Power Xpert 9395P 1000-1200 kVA UPS Technical Specification

Manufacturer's declaration in accordance with IEC 62040-3

IEC 62040-3 Subclause	MODEL RATING	1000 kVA / 1000 kW	1200 kVA / 1100 kW	1200 kVA / 1200 kW
	Model catalogue reference	9395P-1000(1200)	9395P-1200(1200)	9395P-1200(1200)-PF1
	Number of UPM's (Uninterruptible Power Modules)	4 UPM's	4 UPM's	4 UPM's
	UPS options:	External battery cabinets, UPM status LED lights, System Bypass Module (SBM), separate battery input, separate rectifier feed		
	Upgradeability	up to 1200 kVA	-	-
	External paralleling	Up to 5 units with distributed bypass Up to 7 units with centralized bypass		
5.1.1	UPS topology	Double conversion, 3-level IGBT converters		
5.3.4	UPS performance classification	VFI-SS-111		
MECHANICAL				
	UPS dimensions (width x depth x height)	4450 x 880 x 1880 mm		
	Shipping weight	3120 kg	3120 kg	3120 kg
	Installed weight	2980 kg	2980 kg	2980 kg
	UPS Cable entry	Top / bottom entry		
	UPS Degree of protection	IP20		
	UPS colour	Black, RAL 9005		
ENVIRONMENTAL				
6.5.5	Acoustinc noise at 1 m in 25 °C ambient temperature	< 81dBA in double conversion, full load < 74dBA in double conversion, <60% load		
4.1.4	Ambient UPS storage temperature range	-25 °C to +60 °C in the protective package		
4.2.1.1 and 5.4.2.2 h	Ambient operating temperature range UPS	0 to +40 °C		0 to +35 °C
		The maximum rate of temperature change shall be limited to 1.67 °C over 5 minutes (20 °C/hour), based on the ASHRAE standard 90.1-2013		
	External battery	+ 20 °C to + 25 °C recommended for optimized battery life time		
4.2.1.1	Relative humidity range	5 to 95%, no condensation allowed. There shall be at least a 1.0 °C difference between the dry bulb temperature and the wet bulb temperature, at all times, to maintain a non-condensing environment.		
4.2.1.2	Operating altitude	1000 m above sea level at rated maximum ambient temperature Maximum 2000 m with 1% de-rating per each additional 100m above 1000m		
	RoHS/WEEE compliancy	Yes		

Updated: 7.8.2018
Document: Power Xpert 9395P 1000-1200 kVA technical specification
The technical specification is subject to change without notice Rev007

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Manufacturer's declaration in accordance with IEC 62040-3

	MODEL RATING	1000 kVA / 1000 kW	1200 kVA / 1100 kW	1200 kVA / 1200 kW
EFFICIENCY				
5.3.2 r and 6.4.1.6	Efficiency in double-conversion, rated linear load			
	100% load	95,8 %	95,6 %	95,5 %
	75% load	96,2 %	96,1 %	95,8 %
	50% load	96,4 %	96,3 %	96,3 %
	25% load	95,5 %	95,7 %	95,7 %
	Heat dissipation in double conversion			
	100% load	43,8 kW	50,6 kW	56,5 kW
	75% load	29,6 kW	33,5 kW	39,5 kW
	50% load	18,7 kW	21,1 kW	23,1 kW
	25% load	11,8 kW	12,4 kW	13,5 kW
	No load	8,4 kW	8,4 kW	8,4 kW
	Efficiency in ESS, rated linear load			
	100% load	99,2 %	99,2 %	99,1 %
	75% load	99,3 %	99,3 %	99,2 %
	50% load	99,2 %	99,2 %	99,1 %
	25% load	99,0 %	99,0 %	99,0 %
ELECTRICAL CHARACTERISTICS				
INPUT				
5.2.1.a and 5.2.1 b	Rated input voltage	220/380 V; 230/400 V; 240/415 V		
	Voltage tolerance Rectifier input	rated voltage -15% / +15%		rated voltage -9% / +15%
	Bypass input	rated voltage -10% / +10%		
5.2.1 c and 5.2.1 d	Rated input frequency	50 or 60 Hz		
	Frequency tolerance	45 to 65 Hz		
5.2.2 a and 5.2.2 b	Number of input phases			
	Rectifier input	3 phases + PE		
	Bypass input	3 phases + neutral + PE		
5.2.2 d	Input power factor, double conversion mode			
	25-100% load	> 0,99		
	10-25% load	> 0,97		
5.2.2 c	Rated rectifier input current	1508 A (400 V)	1680 A (400 V)	1820 A (400 V)
5.2.2 f	Maximum rectifier input current	1816 A	2000 A	2000 A
	Bypass input current, recommended/maximum	1443 A / 1660 A	1732 A / 1992 A	1732 A / 1992 A
5.2.2 h and 5.2.2. i	Input current distortion at rated input current			
	Resistive load	< 3%		
5.2.2 e	In-rush current	<100% of rated current		

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5.2.2 k	AC power distribution system compatibility	TN-S, TN, TT, IT (4-wire or 3-wire)		
	Rectifier ramp-up, rectifier start and load step	Yes		
	Backfeed protection	Yes, for both rectifier and bypass lines		
ELECTRICAL CHARACTERISTICS				
OUTPUT				
5.3.2 k	Output power rating	1000 kVA	1200 kVA	1200 kVA
	Output power factor	pf 1.0	pf 0.92	pf 1.0
5.3.2 f and 5.3.2 g	Number of output phases	3 phase + neutral + PE		
5.3.2 b	Rated output voltage	220/380 V; 230/400 V; 240/415 V, configurable		
5.3.2 b	Output voltage variation, steady state	< 1,5%		
5.3.2 i	Total voltage harmonic distortion 100% linear load 100% non-linear load	 < 2% < 5%		
5.3.2 q	Voltage unbalance at reference unbalanced load Phase displacement at reference unbalanced load	< 2,5% < 1,0 deg.		
5.3.2 j	Voltage transient (r.m.s) Recovery time to steady state	0% during transfer from stored energy to normal mode ±4% with 140 ms recovery from 100% load step		
5.3.2 c	Rated output frequency Maximum slew-rate when synchronizing	50 or 60 Hz, configurable 0,5 Hz/s		
5.3.2 l	Overload capability @ max temperature On inverter	10 min 120% load 30 sec 136% load 10 sec 165% load 300 ms >165% load	10 min 110% load 30 sec 125% load 10 sec 150% load 300 ms >150% load	10 min 110% load 30 sec 125% load 10 sec 135% load 300 ms >135% load
	Overload capability @ max temperature – On bypass	Continuous < 115% load 20 ms 1000% load		
5.3.2 m	Output current limitation, short-circuit capability	3200 A L-N, 300 ms 3040 A L-L, 300 ms		
5.3.2 o and 5.3.2 p	Load power factor, permitted range	From 0,7 lagging to 0,8 leading without de-rating		
ESS MODE CHARACTERISTICS				
	Transfer time to double-conversion Mains available Mains failure	 No break < 2 ms in normal transfer conditions, < 10 ms maximum		

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	Output voltage variation setting	±10% of nominal voltage, default		
	Storm detection	UPS locks into double-conversion mode when three power line disturbances have forced the unit to double-conversion three times (user adjustable) within a one-hour period (user adjustable).		
	High Alert mode	UPS will stay on double-conversion for one hour (user adjustable), after which the unit will automatically return to operate on ESS.		
VMMS MODE CHARACTERISTICS				
	VMMS availability	Available for multi-module 9395P UPS system, both between internal modules and modules in an external parallel connected system.		
	VMMS operation	When load level per module is less than 55%, VMMS will automatically optimise the number of online modules for optimised operating efficiency. The extra UPMs will be set to ready state mode, capable to transfer online in < 2ms transfer time. The load will be fed in double conversion mode the entire time, even during and after a load step.		
	Redundancy level setting	Number of redundant online UPMs (system wide), configurable.		
	UPM module rotation	System will automatically rotate the ready state UPMs. Enabled by default, configurable.		
BYPASS				
	Type of bypass	Static		
	Bypass rating	1200 kVA		
	Bypass voltage range	220/380 V; 230/400 V; 240/415 V tolerance -10% / +10% of rated voltage		
	Transfer time break	No break		
	Backfeed protection	Integrated as standard		
	Rated conditional short-circuit current, I_{cc} Static bypass	100 kA (internal ultra rapid fusing)		
	Internal static bypass ultra-rapid fuse	Bussmann, 170M7084, 3000A 690Vac		
BATTERY CHARACTERISTICS				
5.4.2.2 d	Battery technology	12 V, VRLA		
5.4.2.2 b	Battery quantity	38 - 41 battery blocks, 228 - 246 cells per string	40 - 41 battery blocks, 240 - 246 cells per string	
5.4.2.2 c	Battery voltage range	456-492 V	480 - 492 V	
5.4.2.2 f	Stored energy time	See separate declaration		
5.4.2.2 o	Recharge profile	Advanced Battery Management (ABM®) = 90% resting,10% floating/charging (typical) OR float charge		

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5.4.2.2 q	End of discharge voltage	1.67 VPC to 1.75 VPC Configurable or automatic (load adaptive)		
5.4.2.2 r	Charging current limit	480 A		
	Temperature compensated battery charging option	Yes (with Environmental monitoring probe)		
	Alternative backup power technologies	Lithium-ion batteries Wet cell batteries NiCd batteries Supercapacitors		

COMMUNICATION CIRCUITS		
5.6	Display	Touchscreen LCD, 4x LEDs for notice and alarm
	Standard connectivity ports	4 x X-Slot ports for optional cards, 5 x building alarm inputs, 1 x relay output and a dedicated EPO
	Optional	X-Slot cards: Web/SNMP, ModBus/Jbus, Relay, Hot Sync, ViewUPS-X remote display
	Complete list of indications and interface devices	See User's Manual

COMPLIANCE WITH STANDARDS		
IEC 62040-1	Safety Access	Restricted access
	Degree of protection	IP20; protection against medium sized foreign matter (incl. finger)
IEC 62040-2	Electromagnetic Compatibility	
	Immunity	EMC Category C3
	Emissions	EMC Category C3