



DPA™ UPScale ST S2

Best-in-class modular UPS ensuring business continuity



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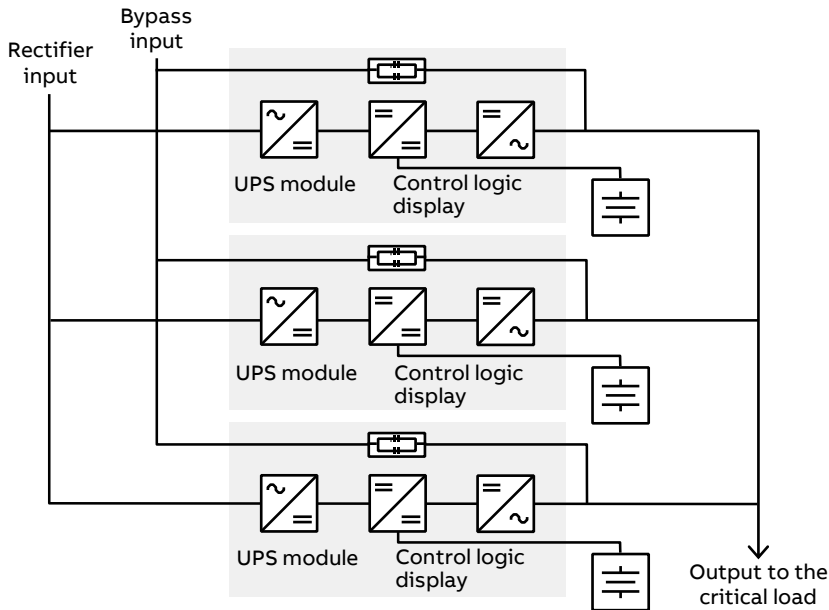
Maintenance & Service

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Best-in class for growing infrastructures

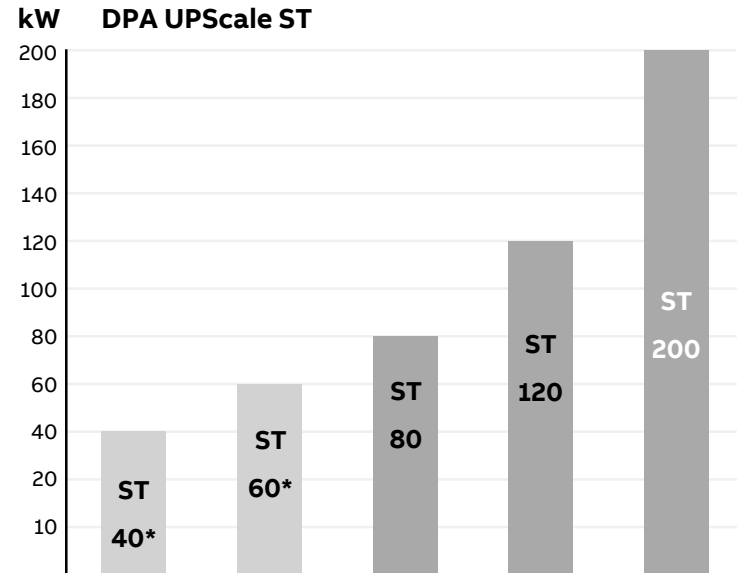
DPA UPScale ST is an online double conversion uninterruptible power supply (UPS) system that will secure the power supply to small-medium data center and control process systems avoiding downtime cost and lost data

It is a **3ph** transformerless UPS based on a **modular decentralized parallel architecture (DPA)**. In DPA, each module share no common components and has a fully functional UPS so a DPA parallel system offers extremely high system reliability and uptime is maximized



The modular architecture of the **DPA UPScale ST** allows flexible scalability, high availability, all in one solution*, easy serviceability, and lower Total Cost of Ownership (TCO)

DPA UPScale power range vs ST models



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Key benefits

99.9999% (6 nines) availability

- Decentralized Parallel Architecture
- No single points of failure
- Redundant capacity (N+1) per frame
- Replace or add modules with no downtime
- Short mean time to repair

Low total cost of ownership

- Up to 96% true online efficiency
- Eco-mode efficiency $\geq 98\%$
- Unity power factor (kW = kVA)
- Low input harmonic distortion (THDi < 3%)
- Small footprint / high power density (472 kW/m²)

All-in-one solution

- Power range from 10 kW to 200 kW in a single frame
- Internal battery modules for short autonomies and external battery cabinets for long autonomies
- User friendly interface per module and system level
- Remote control and monitoring options available

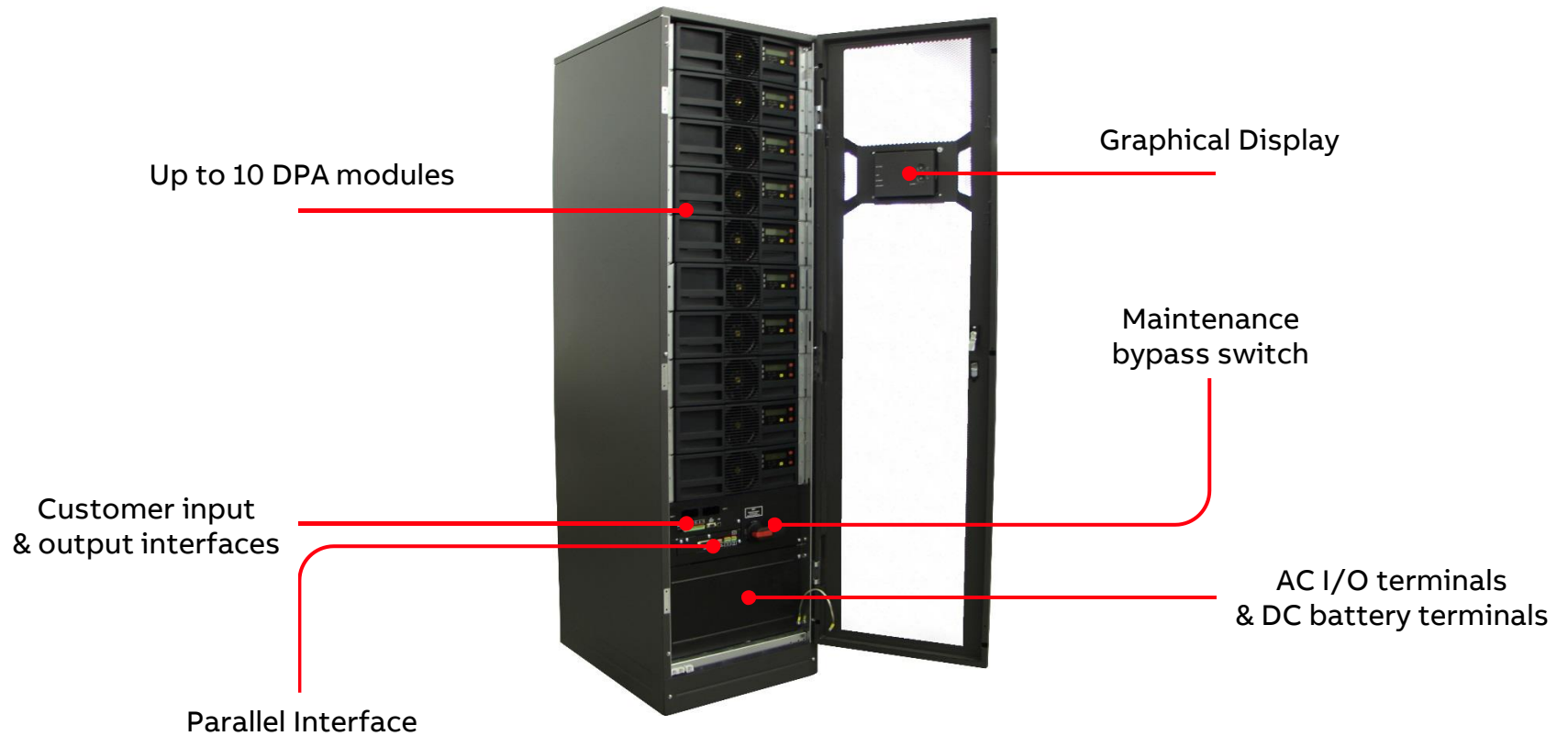
Efficient service concept

- Simple power upgrade
- Fast maintenance
- Full front access
- Reduced spare parts needed



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Product overview (1/2)



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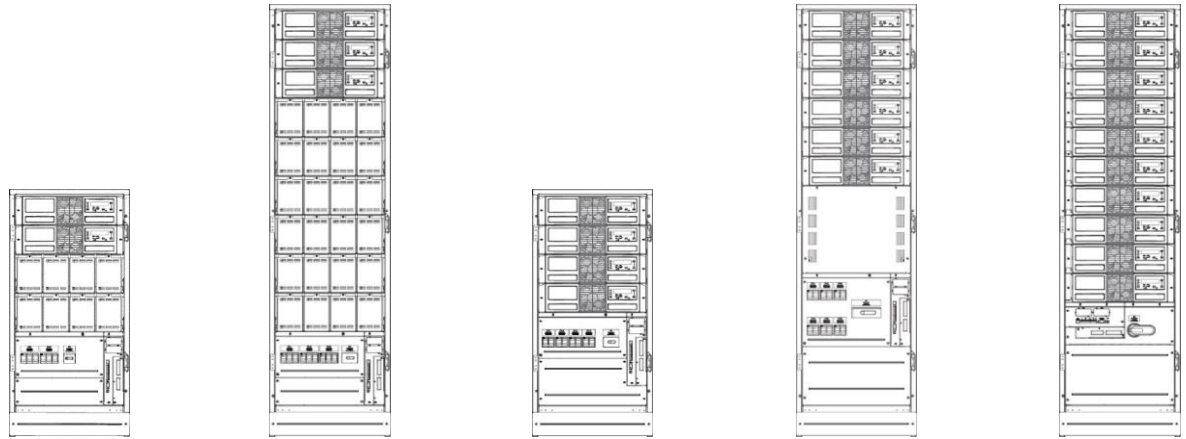
Product overview (2/2)

Technical highlights

Classification IEC/EN 62040-3	VFI-SS-111	Footprint	0.42 m ²
Topology	on-line double conversion	Power density per m ²	up to 472 kW/m ²
Type	3 phase transformerless	Internal battery modules	VLRA
System power rating	10 kW–200 kW	ST40	up to 80 × 7/9 Ah
Module power rating	10 kW, 20 kW	ST60	up to 240 × 7/9 Ah
Maximum power per frame	200 kW / 10 modules	Control & Monitoring	
Maximum parallel module	20 modules / 4 frames	Module	LCD control panel
Maximum power system (N+)	380 kW	System	graphical display (option)
Overall efficiency	96%	Customer interface	in/out dry contact, RS-232
Efficiency in eco-mode	98%	Network management interface	SNMP, Modbus TCP (option)
Output power factor	1		
Input current distortion THDi	<3%		
Cabinet Size (H × W × D)			
ST40 / ST80	1135 × 550 × 775		
ST60 / ST120 / ST200	1975 × 550 × 775		

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Available models

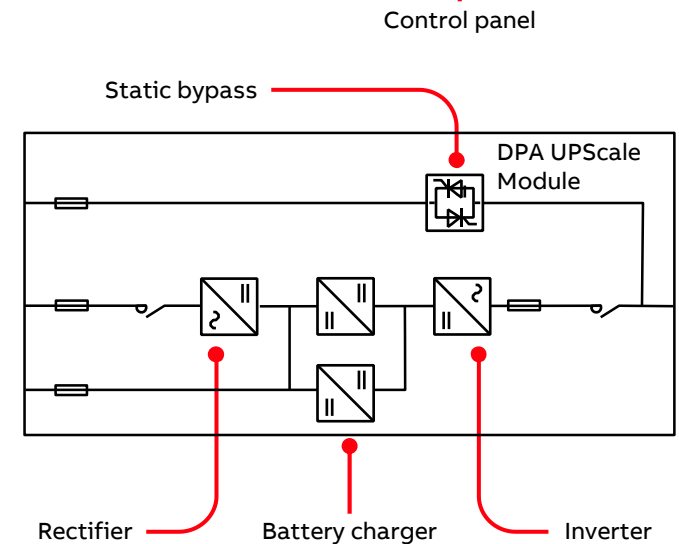


Product types	ST 40	ST 60	ST 80	ST 120	ST 200
Maximum output power	40 kW	60 kW	80 kW	120 kW	200 kW
No. of internal batteries (7/9 Ah)	up to 80	up to 240	–	–	–
Dimensions W × H × D (mm)	550 × 1135 × 775	550 × 1975 × 775	550 × 1135 × 775	550 × 1975 × 775	550 × 1975 × 775
Weight frame (without modules / without batteries)	92 kg	173 kg	82 kg	133 kg	174 kg

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M 10 & M 20 modules

Module Type	M 10	M 20
Module rated power	10	20
AC electrical network	TN, TT, 3ph + N	
Nominal Input voltage [V]	3 × 380 / 220 V+N, 3 × 400 V / 230 V+N, 3 × 415 / 240 V+N	
Input frequency	35–70 Hz	
Battery type	VLRA, NiCd	
VRLA 12V battery blocks @ max output rated power	34–50	48–50
Battery charger capacity	10%	
Nominal output voltage [V]	3 × 380 / 220 V or 3 × 400 / 230 V or 3 × 415 / 240 V	
Overload capacity on inverter	125% load 10 min. 150% load 60 sec.	
Output frequency [Hz]	50 or 60 (selectable)	
Weight	18.6 or 21.5 kg	
Dimensions W × H × D (mm)	488 × 132 × 540 (3HU)	



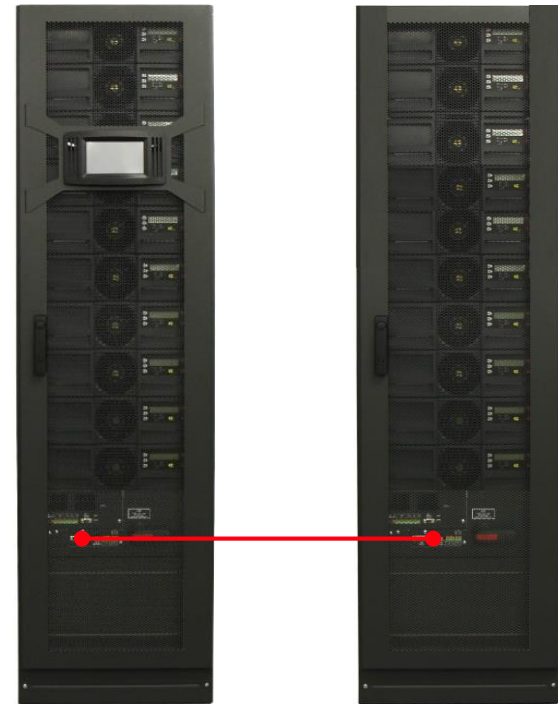
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Vertical and horizontal scalability

Highlights

- Vertical scalable power from 10 kW up to 200 kW (180 kW N+1) in a single frame
- Horizontal scalable power to increase the capacity up to 400 kW (380 N+1)

Cable type	ST 40	ST 60	ST 80	ST 120	ST 200
Number of modules per frame	2	3	4	6	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



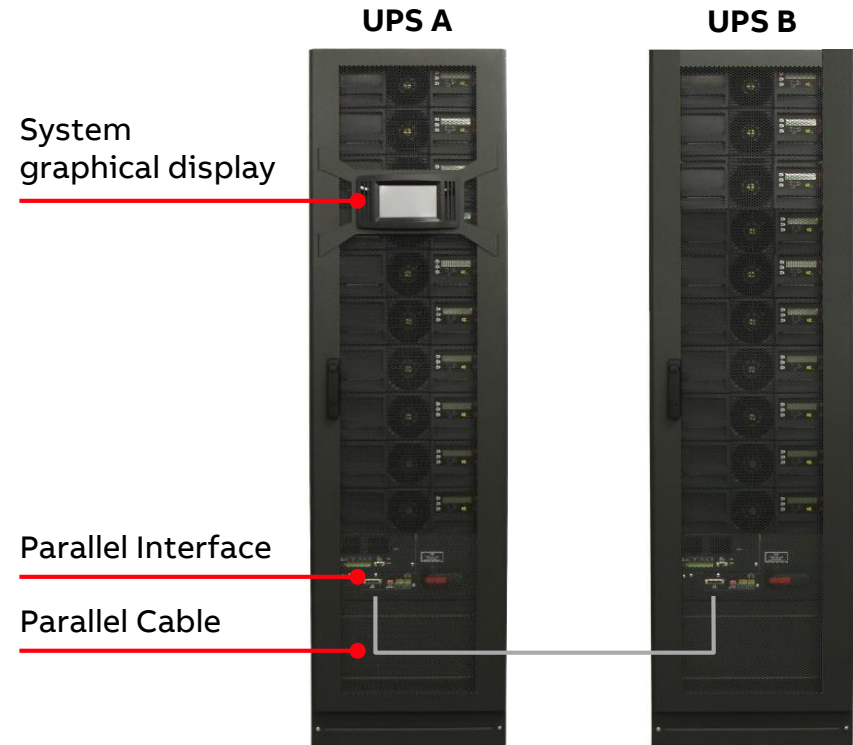
200 kW + 200 kW

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Parallel system configuration

The parallel system configuration is delivered with:

System Configuration	UPS A	UPS B
Graphical display	•	–
Parallel Interface	•	•
Parallel cable 5, 10, 15, 20, 25 m	•	–



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Hybrid configuration

Key benefits

- Small foot print with high power density (max 2 Frames)
- Lower total cost of ownership

ST200 + ST120 = 320 kW

KW	220	240	260	280	300	320	340	360	380	400
ST 60			1							
ST 120	2	2		1	1	1				
ST 200			1	1	1	1	2	2	2	2
Foot Print [W × D] mm	1100 × 775									

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Options – System & Power Module

Backfeed protection (BFP)

BFP in the UPS prevent the occurrence of any hazardous voltage or energy from being present on the UPS input a.c. terminals after interruption of the input a.c. power

Battery Start

The battery start function allows starting a UPS from the battery power in the absence of the input main supply. It means the inverter is started with energy from the battery only and the load is supplied with the battery energy via the inverter

Battery charger enhancement

Battery charger enhancement increases the battery charger current from 4 A up to max 6 A

Output short capability 3 x In

Increase the output short circuit capability of the DPA UPScale power module M 20 to 3xIn during 40 ms

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Frames

Modules

Option		ST 40	ST 60	ST 80	ST 120	ST 200	M 10	M 20
System	Backfeed protection	•	•	•	•	•	–	–
Power Module	Battery start	–	–	–	–	–	•	•
	Battery charger enhancement	–	–	–	–	–	•	•
	Output short capability 3xIn	–	–	–	–	–	–	•
Wiring	Halogen free cable	•	•	•	•	•	–	–
Mechanics	Back plinth	•	•	•	•	•	–	–

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Control & monitoring

The network interface card provides:

- Remote monitoring via Web
- Environmental monitoring
- Extensive alarm handling and dispatching
- Redundant UPS monitoring
- Integration into network or building management system
- Integration into multivendor and multiplatform environments

CS141 Basic

For interfacing UPS with the network without additional environmental interfaces (sensors)

Support following protocols:

- SNMP
- Modbus TCP
- HTTP
- Telnet FPT
- SMTP (e-mail)



Slot format

CS 141 Advanced

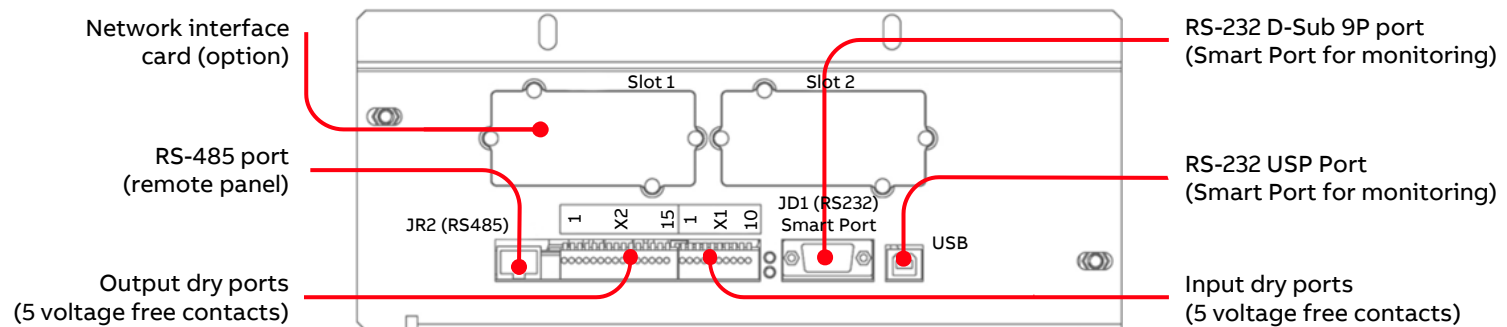
For interfacing UPS with the network allowing user to connect additional sensors to monitor the environment

Support following protocols:

- SNMP
- Modbus TCP
- Modbus RS-485
- HTTP
- Telnet FPT
- SMTP (e-mail)



Slot format



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Efficient service concept

Modular concept benefits for maintenance and service

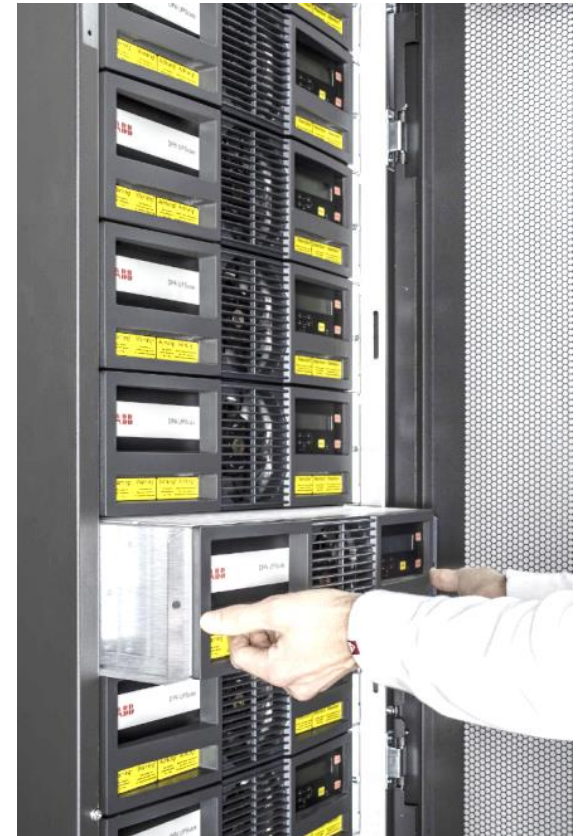
- Limited spare parts inventory in quantities & part numbers
- Standardized service practices
- Minimized risk for human errors

UPS service with ABB's online swappable modules:

- Replace or add modules with no downtime
- Simple power upgrade

DPA UPScale ST allows efficient service

- Front access for maintenance and service



ABB