

# Uninterruptible Power Supplies - Design Guidance - 67

INFINITY UPS SINGLE PHASE SERIES 10-20kVA			
POWER - kVA	10	15	20
UPS Typology	ON LINE - DOUBLE CONVERSION ACTIVE STANDBY BY OPERATION (OPTIONAL)		
Nominal output power P.F. 0.8 (kVA)	10	15	20
Nominal output power P.F. 1.0 (KW)	8	12	16
Efficiency (AC / AC) % (ECO mode)	>98		
Efficiency (AC / AC) - % (Online double conversion mode)	>92		
Heat Dissipation at nominal load (W)	695	1040	1390
UPS ambient temperature (OC)	0 to 40		
Audible noise level (according EN 50091)	<52dB		
Protection degree	IP 20		
Design Standard	Compliant to "EN50091" "IEC 62040" "ISO14001"		
<b>RECTIFIER AND BATTERY CHARGER</b>			
Nominal Input Voltage (Vac PH-N)	230 (+10% - 20%)		
Input Frequency (Hz)	50-60 +/- 5		
Input Power Factor	>0.99		
Converter type	IGBT		
Nominal Input Current (Battery charged) (A)	12	19	23
Max. Input Current Inc. Max recharge (A)	24	36	36
<b>BATTERY</b>			
Battery Type	Sealed Lead Acid Recombination		
Number of Cells	2 x 180	2 x 186	2 x 186
Battery Protection	FUSES		
<b>INVERTER</b>			
Inverter Bridge	IGBT (transformerless)		
Nominal Output Power (P.F 0.8)	10	15	20
Nominal Output Power (P.F 1)	8	12	16
Nominal Output Current(A) (P.F0.8)	43	65	87
(@ 230Vac output) (P.F 1)	35	52	70
Nominal Output Voltage - (Vac Ph-N)	220-230-240 (on request)		
Output Voltage Stability - Static	+/- 1% rms		
- Dynamic (Step Load 0 + 100% + 0)	+/- 2% rms		
- Recovery Time (after load step)	within 10 ms		
- IEC 62040-3	Classification 1		
Overload Capability	125% for 10 min 200% for 100 msec		
<b>DIMENSIONS</b>			
(mm) W = 450 D = 650 H = 1200			
Weights (kg) without battery (with batt)	90 (250)	100 (260)	100 (260)

HYPERION UPS 200-300kVA			
POWER (kVA)	200	250	300
UPS typology	ON LINE - DOUBLE CONVERSION		
Nominal Output Power @(P.F 0.8) (kVA)	200	250	300
Nominal Output Power @ (P.F 1.0) (KW)	160	200	240
Efficiency (AC + AC) %	>93	>93	>93
Heat dissipation @ nominal load (KW)	11.2	14.0	16.8
UPS ambient temperature (OC)	0 to 40		
Audible Noise Level (according EN 50091)	62db	62db	62db
Protection Degree	IP 20		
Design Standard	Compliant to "EN50091" - "IEC 62040" "Vision 2000" - I"ISO 14001"		
<b>RECTIFIER</b>			
AC-DC Converter type	IGBT		
Nominal Input Voltage (Vac)	400 + 10% - 20%		
Input Frequency (Hz)	50 - 60 +/- 5		
Input Power Factor (400 Vac)	>0.96	>0.96	>0.96
Input Current THD	<5%	<5%	<5%
Maximum Recharge @ Nominal Load (A)	30	40	40
Maximum Input Current Inc. Recharge (A)	280	350	410
<b>BATTERY</b>			
Type	Sealed Lead Acid Recombination		
Number of cells (400v)	300	300	300
Battery Protection (external to the UPS)	Automatic Circuit Breaker		
<b>INVERTER</b>			
Inverter bridge	IGBT (High Frequency Comm.)		
Nominal Output power @ (P.F 0.8) (kVA)	200	250	300
Nominal Output power @ (P.F 1) (kW)	160	200	240
Nominal Output Voltage - Vac	380 + 415 (Selectable) Output Voltage Stability		
- Static (Balanced Load)	+/- 1%		
- Static (Unbalanced Load)	+/- 2%		
- Output Volt recovery time (dynamic Step load)	0-100% - 0) +/- 5		
Nominal Output Current - A Cos 0.8	290	360	430
Cos 1	230	290	360
Overload Capability	125% for 10 min, 200% for 100ms		
<b>STATIC BY-PASS</b>			
Automatic Static By-Pass	Electronic Thyristor Switch		
Nominal Voltage (VAC)	380 - 415 (Selectable) +/-5		
Overload Capability	-125% continuously - 1000% for 1 cycle		
Manual By Pass	Electronic Control / No break		
<b>DIMENSIONS (mm)</b>			
	<b>W = 1200</b>	<b>D = 860</b>	<b>H = 1900</b>
Weights (kg) Without Battery	870	1020	1200

THETYS UPS SERIES 60-160kVA					
POWER - kVA	60	80	100	125	160
UPS Typology	ON LINE - DOUBLE CONVERSION				
Nominal output power (P.F 0.8) (kVA)	60	80	100	125	160
Nominal output power (P.F 1.0) (KW)	48	64	80	100	128
Efficiency (AC - AC) % (ECO mode)	> 93				
Heat Dissipation @ Nominal Mode (KW)	3.8	4.8	6.0	7.5	9.6
UPS ambient temperature (OC)	0 to 40				
Audible noise level (according EN 50091)	60db				
Protection degree	IP 20				
Design Standard	Compliant to "IEC EN 62040"				
<b>RECTIFIER</b>					
Nominal Input Voltage (Vac)	400V + 10% -20%				
Input Frequency (Hz)	50 - 60 +/- 5				
Input Power Factor (400Vac)	>0.99				
Max. Recharg. Current at nom. load (A)	15	15	15	20	20
DCM function can increase up to (max A)	50	50	100	100	100
AC/DC converter type	IGBT PFC				
Input Protection	FUSES				
Max. Input Current Inc. Recharge (A)	94	126	157	196	252
<b>BATTERY</b>					
Battery Type	Sealed Lead Acid Recombination				
Number of Cells	300	300	300	300	300
Battery Protection (external to UPS)	Wall mounted Fuse Box				
<b>INVERTER</b>					
Inverter Bridge	IGBT (High Frequency)				
Nominal Output Power @ (P.F 0.8)	60	80	100	125	160
Nominal Output Power @ (P.F 1)	48	64	80	100	128
Nominal Output Current (A) (P.F 0.8)	80	116	145	180	232
@ 400Vac Output (P.F 1)	70	93	115	145	186
Nominal Output Voltage -	380 + 415				
Output Voltage Stability					
- Static (Balanced Load)	+/- 1%				
- Dynamic (Step Load 0 - 100% - 0)	+/- 5%				
- Output Volt. Recovery Time after step load	<20ms				
DIMENSIONS (mm)	W = 815	D = 825	H = 1670		
Weights (kg) without battery	570	600	630	662	720
Static load (Kg/m <sup>2</sup> ) without bat	948	998	1048	1101	1198

TITAN UPS SERIES 400-800kVA				
POWER (kVA)	400	500	600	800
UPS typology	ON LINE - DOUBLE CONVERSION			
Nominal Output Power @(P.F 0.8) (kVA)	400	500	600	800
Nominal Output Power @ (P.F 1.0) (KW)	320	400	480	640
Efficiency (AC + AC) %	>94	>94	>94	>94
Heat dissipation @ nominal load (KW)	22.4	28.0	33.6	44
UPS ambient temperature (OOC)	0 to + 40			
Power de-rating for altitude > 1000m	Compliant to "IEC62040-3"			
Audible Noise Level (according EN 50091)	60db	60db	60db	60db
Protection Degree	IP 20			
Design Standard	IEC 62040 -2			
<b>RECTIFIER</b>				
AC-DC Converter type	IGBT			
Nominal Input Voltage (Vac)	400 to 415 (selectable) + 10% - 20%			
Input Frequency (Hz)	50 - 60 +/- 5			
Input Power Factor (400 Vac)	>0.99	>0.99	>0.99	>0.99
Input Current THD	<3%	<3%	<3%	<3%
Maximum Recharge @ Nominal Load (A)	60	80	80	120
Maximum Input Current Inc. Recharge (A)	560	700	820	1120
<b>BATTERY</b>				
Type	Sealed Lead Acid Recombination			
Number of cells (400v)	300	300	300	300
Battery Protection (external to the UPS)	Automatic Circuit Breaker / Fuse Switch			
<b>INVERTER</b>				
Inverter bridge	IGBT (High Frequency Comm.)			
Nominal Output power @ (P.F 0.8) (kVA)	400	500	600	800
Nominal Output power @ (P.F 1) (kW)	320	400	480	640
Nominal Output Voltage - Vac	380 to 415(selectable)			
Output Voltage Stability				
- Static (Balanced Load)	+/- 1%			
- Static (Unbalanced Load)	+/- 2%			
- Output Volt recovery time (after step load)	(ms) <20			
Nominal Output Current - A Cos 0.8	590	720	860	1180
(@400 Vac output) Cos	1460	580	720	920
Overload Capability	125% for 10 min, 150% for 10 sec			
<b>STATIC BY-PASS</b>				
Automatic Static Bypass	Electronic Thyristor Switch			
Nominal Voltage (Vac)	380 to 415 (Selectable) +/-10			
Overload Capability	- 150% continuously - 1000% for 1 cycle			
Manual Bypass (External option)	Electronic Control / No break			
<b>DIMENSIONS (mm)</b>				
	1990Wx990Dx1920H	2440Wx990Dx2020H	2440Wx990Dx2020H	3640Wx990Dx2020H
Weights (kg) Without Battery	1820	2220	2400	3600