



Three-phase UPS system

## DPA*f<sub>s</sub>* ST 10-200kW

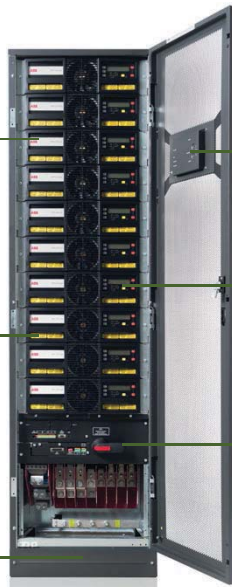
The modular UPS designed for low & medium power applications

# Always protection for your critical applications

**Up to 10 modules**  
in parallel per cabinet

**Up to 20 modules**  
in parallel per system

**0.42m<sup>2</sup>**  
footprint only



**System display**

**400kW**  
total system power

**Customer input**  
and output interfaces

**Product features:**

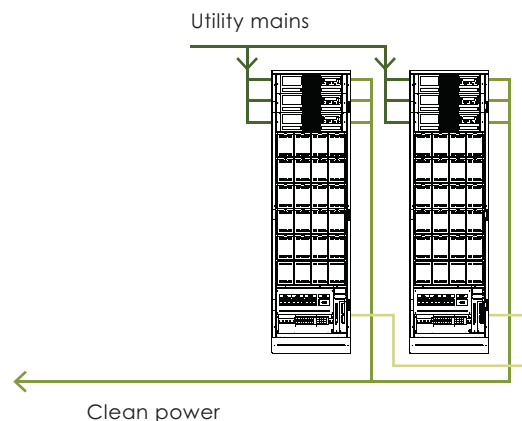
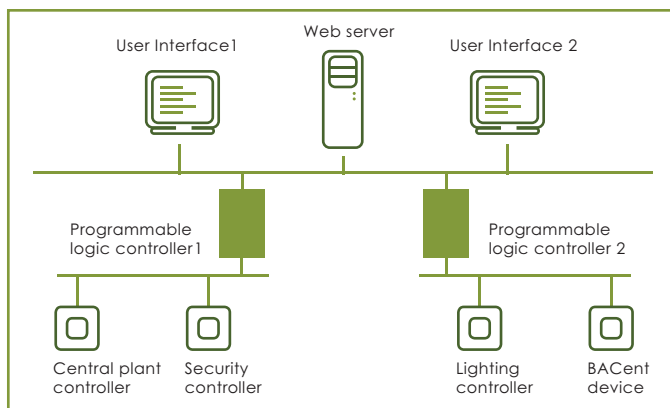
- Online double conversion UPS
- Power range from 10kW to 200kW in a single frame
- Redundant capacity (N+1) per frame
- Up to four frames in parallel
- Online swap modularity (OSM)
- Up to 96% online efficiency
- Eco-mode efficiency ≥ 98%
- Low input harmonic distortion (THDi < 3%)
- High power density (472 kW/m<sup>2</sup>)
- Flexible battery configuration
- Remote control and monitoring options

**All-in-one power protection solution**

NRG DPAfs ST is available for high density applications requiring an all in one power protection solution that includes UPS modules, maintenance bypass, batteries, I/O terminals and communications. A single system delivers power protection from 10kW to 200kW in 10kW or 20kW modular steps. For a continuously growing mid-sized infrastructure NRG DPAfs ST can be paralleled horizontally to increase the capacity up to 400kW. The ability to increment the power as the critical load grows optimizes the operating efficiency and reduce the initial cost for installations.

## The ideal solution for small- to medium-sized critical power IT applications

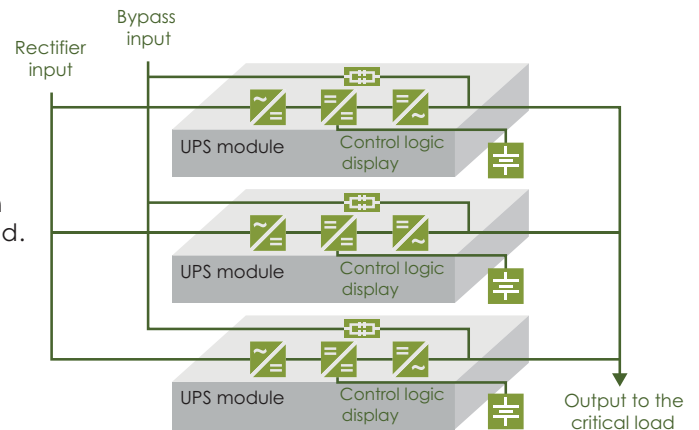
The DPAfs ST can be deployed in a variety of small to medium sized system architectures. In addition to traditional server load applications, the DPAfs ST is ideal to protect critical applications such as building management systems (BMS). Large facilities are often provided with BMS to control and monitor the building's mechanical and electrical systems such as ventilation, lighting, fire alarms and security. The BMS is designed to create and maintain a safe, productive and comfortable environment, thus increasing operational efficiency, decreasing the energy consumption and ensuring the safety of personnel and equipment. The DPAfs ST offers clean backup power for sensitive electronic devices (controllers, I/O devices and user interfaces) designed to monitor and control the infrastructure thus avoiding loss of data or damage to equipment.



# The best way to maximize power availability & minimize TCO.

## Decentralized Parallel Architecture

DPA<sub>fs</sub> ST optimizes availability and total cost of ownership (TCO). The UPS design is based on the concept of true redundancy. Each UPS module has all the hardware and software needed for autonomous operation. With all the critical components duplicated and distributed between individual units, potential single points of failure are eliminated. In the unlikely event of one UPS module failing, the failed module will be automatically isolated and the overall system will continue to operate normally. This modular approach is called decentralized parallel architecture (DPA™).



*Each UPS module has all the hardware and software it needs for autonomous operation.*

## High availability

**Add redundancy.** In a truly redundant system (DPA), all modules are active and share the load equally. Should one module fail, the remaining modules smoothly take over the load.

**Apply best topology.** The incoming AC is first converted to DC. The output AC is then synthesized from this DC – giving a clean sinusoid. These two conversion steps give the term “double conversion” and isolate the output voltage waveform from any disturbances on the input AC side.

**Minimize service time.** Because the UPS modules in a DPA are independent, they can be online-swapped without risk to the critical load and without the need to power down or transfer to raw mains supply. Therefore, engineers can work on the UPS without interrupting operations.

**Standardized solution.** DPA<sub>fs</sub> ST is based on standardized building blocks reducing the maintenance of the system and spare part stock.

**Select high-quality equipment.** Quality and reliability are the fundamental pillars of their core design.

## Low total cost of ownership

**Optimize your investments.** As UPS power requirements change, modularity makes it easy to add modules and increase the power capabilities.

**Optimize your battery capacity.** Run-time and battery sizing can be fitted to what is required. A separate battery allows the system to be upgraded and autonomy preserved, while not compromising availability.

**Save valuable floor space.** Modularity lends itself well to keeping UPS footprint small, – ideal where real estate is limited and expensive. A modular UPS rack has a small footprint and when extra modules are added, no extra floor space is taken up.

**Less installation and maintenance costs.** The modular approach makes installation and commissioning easy. Standardized modules reduce inventory levels of specialist spare parts and simplify system upgrades.

**Save energy costs.** Costs are held down by designs that have best-in-class energy efficiency. DPA<sub>fs</sub> ST efficiency curve is very flat so there are significant savings in every working regime.



## Technical Specifications



General data	ST40	ST60	ST80	ST120	ST200
System power range	10–400 kW				
Nominal power per module	10 kW / 20kW				
Nominal power / frame	40 kW	60 kW	80 kW	120 kW	200 kW
Number of UPS modules	1 to 2	1 to 3	1 to 4	1 to 6	1 to 10
Output power factor	1.0				
Topology	Online double conversion				
Parallel configuration	Up to 20 modules (up to 4 frames)				
UPS type	Modular (Decentralized Parallel Architecture)				
<b>Input</b>					
Nominal input voltage	3 × 380 / 220 V + N, 3 × 400 / 230 V + N, 3 × 415 / 240 V + N				
Voltage tolerance (3x400 / 230V)	For loads <100% (-20%, +15%), <80% (-25%, +15%), <60% (-35%, +15%)				
Input distortion THDi	≤3%				
Frequency	35–70 Hz				
Power factor	0.99				
<b>Output</b>					
Rated output voltage	3 × 380 / 220 V + N, 3 × 400 / 230 V + N, 3 × 415 / 240 V + N				
Voltage distortion (3x400/230V)	<1.5%				
Frequency	50 Hz or 60 Hz				
Overload capability	1 min.: up to 50% / 10 min.: up to 25%				
Unbalanced load	100% (all three phases regulated independently)				
Crest factor	3:1 (load supported)				
<b>Efficiency</b>					
Overall efficiency	Up to 96%				
In eco-mode configuration	98%				
<b>Environment</b>					
Storage temperature	-25°C to +70°C				
Operating temperature	0°C to +40°C				
Altitude configuration	1000 m without derating				
<b>Communications</b>					
LCD	Yes (per module); system display optional (graphical touch screen display)				
LEDs	LED for notification and alarm				
Communication ports	USB, RS-232, SNMP slot, potential-free contacts				
<b>Standards</b>					
Safety / EMC / Performance	IEC/EN 62040-1 / IEC/EN 62040-2 / IEC/EN 62040-3				
Product certification	CE				
Manufacturing	ISO 9001:2008, ISO 14001:2004, OHSAS18001				
<b>Weight, dimensions</b>					
Weight (with modules without batteries)	Up to 135 kg	Up to 238 kg	Up to 168 kg	Up to 262 kg	Up to 389 kg
Dimensions w×h×d (mm)	550 × 1135 × 775	550 × 1975 × 775	550 × 1135 × 775	550 × 1975 × 775	550 × 1975 × 775
<b>Cabinet type</b>					
Number of modules per cabinet	1 to 2	1 to 3	1 to 4	1 to 6	1 to 10
Parallel frames per system	4	4	4	3	2
Max. number of modules per system	8	12	16	18	20
Max. total system capacity w/o redundancy	160 kW	240 kW	320 kW	360 kW	400 kW