aircraft Ground Power Unit (GPU) consisting of these DC rectifiers which are practically a mobile unit that powers, or starts, aircraft, whilst on the ground. Ground power units usually provide either 28V DC or 115V 400Hz AC, although certain aircraft will require a more specialized power derivative. Please also refer to our SFC catalog for 400Hz, AC supply units.

WHY SHOULD WE IMPROVE P.F.?



Salient features

- Field proven Robust Design for LT Power Consumers.
- Most Advanced Micro Processor Technology adopted.
- Built in Automatic - Manual Provision for KVAR Selection.
- The Target Power Factor can be set as per customer requirement.
- 3 Pole MCCB for Complete protection.
- Zero Voltage switching through Thyristor to limit switching surges.
- Selectable Power Factor correction time. Cycle - to - Cycle with Thyristor and 2 minutes with Contactors.
- Discharge resistance or choke on Individual Capacitor.
- Stage on LED Indicator.
- Power & Control wiring with Copper multi strand ISI wire.
- Working temperature up to 55°C.
- Cable Entry at the Bottom (Top Optional).
- Indoor/Outdoor Installation as per customer requirement.



Typical SLD of a static stabilizer



STATIC VOLTAGE STABILIZERS

75 KVA – 1600 KVA

3 PHASE INPUT/OUTPUT

A Static stabilizer (also called Dynamic Voltage Restorer or Static Voltage Regulator) has no moving part, unlike the servo stabilizer. Instead, it uses a digitally controlled DSP based PWM AC-AC converter to generate the correction voltage based on variable input voltage and feed to the primary of a buck boost transformer. There is no variac/autotransformer based electro-mechanical mechanism in action to do the job which is replaced by a converter.

Static stabilizer is primarily designed to protect sensitive electronic equipment like dynamic plants and machineries, laboratory equipment, CNC machine tools, broadcasting instruments, imaging systems etc. Static stabilizer is a perfect voltage correction system for fast and dynamic loads.

Salient features

- Static PWM converters used, almost maintenance free
- Fast, corrects in less than 10 msec or half cycle
- Soft start to reduce high inrush load currents
- Static bypass facility
- Excellent load protection, enhances load life
- Compatible with all types of load
- Cycle by cycle voltage regulation
- High efficiency
- Silent operations
- Forced air cooling
- Intelligent and communicates to other networks

UNINTERRUPTED POWER FOR DRIVES (UPDS)

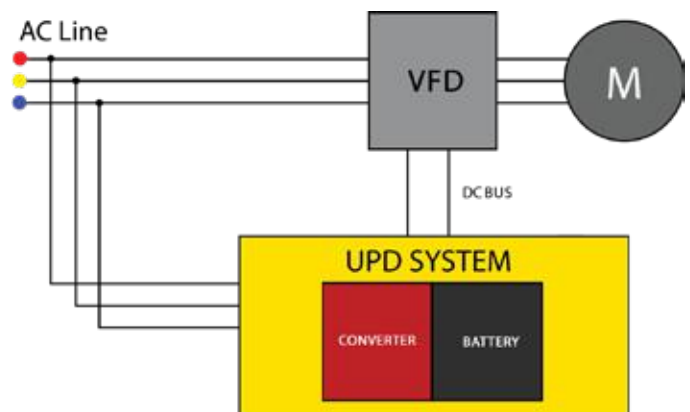
1 – 800 KW, 110 – 690 VDC

UPD is a better option over an UPS for VFD or motor back up

UPDs are designed and manufactured to help VFDs to overcome input supply voltage sags and longer utility power outages. Like an UPS used for mission critical applications, UPDs can be used to provide uninterrupted power to the VFDs. It is an amazingly simple solution to give multiple benefits to the users of industrial applications. UPDs are consisting of a AC-DC converter with a battery bank and together they provide DC power to the VFD DC bus and activates only when The VFD DC bus goes below a certain level. This way the UPD provides the VFD the ability to work without disturbances. The process remains uninterrupted and continuous.

Salient Features

- 110V, 220V & 690 VDC or any other
- Industrially rugged designs
- IP-42 class panel protection
- Constant voltage current limited output
- All battery related alarms and indications
- Digital Metering and annunciations
- Suitable for all types of batteries
- Customizable for variety of configurations
- Modbus/ Profibus/ CAN communication protocol
- RS-485 connectivity
- Battery storage and can be sized for long power Outages
- Parallel connection to the VFD to enhance dependability
- Uninterrupted and smooth static transfer of VFD load from utility to Battery power and vice versa
- Increased efficiency
- Can be sized to the drive size, no oversizing
- Support single to multiple drives
- Suitable with all types of batteries



Typical schematic of a UPD

INDUSTRIAL INVERTERS

ECO SERIES

1KVA – 500KVA
SINGLE PHASE & 3 PHASE OUTPUT

Our ECO series inverters are designed and manufactured based on digital IGBT PWM technology. The superior next-generation control allows us to provide a single control board solution for the inverter, thus increasing reliability by reducing control components. Whether you need a high-quality AC waveform suitable for sensitive electronic equipment or some other purpose, contact us for more details.

Our power inverters are built to customer order based on our standard designs and offer high performance, high reliability, and sophisticated control systems. Applications include remote power stations, micro grids, renewable including wind, solar, fuel cells etc, mobile backup power, overhead cranes, as well as many others.

A variety of computer interfaces are available to meet all your inverter monitoring and remote alarming requirements.

Salient Features

- IGBT based digitally controlled PWM technique
- Both 3 phase & 1 phase output available
- 48V, 110V & 220VDC or any other input
- Industrially ruggedized design
- Offline or online configurations available
- IP-42 Panel protection class
- Customized indications, annunciations & alarms available
- Intelligent with RS-485 port
- Modbus protocol supported





VOLTAGE STABILIZERS

SERVO CONTROLLED

ALFA SERIES

1KVA TO 100 KVA
5 KVA TO 2000 KVA

In most industries, a minor fluctuation in voltage can cause the equipment to malfunction or break down. The basic use of a Servo Controlled Voltage Stabilizer is to control fluctuations in the input voltage and provide constant output voltage at the output. It also helps in reducing MDI and save power. Our ALFA range of stabilizers is known for their consistent performance and the tremendous benefits they bring to the businesses.



Salient features

- Application type: Unbalanced input voltage & harmonic free unbalanced load
- Insulation class: Class A, > 6 Meg Ohms
- Manual bypass facility: Through change over switch
- Breakdown strength: 2500V AC for 2 min (for Transformer)
- Enclosure: CRCA mild steel
- Protection class: IP- 20
- Humidity: up to 95% RH non condensing

INSTALLATION & COMMISSIONING

Any UPS, Charger, Inverter, VRLA batteries etc must be professionally installed and commissioned to ensure a long and trouble-free working life. Whilst small, less sophisticated systems simply plug into a standard mains socket, larger UPS/Charging/Back up (typically over 3kVA) must be electrically installed and commissioned by skilled and qualified professionals.

Our engineering team will work closely with you, from start to finish, ensuring your UPS or whichever power protection or backup system, you buy from us, is installed and commissioned safely, on time and with minimal disruption to your business.

We will carry out a full onsite assessment for access, space, and floor loadings etc including the quality of power that is being made available. We can arrange delivery and placement, arranging special lifting and crane if needed. We can also do the entire job of pre-commissioning, installation & commissioning on a turnkey basis.

We strictly follow the factory recommended installation & commissioning procedures keeping the various electrical & electronics standards/conventions in mind.

Key Benefits

- Turnkey execution.
- Extensive network of factory trained field service engineers.
- Instrument based power quality monitoring, logging & problem solving.
- Full installation and commissioning services for all our products
- Service for Third-party systems also available



SYSTEM MAINTENANCE PROGRAMS

MAINTENANCE PLANS FOR BACKUP SYSTEMS

LIVELINE maintenance programs offer the flexibility to choose the level of service needed to ensure that risks and costs are minimized. They all provide regular maintenance visits and you can choose the level of service time you need to suit your business requirements. To maximize the reliability of your back up systems such as UPS, Battery chargers, Inverter/Converter units, a service plan from LIVELINE also ensures critical component degradation is identified and that repairs or replacements are carried out before a fault occurs. Immediate spares availability is assured through our extensive spares inventory.

We will communicate with you right through the service process, proactively managing your service visits and organizing the best time to visit to minimize any disruption.

All this not only ensures your power protection system will guarantee your business continuity but assures your peace of mind.



Features

- Routine inspection and preventative maintenance
- Emergency call-out options including guaranteed speed of response, 24 hours a day, 365 days a year
- Battery maintenance
- Comprehensive and non-comprehensive plans
- 24X7 coverage plans
- Available for LIVELINE as well as third party equipment

Key Benefits

- Comprehensive plans competitively priced optimizing UPS availability – with min cost
- Guaranteed response times to site – we are there when we say we will be there
- 24/7 telephone support for an instant response to your service needs
- Extensive network of trained field service engineers
- Service for a wide range of backup systems or manufactured by other brands
- Support contracts tuned precisely to each installation, so you only pay for the service level you need
- Extensive spare parts inventory ensuring maintenance and repairs are carried out without delay.



BATTERY MAINTENANCE PROGRAMS FOR LEAD ACID FLOODED, PLANTE, VRLA, NI-CD BATTERIES

GETTING ALL YOUR BATTERY HAS TO OFFER

All industrial, commercial and the utility industries heavily depend on electrical power to drive their business operations in the 21st century. Availability of reliable power, AC or DC, are the preconditions for a smooth and trouble-free operations of all business organization today. Many will agree that the money saved from preventing unplanned business shutdown directly adds to their bottom line.

Most of the power systems today critically depends on multiple battery banks that either supporting a UPS system in the control/computer room or a dc backup system in their utility substations or in a telecom tower. In a way, we are fully dependent on batteries that include even our personal and social life and criticality of these batteries had not been so important ever before.

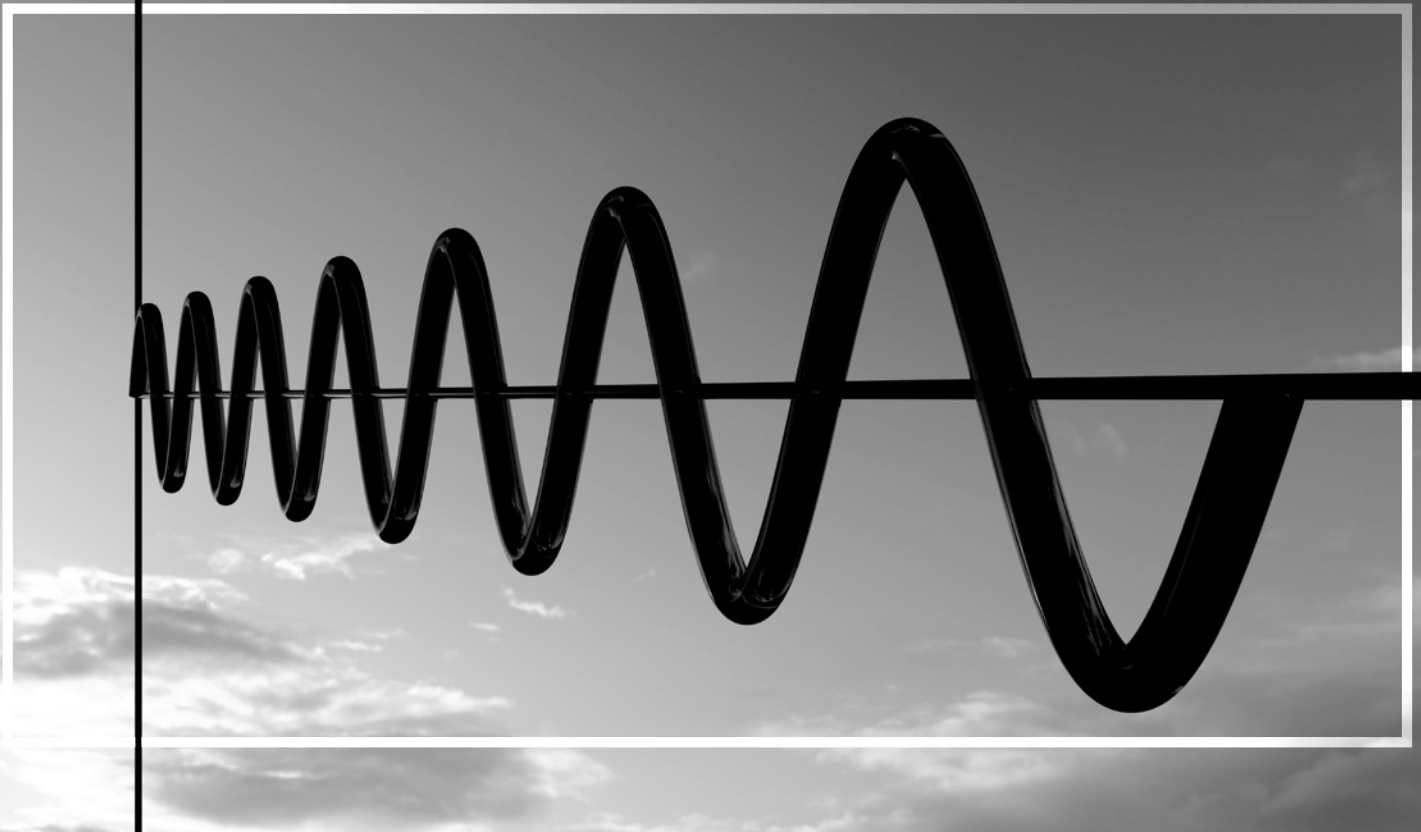
In the event of a power failure or outage, your electrical power system is only as strong as its weakest link and arguably, the DC system batteries are considered the most critical, yet vulnerable components in the electrical power distribution system. In fact, battery failures remain a leading cause of load loss. Yet, many users do not have a regular preventive maintenance or predictive monitoring program in place for their battery systems.

A comprehensive battery maintenance program with regular inspections, coupled with battery capacity testing and continuous monitoring, helps maximize your total system reliability while extending the useful life of your batteries.

Key Benefits

- Maximize system reliability
- Identify weak cells in advance to prevent premature failure
- Enhances battery service life
- Improve availability
- Reduces consequential loss of productivity
- Helps planned replacement or preventive actions





POWER QUALITY MONITORING & AUDITS

Power quality is an issue that is becoming increasingly important to electricity consumers at all levels of usage. Sensitive power electronic equipment and non-linear loads are widely used in industrial, commercial, and domestic applications leading to distortion in voltage and current waveforms. With ongoing regulatory policy and structural changes in the Indian electricity industry, following the Electricity Act 2003, the issue of PQ is poised to become a figure-of-merit amongst the competing distribution utilities. Improvement of PQ has a positive impact on sustained profitability of the distribution utility on the one hand and enhanced production time on the other for the end-users.

A critical step in ensuring reliability in electrical components is monitoring power quality and doing a load analysis. A load analysis typically finds out how many watts each electrical component consumes over time. Monitoring power quality and load analysis can help identify the cause of power system disturbances and even help identify problem conditions before they cause power interruptions or power disturbances.

We can do specialized power quality audits which will not only identify power quality issues but will also help you determine your specific power quality needs. We can put together a power quality recommendation and design a power quality solution that meets your needs and budget.

Our Power Quality Monitoring and Load Analysis service include testing & monitoring of

- Uninterruptible Power Systems (UPS)
- Power Conditioners / Voltage Regulators
- Inverters and Frequency Converters
- Generators
- Voltage disturbance monitoring
- Proper Grounding and Wiring Analysis
- Harmonic analysis
- Motor & transformer health monitoring
- Energy consumption



ON DEMAND SERVICES

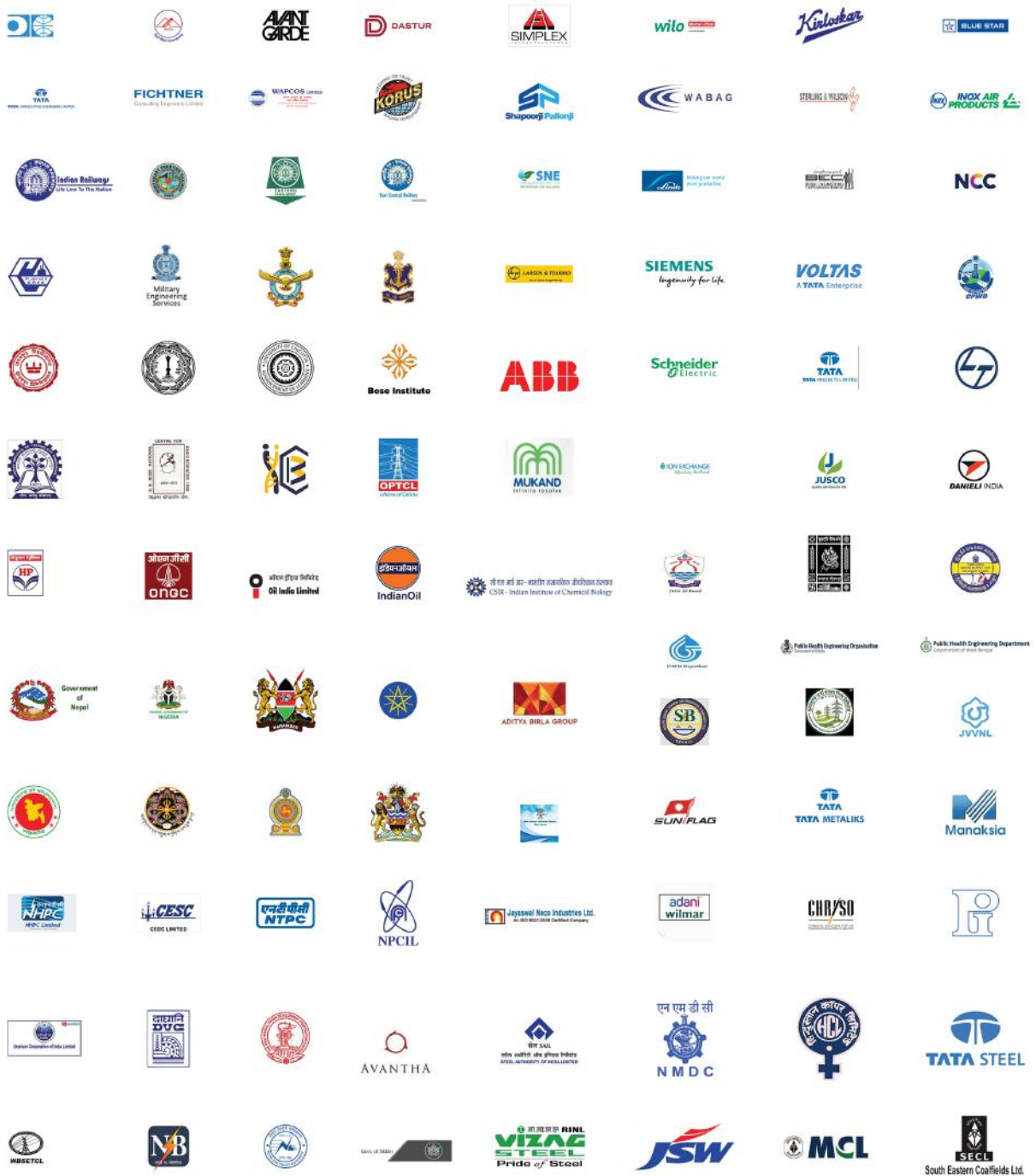
To ensure peak reliability for your equipment and meet your expectations, we remain flexible with our customer's best interest in mind. With both our own internal staff of qualified Field Engineers and our other nationwide service partners, we can offer highly responsive and timely repairs and maintenance on on-demand basis. This service is available LIVELINE as well as any third-party manufacturers equipment on a nationwide basis.

Our services include but are not limited to

- 7 X 24 on call on site services.
- Prompt and immediate response
- Services available for third party equipment
- Battery load testing
- Battery replacements
- Repair and maintenance jobs



CUSTOMERS



SALES SUPPORT

Our inhouse sales and engineering teams are available to answer your immediately on selection of right transformer for your application. They are technically trained and can answer most questions on the phone. Drawings, documentation, expediting, quotations, or technical information are always readily available. Our commitment to sales support is paramount and it means you will be an informed, relaxed, and satisfied customer as quickly as possible. Call our sales team or mail us at info@livelineindia.com or visit our website.



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**All information contained in this brochure are subject to change without prior notice.
Our systems are manufactured in an ISO9000 & 14000 certified plant.**

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