



Cyberex SuperSwitch 4



Digital Static Transfer Switch

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

Peak performance and reliability

- ≤1/4 cycle in-phase transfers.
- ≤16ms out of phase transfers regardless of phase difference between sources.
- ≤1.2x 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.

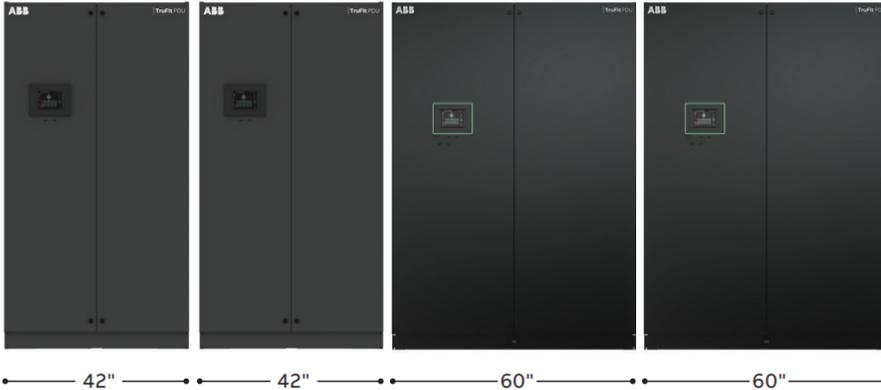
The SuperSwitch® 4 is available in a wide variety of models designed to meet the diverse needs of critical loads in smaller enterprise/edge data centers up to larger colocation or hyperscale installations.





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



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)



MegaFlex UL UPS



Simple & safe installation



15-year life on consumables

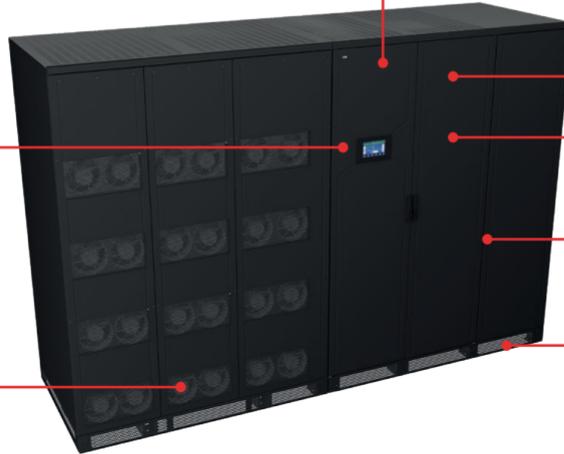
Monolithic UPS capable up to 1.6 MW - specifically designed for critical high-density computing environments across private and public enterprise, as well as data centers for colocation, hybrid, hyperscale and neocloud data centers.

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



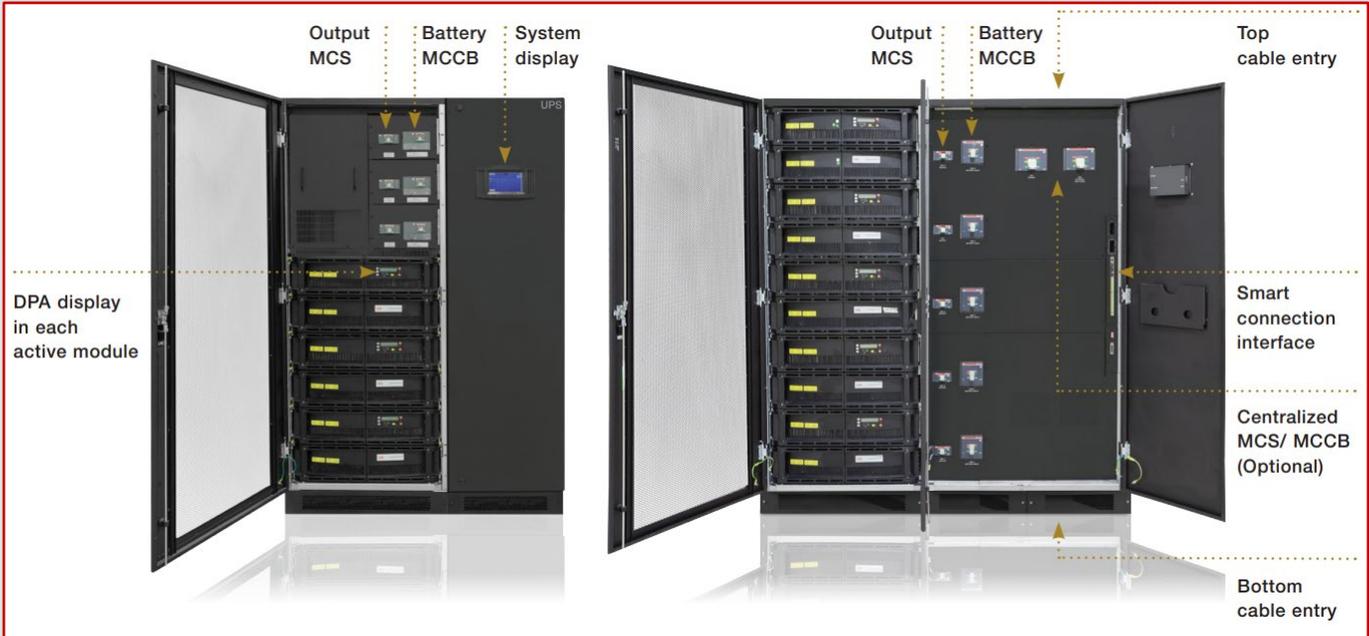
Control and monitor

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





DPA 60 & 120 – 208V UL – MODULAR UPS

Decentralized Parallel Architecture (DPA)

DPA 60



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

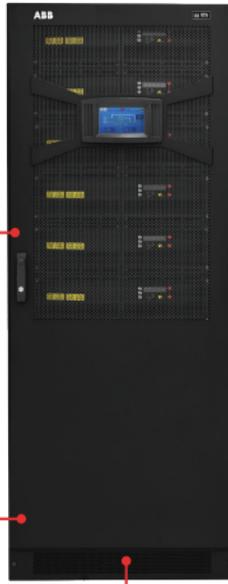
120kW or 100kW N+1 redundant power.
In one UPS cabinet.



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.

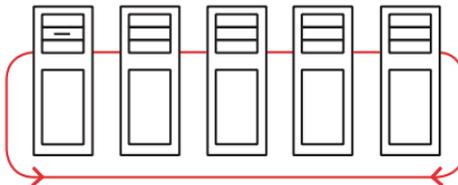


94% double conversion efficiency, **99%** eco-mode efficiency reduced power losses.



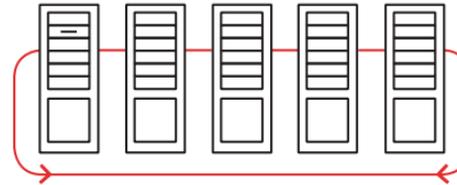
< 10min service time. Low MTTR to exchange one UPS module.

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

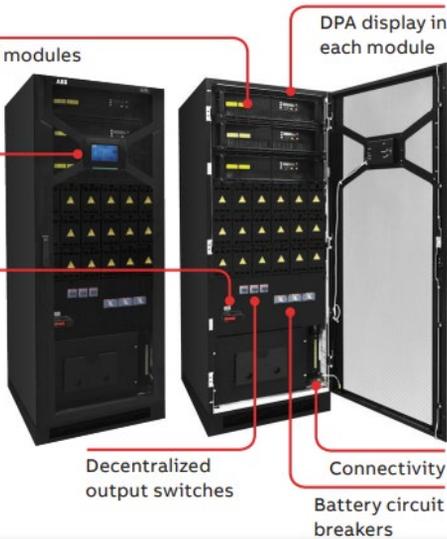
The DPA 120 delivers power protection from 20kW–120kW at 208V (one to six 20kW modules) with two cabinets – one cabinet for the power modules and the other cabinet for the external batteries

DPA 60

One to three UPS modules

System display

Internal maintenance bypass switch (optional)

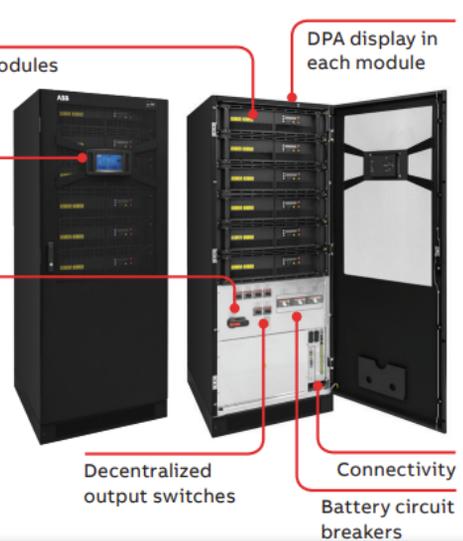


DPA 120

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.