MODULAR THREE-PHASE UPS IEC 400V

Innovation that works around you

MegaFlex DPA – the best in power protection

- Market-leading energy efficiency
- Modular UPS with capability up to 1.5 MW
- Footprint reduction up to 45 percent

As the market leader in UPS technology, ABB developed the MegaFlex Uninterruptible Power Supply range for the IEC and UL markets, with power ranges of up to 1.5 and 1.6 MW.

It’s fully adaptable, highly efficient, scalable, and easy to install and maintain. High-power protection has been taken to a whole new level without the need to compromise.

Table of contents

Meet the best and most reliable UPS on the market

The MegaFlex DPA UPS

The on-line double conversion MegaFlex DPA UPS provides the best power protection for your critical infrastructure from 250 kW to 1,500 kW.

This modular UPS is specifically designed for critical high-density computing environments across private and public enterprise, as well as data centers for colocation, hosting cloud and telecommunications.

The modular UPS is based on ABB's **decentralized parallel architecture (DPA™)**. This innovative system means every UPS module is practically its own UPS with all the essential functional units needed for independent operation.

DPA provides full redundancy and fault tolerance in a way that is unique amongst UPS vendors. This results in increased system reliability and availability that outperforms every other modular UPS solution on the market.

Footprint savings of

45%

Outperforms its competitors with efficiencies of

97.4%

Design life of up to

15 years

reduces total cost of ownership

Flexible, scalable power

From 250 kW to 1,500 kW or 1,250 kW N+1

Maximized availability using proven DPA technology

Each module is independently functional with inherent redundancy between UPS modules

Sustainable power technology

Best-in-class efficiency of **97.4%** in double conversion mode and > 97% with variable load

Concurrently maintainable power modules for continuous uptime

Plug-in design make it easy and safe to hot swap

Maximized power density

Up to **45%** footprint saving

Design life of up to 15 years

Reduces the cost of system replacements over the product lifespan

Simple and safe installation

Wire-free power frames and slide-in power modules for safer connection

The MegaFlex DPA UPS offering

As the most efficient technology of its kind, the MegaFlex DPA UPS offers a huge 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

- Easily scalable solutions
- Up to 1,500 kW power protection in a single UPS with add-on modules
- Redundant power capabilities: 1,000 kW N+1, 1,250 kW N+1
- Collaborative, customer-centered approach

02

Optimized efficiency

- Minimized energy losses, heat dissipation and electricity cost in double conversion or eco mode
- Smart load-sharing optimizes energy consumption
- Optimized system efficiency under low load conditions with ABB Xtra VFI with ABB Xtra VFI modes
- All guaranteed across the 15-year product lifespan

03

Reliable operations

- DPA™ technology maximizing power availability
- Online-swappable power modules for continuous uptime
- Automatic isolation of any faulty power module
- Fault-tolerant UPS design for uninterrupted power
- Ease of operation with local and remote real-time monitoring

04

World-class innovation

- Proven technology from world-leading R&D experts
- Clear technology roadmap
- Failsafe predictive maintenance
- Xtra VFI for optimized energy use
- Cable-free design

Simple installation and serviceability

- Plug-in power modules support easy, safe connections
- Pre-engineered power frames eliminate wiring entirely
- Cleans and optimizes incoming power
- Automatic self-configuration and testing minimizes human intervention

01

Flexible approach

As your power requirements increase, you need a UPS that grows with your infrastructure. With three to four power frame slots and connection frames of 1 MW or 1.5 MW, the MegaFlex DPA UPS offers a flexible mechanical layout that can adapt to your current system and future power expansion.

Flexible approach

- Easily scalable modular system
- Power capacity can be optimized to match variable loads
- Easy upgrade for power demand increases
- Ease-of-use for operations personnel
- Simple maintenance
- Can be paralleled with up to four systems

250 kW

1,500 kW

250 kW to **750 kW**

500 kW N+1 to **1,000 kW**

1,000 kW N+1 to **1,500 kW**

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 CO_2 emissions.

Optimised efficiency

The MegaFlex DPA UPS solution combines the highest efficiency ratings available with the smallest footprint.

- The best power density on the market
- VFI double conversion operating mode with efficiency of up to 97.4 percent, rising to 99.4 percent efficiency in VFD ECO mode
- Up to 45 percent footprint savings with ultra-high kW per m^2
- Optimized efficiency in partial-load conditions

Intelligent energy management
As a data center's power requirements can fluctuate dramatically, a high level of adaptability is required to effectively manage different usage levels.

Traditional UPS systems can fare poorly when the load is less than 25 percent of full system capacity. The MegaFlex DPA UPS Xtra VFI operating mode is a smart way to minimize losses and improve efficiency when running in the default double conversion mode.

When Xtra VFI mode is enabled, it automatically adjusts the number of active modules according to the power load requirement. Modules that are not needed revert to standby, ready to reactivate if the load increases.

The switching regime can be set by the user to increase reliability, extend service life and equalize ageing. To achieve this, the system rotates modules between active and standby mode at fixed intervals. Should there be a mains failure or other abnormal situation, all modules can revert to active mode within milliseconds.

Efficiencies up to

97.4%

at system level

30%

Lower power losses

CO_2 emission reduction of

427 tons

Design life of up to

15 years

reduces total cost of ownership

03

Reliable operations

Critical, high-density computing environments demand a combination of guaranteed uptime and the highest safety standards to ensure both assets and people are protected.

Reliable performance

- Automatic power module self-configuration and firmware updates
- Slide-in power modules for simple and safe installation
- Full lifetime service from ABB-trained specialists
- Enhanced power measurement, providing comprehensive data to track energy consumption

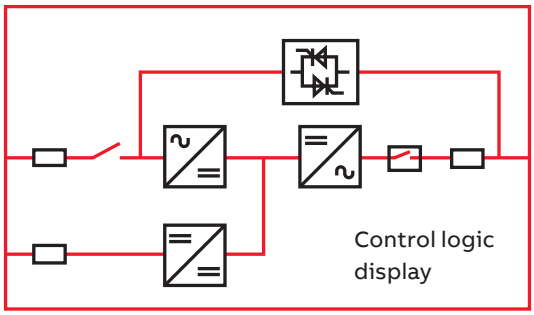
Maintenance made easy
Serviceability has never been easier than with the MegaFlex DPA UPS's modular design. Each component has been expertly engineered to optimize accessibility and to reduce the possibility of human error.

Designed for ease of use from the first moment of installation, the module cabinets are easily transported to the UPS and slide into place on integrated wheels.

Docking connectors eliminate the threat of cabling faults during installation while entry points at the front and rear of the IP20-protected cabinet make connecting mains cabling convenient, safe and worry-free.

The fan array is mounted on a pull-out drawer for ease of access with failure detection and speed regulation provided as standard.

DPA™ (decentralized parallel architecture) technology
This modular UPS is based on ABB's DPA system, where every UPS module is practically its own uninterrupted power source. This ensures inherent redundancy between modules, allowing them to function independently on all levels.



- Plug-in power modules support easy, safe connections
- Pre-engineered power frames and power distribution frame eliminates wiring entirely

04

World-class innovation

Meeting the increasing power demands of modern data storage solutions 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 DPA 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.

- Intelligent predictive maintenance program to plan and reduce maintenance throughout product life
- 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 improves speed to market, 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.

Control and monitoring

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

Display variables include:
- Input, output and battery voltage and currents
- Output kW, kVA
- Thermal monitoring for the main converter and critical components

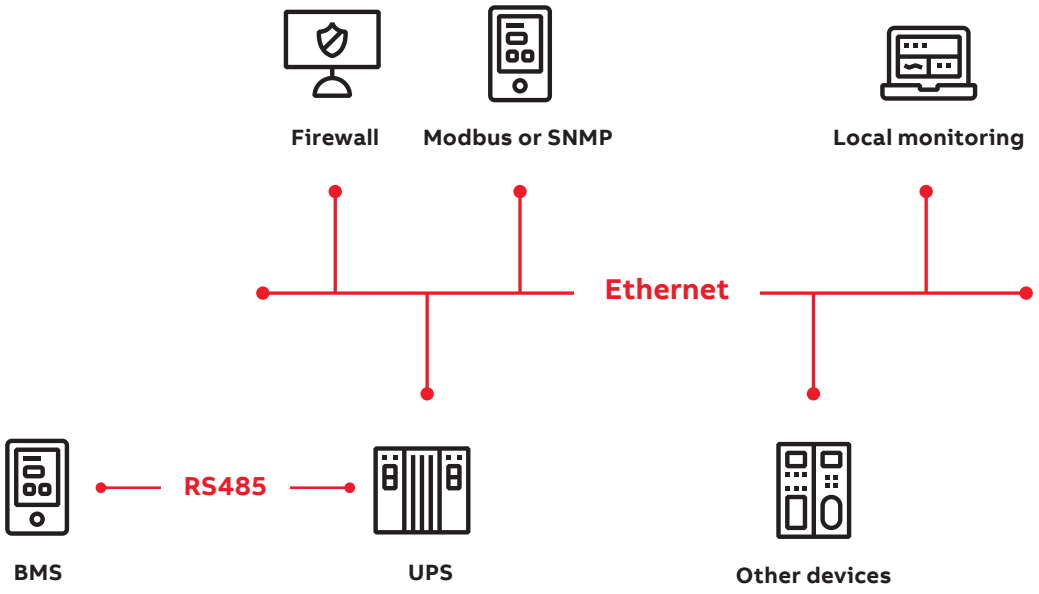
All UPS measurements are easily accessed remotely with a standard web browser via SNMP, Modbus TCP/IP or Modbus RS 485.

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).

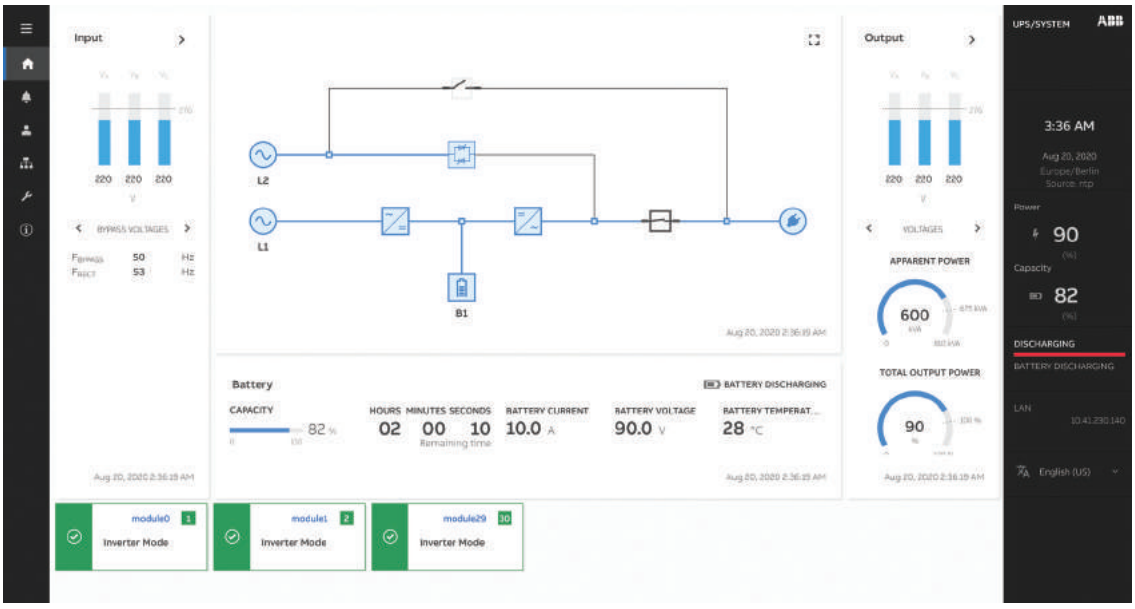
These systems also integrate with the ABB Ability™ Data Center Automation platform, enabling a proactive, holistic approach across operations.

Additional control and monitoring features:
- I/O dry ports
- Dry inputs for remote shutdown
- Generator, operational and external switchgear
- Castell interlock function
- Preconfigured battery temperature sensor input

—
The flow of information from the UPS



—
Example of critical component status dashboard



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 has developed a power protection testing facility located at its Swiss factory. This groundbreaking center has been carefully designed to test even the largest UPS configurations as a single entity.

All ABB's customers have access to the facility for:

- Modular infrastructure for flexible testing of up to 4 MW
- UPS testing with associated equipment – like switchgear, static transfer switches, and transformers – for smooth system integration into onsite infrastructure
- Overseeing the entire test process from the comfort of an adjoining conference room
- Remote video conferencing where in-person visits are not possible

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			
System power rating [kW]	1,000	1,250	1,500
Core power rating [kW]	250		
Static byass architecture	Distributed		
Parallel system capability	Up to 4 UPS system		
Topology	Online double conversion		
Cable entry	Top or bottom		
Serviceability	Frontal access for power frame and connection frame, removable power module with 360° access		
Back-feed protection	Built-in as standard		
Input			
Nominal input voltage	380 / 400 / 415 VAC		
Voltage tolerance (referred to 3x 400 / 230 V)	- 30% at partial loads		
Current distortion THDi	<4%		
Frequency range	35 – 70 Hz		
Power factor	0.99		
Output			
Rated output voltage	380 / 400 / 415 VAC		
Voltage tolerance (referred to 400 V)	± 1%		
Voltage distortion THDU	<2.0%		
Frequency	50 or 60 Hz (selectable)		
Rated power factor	1.0		
Efficiency			
Max system efficiency (VFI) @ 50% load	97.4%		
Overall system efficiency (VFI)	Over 97% with varying of load		
In eco-mode (VFD)	Up to 99%		
Environment			
Protection rating	IP 20		
Storage temperature	-25 °C to +70 °C		
Operating temperature	0 °C to +40 °C		
Altitude (above sea level)	1,000 m w/o derating		
Communications			
User interface	System graphical touch screen		
Communication ports	USB, RS-232, potential-free contacts, ABB network card		
Customer interface	Remote shutdown, gen-set interface, external bypass contact		
Batteries			
Types	VRLA, open cells, NiCd and Li-Ion		
Charger	Decentralized battery charger per power module		
Standards			
Safety	IEC / EN 62040-1		
EMC	IEC / EN 62040-2		
Performance	IEC / EN 62040-3		
Manufacturing	ISO 9001:2015, ISO 14001:2015, OHSAS18001		
Weight, dimensions			
Weight [kg]	2170	2865	3270
Dimensions w × h × d (mm)	2235 x 2000 x 1000	3045 x 2000 x 1000	3045 x 2000 x 1000

ABB Power Protection SA
Via Luserte Sud 9
CH-6572 Quartino
Switzerland

abb.com/ups

4NWP106478R0001_EN