

MONOLITHIC THREE-PHASE UPS UL 415V & 480V 60HZ

MEGAFLEX UL UPS

Innovating Advanced AI Power Protection



- Market-leading energy efficiency
- Monolithic UPS with capability up to 1.6 MW
- Monolithic Three-Phase UPS UL 415V & 480V
- Footprint reduction up to 40 percent

**ENGINEERED
TO OTRUN**



AS A MARKET LEADER IN UPS TECHNOLOGY, ABB DEVELOPED THE MEGAFLEX UNINTERRUPTIBLE POWER SUPPLY FOR THE UL MARKET WITH POWER RANGES FROM 1.0 MW TO 1.6 MW.

MEGAFLEX UL UPS IS FULLY ADAPTABLE, HIGHLY EFFICIENT, AND EASY TO INSTALL AND MAINTAIN. HIGH POWER PROTECTION HAS BEEN TAKEN TO A WHOLE NEW LEVEL WITH HIGHEST POWER DENSITY AND ENERGY EFFICIENCY.

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Maximizing uptime, ensuring seamless power protection

The MegaFlex UL UPS

The online double conversion MegaFlex UL UPS provides advanced, efficient, and reliable power protection for your critical infrastructure from 1,000 kW to 1,600 kW for UL applications.

This monolithic UPS is 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.

Technology based on ABB's **redundant parallel architecture™ (RPA)** allows the UPS to run in a parallel arrangement, eliminating any single point of failure with true redundancy. RPA reduces operating footprint and provides a scalable paralleling approach that increases system reliability. It also eliminates the need for external paralleling equipment or centralized bypass and master control.

The ABB MegaFlex UL UPS delivers up to 97% efficiency in double conversion mode and 99% in eBoost operating mode. The system efficiency substantially reduces operating and cooling costs, reducing cost of ownership and providing more effective power usage than conventional UPS systems.

Footprint savings up to

40%

Efficiencies up to

97%

Design life up to

15 year

including consumable components



MegaFlex UL designed for large high power mission critical data centers.



Flexible, scalable power

From 1,000 kW to 1,600 kW based on power block of 337 kW @ 415V and 400 kW @480V.



Simple and safe installation

Pre-engineered interconnection between power section and power distribution cabinet enables trouble-free installation



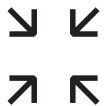
Sustainable power technology

Best-in-class efficiency of up to 97% in double conversion mode and up to 99% in VFD mode

RPA™

Maximized availability using proven RPA technology

RPA provides complete redundancy of all UPS modules in parallel, eliminating single points of failure



Maximized power density in compact monolithic design

Up to **40%** footprint savings with ultra-high kW per square foot



Up to 15 year life on consumable components

Reduces the cost of system replacements over the product lifespan

The MegaFlex UL UPS offering

Engineered for AI integration, the MegaFlex UL UPS offers a vast range of benefits to its user. From effortless installation to industry-leading innovation, explore how your facility can harness its exceptional performance.

01



FLEXIBLE APPROACH

- Single module capacity from 1,000 kW to 1,350 kW; core power blocks of 337 kW @ 415V
- Single module capacity from 1,000 kW to 1,600 kW; core power blocks of 400 kW @ 480V
- Redundant parallel architecture with distributed static bypass
- Multi-module ready offering: N+1, 2N, 2N+1, N+N, 3N/2, and a distributed redundant 'catcher' design
- Collaborative, customer-centered approach

02



OPTIMIZED EFFICIENCY

- Minimized energy losses, heat dissipation and electricity cost in double conversion, up to 97%
- High energy efficiency operation in eBoost mode, up to 99%

03



RELIABLE OPERATIONS

- RPA technology eliminates single points of failure in parallel systems
- Ease of operation with local and remote real-time monitoring
- Proven high-power transformerless technology

04



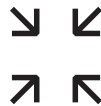
WORLD-CLASS INNOVATION

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



SIMPLE INSTALLATION AND SERVICEABILITY

- Easy front and top service access
- Modular sub-assemblies facilitate ease of service and lower MTTR
- Fast consumable replacement - all accessories in one cabinet
- Remote UPS monitoring
- Consumable parts design life up to 15 years



ULTIMATE SPACE & ENERGY SAVINGS

- Market leading maximization of power density
- Up to 40 percent footprint savings inside high-density computing rooms
- 25 percent reduced energy consumption kWh over the product life span

01

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.



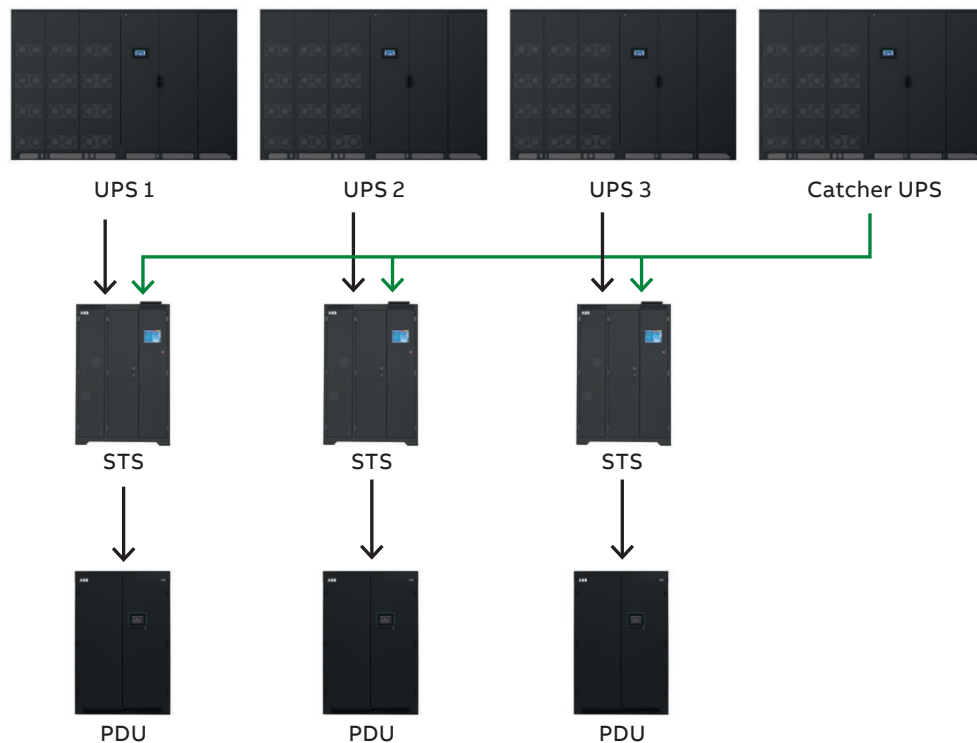
Flexible approach

- Ease-of-use for operations personnel
- Simple maintenance, easy system upgrade
- Can be paralleled with up to four systems

1,000 kW ———→ 1,600 kW

Flexible system architecture ready: N+1, 2N, 2N+1, N+N, 3N/2, and catcher systems. ABB catcher system configurations allow redundancy and reliability and improve total costs of ownership.

The MegaFlex UL UPS is part of ABB's broad range of products and integrated solutions that ensure data centers operate with optimum reliability and efficiency. From power distribution units to static transfer switches and uninterruptible power supply systems, ABB can optimize your centralized power protection design.



02

Optimized efficiency

Running a facility with high energy demands means that every percentage point of energy saved represents significant cost savings and a reduction in CO₂ emissions.



Optimized efficiency

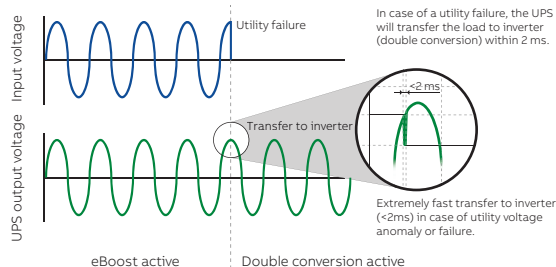
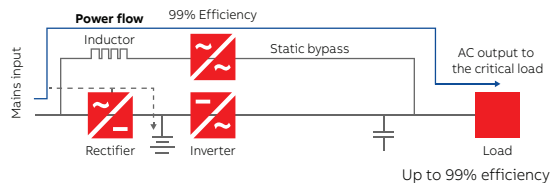
The MegaFlex UL UPS solution offers high efficiency ratings paired with a compact, competitive footprint.

- Double conversion operating mode with efficiency of up to 97 percent, rising to 99 percent efficiency in VFD eBoost mode
- Up to 40 percent footprint savings with high power density
- Optimized efficiency in partial-load conditions

Energy consumption is a critical issue for IT organizations as data center energy demands continue to grow. eBoost technology allows IT organizations to reduce energy consumption costs without sacrificing the system reliability that keeps their center running.

Double conversion (VFI) - 3 level converters

eBoost (VFD)



Efficiencies up to

99%

in eBoost operation

60%

Lower power losses

CO₂ emission reduction in eBoost mode

1,000 tons

15 year

design and operating life

03

Reliable operations

High-density computing environments demand reliable operations, combining assured uptime with stringent safety standards to protect both assets and personnel.



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

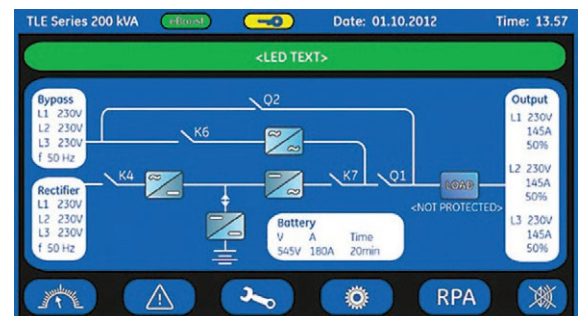
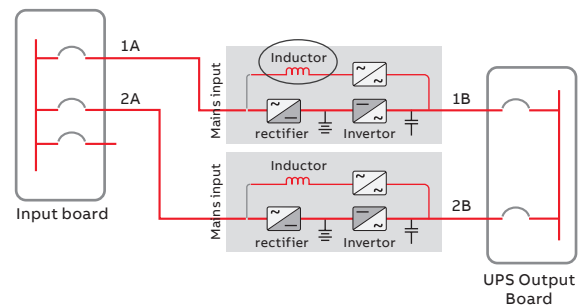
Maintenance made easy

Serviceability has never been easier, thanks to the MegaFlex UL UPS's innovative design. Building block blueprints of 337 kW and 400 kW have been expertly engineered to optimize accessibility and to reduce the possibility of human error.

Designed for ease of use from the moment of installation, the MegaFlex UL UPS two-cabinet compartmented architecture simplifies uniform structural support and easy installation. The power and distribution cabinets are factory pre-wired, minimizing onsite connection points and accelerating onsite logistics and commissioning.

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.



04

World-class innovation

Meeting the increasing power demands of modern data centers requires a continuous flow of clean, sustainable power and system-wide resiliency. With its world-class research and development capability and 130 years history of innovation, ABB is uniquely placed to work with you to support power quality and availability.



**World-class
innovation**

Enhanced resiliency increases a power structure's failure-prevention capabilities and its ability to keep running despite faulty equipment or software.

The MegaFlex UL UPS and accompanying ABB support infrastructure – such as intelligent switchgear, smart sensors, cloud-based predictive maintenance and enterprise and site-specific monitoring – deliver the high-level of system-wide resilience essential to the global data center industry.

- Support of ABB's full product portfolio
- Smart grid to regulate energy consumption

Innovation in resilience

As data centers respond to new trends in hybrid and distributed architectures, real-time data replication and advances in virtualization, resiliency becomes increasingly essential.

Measures taken to improve resiliency also have other benefits. For example, a good monitoring strategy allows for predictive insight that can not only flag equipment replacement issues but also enhance self-diagnostics. This in turn reduces downtime and mitigates risk through human error.

This approach also allows remote monitoring of the plant's energy consumption, making the implementation of energy management strategies easier, faster and more cost-effective.

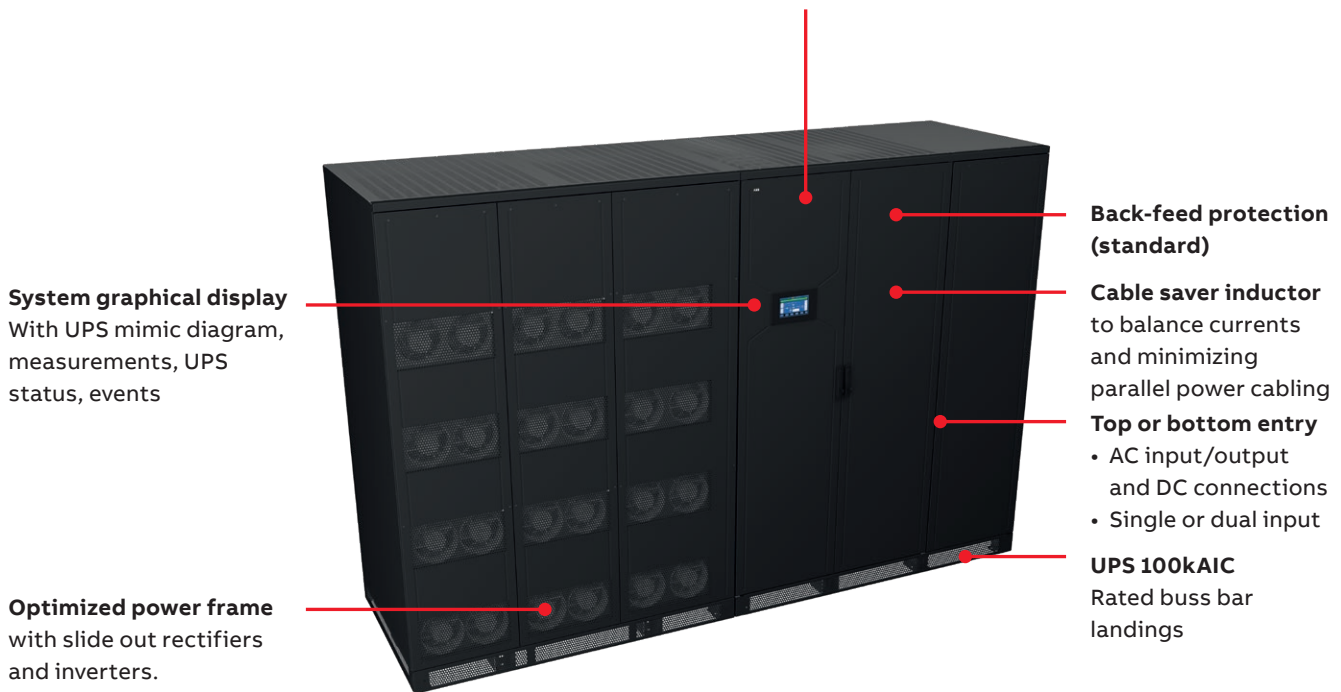


Ultimate space and energy savings

The MegaFlex UL system features an industry-leading, monolithic high-power density cabinet design with an optimized, system footprint. This compact system can stack three or four power blocks to achieve the desired UPS rating within a single cabinet, ensuring reliable power delivery with minimized energy losses.

Connectivity section

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



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

Optimized power frame
with slide out rectifiers and inverters.

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

	415V systems	480V systems
System power rating	1,000, 1,100, 1,200, 1,250 & 1,350 kW	1,000, 1,100, 1,200 & 1,500 & 1,600 kW
Core power rating	337 kW	
Nominal input voltage	415 VAC, 3-ph, 4 W + ground	480 VAC, 3-ph, 3 W or 4 W + ground
Rated output voltage	415 VAC ph-ph, 240 VAC ph-n	480 VAC ph-ph

Control and monitoring

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



Control and monitor

Display variables include:

- Input, output and battery voltage and currents
- Output kW, kVA

All UPS measurements are easily accessed remotely with a standard web browser via SNMP, Modbus TCP/IP or Modbus RS 485.

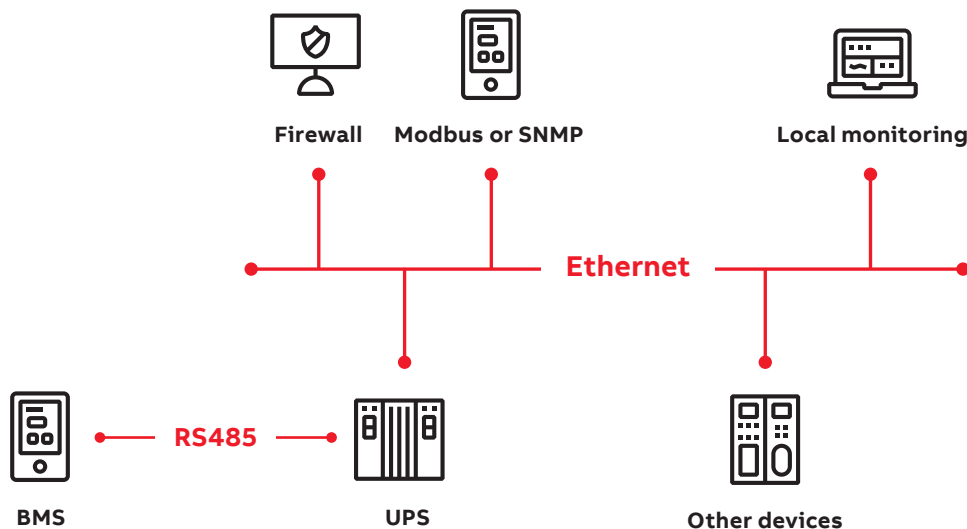
Measurements and alarms are also made accessible to other integrated systems including electrical power monitoring system (EPMS), the building management system (BMS) and data center infrastructure management (DCIM).

These systems also integrate with the ABB Ability™ Data Center Automation platform, enabling a proactive, holistic approach across operations.

Additional control and monitoring features:

- I/O dry ports
- Dry inputs for remote shutdown
- Generator, operational and external switchgear
- SKRU Interlocks
- Battery cabinet temperature sensor

The flow of information from the UPS



Tested and trusted

Comprehensive testing is crucial, which is why companies routinely test individual products before they leave the factory.

But as our customers know, there are often unexpected operating conditions once devices are integrated into a real-life system. To address this, ABB maintains extensive customer witness testing programs at its Swiss and US manufacturing facilities.

ABB's customers have facility access for:

- Infrastructure flexible testing of up to 5 MW
- UPS testing with associated equipment – like switchgear, static transfer switches, and transformers – for smooth system integration and transition to onsite infrastructure
- Testing center designed to test the largest UPS configurations as a single entity
- Overseeing the entire test process in a private and dedicated conference and high-power testing environment
- Customers can attend UPS factory witness test in person or virtually with remote system



Services

With a global presence in over 100 countries, ABB's service engineers are committed to supporting you wherever you are in the world.



Our UPS service portfolio is designed to maximize your return on investment, keeping equipment operating at its highest efficiency and availability throughout its lifetime.

We work closely with our team of R&D experts to develop the most advanced service technologies that ensure proactive product life-cycle management.

Our services include:

- Installation and commissioning
- Repairs
- Spares and consumables
- Extensions, upgrades and retrofits
- Replacement
- Training
- Service agreements
- Advanced services including predictive maintenance
- Factory evaluations

Technical specifications

General data	415V	480V
System power rating [kW]	1,000 / 1,100 / 1,200 / 1,250 / 1,350	1,000 / 1,100 / 1,200 / 1,500 / 1,600
Core power rating [kW]	337	400
Topology	Online double conversion	
Parallel system capacity	Up to 4 UPS systems via RPA Decentralized Architecture	
Static Bypass Inductor (Standard)	Up to 25% more flexibility on cable length in case of RPA system.	
Cable entry	Top or bottom	
Serviceability	Front and top service access	
HRG Ready	Yes	
Input Connections	Single or Dual Feed	
Short Circuit Withstand Rating	100 kAIC	
Static Bypass	100% Rated – Continuous Duty	
Cabinet color	RAL 9005 (black)	
Input		
Nominal input voltage	415 VAC, 3-ph, 4 W + ground	480 VAC, 3-ph, 3 W or 4 W + G
Voltage tolerance	-15% to +15%	
Current distortion THDi	<3.0% 100% load normal mode – linear	
Frequency range	60 Hz +/-10%	
Power factor	0.99	
Output		
Rated output voltage	415 VAC ph-ph, 240 VAC ph-n	480 V ph-ph or 277 V ph-n
Voltage tolerance	Static: +/-1% Dynamic (step load 0%-100%-0) +/-3 Dynamic (step load 0%-50%-0) +/-2	
Voltage distortion THDu	<3 @ 100% load-normal mode – linear <5 @ 100% load-normal mode – non-linear	
Frequency	60 Hz	
Rated power factor	1.0	
Efficiency		
Double conversion (VFI)	Up to 97%	
eBoost Mode (VFD)	Up to 99%	
Environment		
Protection rating	IP20	
Storage temperature	-13 to 131°F / -25 to 55°C	
Operating temperature	32 to 104°F / 0 to 40°C	
Altitude without de-rating	Up to 1,000 m	
Altitude with de-rating	1,500 m: -2.5% / 2,500 m: -2.5% 1,500 m: -2.5% / 1,500 m: -2.5%	
Acoustic noise at 1 m	<80 dBA	
Communications		
User interface	System graphical touch screen	
Communication ports	RS232, SNMP & Modbus	
Customer interface	Remote shutdown, gen-set interface, external bypass contact	
Batteries		
Types	Lithium ion, VRLA, Pure Lead, NiCd & Ni-Zn	
Nominal Battery Bus	480V (240 Cell)	
Standards		
Safety	ETL as tested to UL1778 / EN 62040-1 / UL9540	
EMC	C3	
Manufacturing	ISO 9001:2015, ISO 14001:2015, OHSAS18001	
Weight, dimensions		
Weight [lbs] [kg]	415V systems	480V systems
	1,000 kW 8,157 lbs / 3,700 kgs	1,000, 1,100 & 1,200 kW 8,157 lbs / 3,700 kgs
	1,100, 1,200, 1,250 & 1,350 kW 9,039 lbs / 4,900 kgs	1,500 & 1,600 kW 9,039 lbs / 4,900 kgs
Dimensions w x h x d (in) (mm)	129.92 x 86.61 x 39.37 (in) 3,300 x 2,200 x 1,000 (mm)	

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