

ZEPHYR 10 ÷ 30 KVA

DT 0267 E01 TECHNICAL DATA

Rev	Description	Date	Checked	Released	Date			
	ISSUED	08.11.2001		E.Borsa	28.11.2001			
	Revision 01	21.01.2002		Approved				
				A.Gorlani		DT267 E01		

Technical Specification

ZEPHYR 10-30kVA

General characteristics

Double conversion, digital controlled, high frequency transformer less design.
Mechanical design in line with the POWERTRONIX style guidelines and featuring

- Bottom cable entry
- Enclosure rating to IP20
- Easy battery upgradability up to 4 strings

System data	10	15	20	30
System configuration	On line double conversion			
Nominal input voltage	3ph + N 380 Vac to 415 Vac			
Input voltage range * capability)	300÷475 Vac (330 Vac to 475Vac full battery charge			
Nominal input frequency	50÷60 Hz ± 20%			
Nominal output voltage	220/230/240Vac adjustable			
Nominal output frequency **	50/60 Hz			
Output voltage distortion (THD) 100% load				
linear load	< 3%			
non linear load (according to EN50091-3)	< 5%			
Output voltage stability	± 1%			
Output frequency regulation				
synchronisation with mains	± 1%, ± 4% user selectable			
free running	±0.005%			
Output kVA	10	15	20	30
Output KW	8	12	16	24
Efficiency				
at 50% load	89	90	91	91
at 100% load	91	91	92	92
Losses with nominal load and charged battery Kw	0.80	1.18	1.39	2.09
Autonomy time with internal battery	>5 minutes (Full Load)			
Overload capacity ***				
Inverter	125% for 10 minutes, >125% to 150% for 5 seconds			
Static Bypass Switch	150% 30 mins 1000% 100ms			
Permissible Inverter output voltage variation				
for bypass switching	± 15%			
Design standards	IEC 146-4, EN50091-1, IEC 950			
Enclosure rating	IP20 to IEC529, IEC 944			
Operating temperature	0 to 40°C			
Storage temperature	-20 to 70°C (excluding battery)			
Permissible relative humidity	< 95% UR (non condensing)			
Maximum altitude above sea level at full load	1000 mt.			
RFI Suppression	EN50091-2 class A IEC801-2, IEC801-3, IEC801-4			
Performance Requirements	in compliance with EN50091-3			
Audible noise level at 1 metre	< 52 dBA			

* all quoted voltages have tolerance of ± 5V L-N

** all quoted frequencies have tolerance of ± 0.1Hz

*** all quoted overloads have tolerance of ± 5% of the overload

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Battery Charger Data	10	15	20	30
Nominal input voltage	3ph + N 380, 400, 415 Vac			
Input voltage variation *	330 Vac to 475 Vac			
Input frequency	50/60 Hz			
Input frequency range	40/70 Hz			
Soft start	10 sec			
Battery charger output voltage				
Float charge	432 Vdc			
Boost charge	Factory optional to suit battery type			
Battery charger voltage stability	± 1%			
Battery charger output voltage ripple (Vrms/Vb) x 100	< 1%			
Maximum battery recharging current	A. 7	7	7	7
Maximum battery recharging current setting	1-3-7 selectable			
Battery charging characteristics	To battery manufacturers recommendations			

Battery Data				
Number of cells				
Lead acid maintenance free	192			
Lead acid open	192			
Ni Cd	Options available to suit customers requirements			
Boost charge voltage				
Lead acid open	Variable to suit battery option			
Ni Cd				
Permissible battery voltage range	320-500 Vdc			
Maximum battery discharging current (Vdc = 320 V nominal load)	A. 26.5	40	53	79.5
Environmental temperature	Recomended 20°C Following battery manufacturers instruction			

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 ** all quoted frequencies have tolerance of ± 0.1Hz

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Inverter Data	10	15	20	30
Input power at rated load KW	8.5	12.8	17	25.5
Nominal input voltage	384 Vdc (192 cells)			
Input voltage range	320-750 Vdc			
Battery running down alarm	Adjustable (350 Vdc suggested)			
Maximum input current	A. 26.5	40	53	79.5
Nominal output current at rated load (230Vac)	A. 43.5	65.2	86.9	130,4
Efficiency at 100% load	>94%			
Output voltage	220/230/240 Vac adjustable			
Output voltage distortion (THD) 100% load				
linear load	< 3%			
non linear load (according to EN50091-3)	< 5%			
Output voltage adjustment range	+15% - 35% of nominal voltage			
Voltage tolerances				
Static load	< 1%			
Dynamic 50% load step	< 3%			
Dynamic 100% load step	< 5%			
Voltage transient recovery time	< 30ms into 3% RMS			
Short circuit current	2.4 times of nominal current for 5 sec			
Max frequency range for synchronisation of Inverter with ac supply	1÷4% selectable			
Maximum frequency variation during synchronisation	< 1Hz/s			

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By pass Switch Data	10	15	20	30
Nominal input/output voltage 3ph + N	220/230/240Vac			
Voltage tolerance	± 10% adjustable			
Overload ***	1.5In for 30 mins 10In for 100ms			
Maximum switching time				
Inverter - Bypass	< 1ms			
Overload or manual command	0 ms			
Bypass - Inverter automatic retransfer	0 ms			

Standard Interfacing

Relays Card	
Relays clean contacts outgoing on terminal blocks and Db9	250Vac/10A Mains Present Inverter Run Battery prealarm By-Pass ON

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