



Professional Manufacturer's Representatives: Strategic Protection Systems strives to maintain a reputation of a "technical solutions-oriented" firm specializing in electrical, electronic, and data-com products and services that dominate both the commercial and industrial markets.

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ABB Critical Power Products: UPS, Distribution Units (PDUs), Active Voltage Power Conditioning Systems (PCS) Remote Power Panel (RPPS), with and without distribution, all available with Fault Guard



ABB Cyberex Static Switch Products: Digital Static Transfer Switch - Static switches | ABB 200-4000 AMP Digital Static Switches Designed with True Fault-Tolerant architecture



Manufacturer of industrial grade, customizable UPS systems, test & measurement products, rectifier and inverter systems, DC-DC converters, OEM power supplies, chargers for traction batteries & the repair of electrical machines up to 120 t.



Manufacturer of high performance, medium voltage dry-type transformers, switchgear and battery storage solutions



World-class designer/manufacturer of flexible, reliable, indoor & outdoor, busway power distribution & monitoring systems from 160A - 6300A, serving every power distribution need for a given facility



Critical Battery Monitoring Systems for all types of battery requirements



DC Energy Storage "Flywheel" to provide highly reliable protection for mission-critical applications.



Single Phase & Three Phase Emergency Lighting Inverters & Egress Lighting Solutions (550watt - 33kW). Single Phase 4KVA - 15KVA Industrial UPS Systems



Data Center, Mission Critical and Specialty Applications. High Efficiency Transformers with significant life-cycle energy savings from its ultra-low loss E-Saver transformers, Cyberhawk advanced power meters, & integrated power distribution products, including Energy Station PDUs for data centers



Power Factor Correction and Harmonic Mitigation Systems, Power Conditioning Products, Uninterruptible Power Supplies



Fuel Management Systems and Services that combat tank and fuel contamination in Aboveground (AST) and Underground (UST), subbase and day tanks



Full range of Telecom Products (Surge Protection & Custom Electrical Assemblies) to special Commercial OEM Electronics (Custom Designs) for industrial commercial applications



Designs, produces & delivers power quality & data center solutions that solve real-world problems while providing the best cost to performance ratio in the industry



Stored Energy Systems, Automatic DC Power Supply/Charger 24 VDC, 48 VDC, 120 VDC, 240 VDC Systems, UPS Maintenance Bypass Switches, Battery solutions



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MegaFlex UL UPS



Simple & safe installation



15-year life on consumables

Monolithic UPS capable up to 1.6 MW - specifically designed for critical high-density computing environments across private and public enterprise, as well as data centers for colocation, hybrid, hyperscale and neocloud data centers.

System graphical display
With UPS mimic diagram, measurements, UPS status, events

Optimized power frame
with slide out rectifiers and inverters.

Connectivity section

With ultra-fast relay boards and up to two network management cards for connectivity, eg. SNMP, Modbus TCP/IP, Modbus RS 485



Back-feed protection (standard)

Cable saver inductor
to balance currents and minimizing parallel power cabling

Top or bottom entry
• AC input/output and DC connections
• Single or dual input

UPS 100kAIC
Rated buss bar landings



Flexible approach

Flexible Approach

As your power requirements increase, you need a UPS that grows with your infrastructure. MegaFlex UL UPS provides a scalable paralleling approach, with module capacity ranging from 1,000 kW to 1,600 kW, up to 4 modules for capacity or redundancy.



World-class innovation

World-class Innovation

- Proven technology from world-leading R&D experts
- Power conversion technology for high power density
- eBoost (VFD) mode for premium efficiency



Optimized efficiency

Optimized Efficiency

- Double conversion operating mode with efficiency of up to 97%, rising to 99% efficiency in VFD eBoost mode
- Up to 40 percent footprint savings with high power density
- Co2 emission reduction = 1,000 tons
- Critical for Data Center energy growth demands



Reliable performance

Reliable Performance

- Comprehensive monitoring capabilities allowing inclusive communication to ABB service networks
- Enhanced power measurement, providing comprehensive data to track energy consumption
- Modular sub-assemblies including capacitors and fans facilitating ease of service and lowering MTTR
- Easy front and top access to all system components reduces repair and maintenance time
- Up to 15-year design life on consumable components

RPA™

RPA (Redundant parallel architecture) technology - RPA provides parallel system architecture for redundancy and no single point of failure. This means that if the lead UPS fails to operate, another UPS automatically takes on the leadership role. And, if any other UPS fails to operate, its load is automatically redistributed to the others.



Ultimate Space & Energy Savings

- Market leading maximization of power density
- 25% reduced energy consumption kWh over the product life span



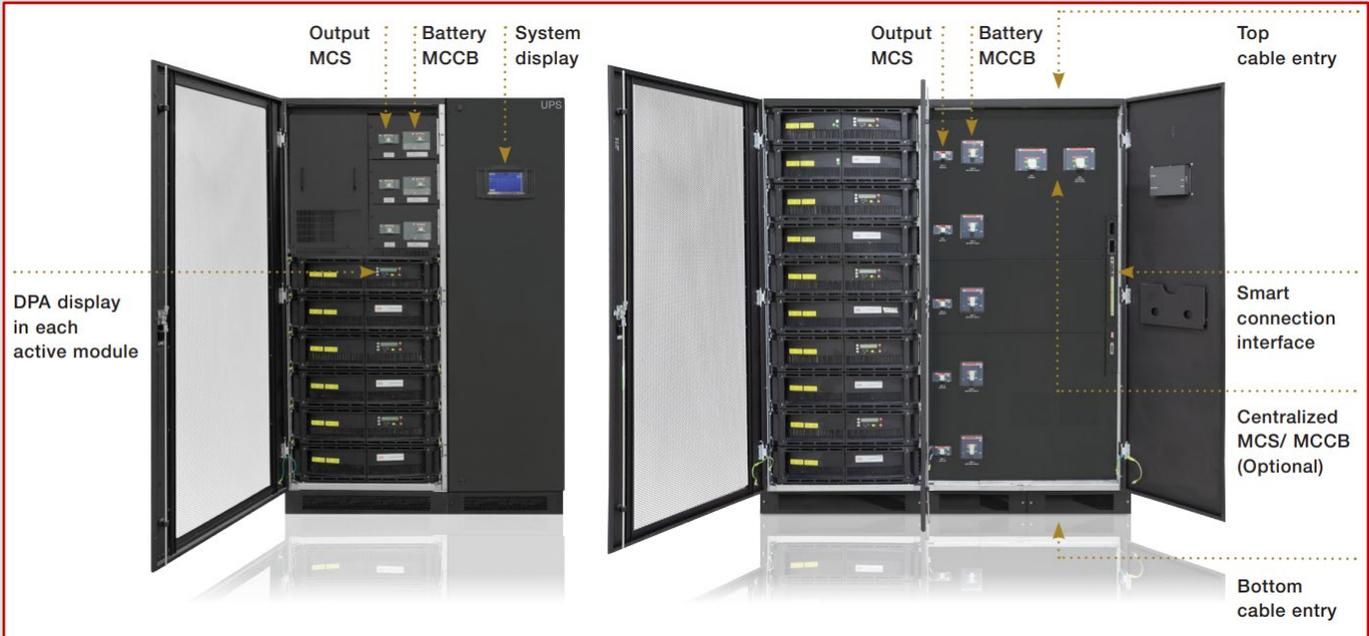
Control and monitor

Control & Monitoring

The MegaFlex UL UPS's visual interface allows the operator to observe measurements, events and alarms onscreen for a comprehensive overview of operations.



Conceptpower DPA 500 – MODULAR UPS



The modular UPS for medium-sized and large data centers - Today's data centers require continuous uptime. That target is why ABB's Conceptpower DPA 500 is based on **Decentralized Parallel Architecture (DPA)**. Only a truly redundant architecture like DPA allows online modules to be swapped out while the system is running.

Each high-reliability, standardized module is self-contained and can be swapped at any time, so no load has to be ever switched off – making routine maintenance safe and easy. Conceptpower DPA 500 is designed to secure continuity of critical operations for data centers, colocations, server rooms and other IT applications.

It also protects industrial automation processes, healthcare facilities and many other vertical markets where operations are of a critical nature.

The lowest total cost of ownership

- > 96% true online efficiency
- Unity power factor (KW = kVA)

- Small footprint/high power density
- Low input harmonic distortion (THDi < 3.5%)

Maximized Availability

- 99.9999% availability
- Replace or add modules with no downtime

- Decentralized parallel architecture
- Short mean-time-to-repair

No single points of failure

Efficient service concept

- Simple power upgrade
- Fast service – low MTTR
- Online serviceability
- Online-swap modularity (OSM)
- Reduced spare parts needed

Cost effective “right-sizing”

- Scalable from 100kW up to 3MW
- Optimized cabinets – 300kW and 500kW
- Vertical and horizontal scalability
- Pay as you grow





TLE Series UPS - Scalable (40-150 kW)



- Up to 50% reduced footprint and volume
 - Lower rental fees and more room for UPS' power expansion
- Up to 80% reduced weight
 - Reduced civil engineer overhead – more room for UPS's power expansion
- 15 years design life
 - 10 years performance warranty – lower total cost of ownership
- Up to 3 times higher in power efficiency
 - Buy what you need – less battery modules for same power discharge
- Battery management system
 - Higher safety protection. Reduced maintenance costs and risks for unexpected outages

THREE-PHASE STANDALONE UPS SYSTEM

TLE Series UPS 40–150kVA/kW 480VAC

Highly efficient and scalable

The **TLE Series UPS** is a robust, high performance 480/277VAC UPS system suitable for a broad range of mission-critical applications including data centers, data closets, healthcare/medical, telecommunications, transportation, commercial buildings, and industrial critical processes.

Design and performance - The TLE Series UPS uses double conversion technology via a true on-line VFI (voltage frequency independent) design. The IGBT Rectifier provides low input current harmonic distortion and a high input power factor to minimize input feeder sizing. The IGBT Inverter with transformerless output ensures low output voltage distortion and fast transient response to high crest factor loads or step loads.

Multi-mode efficiency - The TLE Series UPS can operate up to 98.9% efficiency when utilized in EcoMode operation. EcoMode continuously monitors the output voltage and frequency and will instantaneously switch to double conversion mode and inverter usage during voltage and/or frequency disturbances to ensure compliance with the ITI (CBEMA) curves for operation on sensitive IT server or other critical loads.

Redundant Parallel Architecture (RPA) - can be used on TLE Series UPS for up to six (6) modules, for redundancy or capacity means. The RPA system design eliminates single points of failure by using redundant controls and an integrated bypass static switch in each UPS module. The RPA system allows for flexibility in output paralleling cabinet design and usage, including load growth scalability/expansion capabilities.

Site services and remote monitoring - ABB Critical Power Services offers a wide array of site services, including product startup, preventative maintenance and emergency maintenance. ABB's iUPSGuard software allows for remote monitoring of key subsystems within the UPS module and battery, allowing for proactive dispatching and problem resolution when emergency repairs are required.

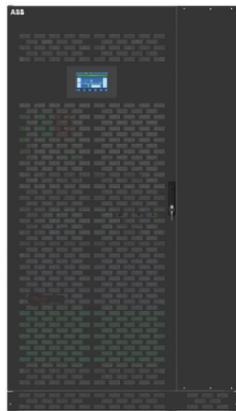
Scalability and slide out construction - The TLE Series UPS scales vertically to up to 150kW, and all sub-assemblies are designed to easily slide out for fast maintenance and service. Now you can replace fans, caps, etc. as needed without having to replace the entire power block.

Distributed control logic - Each module in an RPA system has its own operational controller. Each one continuously communicates with all others in order to manage the entire system like a team.

Sequential soft start - Provides sequential soft start of each module to reduce instantaneous load on input feeders during mains recovery. This helps avoid over-rating of generator and overheating of cable and fuses.



TLE Series UPS UL - (160-1000 kW)



Efficiency of up to 96.8% in VFI mode and up to 99% in eBoost mode, reducing operational costs and minimizing energy losses



RPA for reliability, redundancy and scalability, offering up to six UPSs in parallel and power up to 6MW



Intelligent energy management integrated operating mode maximizes efficiency at partial load by dynamically configuring the parallel UPS modules



Variety of options for energy backup available, including lithium-ion batteries



Advanced control, monitoring and diagnostic capability, ensuring maximum performance of the UPS

Delivering top efficiency with innovative technology

ABB's TLE Series UPS is one of the most efficient and reliable three-phase UPS systems on the market, providing excellent efficiency, output performance and critical power protection for data centers and many other applications. TLE Series UPS solutions are optimized to provide high efficiency under part-load conditions.

This UPS ensures low current total harmonic distortion (THDi), ideal output voltage regulation and excellent dynamic response. These attributes help customers cut operational costs while implementing an environmentally friendly solution.

Key features

- eBoost, lithium batteries and RPA with intelligent energy management™ (IEM) further improve efficiency
- Input from mains conditioned to a sinusoid with 0.99 input power factor and <3%TH Di
- Output power factor: 1
- Intuitive user interface
- True front access design
- Extremely low output voltage distortion
- Compact footprint
- Fast transfer for inverter < 2 ms

Clean input performance - The TLE Series IGBT-based rectifier and innovative control algorithm ensure an input THDi of less than 3% and allow a pure sinusoid to be drawn from the mains. This arrangement also provides UPS input power factor of 0.99.

Programmable soft start

The programmable soft start allows the rectifier to ramp up in a programmable period (0-15 s), thus eliminating inrush current. This feature reduces the need to oversize the input power system (gensets, feeder cables and overcurrent devices).

Generator compatibility - User-programmable features such as slew rate, phase angle rate-of-change and voltage rate-of-change allow the UPS to sync to a genset quickly during emergency back-up. ABB's input filter also has user-programmable features that ensure quick and continuous synchronization to generator voltage.

Advantages

- Reduction in the size of upfront equipment (emergency generators, cabling, and circuit breakers)
- No disturbance to nearby equipment; eliminates perturbation and outages on downstream electrical equipment, avoiding also any investigation and analysis costs arising from malfunction

THDu - A distorted output voltage waveform affects the proper functioning of the load's equipment. The TLE Series has very low output voltage THD, even with 100% unbalanced or 100% nonlinear loads connected.

Transient response

Transient response is very fast due to control algorithms that ensure very high dynamic response. This reduces the need to oversize the UPS for pulse-load applications.



Superior battery Management



Improved diagnostic & reliability with DSP control



Remote monitoring & diagnostic solution (iUPSGuard)



DPA 60 & 120 – 208V UL – MODULAR UPS

Decentralized Parallel Architecture (DPA)

DPA 60



60kW or 40kW N+1 redundant power.
In one UPS cabinet.

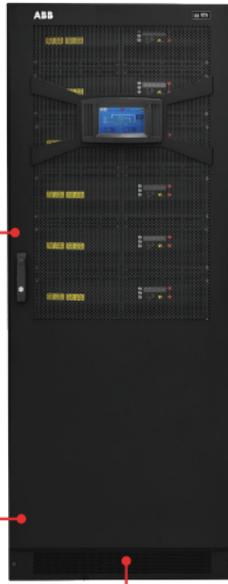
120kW or 100kW N+1 redundant power.
In one UPS cabinet.



300kW power in one system.
By paralleling up to five cabinets.

600kW power in one system.
By paralleling up to five cabinets.

DPA 120



20kW power in one UPS module.
Truly scalable power – featuring DPA.

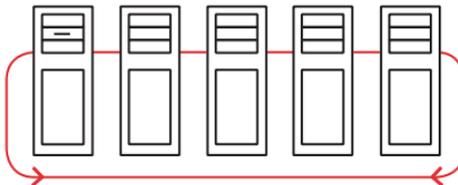


94% double conversion efficiency, 99%
eco-mode efficiency reduced power losses.



< 10min service time. Low MTTR to
exchange one UPS module.

DPA 60



$3 \times 5 \times 20\text{kW} = 300\text{kW}$

DPA 120



$6 \times 5 \times 20\text{kW} = 600\text{kW}$

DPA 60 and 120 - The modular UPS for small and medium-sized data centers
Suit applications requiring N+1 redundancy and flexibility

The DPA 60 and 120 are 208V modular UPSs based on 20kW modules and are available in two cabinet configurations:

- DPA 60 cabinet is 20–60kW with internal batteries
- DPA 120 cabinet is 20–120kW with external battery cabinets

Today's data centers require continuous uptime, especially the smaller but rapidly growing edge data centers. That high reliability target is why ABB's DPA 60 and 120 are based on Decentralized Parallel Architecture (DPA). Only a truly redundant architecture like DPA with no single point of failure allows modules to be swapped out while the system is running in double conversion.

Each high-reliability, standardized module is self-contained and can be swapped at any time, so nothing will ever need to be switched off – making routine maintenance safe, fast and easy.

The DPA 60 and 120 are designed to secure continuity of critical operations for small to mid-sized data centers, server rooms and other IT applications. It also protects industrial automation processes, healthcare facilities and many other vertical markets where operations are of a critical nature.



DPA 60 & 120 – 208V UL – MODULAR UPS

Total vertical and horizontal scalability

The DPA 60 delivers power protection from 20kW–60kW at 208V (one to three 20kW modules) with internal batteries in a single cabinet

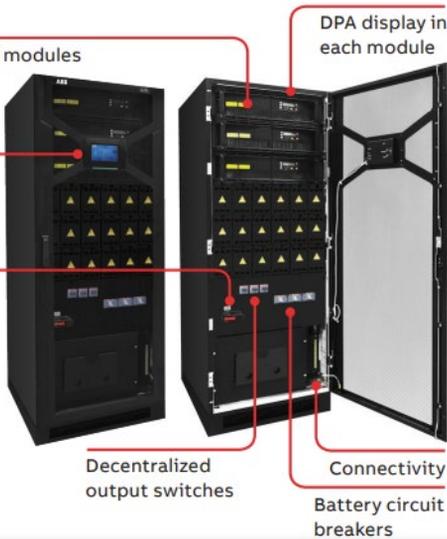
The DPA 120 delivers power protection from 20kW–120kW at 208V (one to six 20kW modules) with two cabinets – one cabinet for the power modules and the other cabinet for the external batteries

DPA 60

One to three UPS modules

System display

Internal maintenance bypass switch (optional)

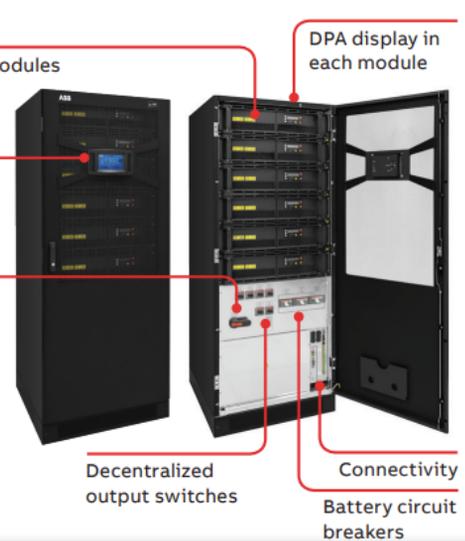


DPA 120

One to six UPS modules

System display

Internal maintenance bypass switch (optional)



True parallel architecture - This advanced UPS design provides the highest degree of protection in critical applications where the load must be fed with quality power. Each module operates independently, containing all hardware and software required for full system operation, creating complete redundancy within the unit. Each UPS module has its own independent static bypass, rectifier, inverter, logic control, control panel and battery charger. With all the critical components duplicated and distributed between individual units, potential single points of failure are eliminated.

Basic system configuration - module includes:

- 20kW rectifier and inverters
- True online double conversion UPS
- Built-in backfeed protection
- HMI interface with mimic diagram and LCD providing information in five languages
- Decentralized static bypass switch
- Built-in modular isolation
- Individual module display

The cabinet includes:

- Optimized cabinets, with either 60kW or 120kW of rated power
- Bottom cable entry (standard) and top cable entry (optional)
- Rectifier, bypass terminals (single or dual-input mains connection available) and UPS output terminals
- Battery breakers and output switches for each module set. DPA 60 (standard); DPA 120 (optional)
- Graphical color touch screen system display
- Communication interfaces: RS-232 and USB ports, I/O dry contacts (e.g. EPO, GEN On) and external bypass interlock

Options

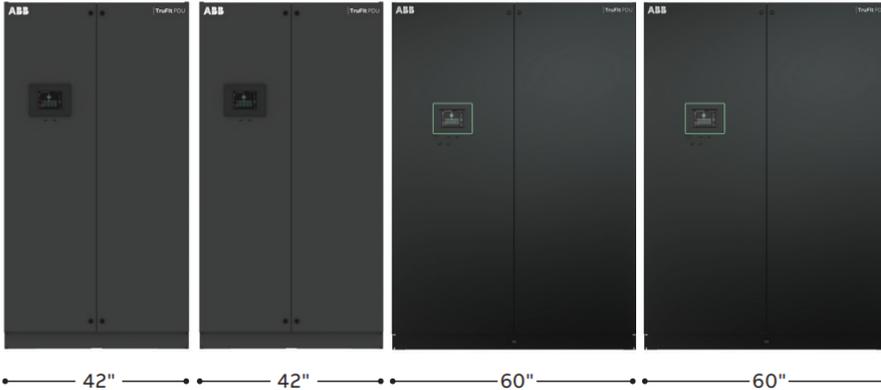
- Internal battery options for optimized 60kW cabinet
- Maintenance bypass cabinet (matching or wall mount)
- Control and monitoring (Modbus RS-485, Modbus TCP/IP, SNMP, Bacnet and others)
- Matching external battery cabinets
- Battery monitoring
- Seismic bracing

The lowest total cost of ownership - energy efficiency, scalability and modular design to enable easy serviceability. The unique and modular UPS DPA belongs to the newest generation of midrange 3-phase UPS-Systems. High reliability, low operating cost and excellent electrical performance are only some of the highlights of this innovative UPS solution.



TruFit PDU

TruFit PDU
50–300kVA
42" cabinet
Front access
only 2
systems 84"
width up to
36%
reduction in
required
floorspace.



TruFit PDU
400–800kVA
60" cabinet
Front access
only 2
systems 120"
width up to
31%
reduction in
required
floorspace.

42" 42" 60" 60"

The TruFit PDU - Designed to provide an unmatched combination of power density, safety, and sustainability, the TruFit PDU brings highly configurable power distribution to the consumer. Its compartmentalized system architecture requires only front access for complete system operation and maintenance, allowing an easier fit into the white space. A holistic view of overall system health is supported by the PowerView™ advanced monitoring and integrated thermal monitoring package. The TruFit PDU is equipped with a high efficiency transformer and integrated comprehensive monitoring system to better monitor the true health of your power distribution equipment.

Optimal fit

- Front access only design for better fit into your floor plan.
- Installation, operation, and maintenance of any serviceable components from front.
- Eliminates need for additional side or rear clearances.

True and proven reliability

- Equipped with ABB's SACE Tmax XT breakers.
- True reliability through extreme breaking capacity in compact frames.
- Safe and reliable interruption of faults.

Centralized health/fitness monitoring

- Combines the usual metering/ monitoring with optional integrated thermal monitoring solution.
- Eliminates need for expensive 3rd party metering solutions.
- Simplified communications through centralized native PDU monitoring system.

Prioritizing safety

- Compartmentalized design to minimize exposure to potential arc flash events.
- Isolation of consumable/serviceable components from hazardous voltages.

Improved sustainability

- Equipped with high-efficiency, DOE 2016 compliant transformers.
- Advanced metering/monitoring provides requisite visibility to optimally balance loads and maximize utilization.

Reliable systems are built around the smallest details.

- Superior breaking capacities.
- Adjustable thermal-magnetic or electronic trip (Ekip Dip) units.
- 100,000 testing hours per year.
- The most advanced protection in the smallest of frames

TruFit– safe and reliable power distribution



Cyberex SuperSwitch 4



Digital Static Transfer Switch

100A–4000A (3-pole) -or- 200A–800A (4-pole)

Peak performance and reliability

- $\leq 1/4$ cycle in-phase transfers.
- $\leq 16\text{ms}$ out of phase transfers regardless of phase difference between sources.
- $\leq 1.2\text{x}$ inrush for out of phase transfers using.

Improved safety and serviceability

- Sectionalized design for safety & ease of serviceability enables quicker troubleshooting & time to repair.
- Isolation of consumable components allows for easier replacement without need to de-energize.

Minimize risk of human error

- On-screen software guided bypass operation.
- Dedicated LED indicators coordinate with bypass instructions on HMI to ensure bypass sequence.

Comprehensive offering

- Covering wide power range from 100A up to 4000A in 208V through 480V.
- Ultra-dense optimized designs for low power applications.
- Optimized front access only designs for higher power ratings.

Improved sustainability

- Proven track record of design life exceeding 15 years.
- Designed to minimize usage of consumable components.

Key applications

- Data centers
- Healthcare facilities
- Financial institutions
- Colleges/Universities

Adaptive DIR

For critical loads with more sensitive power supplies and less ride-through than limits traditionally defined by the CBEMA/ITIC curve, the advanced Adaptive DIR feature enables setting tighter transfer tolerances to provide another layer of fine tuning to more reliably support even the most sensitive applications.

The SuperSwitch® 4 is available in a wide variety of models designed to meet the diverse needs of critical loads in smaller enterprise/edge data centers up to larger colocation or hyperscale installments.





AC Surge Protection Devices (SPDs)

Since the late 1980's, the industrial markets like water treatment, schools, prisons, refineries and all types of factories, has been transitioning over from an electrical environment to a purely electronic environment. This electronic environment includes not only specialty equipment like Industrial Control Panels, Robotics, Computers, Printers, but also includes Facility Alarm & Security, and energy saving devices such as lighting ballasts and Variable Frequency Drives. This means that equipment failures can be caused by anomalies that originate from outside and inside the industrial facility. Not only is the electronic equipment more sensitive from outside transients, but their power supplies generate high frequency noise that will hurt other electronic equipment tied to the same power bus.

ACT offers real-world solutions to all of these power quality problems.

ACT 471 Surge Seeker Family

A Full-Featured Primary Surge Protection/Filter Device

No other protection company is offering this breadth of power filtering and monitoring capability in a single package.



10 YEAR Standard Warranty

Power quality is more important today than ever before and that means not just any surge protector can be relied on to protect your sensitive equipment.

The ACT 471 Surge Seeker Family is the perfect design to protect your sensitive electrical and electronic environments.

This full-featured filter protector protects all phases and modes against transient surges and, with the filter option, is able to reduce induced noise by over 50 dB. No other company offers as much power quality protection.

MOST ADVANCED MONITORING SYSTEM ON THE MARKET

- Listed Type 1 and Type 2
- Lights (LED) – Green per phase, Red - Alarm
- Audible Alarms
- Microprocessor-based Power Quality Meter (optional)
- Logging Capability (optional)
- Event Waveform Capture (optional)
- 200 kAIC rated Fuse or Optional Fused Disconnect
- Up to 300,000 amps per mode modular protection (600,000 per Phase)
- BEST IN CLASS built in Filter options in the market >55dB
- Advanced filter targets most common transient surges and damaging medium frequency noises
- Copper Bus Connected Surge Modules
- 10 Modes of Protection (L-N, L-G, N-G, L-L)
 - 7 Modes Discrete (L-N, L-G, N-G)
- Dual Surge Counter Options (Continuous and Resettable)
- Smart Monitoring
- Dual NO / NC Form C Dry Contacts
 - For remote monitoring & control (250V 5A rating)
- Individually Fused and Protected MOV Technology
- NEMA 4 & NEMA 12 Painted Steel Enclosure

ACT 471SEL Selenium Hybrid Filter Device

A Full-Featured Primary Surge Protection/Filter Device



20 YEAR Standard Warranty

The ACT 471 SEL Family is designed to protect all phases and modes against transient surges and limited over voltage events and, with the Advanced Power Filter selected, is able to reduce induced high frequency noise by over 50 dB across a broad frequency spectrum.

Unlike many of our competitors, the ACT hybrid design comes standard with many different alarm options. Add our Power Quality Meter option and no other company can provide this level of Power Quality Diagnostic information. "Transient Snap Shot" and "Time Stamp Data Logger" are included.



AC Surge Protection Devices (SPDs)

The Full Featured Surge Stryker Family is a high performance surge protector designed for critical panel locations. The SPD incorporates high-energy MOVs with the best performing AC filter on the market to provide protection against transients originating from induced lightning strikes, utility switching and facility power noise.

Real-time diagnostics include LED fault indicators for each phase, as well as an optional alarm that includes red LED, dual Form C dry contacts for remote indication and an audible alarm, so you always know the Surge Stryker Protector is at full capacity.

The ACT 455 Family is available for all voltages and configurations up to 480Vac. Housed in a rugged NEMA 12 enclosure, these devices are suitable for harsh indoor or outdoor applications.

- 1** Capture the lightning strike to a known and preferred attachment point using a purpose-designed air terminal system.
- 2** Conduct the energy to the ground via a purpose-designed down conductor.
- 3** Dissipate the energy into a low-impedance grounding system.
- 4** Bond all ground points to eliminate ground loops and create an equipotential plane.
- 5** Protect equipment from surges and transients on incoming power lines to prevent equipment damage and costly operational downtime.
- 6** Protect equipment from surges and transients on incoming telecommunications and signal lines to prevent equipment damage and costly operational downtime.

ACT Surge Stryker 455 Family

7-Mode Hardwired Primary AC Surge Protection Device

Surge Handling (Imax)
Up to 30 kA/mode 6000 kA/phase

Recommended Location
Type 2 Location
Cell Sites, Well Pumps / Cat C
Distribution Equipment / Cat B
Branch Panels / Cat B
Point of Use / Cat A
Residential / Cat C



Available in 050, 080, 100, 160, 200, 300 kA per modes
7 modes of discrete protection (L-N, L-G, N-G)
10 modes of protection (L-N, L-G, N-G, L-L)
200 kAIC Fault Current Rating
Advanced EMI/RFI Noise Filtering (-45dB) 3kHz - 1MHz
3rd Party Tested - 15,000 (C3 20 kV/10 kA)
Optional 30amp fuse allows direct connect to power bus
Response Time <5 nanoseconds MOV Technology
Green LED Indicators
Alarms Red LED (option)
EMI/RFI Noise Rejection (option) -45dB and -55dB
Surge Counter (option) 8-digit resettable transient counter
Remote Signaling Form C dry contacts – NC & NO
Audible (option) With Shut-off Switch

ACT Surge Stryker 455 CGC Family

7-Mode Hardwired Primary AC Surge Protection Device

Surge Handling (Imax)
Up to 50 kA/mode 100 kA/phase

ACT Surge Stryker 455 CGX Family

7-Mode Hardwired Primary AC Surge Protection Device

Surge Handling (Imax)
Up to 80 kA/mode 160 kA/phase

Resettable Surge Counter

5 YEAR Standard Warranty



7 modes of discrete protection (L-N, L-G, N-G)
10 modes of protection (L-N, L-G, N-G, L-L)
200 kAIC Fault Current Rating
EMI/RFI Noise Filtering (-45dB) 3kHz - 1MHz
3rd Party Tested - 15,000 (C3 20 kV/10 kA)
Response Time <5 nanoseconds MOV Technology
Green LED Indicators
EMI/RFI Noise Rejection -45dB
Alarms Red LED
Remote Signaling Form C dry contacts – NC & NO
Audible With Shut-off Switch
Enclosure Type: Painted Steel NEMA 12
Standard no option code
Stainless Steel – SS
Wire option: Standard 10awg 3' pigtailed
Alarms Alarm LED, Remote Relay & Audible
Filter -45 dB EMI / Noise Filter
Optional Mounting Top Feed – T



Industrial Power Supplies

For decades, BENNING has been supplying modular AC and DC power supplies for battery-supported power supply of electronic systems in telecommunications, industry, medical and data technology. These include:

- Monobloc rectifiers, inverters and UPS systems
- Modular rectifiers, inverters and UPS systems in 19" design

Modular industrial power supplies are well established even under the harsh conditions of industrial use, due to their high availability, economic efficiency and ease of servicing, e.g.

- in the petrochemical industry
- in energy generation and distribution
- In automation and traffic engineering

Maximum availability & efficiency



Benefits of modular industrial power supplies:

Maximum availability, cost-effective redundancy solutions

- Low volume and weight
- reliable modular hot-plug technology
- Short repair times (MTTR)
- Simple scalability of system performance (pay as you grow)
- high energy efficiency

SPS is your Benning contact for industrial rectifiers, industrial inverters, industrial UPS systems and AC, DC power supply systems.

Rectifier systems & DC/DC converters

In many industry sectors, the electrical consumers used must be protected against the failure of the public grid by means of a backup power supply. For this purpose, rectifier devices with batteries connected in parallel have been used for many years.

Rectifier series designed for building reliable industrial power supplies:
ADC Modular, TEBECHOP SE, THYROTRONIC, Rectifier NPP

Rectifier system ADC modular

The ADC modular series are highly efficient modular rectifiers that are particularly suitable for industrial use but also for the power supply of telecommunications systems. Together with lead or NiCd batteries connected in parallel, these rectifiers can be expanded to battery-supported backup power supplies.

Rectifier and power supply system of the ADC series

Left: 19" ADC rectifier module
Right: Modular DC rectifier system



TEBECHOP SE rectifiers and DC converters

With the TEBECHOP SE product line, a new generation of highly efficient modular rectifiers and DC converters is at your disposal, which meets all the needs of sensitive and process-critical systems.

In combination with lead or NiCd batteries connected in parallel, this line of rectifiers can be expanded to battery-supported backup power supplies and includes:

- 1/5 19" TEBECHOP 3000 SE rectifier modules with a maximum output power of 1800 W or 3000 W, covering a power range from 1800 W to 15000 W
- convection-cooled 1/3 19" TEBECHOP 3000 SE rectifier modules that are specially designed for use under critical environmental conditions (e.g. dust, acid, etc.) in the petrochemical industry, in power distribution and traffic engineering
- three-phase 19" industrial rectifiers TEBECHOP 13500 SE for the construction of industrial power supply systems with consumer power > 50 kW
- and 1/5 19" wide DC converters that are based on the same mechanical platform and can therefore be easily integrated into common industrial power supply systems

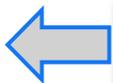
Maximum availability, highest application and investment flexibility, minimized operating costs

- Design and high-quality components, created for the tough conditions of the industry
- n+1 (or n+r) redundancy
- reliable hot-plug technology
- Extensive signaling and monitoring functions, e.g. B. via HTML, SNMP, Modbus or Profibus, IEC 61850
- high MTBF low MTTR
- Easily scalable system performance

TEBECHOP SE rectifier for a safe power supply

Low MTTR (Mean Time To Repair) and low maintenance costs

Each module can be replaced in under ten minutes thanks to "hot-swap" capability



TEBECHOP SE rectifier systems and DC converters with modular technology, scalable, robust and cost-effective, well-suited to deal with industrial requirements



19" rack insert with **TEBECHOP 3000 SE** rectifier modules Each rectifier module supplies a maximum output power of 1800 W or 3000 W. In one 19" rectifier rack shelf, up to 5 power modules can be installed, to provide a power output range from 1800 W up to 15,000 W.

TEBECHOP 13500 SE:

The industrial TEBECHOP 13500 SE rectifier module is particularly suitable for the construction of power supply systems with power consumption requirements in excess of 50 kW. This 3U height, 19" rack module has a 3-phase mains connection, active power factor correction (0.99 output factor) and constant a output power of 13,500 W.





Industrial rectifier THYROTRONIC

The THYROTRONIC industrial rectifier series is particularly convenient to use with battery-supported DC power supplies and, in addition to great reliability, offers a comprehensive signaling and monitoring concept.

Designed as an industrial power supply, these robust monoblock rectifier systems work with an electronically controlled output characteristic (IU characteristic according to DIN 41773).

Typical areas of application for these thyristor-controlled backup power supplies are:

- Power plants
- Substations
- Railway systems
- Oil and gas industry
- Airports
- Hospitals

Nuclear Plant Power Supply

Electronically controlled rectifier systems, in conjunction with the appropriate lead or NiCd batteries, form secure power supply systems that supply vital nuclear power plant consumers with electricity both when the grid is available and in the event of a grid failure. They can be used for power supply in conventional coal, gas or waterpower plants as well as in nuclear power plants.

These include:

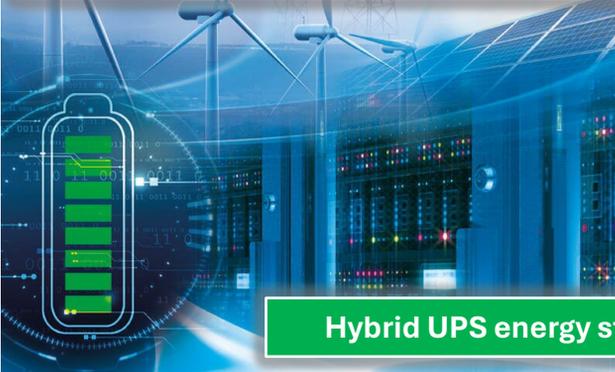
- the power plant control technology
- Signaling, control and protection electronics
- Telemetry and remote-control technology
- DC and AC motors
- Magnetic valves



Bye-bye Blackout: Energy storage with EMS and UPS function

UPS-enabled storage systems offer economic efficiency and fast payback combined with safety for the critical load.

The critical loads are protected from mains disturbances by the UPS. At the same time, the system takes on load management tasks in conjunction with the "on-board" energy management system (EMS) and can therefore generate a high additional financial benefit compared to systems without a storage function.



Hybrid UPS energy storage systems for industrial use

Inverters for safe industrial power supplies

Irregularities in the public supply network cannot be prevented due to the feedback effects of large consumers being switching on or off at peak consumption times and due to lightning strikes. Static inverters are increasingly being used to supply loads that require AC voltage that is unaffected by disruptions in the public grid, e.g. for power supply of:

- Data processing equipment Process computers
- Air traffic control systems Signal, call and warning systems
- Telecommunications equipment
- Inverter series: INVERTRONIC, INVERTRONIC compact, INVERTRONIC modular, KKW Inverters

Inverter single and three phase

With these industrial inverters, very robust single and three-phase IGBT inverter systems (power range 10 kVA - 200 kVA) are available for tough industrial applications, for example as:

- Power supplies for the power plant sector
- Power supplies for the oil, gas and petrochemical industries
- Power supplies for the processing industry

These inverters are connected to battery-backed DC grids and reliably supply critical loads with good quality power. The existing battery and rectifier infrastructure can remain in use.



Three-phase 19" modular inverters

Modular 19" inverters

With the INVERTRONIC compact inverter series, BENNING offers safe and cost-efficient, single-phase, modular inverter systems. In combination with the TEBECHOP SE modular rectifier systems, the final product is a flexible, adaptable and cost-efficient platform for setting up complete battery-supported backup power supplies with maximum availability.

These industrial power supplies are characterized by:

- n+1 redundancy
- autonomous inverter modules (hot plug)
- galvanic isolation
- extensive reporting and monitoring functions
- EUE and service bypass as separate hot-plug modules

Compared to three-phase monoblock systems, INVERTRONIC modular inverters have a lower volume and weight. With n+1 redundancy, the parallel connection of the inverter modules results in power supply systems with maximum availability and a power range of 10 kVA – 180 kVA.

Advantages of these inverters when setting up industrial power supplies:

- Easily scalable system performance
- each 19" inverter module has its own electronic switching device (SBS)
- Short MTTR (Mean Time to Repair)
- Highest availability through n+1 redundancy
- highly energy efficient due to good system efficiency factor even in the partial load range
- lower system volume and weight reduce the required space and simplify transport and installation of the system





EAE USA - E-LINE Comprehensive Busway Systems (CCR-II, KX-III, KD-III)

Busway Power Distribution

- Power Busway System is a modular energy transmission and distribution system created by insulating current carrier Aluminum or Copper busway conductors placed in a closed body.
- The busway system is used to transmit energy to a point along the route within the facility, starting from a point such as a transformer, generator or panel, or to distribute energy to the loads in the facility by receiving energy from the current receiving points on it with tap off boxes.
- EAE's power busway products are superior to traditional power distribution means, such as cable bus and conduit/wire.
- EAE's extensive labor savings, ease of use and low maintenance allow for a more cost effective and less labor-intensive method of transmitting power to and throughout a facility.
- EAE is the unrivaled leader in busway products due to their ability to seamlessly interconnect all their busway types & connect to any manufacturer's gear.
- Engineer project assist (REVIT), contractor field training, < 20-week lead times, saving options all included with EAE busway.



Tin plating is EAE standard application on all busway systems. Silver plating is optional. Tin / Silver plating, prevents oxide formation on all contact surfaces and minimizes contact resistance.



EAE designs the busway systems for each project according to customer requirements, with focus on energy saving and efficiency.



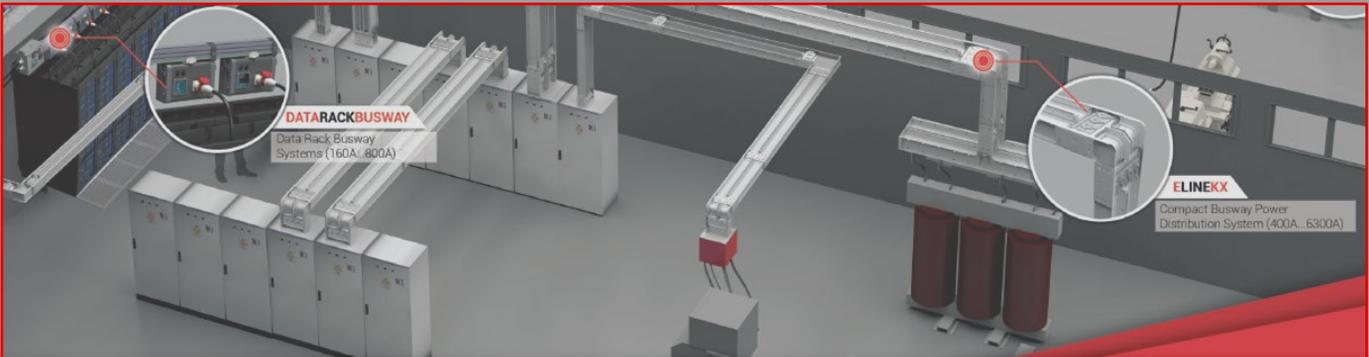
Specially formulated class B epoxy insulation ensures longer life cycle.



Extraordinary fire resistance performance.

Since 1973

EAE Group of Companies started its journey in the electrical sector in 1973 with the establishment of EAE Elektrik. Since its founding, EAE has grown rapidly, expanding its production and areas of operation by incorporating EAE Lighting in 1983, EAE Machinery in 1996, EAE Electrotechnics in 2004, and EAE Technology in 2009.



50+
Years Experience



7
Active Factories



360.000 sqf.
Manufacturing Area



3
R&D Centers

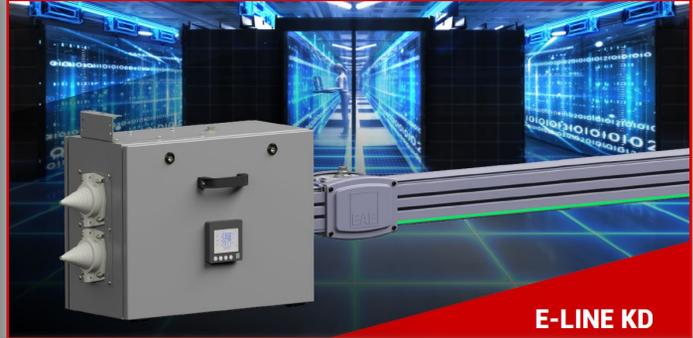


150+
Countries Exported To

EAE carries out its production activities in accordance with ISO 9001 Quality Management, ISO 14001 Environmental Management, ISO 14064-1 Greenhouse Gas Management System, ISO 45001 Occupational Health and Safety Management, ISO 10002 Customer Satisfaction Management, ISO 50001 Energy Management System, and ISO 27001 Information Security Management System standards.



E-LINE KD-III Busway (250A – 800A)



E-LINE KD

- Special holder mechanism for optimal Tap-Off Box placement
- Plug-Play Tap-Off Boxes for efficient energy monitoring
- Long-life contacts ensuring constant pressure for safety
- Snap-In Suspension Mechanism for quick setup
- Mono Block Joint for long-lasting connections
- IP23D for superior protection level

DATA TAP-OFF Boxes Upto 125A;



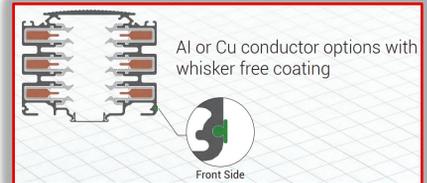
KD Plug-in 125A Tap-Off Boxes made of aluminum case with Safe Locking Mechanism enables Customization with vendor neutral components for different setups of MCB, SPD, RCCB, Power Meters Energy Analyzers and Current Transformers etc.

The KD-III Busway system - Data Center Busbar Distribution

To power the mission critical IT infrastructures, EAE offers a highly flexible Busbar Systems for reliable and energy efficient operations in your System's Data Centers.

Features:

- Plug-in-play anywhere along the bar
- Protected Tap-off contacts
- Aluminum or copper conductors (4,5 or 6 conductors)
- Tin plated aluminum or copper conductors
- Safe alignment mechanism ensures correct installation and operation
- Special interlock mechanism enabling to carry the weight of the plug-in box and cables at the busbar housing
- Pre-installed joints for easy, safe installation



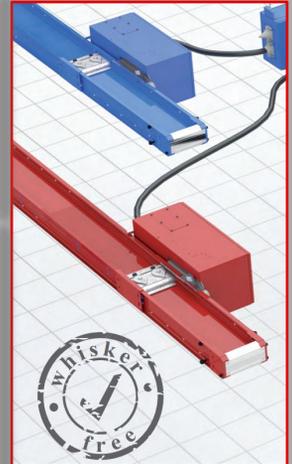
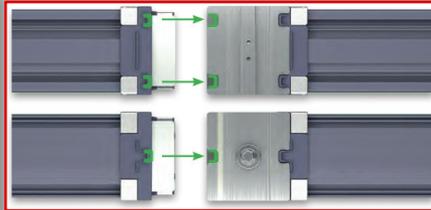
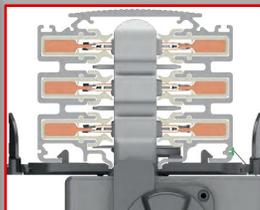
Al or Cu conductor options with whisker free coating

Applications:

White Space, High Density Distribution & Mid-Range Areas with "Infinite Flexibility", Medium-sized buildings & industrial facilities

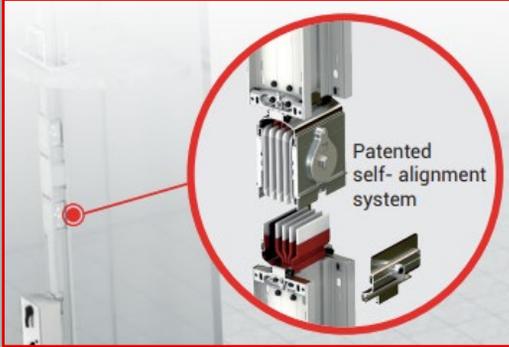


High Flexible and Reliable Busway System





E-LINE KX-III Busway (400A – 6000A)



- Vertical power routing for space-saving installations ✓
- High current capacity for multiple floors ✓
- 2Hr Fire-resistant and reliable performance ✓
- Easy maintenance and reconfiguration options ✓

KX Busway is easier to handle and install, saves labor costs and installation time.

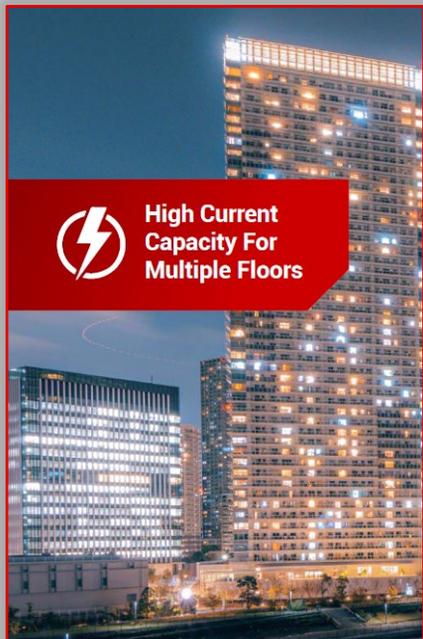
The KX-III Busway system

- The most versatile product in the E-Line Busway series.
- Designed, with the latest innovative technologies such as special epoxy coating and mono-block joint to have ratings from 400A to 6000A.
- The customer has the option to use copper or aluminum conductors in any configuration of the KX-III Busway.
- Used in a variety of vertical and horizontal electrical distributive applications and typically used in the transmission of energy in facilities with high power applications.

Feeder or Plug-in

- The feeder busway provides power transmission where tap off boxes are not required.
- The plug-in type can have up to 10 windows per 10-foot section for attaching tap off boxes.

Applications include: Industrial, Commercial, EV Charging, Automotive, Exhibition areas, High-rises, Hospitals, Data Centers



High Current Capacity For Multiple Floors

Features

- Modular structure
- High electrical and mechanical strength
- The compact structure offers many benefits in the installation.
- Fast, easy and reliable installation with single bolt joint construction.
- Output units allow a significant saving about panel and system cost.
- Special design for minimal voltage drop
- Tin plated aluminum or copper conductors
- IP55 protection degree
- Aluminum housing, epoxy insulation, fire resistance as per IEC 60331

Advantages of E-Line KX Compact Busbar:

- High short circuit resistance due to compact construction
- Less voltage drop in comparison to cable systems
- Special alloy metal enclosure provides higher mechanical strength and causes less electromagnetic interference.
- Better cooling capability
- High resistance to fire
- Seismic resistance
- Protection Degree (IP55 standard and IP67 optional)
- Requires less space in comparison to cable systems



E-LINE CCR-II Busway (400A – 6000A)

The CCR-II Busway system

Traditionally, carrying high currents (transformer to switchboards, main distribution lines, power distribution for factories) was achieved using multiples of large cross-section cables in parallel. In order to support these cables in the buildings, there were used a lot of cable trays, cable ladders, under-floor cable channels, etc.

Applications include: Outdoor environments, Oil & Gas plants, Petrochem, Nuclear plants, Cement plants, Power plants, Industrial, Harbors & Shipyards, Tunnels & Underpasses, Gallery transitions and more...

Using “Cast Resin Busbars” in outdoor environments instead of cables applied as mandatory offers many advantages.

High IP Isolation

Aluminum body over the IP 68 “DUROCOMP” composite material that is made by specially selected pure silicium minerals and epoxy resin and has high temperature and mechanical operation features protects E-LINE CCR-II busbar from external elements.

Effective Heat Dissipation

Heat accumulated in conductors are transferred into the environment through the aluminum body thanks to the additives with high heat transfer rate used in the system.

Fire and Earthquake Resistance

3 hours Electrical Continuity under Fire as per IEC 60331-1 2 hours current continuity according to BS 8602 standard Seismic Resistance as per IEC 60068-3-3 / 60068-2-57 and IEEE 693

One Bolt Joint Ensures Safety and Easy Installation

E-Line CRR Busbars are installed by tightening the “one bolt joint”. Belleville spring washers on both ends of the bolt retains the original contact pressure, ensuring a more secure, reliable and maintenance - free joint.

Short Circuit Withstand

High mechanical and thermal resistance within aluminum body thanks to DUROCOMP material

- **Copper & Aluminum options:**
- **3, 4, 4.5 & 5 conductor options**

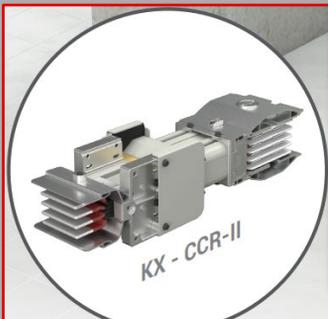


- High current capacity for demanding oil and gas operations.
- Explosion-resistant and corrosion-resistant construction.
- Advanced monitoring and safety features.
- Flexible design for efficient installations.



Advantages of a Cast Resin System

- IEC 61439-6 standard approved
- Protection degree IP68
- Protects against corrosion
- Resist insects and rodents
- Suitable for tropical climates
- High mechanical strength
- Protects against chimney effects
- High short circuit withstand
- Resistant to fire propagation
- Electrical continuity during fire
- Suitable to connect with E-Line KX busbar systems
- Voltage layout advantage thanks to its compact structure





Transformer, Switchgear and Electrical Power Solutions

DRY TYPE TRANSFORMERS



Cast Resin Transformers

Voltage levels up to 72.5 kV (350 kV BIL)
 Ratings 300 kVA – 45 MVA
 Cast primary and secondary
 NEMA enclosure options
 Fused disconnect options



VPI Transformers

Voltage level up to 25 kV (110 kV BIL)
 Ratings up to 14.5 MVA
 NEMA enclosure options
 Low voltage designs

Specialty Transformers

Reactors
 Submersible network transformers
 Up to 54 pulse transformers
 Phase shifting
 Zig zag/grounding transformers

PAD MOUNT TRANSFORMERS



Single-phase Liquid-filled Pad Mounted Transformers

Voltage level up to 34.5 kV
 Power range up to 167 kVA
 ANSI/IEEE and NEMA standards
 UL Listed



Three-phase Liquid-filled Pad Mounted Transformers

Voltage level up to 34.5 kV
 Power range up to 5000 kVA
 ANSI/IEEE and NEMA standards
 UL Listed

SWITCHGEAR



Air-insulated Switchgear

Up to 15 kV, 3000 A, 50 KAIC
 Utilizes J3MAG™ breaker
 Indoor and outdoor options available



Gas-insulated Switchgear

Up to 38 kV, 3000 A, 40 kA
 Up to 69 kV, 1200 A, 31.5 kA
 Indoor and outdoor options available



Transformer, Switchgear and Electrical Power Solutions

SMALL MPOWER TRANSFORMERS



Small Power Transformers

Power ratings 5 MVA – 100 MVA (max with fans)
 Primary voltage up to 161 kV (650 kV BIL)
 Dielectric coolant – mineral oil/ natural ester/synthetic
 Maximum manufacturing weight 100 tons
 Built to IEEE, IEC, GB/T and ANSI standards

OUTDOOR SUBSTATION BREAKERS



OD3MAG™ Outdoor Breakers

Up to 15 kV, 2000 A, 31.5 KAIC
 Magnetically actuated breaker
 Single-phase capability with independent pole actuators
 No maintenance requirements

UNIT SUBSTATIONS



Medium Voltage Unit Substations

Packaged solution includes:
 Switchgear, disconnect switch
 Cast resin or oil-filled transformer up to 5 MVA
 Inverter, used for BESS and solar applications
 Skid-style construction and containerized solutions

ENERGY STORAGE



Battery Energy Storage Systems (BESS)

Voltage ratings 5 kV – 38 kV
 Maximum stand-alone capacity 2 MWh – 5 MWh
 UL, IEEE and IEC rated
 Customizable for any Grid-Scale or C&I application



OPAL™ Series - Low Voltage Transformers



OPAL™ OPTIMIZED PERFORMANCE FOR THE APPLICATION LOAD

To achieve 25-50% more savings than the DOE 2016 requirement, Powersmiths' developed and implemented a design best practice called OPAL™ - Optimized Performance for the Application Load. Recognizing that the transformer has much more impact in an electrical system than just efficiency, OPAL considers the system as a whole, including managing impedance, arc flash, fault level, inrush, harmonics, and more. OPAL™ is possible thanks to the tight feedback loop between design, onsite manufacturing, & extensive ongoing real world operating performance verification. The result is more savings for the same dollar.

Expandable kVA selection enables right-sizing

Powersmiths enables right-sizing of electrical infrastructure by offering a much broader selection of transformer kVA sizes. The capital cost, operating cost and footprint reductions can be dramatic – on the order of 30-50%, through smaller transformers, breakers, conductors, and distribution panels.

Guaranteed Performance over 32 years

Powersmiths guarantees that every transformer we manufacture meets our published technical data, and furthermore, that this performance is met over the full term of the 32-year pro-rated warranty.

K-Rating requirement

Many general-purpose transformers are purchased & installed because they have the lowest first cost, however, they carry a UL label on the basis of feeding only linear loads. Since most connected loads today are electronic with nonlinear profiles, a low-voltage transformer needs to be K-rated to have a valid UL listing for most applications. E-Savers are appropriately K-rated.

Environmental / Green Building / LEED® / Net Zero

By going meaningfully beyond the DOE 2016 baseline efficiency, the E-Saver™ contributes to green building, LEED®, Net Zero and carbon footprint reduction goals. Additional benefits include our ISO14001 certified manufacturing, integrated metering and ability to integrate with the Powersmiths WOW™ Sustainability Management Platform.

Metering & Arc Flash options

Integrated metering can provide information about capacity utilization, load profiles, power quality and energy use. The lockable hinged door and our patented 360° Rotatable IR Port™ options, both provide quicker maintenance access and reduce arc flash safety risks.

Other Features & Options

- Low Noise
- Electrostatic Shield comes standard, dual and triple also available
- Type 3R, Stainless Steel, Rotatable IR Ports, Hinged Doors & SPDs available



32 -YEAR PRO-RATED WARRANTY



E-SAVER OPAL™ Series - Low Voltage - High Efficiency Transformers

E-SAVER APPLICATION & KEY ADVANTAGES

The E-SAVER OPAL™ Series is a family of ultra-efficient dry-type isolation transformers that has been optimized for different application load profiles, to maximize energy savings and ensure electrical system compatibility. These energy optimized units are perfect for Net Zero, LEED® and High Performing Buildings.

T1000 OPAL™ Series - Low Voltage – Harmonic Mitigating Transformers (HMT)

HMT APPLICATION & KEY ADVANTAGES

The OPAL™ Series T1000-30H™ model is an ultra-efficient dry-type low-voltage harmonic mitigating isolation transformer that delivers an average of 30% less losses than a comparable U.S. DOE 2016 transformer, under a heavy harmonic-rich load. T1000-30H is optimized to reduce voltage distortion in harmonic-rich environments.

OPAL-T1000™ transformers treat the 3rd harmonic through secondary flux cancellation and reduce fundamental current imbalance. Unlike delta-wye transformers, OPAL-T1000 windings are configured such that 3rd and other zero sequence currents in the transformer do not couple into the primary winding. 5th and 7th harmonics are treated on a system basis at the common point upstream, by alternating phase-shifted models.

E-SAVER OPAL MODEL COMPARISON MATRIX ²

Model	Optimized Load Range	Saving beyond DOE 2016 *	Temp. Rise	Winding Material ***	Continuous Overload Capacity	K-Rating ** /****	Applications
E-Saver-33L	0-25%	33%	<130°C	CU	5%	K7	Most Applications - office, education, healthcare, most other institutional, commercial (light load feeding electronic equipment).
E-Saver-20M	0-100%	20%	<115°C	CU	15%	K1, K9, K13	Where equipment or process loading varies widely, or where the load is expected to change significantly over time.
E-Saver-25H	75-100%	25%	<105°C	CU/AL CU opt.	20%	K13	Dedicated equipment (fans, pumps, elevators, etc.), labs, broadcast, datacenter, industrial where loading is significant.
T1000-30H	50-100%	30%	<105°C	CU	20%	K20	Harmonic Mitigation Transformer - for heavy, harmonic-rich loads, high densities of electronic equipment, where voltage distortion could become excessive.
E-Saver-35H	75-100%	35%	<80°C	CU/AL CU opt.	33%	K20	Heavy loading for extended hours, and need for lower losses & operating costs, overload capacity, faster payback if high energy rate.
E-Saver-50H	75-100%	50%	<65°C	CU	50%	K30	For Special Applications close to full continuous load, where full load losses & heat output must be minimized, significant overload capacity.
E-Saver-S0L	0-100%	30%	<105°C	CU/AL CU opt.	20%	K20 (but not required for app)	Solar Applications - to avoid solar production waste - minimize transformer idling and full load losses, continuous overload capacity for longer life.

Conformity to Standards

Quality: ISO 9001
 Environment: ISO 14001
 Efficiency Test Lab: ISO 17025
 UL and CSA
 Production Integrated Nonlinear Load Test Program
 IPMVP Compliant Field Measurement
 Certified Test Lab Load Profile Test Reports





Staco FirstLine - Three Phase UPS Systems

In the event of an AC power failure, the FirstLine® P, PE, PLT and E3 UPS will automatically transfer to battery power and continue to provide power without any interruption for the full amount of time you select. When power returns, the UPS will automatically recharge the batteries for the next unexpected power outage or disturbance.



FIRSTLINE PLT

FirstLine PLT (50-60 kVA)

Three Phase, On-Line Double Conversion, Uninterruptible Power Supply

- Up to 94% Efficient Lower energy costs and carbon footprint Hot Standby Economy Mode available
- Compact & Reliable 208VAC or 480VAC models with *internal batteries (50-60kVA) allows for smaller footprint. Cooler operation extends internal component life
- AC Input Performance High input power factor of 0.99. Low input current distortion of < 1% (THDi) @ full load. Soft Start Power walk-in function that ensures progressive rectifier start-up



FIRSTLINE PE

FirstLine PE (50-200 kVA / kW)

Energy Efficient Uninterruptible Power Supply

Three Phase, On-Line Double Conversion

- Up to 99% Efficient Lower energy costs and carbon footprint
- Built-in Power Quality Metering Accurately diagnose and troubleshoot utility power events
- Advanced Touchscreen Display Integrated 4 channel oscilloscope for troubleshooting without any use of special software or encrypted tools



FIRSTLINE P

FirstLine P (65-500 kVA)

Three Phase, On-Line Double Conversion, Uninterruptible Power Supply

- Up to 98% Efficient Lower energy costs and carbon footprint
- Compact & Reliable Requires either front access so it can be placed against a wall to minimize footprint. Cooler operation extends internal component life.
- AC Input Performance High input power factor of 0.99. Low input current distortion of <= 3%. Power walk-in function that ensures progressive rectifier start-up.



STACO E3

Staco E3 (3.5-40 kVA)

Three Phase, On-Line Double Conversion, Uninterruptible Power Supply

- Above 92% Efficient Lower energy costs and carbon footprint Hot Standby Economy Mode available
- Compact & Reliable 208VAC or 480VAC models with internal batteries allows for smaller footprint. Cooler operation extends internal component life
- AC Input Performance High input power factor of 0.99. Low input current distortion of < 1% (THDi) @ full load. Soft Start Power walk-in function that ensures progressive rectifier start-up



Staco UniStar & S/V Series - Single Phase UPS



Staco V



Staco SV

Staco V & SV Series 120/120 VAC Universal Tower/Rack Mount

A true double conversion UPS will provide clean, high level quality power to fully protect mission-critical devices such as sensitive networks, small computer center servers, telecom applications, as well as for industrial applications.

The Staco V features a field-proven Digital Signal Processor (DSP) achieving high reliability, while providing protection from electrical power disturbances to the connected load. The convertible tower/rack design offers maximum flexibility, enabling UPS integration into a wide variety of environments. Industry-leading functionality is standard and includes hot swappable battery, powerful internal charger, emergency shut-down and programmable receptacles. The Staco V is an ideal power protection solution for servers, networks, telecommunications, industrial equipment, and manufacturing processes. XL Models are for those critical applications that require extended battery backup times.

The Staco SV features a field-proven Digital Signal Processor (DSP) achieving high reliability, while providing protection from electrical power disturbances to the connected load. Industry-leading functionality is standard and includes hot swappable battery, powerful internal charger, emergency shut-down and programmable receptacles. XL Models are for those critical applications that require extended battery backup times.

Staco UniStar VP Tower & Rack Mount UPS (6 & 10 kVA)

On-line, Single-phase - Parallel Redundant UPS System

- Power range and runtime scalability
- Full-time Digital Signal Processor Control
- LCD/LED mimic panel n Easy-to-set user personalization
- Up to 98% energy efficiency
- Continuous power conditioning, even when not running on battery
- Smooth, uninterrupted switching from utility power to battery mode, and back again
- Wide fluctuations in utility power are handled without going to battery
- Parallel up to three units for added capacity or redundancy, using a simple connection on the rear panel without additional cabinets
- Unlike most UPSs in this size range, the UniStar® VP has a very low rate of added and reflected harmonics, which protects the integrity of your entire electrical system



Staco VP



Staco Minuteman - Single Phase UPS

Endurance UPS Series (1, 1.5, 2, 3 kVA) – Tower/Rack

Single-phase, high density, double conversion On-Line UPS Series. Light and compact with **advanced lithium battery technology**.

Designed to protect the most sensitive IT and business infrastructure against the worst power environments. Continuous power conditioning with no signal transfer time, pure sine wave output. Wide variety of installation options to create the perfect power protection solution. 5-year product warranty, including batteries.



Endeavor 5-10kVA UPS Series – Tower/Rack

The Endeavor 5-10kVA is a high-density, double-conversion online UPS series providing unparalleled power protection for critical IT and business infrastructure. With a unique multi-color touchscreen panel for easy management and monitoring, this UPS offers a wide range of installation options and is ideal for servers, networks, industrial applications.

Key Features & User Benefits

- True double-conversion online tech
- Independent Battery Bypass (IBB)
- Cold start function
- DSP design
- 120/208V output models
- Automatic internal bypass
- Multi-function, color LCD touchscreen
- USB and RS-232 communication options
- REPO Port • 3-year standard product warranty
- Optional 5-year warranty options available
- RoHS2 and Energy Star 2.0 compliant
- Platinum Protection Plan®
- High power factor (0.9pf)
- Smart fan control



Endeavor 6/10 kVA Tower UPS

The Minuteman® Endeavor® 6/10kVA Tower Series UPS combines transient free, pure sine wave output and extended runtime capability for critical applications. A front panel LCD display provides visual notification of the UPS status, including AC input status, battery status, and UPS fault indication.

Ultra-Configurable Value for Large Systems

The Endeavor Series is available in two models with configuration options and multiple voltage configurations to ensure a proper solution is available for most applications.

Typical Applications

- Network Data Centers
- Security Systems
- Highly-sensitive Equipment
- Education Networks
- Remote Network Closets
- Telephone and VOIP
- DAS and Small Cell Systems

