

1.1 GENERAL CHARACTERISTICS

General characteristics - Frame

Values

Unit

Model: Conceptpower DPA 500, UL Series



Power, rated:

Apparent	500	kVA
Active	500	kW
Power, range	100 - 3000	kW

UPS type: online, transformerless, modular, decentralized parallel architecture (DPA)

Parallel capability: up to 6 frames

Battery: not included

Performance classification: VFI-SS-111

Mechanical

Dimensions (width × height × depth)	70 x 77.75 x 36 (1778 x 1975 x 914)	In (mm)
Mass, approximate (500kW system, with 5 modules) (Empty cabinet)	2150 (975) 950 (430)	Lbs. (kg)
Acoustic noise (acc. to IEC 62040-3)		
In normal mode (at ≤25°C) at 100% / 50% Load	75 / 67	dBA
In battery mode (at ≤25°C) at 100% / 50% Load	73 / 66	

Safety

Access: Operator/Restricted Access

Degree of protection against hazards and water ingress: IP 20

Electromagnetic compatibility

Emission UPS Cat/Immunity UPS Cat C3 / C3

Environmental

Storage temperature range	-25 - +70	°C
Operative temperature range	0 - +40	°C
Relative humidity range (non-condensing)	≤ 95	%
Maximum altitude without de-rating	1000	m

Additional and usual information

Connection: 4 wires, 3 phase + Ground (PE)

Cable entry: Top. Bottom cable entry available upon request

Accessibility: Front access only

Unit Color: Powder coat, Midnight Black Wrinkle (Rohm & Haas #12-7001)

Standards

Safety	UL 1778 5th edition, CSA C22.2 No. 107.3-14 Third Edition
Electromagnetic Compatibility (EMC)	IEC/EN 62040-2

General characteristics - Module**Values****Unit**

Model: Conceptpower DPA 500



Power, rated:

Apparent 100 kVA

Active 100 kW

UPS type: online, transformerless, modular, decentralized parallel architecture (DPA)

Parallel capability: Up to 6 frames

Battery: Not included

Performance classification: VFI-SS-111

Mechanical

Dimensions (width × height × depth):

active sub-module/passive sub-module 27.8 x 6.90 x 29.50 (706 x 175 x 750) In (mm)

Mass, approximate:

Active sub-module/passive sub-module 121 / 119 (55 / 54) Lbs. (kg)

Additional and usual information

Back feed protection: Included

Color: Black (RAL 9005)

1.2 INPUT CHARACTERISTICS

Input characteristics	UPS frame values	UPS module values	Unit
Power, rated:	500	100	kW
Voltage (steady-state, r.m.s), rated:		3 x 480V	VAC
Tolerance at 480V	-10 / +15 at <100% load -20 / +15 at <80% load, -30 / +15 at <60% load		%
Frequency, rated		60 +/- 5%	Hz
Current (r.m.s), rated (with battery charged and input 480V)	614	123	A
Maximum (with Battery charging and input 400/230V)	689	138	A
Total Harmonic Distortion (THDi)		< 3.5	%
In-rush current	< 100% of rated current		%
Power factor	0.99 @ 100% load		
Rated Short Circuit Current Rating (Withstand Current)	100	-	kA
AC power distribution system: TN-S, TN-C, TN-C-S, TT			
Note: in static bypass mode or eco-mode TN-C and TN-C-S can cause PE current to rise above 5% of phase currents.			
Phases required		3	
Neutral required		No	
Additional and usual information			
Connection: 4 wires, 3 phase + PE			
Cable entry: top or bottom			
Accessibility: Front access only			
Walk In/Soft Start: yes			
Single input feed is standard. Dual input feed also available upon request.			

1.3 OUTPUT CHARACTERISTICS

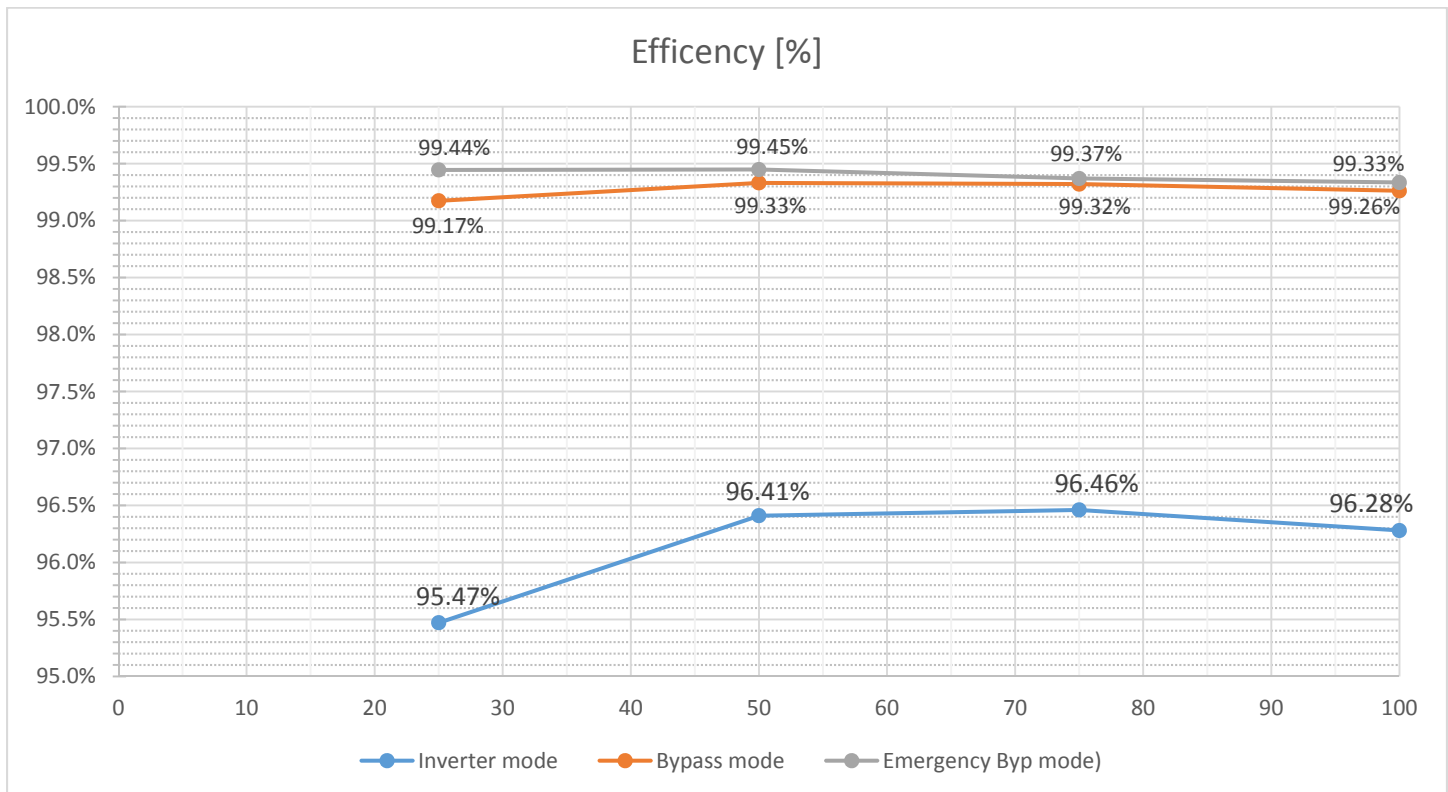
Output characteristics	UPS frame values	UPS module values	Unit
Power, rated:	500	100	kW
AC power distribution system: TN-S, TN-C, TN-C-S, TT			
Available phases		3	
Neutral available		No	
Voltage (steady state, r.m.s.), rated:		3 x 480	VAC
Variation in normal mode/battery mode		$\pm 1.5 / \pm 1.5$	%
Total harmonic distortion (THDu), 100% load, normal mode:			
Linear		< 2.0	%
Non-linear (according to IEC 62040-3)		< 4.0	
Total harmonic distortion, 100 % load, battery mode:			
Linear		< 2.0	%
Non-linear (according to IEC 62040-3)		< 4.0	
Voltage unbalance and phase displacement, 100 % load unbalance		0	°
Voltage transient and recovery time, 100% step load:			
Linear		± 4	%
Non-linear (according to IEC 62040-3)		± 4	%
Transfer normal mode --> battery mode		0	%
Frequency (steady-state), rated:		60	Hz
Frequency tolerance / variation in normal mode (frq. Synchronized with mains)		$\pm 2 / \pm 4$	%
Frequency tolerance / variation in battery mode (free-running)		± 0.1	
Max synch phase error (referred to a 360° cycle)		< 2	°
Max slew-rate		1	Hz/s
Nominal current (In), r.m.s. rated:	601	120	A
Overload on inverter		0.5 @ 150% load, 5 @ 125% load, 20 @ 110% load	min
Inverter Output Short Circuit Capability		300% for 100 ms	-
Load power factor, rated		1.0	-
Displacement (permissible lead-lag range)		(all range) 0	%, s
AC / AC efficiency in normal mode, linear load:			
100% load		96.28	
75% load		96.46	%
50% load		96.41	
25% load		95.47	
Eco-mode efficiency, linear load		≥ 99	%
Crest factor (load supported)		3:1	
Static bypass			
Type: automatic, static switch in each module			
Transfer time: inverter → bypass / bypass → inverter / in eco-mode		<1 / <5 / <6	ms
Rated current	666	133	A
Fault clearing capability (bypass mode) for 20 ms	10xIn	10xIn	A
Overload current on bypass mode (< 25°C)	continuously @ 110% load		min

1.4 BATTERY CHARACTERISTICS

Battery characteristics	Values	Unit
Technology: VRLA, vented lead-acid, NiCd		
Battery/DC Nominal Input	540V (nom)	
Number of 12 V blocks	45	
Number of 1.2 V NiCd cells (even and odd)	450	
Battery charger - each module has its own decentralized charger		
Max. current charger capability	60	A
Max. power charger capability	30	kW
Floating voltage (VRLA / NiCd)	2.25 / 1.40	VDC
End of discharge voltage (VRLA / NiCd)	1.68 / 1.05	
r.m.s. ripple current (percentage of the battery capacity)	2	%
Temperature compensation: optional		
Battery test: automatic and periodic battery test (selectable)		

1) IMPORTANT NOTE: At output voltage 480VAC, the minimum number of 12V blocks is 45.

1.4.1 Graph: AC/AC efficiency with linear load @ cos (phi) 1 *



* Tolerance of $\pm 0.5\%$ applies on all figures